



ELDERLY AND TRAUMA: PROFILE AND TRIGGERING FACTORS

O IDOSO E TRAUMA: PERFIL E FATORES DESENCADANTES

EL ANCIANO Y EL TRAUMA: PERFIL Y FACTORES DESENCADENANTES

Juliana Rodrigues¹, Maria de Fátima Mantovani², Suely Itsuko Ciosak³

ABSTRACT

Objective: to characterize the profile of elderly victims of trauma treated at the emergency room and the relationships involved. **Method:** quantitative prospective, cross-sectional study conducted in the emergency room of two hospitals in Curitiba, Paraná, Brazil. Inclusion criteria were: elderly being 60 years old or more, of both genders, trauma victims who agreed to participate or by authorization of the caregivers or family in case of cognitive and/or hearing impairment. The interview was used to collect data and then data were organized and analyzed in an Excel spreadsheet and presented in frequencies and percentages. The research project was approved by the Ethics Committee in Research, CAAE 0017.0.084196-10. **Results:** The sample consisted of 261 elderly, from 60 to 103 years old, average of 72.6 ± 9.3 years old, more women. **Conclusion:** the most common mechanism of injury was a fall (75.9%), which increased with age and occurring more at home, with similar distribution in every day of the week. **Descriptors:** Elderly; Trauma; Fall; Nursing.

RESUMO

Objetivo: caracterizar o perfil dos idosos vítimas de trauma atendidos no pronto-socorro e as relações envolvidas. **Método:** estudo quantitativo, prospectivo, transversal, realizado no pronto-socorro de dois hospitais de Curitiba-PR, Brasil. Os critérios de inclusão foram: idosos com 60 anos ou mais, de ambos os sexos, vítimas de trauma que aceitaram participar da pesquisa ou por autorização de cuidadores ou familiares, em caso de déficit cognitivo e/ou auditivo. A entrevista, foi utilizada para coleta de dados, em seguida, foram organizados e analisados em planilha Excel e apresentados em frequências e percentuais. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, CAAE 0017.0. 084.196-10. **Resultados:** a amostra foi de 261 idosos, com idade que variou de 60 a 103 anos, média de $72,6 \pm 9,3$ anos, maior número de mulheres. **Conclusão:** o mecanismo de trauma mais frequente foi a queda (75,9%), que aumentou com a idade e ocorreu mais no domicílio, com distribuição semelhante em todos os dias da semana. **Descritores:** Idoso; Trauma; Queda; Enfermagem.

RESUMEN

Objetivo: caracterizar el perfil de los ancianos víctimas de trauma atendidos en la sala de emergencia y las relaciones envueltas. **Método:** estudio cuantitativo, prospectivo, transversal, realizado en la sala de emergencia de dos hospitales de Curitiba-PR, Brasil. Los criterios de inclusión fueron: ancianos con 60 años o más, de ambos sexos, víctimas de trauma que aceptaron participar de la investigación o por autorización de cuidadores o familiares, en caso de déficit cognitivo y/o auditivo. La entrevista, fue utilizada para recolección de datos, en seguida, fueron organizados y analizados en planilla Excel y presentados en frecuencias y porcentajes. El proyecto de investigación fue aprobado por el Comité de Ética en Investigación, CAAE 0017.0. 084.196-10. **Resultados:** la muestra fue de 261 ancianos, con edad que variaba de 60 a 103 años, media de $72,6 \pm 9,3$ años, con mayor número de mujeres. **Conclusión:** el mecanismo de trauma más frecuente fue la caída (75,9%), que aumentó con la edad y fue más en el domicilio, con distribución semejante en todos los días de la semana. **Descriptores:** Anciano; Trauma; Caída; Enfermería.

¹Nurse, Ph.D. Professor in Nursing. Federal University of Goiás - Regional Jataí. Jataí/GO, Brazil. E-mail: junurse2005@yahoo.com.br;

²Nurse, Ph.D. Professor, Nursing Department, Federal University of Paraná/UFPR. Productivity Scholarship of CNPq. Curitiba (PR), Brazil. E-mail: mfatimamantovani@ufpr.br;

³Nurse, Ph.D. Professor and Associate Professor of Nursing, Nursing School, São Paulo University/SP. São Paulo (SP), Brazil. E-mail: siciosak@usp.br

INTRODUCTION

The growing number of elderly is changing the demographic profile of Brazil and this phenomenon requires the reorganization of society to provide quality of life for this population. The elderly undergo normal and progressive physiologic changes that alter homeostasis, reduce the quality of vital functions and the ability to resist to diseases and trauma.

The appearance of pre-existing diseases, for example, hypertension and diabetes, and chronic diseases of aging may be risk factors for the development of accidents and falls, resulting from events associated with the continuously use of medication.¹

It is noteworthy that the elderly victims of trauma deserve studies, especially for preventive action against these diseases, and the nurse is able to work to reverse or mitigate these issues. The issue of elderly care also involves issues such as the need for hospitalization, more often and longer to rehabilitation, being the biggest cost to the health system.

With this new profile of the population, it is necessary the reorganization of society, including changes in street furniture, access to public buildings, adequacy in housing and public transportation, labor market and health systems “to ensure the inclusion in the family, the city and the society in general”.^{2:15}

Understanding the relationships involving trauma in the elderly allows the “proposition of health promotion and trauma prevention strategies, to improvement of living conditions of the elderly”.^{3:603} In this way, the aim of this study is:

- to characterize the profile of elderly victims of trauma treated in the emergency room and the relationships involved.

METHODOLOGY

Prospective study of cross-sectional quantitative approach developed in two units of emergency room (ER) of two hospitals in the city of Curitiba. The study subjects were elderly victims of trauma assisted in these ER. Inclusion criteria were patients from 60 years old or more, of both genders, trauma victims, who they or their families or caregivers agreed to take part of the research in case of cognitive and/or hearing impairment.

The sample was non-probabilistic type. To collect data, an instrument with closed questions was used, with socio-demographic data related to trauma, comorbidities, and continued use of medications, among others.

Data collection was performed during the stay of the elderly in the ER.

Respecting Resolution Number 196/96 of the National Health Council, the elderly participated voluntarily after being informed and enlightened about the research, read and signed the Consent Term.⁴ The research project was approved by the Committee Ethics of the Secretary of Health of the State of Paraná/Workers’ Hospital and received by the Certificate of Presentation to Ethics Assessment (CAAE) number 0017.0.084196-10.

RESULTS

The study sample consisted of 261 elderly victims of trauma who were hospitalized in two hospitals in the city of Curitiba. Regarding to gender, 148 (56.7%) were women and 113 (43.3%) men. The age ranged from 60 to 103 years old (average was 72.6 ± 9.3 years old), with the highest concentration at the age below 70 years old, with 117 (44.8%) patients. The second most frequent age group was from 70 to 79 years old with 85 (32.6%), followed by 80 years old or more, with 59 (22.6%) patients. The women were equally distributed in all age groups and more than half of men (53.9%) were from 60 to 69 years old.

Regarding marital status, 113 (43.3%) were married, 92 (35.2%) widowed, 34 (13%) separated and in a stable union and 22 (8.4%) unmarried.

Among those under 70 years old, there was predominance of married women (20 to 35.7%); but from 70 to 79 years old and 80 years old or more, there were more widows, 26 (46.4%) and 30 (83.3%) respectively.

Most of men up to 79 years old were married. In 80 years old or more, 12 (52.2%) were widowed.

There was a predominance of white skin color in both genders (88.5%).

In all age groups, the majority of participants were retired. They received one to three minimum wages, 139 (93.9%) women and 100 (88.5%) men. Most respondents did not work (196 to 75.1%), except for men in the age group of 70 years old, in which 42 (68.9%) were still working.

There were more women (22.3%) living alone compared to men (13.3%). The percentage of men who lived with a spouse was higher in all age groups, occurring most under elderly of 70 years old (42 to 68.9%).

Most patients younger than 79 years old had no caregiver, however, in the range of 80 years old or more, 25 (69.4%) women and 13 (56.5%) men had caregiver.

The daily activities were not held by 27 (18.2%) women and 23 (20.4%) men, and 81.6% of participants did not practice in physical activity.

With regards trauma mechanisms that led the elderly to the ER, there were the fall, trampling, and direct trauma and car accidents.

Falls were the trauma mechanism more frequently occurred, with 198 cases (75.9%), 85.1% being women and 63.7% men. For the group of over 80 years old, all women have suffered this injury, while in men the rate was 73.9%.

The second most common trauma mechanism was trampling, with 25 (9.6%) cases, being 11 (12.5%) cases for women, predominantly in the age group 70-79 years old and, 14 (16.4%) cases for men in the age group of 70 years old. Direct trauma, considered as an impact caused by objects resulting in injuries, was in third place among the causes of trauma in the elderly (14 to 5.4%).

The falls were classified as: of the same level (the fall occurred at the high the patient was) and level (the elderly fell from a different high he was). The fall of the same level occurred more often (130 to 65.7%). The majority (78.5%) occurred within the home, especially among women (85.5%), mainly in the range 70-79 years old (91.1%). For men falling at home was more frequent in the age group 80 years old and over (76.5%).

Seeking to find trauma occurrence, it was found that there was a higher frequency in the morning, for both men and women, with 119 (45.8%) cases. Regarding the day of the week, there is a similar distribution to all days and the lowest percentage of accidents were observed on Saturdays and Sundays (7.7% and 10.3% respectively).

The main access of the patient to the emergency room was by spontaneous demand (64.4%), followed by the Integrated System of Care Trauma and Emergencies (SIATE) (24.1%) and Mobile Emergency Service (SAMU) (11.5%).

Of the nine regional city of Curitiba, Portão regional was 22.6%, followed by regional Pinheirinho (15.2%).

To facilitate the description and analysis of continuous medication used by the elderly, they were classified according to the Therapeutic Guanabara Dictionary in: antihypertensive, hypoglycemic, antilipemic, antiplatelet, diuretic, coronary vasodilator and medications that act on the system central nervous (SNC).⁵

The analysis of the use of continuous medication of elderly victims of trauma indicated that the most frequent in all age groups was the antihypertensive, 118 (45.2%).

With regard to medications that act in the SNC, it was observed that 62 (23.8%) of the participants had continued use of psychotropic drugs, psychostimulants and SNC depressants.

The use of diuretics has been shown by 45 (17.2%) elderly, often in the range of 70 to 79 years old.

It was noted that only 36 (13.8%) used hypoglycemic agents.

DISCUSSION

This research showed that most accidents involving trauma in the elderly were on women. In France, studies developed a clinical scale to stratify the risk of falls in the elderly over 65 years old, concluded that the female is strongly associated with falls.⁶⁻⁷

In Brazil, the highest incidence in women, shows the feminization of old age and personal and environmental factors that in women, it interferes with the risk of falls.⁸

The patients' ages was from 60 to 103 years old and the age group of 70 years old was highlighted in all samples, which are *young elderly*, so they participate in an active way in society, showing a greater exposure to accidents and urban violence.³ The oldest elderly go out less from home, sometimes by their physical condition, sometimes by their social status.⁹

Regarding marital status, most of the women were widowed at 70 years old and men were married. It appears that women lose their companions rather than men, because for many years, in our society, men married with younger women and that after the death of the partner, they marry again more frequently than women.

In an attempt to promote human health in 2009 the National Men's Health Policy was released. Men have difficulty seeking the assistance of primary care, which could avoid the injuries. This behavior increases social spending and the suffering of the patient and his family.¹⁰

Most of men (71%), live with spouse, only 48 (18.4%) lived alone, but many women (37.8%) lived with their children, similar results reported in another study.³

The predominance (70.8%) of white color reflects the history of Paraná, where in the late eighteenth century and early twentieth century, this state was mostly involving European in their immigration process. Among

them, there were Germans, Italians, Ukrainians, Poles, and Dutch. Bento Munhoz da Rocha, former governor of Paraná, was among European immigrants in Parana, the slaves, in particular, transformed the State "in Brazil's blonde march".^{11:98}

Although physical activity is a key aspect to promote healthy aging, the study population showed little or no physical activity.⁹ It is known that elderly who participated in physical activity reduce the risk of falls, but sedentary elderly have less functional mobility, largest deficit in balance and walking changes, leading to more falls.¹²

Activities of daily living (ADL) are held by 81.8% of women and 79.6% of men, a decrease was observed only in the age group above 80 years old. It was noticed a great independence among older respondents regarding the activity as eating, cooking, walking in flat surface and bathing.

It is noteworthy that from 80 years old, it is expected some level of compromise to the performance of ADLs. Similarly, the general health conditions, social and economic context, as well as regional differences of each population make a difference in the intensity and frequency in the fall of ADL.¹³

As evidenced before, the fall was the mechanism that more affected the elderly, and women more than men. The increased number of falls among women is justified because they are more numerous and live longer than men. Other issues relate to the different tasks and different activities of men. Therefore, it is understood that women are more exposed when doing housework, being caregivers and are living alone.¹⁴

The fall of the same level represented almost double compared to the level falls, results corroborating other findings.^{15:1} In addition to this specific feature of the falls, the place in which they occurred was highlighted, and the home was the space offering more risks to older adults (78.5%). This can be understood by the fact that the elderly stay longer in their homes.⁹ Therefore, these data point to the need to promote a more healthy environment for the elderly, especially those with risk of falls.

It could be observed during this research, some reasons that led the falls at home, such as slippery, animals at home, presence of carpets and even carelessness walking in the dark.

There was an increase in the frequency of falls in both genders in the oldest. All women in the sample who were 80 years old or older, have suffered a fall. For men, the frequency of falls increased from 55.7% in the elderly

under 70 years old to 73.9% in over 80 years old. Falls determine complications that reflect negatively on quality of life, and limit the elderly for fear of falling again.¹⁶

Analyzing the occurrence of other trauma mechanisms, it appears that women over 80 years old were not affected by other mechanisms, the fall was the only reason of their accidents.

In accordance with the data found, in which the trampling and car accidents were in second place, study of a group of elderly in Londrina, showed the same result, particularly among men.³ Similarly, the trampling was the second mechanism trauma more common among the elderly, besides having a higher frequency compared to the young group (28.6%, 19.8% respectively).¹

With regard to direct trauma and other mechanisms (FCC, abuse, sprain), the total of these events represented only 10.8% and the various causes that led this outcome are associated with the act of picking up objects in high places, furniture broken, gate falling, walk fast and assault. It is noticed that the cause of these accidents are likely to be eliminated, offering thus more security for the elderly.

The scarcity of scientific publications on the influence of temporal and geographical factors on trauma in the elderly, limits the discussion regarding the findings. Also, there is the low value the period of the day of the week in which the trauma occurred.

A minority of the accidents happen overnight, that is occurring more during daylight, and the morning occurred more (45.8%) in both genders. As shown in another study, domestic accidents are more likely to occur throughout the day (77.1%) and the highest frequency in the afternoon.¹⁷

As for the days of the week, Saturdays and Sundays were highlighted as the days less occurring falls (7.7%, 10.3% respectively), perhaps by the presence of other family members at home, to assist the elderly in some activities and in Monday, when they resume their daily activities, increase the risks to its incidence, increasing four to five times (45.8%).

The way the patient had access to the ER was predominantly of spontaneous demand, followed by SIATE, specialty of this service system and, finally, the SAMU. According to where the accident occurred, the regional Portão and Pinheirinho showed higher rates. As to the most populated neighborhoods of Curitiba, the ones of Portão and Água Verde (Portão regional) in 2010, occupied the 9th and the 10th position among the most populated

neighborhoods of the city. Pinheirinho neighborhood occupied the 8th place among the ten most populous, from 54,734 inhabitants in 2007 to 57,310 inhabitants in 2010 (IPPUC, 2010)¹⁸. Regional Portão has 287,636 inhabitants in 2012 to 315,070 in 2020, and this past year the regional that will have the greatest number of inhabitants.

The medication most commonly used by both genders was the antihypertensive and in this class thiazides has been associated with increased risk of falling, being more intense in three weeks after initiation of therapy. For other antihypertensive medication, classes were not falls risks shown.¹⁹

In women, “the prevalence of hypertension increases significantly after 50 years old, this change related to hormonal changes of menopause.”²⁰

In Western society, hypertension as a chronic problem, it is a special challenge due to its high prevalence or even the fact of being asymptomatic. Similarly, obesity, smoking, alcohol consumption and excess salt are risk factors that contribute to the development of the disease.²¹

Medications that act on the central nervous system (SNC) (psychotropic, psychostimulants, SNC depressants) after antihypertensive drugs, as the most commonly used drugs and, thirdly, diuretics.

Among the medications that act in the SNC, benzodiazepines may experience adverse reactions such as hypotension, nausea and fatigue and may reflect falls in its users.

As we have seen, the falls have a multifactorial origin, making it difficult to identify the main reason. Among the most common risk factors, there are advanced age, female, balance disorders, walking disorders, low physical fitness, decreased muscle strength, postural hypotension, visual impairment, cognitive and polypharmacy impairment.²²⁻²⁴

Similar results show that the fall in the surveyed elderly is high, more common in women aged 60-69 years old. This event was “frequently while the elderly walk, with as main cause of slippery, occurring predominantly at home and in the morning shift.”^{25: 5073}

There is vulnerability of the elderly to adverse events and the challenge of nurses to contribute to the rational use of medicines.²⁶ It is “essential training of community health agents and nursing assistants, as professionals who enter the user’s home and provide systematic monitoring”, with possibilities to detect risks, proposing preventive actions beyond monitor adherence of the proposed measures.^{27:64}

CONCLUSION

There were 261 elderly victims of trauma interviewed, with the following characteristics:

- 56.7% were female;
- The age ranged from 60 to 103 years old and the average age was 72.6 ± 9.3 years old;
- 43.3% were married; 35.2% widowed; 13% were separated and 8.4% single. There was a predominance of widows and married men;
- 88.5% in both genders were white;
- Most of the respondents were retired and received one to three minimum wages (93.9% - women and 88.5% - men) and 24.9% of men under 70 are still working;
- They lived alone: 22.3% women and 13.3% men.

Concerning trauma we found:

- 75.9% due to fall more frequently in women (occurring in all of them over 80 years old);
- 78.5% of falls occurred at home;
- 45.8% of the accidents occurred in the morning, most often on Mondays;
- 45.2% of subjects were using anti-hypertensive, 23.8% medications that act in the SNC, 17.2% diuretics and 13.8% hypoglycemic.

It is important that health services, especially in primary care are aware of prevention and early identification of risk factors for falls in the elderly in order to minimize its high prevalence. In this process it is for the nurse implement guidance and care involving both professionals of their team, as the elderly population and family to minimize factors related to falls, considering not only the physiological aspects of aging, but environmental and especially those related to drug therapy, adverse events which may contribute to these risks.

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Corresponding Address

Juliana Rodrigues
Câmpus Cidade Universitária, Br 364, Km 195,
nº 3800
CEP 75801-615 – Jataí (GO), Brazil