Profile of elderly patients who suffered trauma in Londrina - Paraná*

PERFIL DOS IDOSOS QUE SOFRERAM TRAUMA EM LONDRINA - PARANÁ

PERFIL DE LOS ANCIANOS QUE SUFRIERON TRAUMAS EN LONDRINA - PARANÁ

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ABSTRACT

The objective of this study is to characterize elderly victims of traumas admitted to three tertiary hospitals in Londrina, Paraná State. This quantitative-based research lasted six months and was carried out by means of an observational and cross-sectional study of 121 elderly people (60 to 74 years old) and their caregivers at the patients' homes, by the use of interviews. Results indicated that the majority of the elderly patients were males, with average age of 67.7 years. The suffered traumas were distributed as follows: 62.0% by falls; 25.6% by transport accidents; and 10.4% by other sources. As a consequence of the trauma, the elderly patient had from one to three injuries and 11 (9.1%) died. Falls were the major source of traumas. This event can be avoided by the observations of predisposing intrinsic and extrinsic factors, aiming at establishing prevention strategies to this type of trauma.

KEY WORDS

Aged.
Accidental falls.
Wounds and injuries.

RESUMO

O objetivo foi caracterizar os idosos que sofreram trauma e foram internados nos três hospitais terciários, da cidade de Londrina - Paraná. Pesquisa quantitativa através de um estudo observacional, transversal, com 121 idosos de 60 a 74 anos e seus cuidadores, realizada durante um período de seis meses, por meio de entrevistas e visita domiciliar. Os resultados evidenciaram que a maioria dos idosos era do sexo masculino, com média de idade de 67,7 anos. Os traumas sofridos foram: 62,0% quedas, 25,6% acidentes de transporte e 10,4% outras causas. Como conseqüência ao trauma houveram de uma a três lesões, e 11 idosos (9,1%), foram a óbito. A queda foi a principal causa de trauma, a qual pode ser evitada observando os fatores intrínsecos e os extrínsecos que a predispõem, com o intuito de estabelecer estratégias de prevenção desse tipo de trauma.

DESCRITORES

Idoso.
Acidentes por quedas.
Ferimentos e lesões.

RESUMEN

El objetivo fue caracterizar a los ancianos que sufrieron traumas y fueron internados en los tres hospitales terciarios, de la ciudad de Londrina, Paraná. Investigación cuantitativa a través de un estudio observacional, transversal, realizado en 121 ancianos de 60 a 74 años y sus cuidadores, realizada durante un período de seis meses, por medio de entrevistas y visitas a domicilio. Los resultados colocaron en evidencia que la mayoría de los ancianos era de sexo masculino, con promedio de edad de 67,7 años. Los traumas sufridos fueron: 62,0% caídas, 25,6% accidentes de transporte y 10,4% otras causas. Como consecuencia del trauma tuvieron de una a tres lesiones y 11 ancianos (9,1%), murieron. La caída fue la principal causa del trauma, la cual puede ser evitada observando los factores intrínsecos y los extrínsecos que la predisponen, con la finalidad de establecer estrategias de prevención para este tipo de trauma.

DESCRIPTORES

Anciano.
Accidentes por caídas.
Heridas y traumatismos.

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INTRODUCTION

The increase in the elderly population in the country has been demonstrated by many demographic studies carried out on the Brazilian population, showing that it has been aging quickly since the 1960s[1-2]. Concurrent with this fact, trauma prevalence among this population has been rising significantly in the past few years, mainly in large urban centers.

Trauma centers equipped to deal with the geriatric population are becoming more necessary every day, since elderly trauma victims are initially more critical, requiring more frequent admittance to hospital and representing great proportions in Intensive Care Units, as well as consuming more resources than any other age bracket[3].

Trauma, according to medical-sanitary concepts, is characterized by the real existence of a lesion, wound, or injury caused to the organism and/or mind. Its conditionings and etiology vary and are, predominantly, originated externally; however, its symptomatic expression and clinical manifestations are still influenced by the organism's internal functioning mechanisms. These grievous injuries, and the organic and mental processes following it, are considered to be due to certain preceding or concurrent external events[4]. The processes originating these traumatic lesions are aggressive actions against the integrity of the being, whether or not intentional.

Therefore, late mortality rates are higher for elderly trauma victims than for younger victims, since there is a combination of the lesion associated with higher occurrences of associated pre-existing diseases (comorbidities) and post-trauma complications.

Hospitalization can lead to complications due to prolonged immobilization, higher risk of iatrogenic diseases and post-traumatic stress featured by insomnia, distress, depression, loss of trust, and panic disorder[4].

Factors interfering in the prognosis of elderly trauma victims are age, number of injuries, injury severity, early medical attention, pre-hospital care and appropriate transportation, hospital resources providing the service and the presence of comorbidities[4].

In Brazil, recent statistics for the period of 1998 to 2002[4-5] show that trauma is the third or fourth cause of death for elderly people.

Care delivery for the health of the elderly has become a priority with a view to the progressive increase of life expectancy over the past decades. Based on the elderly population growth, this population share is estimated to represent, by the mid-21st century, 40% of the people who have experienced trauma[5].

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Considering the significant increase of the elderly population and its high mortality rate due to trauma, this theme rises, in Public Health, as one of the great social concerns of our century justifying this study.

Presenting data on the elderly profile and the types of trauma occurring in people from the 60-74 years old age bracket for health professionals and society in general is intended. Elderly people from this age bracket are considered *young elderly* who, despite the aging process, are active participants in society and this type of event can compromise their functional capacity when it does not cause their death.

Understanding the relationship between the occurrence of traumas and its consequences for the young elderly is important for health team knowledge. It can affect the improvement of care delivery, as well as propose strategies for health promotion and prevention of trauma, with a view to improving life and health conditions for these elderly people.

OBJECTIVES

• Identify socio-demographic aspects of the elderly who have suffered trauma;

• Describe the types of trauma that elderly people have suffered and their consequences.

METHOD

This study was observational and transversal, carried out on elderly trauma victims (n=121) according to the following inclusion criteria: age bracket from 60 to 74 years old; both genders; inhabitant of the city of Londrina – PR and the Metropolitan Region (municipals of Bela Vista do Paraíso, Cambé, Ibiporã, Jataizinho, Rolândia and Tamaran); who had received care after a trauma and had been admitted to one of the three general and tertiary hospitals in the city of Londrina throughout a period of 6 months (July to December of 2004); who had suffered trauma due to traffic accidents, falls and abuse as the causes of their admittance to hospital; and who had agreed to participate in this research.

A survey of elderly (60 to 74 years old) subjects who had been diagnosed as suffering a trauma according to the International Classification of Diseases (ICD-10)[6], for the studied period was required from the Medical Records Departments (MRD) of the three hospitals.

Contact via the telephone was carried out and house-calls to be performed by two trained instructors (nursing undergraduate students), supervised by one of the researchers, were booked.

Regarding data collection, an instrument developed by the researchers with 34 open questions was used for the

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purpose of achieving the objectives of this study. After the evaluation of its contents by experts in the area, the instrument was formatted to a standardized record format, facilitating data application and tabulation.

Data collection was performed after receiving the approval of the Ethics and Research Committee on Human Beings for the *Filadélfia* University Center of Londrina (Process No. 34/2004).

A data base in the EPI INFO 6.04 software was used. Afterwards, data were processed and analyzed only by descriptive analysis, since it includes a study of the whole population; in other words, from all elderly individuals in the determined age bracket who had suffered trauma and needed to be admitted to the hospital. Tables on single frequency and double, average and median values were generated, resulting in the combination of the studied variables.

RESULTS

Results demonstration began by organizing the demographic and socio-economic characteristics of the elderly who had suffered trauma and were admitted to one of the three tertiary hospitals in the city of Londrina, as follows in Table 1.

Table 1 - Socio-economic and demographic variables frequency distribution according to gender on the researched elderly (n=121) - Londrina, PR - 2005

Variable	Female (%)	Male (%)	Total (%)
Age (in Years)			Average = 67.7(d.p.±4.4); Median = 68.0
60-64	15 (12.4%)	22 (18.2%)	37 (30.6%)
65-69	14 (11.5%)	22 (18.2%)	36 (29.7%)
70-74	20 (16.5%)	28 (23.2%)	48 (39.7%)
Marital Status			
Single	5 (4.2%)	5 (4.2%)	10 (8.4%)
Separated	5 (4.1%)	7 (5.8%)	12 (9.9%)
Widow	17 (14.0%)	7 (5.8%)	24 (19.8%)
Married	20 (16.5%)	55 (45.5%)	75 (62.0%)
Education Level			
Illiterate	11 (9.0%)	10 (8.3%)	21 (17.3%)
Literate	8 (6.6%)	8 (6.6%)	16 (13.2%)
Primary education	22 (18.2%)	38 (31.4%)	60 (49.6%)
Junior High School Education	2 (1.6%)	7 (5.8%)	9 (7.4%)
High School Education	3 (2.5%)	6 (4.9%)	9 (7.4%)
Undergraduate	3 (2.5%)	3 (2.5%)	6 (5.0%)
Stipendiary Work			
Yes	4 (3.3%)	24 (19.8%)	28 (23.1%)
No	45 (37.2%)	48 (39.7%)	93 (76.9%)
With Income			
Yes	35 (28.8%)	58 (48.0%)	93 (76.8%)
No	14 (11.6%)	14 (11.6%)	28 (23.2%)
Receiving Aid From Others			
Yes	19 (15.7%)	24 (19.8%)	43 (35.5%)
No	30 (24.8%)	48 (39.7%)	78 (64.5%)
Regarding Type Of Housing			
Own with paid mortgage	35 (28.9%)	60 (49.6%)	95 (78.5%)
Own with mortgage	1 (0.8%)	-	1 (0.8%)
Rental	3 (2.5%)	5 (4.1%)	8 (6.6%)
Granted	4 (3.3%)	5 (4.1%)	9 (7.4%)
Living with relatives	3 (2.5%)	1 (0.8%)	4 (3.3%)
Living in a facility	3 (2.5%)	1 (0.8%)	4 (3.3%)
Whom They Live With			
Living Alone	5 (4.1%)	10 (8.3%)	15 (12.4%)
Living with spouse	21 (17.3%)	56 (46.3%)	77 (63.6%)
Living with their sons or daughters	24 (19.8%)	33 (21.3%)	57 (47.1%)
Living with other relatives	9 (7.4%)	8 (6.6%)	17 (14.0%)

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Living with other relatives	9 (7.4%)	8 (6.6%)	17 (14.0%)

Table 1 presents the frequency of variables according to the researched elderly gender, and also their age average, which was 67.7 years (d.p. = 4.4). 121 elderly who had suffered trauma participated in this study. From this total, 72 (59.5%) were male and 49 (40.5%) female.

Male, married elderly within the age bracket of 70 to 74 years old demonstrated more trauma events in comparison to women. The profile also demonstrated that a primary level of education was predominant, in addition to no stipendiary labor, but receiving pension/retirement income and receiving aid from family members. Despite the low income, 78.5% had their own home, with paid mortgage residence by the housing finance system. The study permitted us to observe that most subjects lived with their spouse and/or children.

Regarding external causes for the trauma suffered by the elderly, of the 75 (62.0%) falls, the following could be observed: 26 (21.5%) events occurred in their own home while standing, 23 (19.0%) fell in other locations outside their home, while standing; 18 (14.9%) fell down the stairs; 4 (3.3%) fell from one level to another and 4 (3.3%), from a wheelchair within their home; in addition, 31 (25.6%) subjects suffered traffic accidents, 4 (3.3%) were violence and abuse victims, and 11 (9.1%) were cases due to other external causes.

Table 2 - Frequency distribution according to the nature and number of injuries (1,2 and 3), in the researched subjects - Londrina, PR - 2005

Nature of the Injury 1 (N=121)	Gender		Age Bracket			Total
	M	F	60-64	65-69	70-74	
Trauma						
Lower Limbs *(S 72. S 82 and S 92)	20 (16.6%)	17 (14.0%)	9	9	19	37 (30.6%)
Upper limbs *(S 42. S 52 and S 62)	15 (12.4%)	12 (9.9%)	10	9	8	27 (22.3%)
Skull. Face and Neck *(S 02 to S 12)	21 (17.4%)	4 (3.3%)	10	6	9	25 (20.7%)
Abdomen. Dorsal area and Pelvis *(S 26. S 27. S 36 and S 37)	7 (5.8%)	5 (4.1%)	2	5	5	12 (9.9%)
Dislocations. Sprains and Strains *(S 03. S 13. S 23. S 33. S 43. S 53. S 63. S 73. S 83 and S 93)	2 (1.6%)	6 (5.0%)	2	4	2	8 (6.6%)
Multiple *(T 00 to T 07)	4 (3.3%)	3 (2.5%)	2	2	3	7 (5.8%)
Thorax and Back *(S 22 to S 32)	3 (2.5%)	2 (1.6%)	2	1	2	5 (4.1%)
Total	**72 (59.5%)**	**49 (40.5%)**	**37**	**36**	**48**	**121 (100.0%)**
Nature of the Injury 2 (n=24)						
Skull. Face and Neck *(S 02 to S 12)	6 (25%)	1 (4.2%)	2	2	3	7 (29.2%)
Lower Limbs *(S 72. S 82 and S 92)	4 (16.7%)	3 (12.5%)	3	2	2	7 (29.2%)
Thorax and Back *(S 22 to S 32)	2 (8.4%)	2 (8.4%)	-	3	1	4 (16.8%)
Abdomen. Dorsal area and Pelvis *(S 26. S 27. S 36 and S 37)	2 (8.4%)	-	1	1	-	2 (8.4%)
Dislocations. Sprains and Strains *(S 03. S 13. S 23. S 33. S 43. S 53. S 63. S 73. S 83 and S 93)	2 (8.4%)	-	-	1	1	2 (8.4%)
Upper Limbs *(S 42. S 52 and S 62)	1 (4.2%)	-	-	1	-	1 (4.2%)
Multiple *(T 00 to T 07)	1 (4.2%)	-	1	-	-	1 (4.2%)
Total	**18 (75.0%)**	**6 (25.0%)**	**7**	**10**	**7**	**24 (100.0%)**
Nature of the Injury 3 (n=2)						
Abdomen. Dorsal area and Pelvis *(S 26. S 27. S 36 and S 37)	1 (50.0%)	-	-	-	1	1 (50.0%)
Dislocations. Sprains and Strains *(S 03. S 13. S 23. S 33. S 43. S 53. S 63. S 73. S 83 and S 93)	1 (50.0%)	-	1	-	-	1 (50.0%)
Total	**2 (100.0%)**	**-**	**1**	**-**	**1**	**2 (100.0%)**

* Classification according to the Comorbidity List of ICD 10[6]

Table 2 shows that all 121(100%) researched subjects had at least one injury, most of them being lower limb trauma, predominantly in males between 70 and 74 years old; the females presented more dislocations, sprains and strains. In addition, there were also, in fewer cases, subjects that presented two or three injuries.

The frequency of external causes, according to the ICD 10[6], by age bracket and gender is presented in Table 3. It demonstrated that most traumas occurred due to falls, followed by transportation accidents and, thirdly, due to abuse and violence.

From all 121 elderly subjects, 11 (9.1%) died as a consequence of the trauma. The main cause of death was complications due to traffic accident, followed by falls (36.4%) and abuse/violence. The families informed the researchers that these 11 subjects were totally independent before the trauma.

Table 3 - lderly trauma external causes frequency distribution, grouped according to the ICD 10[6] - Londrina, PR - 2005

External Causes (n=121)	Male	Female	Total
Falls	37 (30.6%)	38 (31.4%)	75 (62.0%)
Transportation Accidents	23 (19.0%)	8 (6.6%)	31 (25.6%)
Abuse and Violence	1 (0.8%)	3 (2.5%)	4 (3.3%)
Other Causes	11 (9.1%)	-	11 (9.1%)
Total	**72 (59.5%)**	**49 (40.5%)**	**121 (100.0%)**
Falls - W 01 to W 19.9 - (n= 75)			
Age Bracket	**M**	**F**	**Total**
60 to 64 years old	9 (12.0%)	11 (14.7%)	20 (26.7%)
65 to 69 years old	11 (14.7%)	9 (12.0%)	20 (26.7%)
70 to 74 years old	17 (22.6%)	18 (24.0%)	35 (46.6%)
Total	**37 (49.3%)**	**38 (50.7%)**	**75 (100.0%)**
Accidents in Transportation - V 02.1 to V 84.7- (n= 31)			
Age Bracket	**M**	**F**	**Total**
60 to 64 years old	8 (25.8%)	2 (6.4%)	10 (32.2%)
65 to 69 years old	9 (29.0%)	4 (12.9%)	13 (41.9%)
70 to 74 years old	6 (19.4%)	2 (6.45%)	8 (25.8%)
Total	**23 (74.2%)**	**8 (25.8%)**	**31 (100.0%)**
Abuse - X 95.5 to Y 04.4 - (n= 4)			
Age Bracket	**M**	**F**	**Total**
60 to 64 years old	-	2 (50.0%)	2 (50.0%)
65 to 69 years old	-	1 (25.0%)	1 (25.0%)
70 to 74 years old	1 (25.0%)	-	1 (25.0%)
Total	**1 (25.0%)**	**3 (75.0%)**	**4 (100.0%)**
Other causes - W 20.5 to W 49.5 - (n= 11)			
Age Bracket	**M**	**F**	**Total**
60 to 64 years old	5 (45.4%)	-	5 (45.4%)
65 to 69 years old	2 (18.2%)	-	2 (18.2%)
70 to 74 years old	4 (36.4%)	-	4 (36.4%)
Total	**11 (100.0%)**	**-**	**11 (100.0%)**

DISCUSSION

As a consequence of trauma, 78 (64.5%) elderly subjects underwent surgical procedures. Therefore, we were able to observe that the injuries were considered severe, with a need to care for the elderly using high technology, involving human and financial resources.

Data demonstrated that most traumas occurred due to falls, followed by transportation accidents and abuse and violence. These data agree with national and international litera-

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ture. International literature shows that 30% of people older than 65 years of age fall at least once a year, and half of these people experience recurrent falls after the first event[7-10].

In this study, as in an American study on elderly subjects[11] and a study of Chinese elderly[12], women demonstrated more fall events in comparison to men.

Among the intrinsic factors demonstrated here[8], the following stand out: postural hypotension, the use of sedatives and other prescribed medications, weakening of arms and legs affecting strength or movement, balance difficulty, and difficulty in the ability to transfer from the bed to the chair, from the shower to the toilet or simply in walking. In addition to the physiologic alterations of the aging process, the main causes of falls are related to extrinsic factors. Factors dependent on social and environmental circumstances generate challenges for the elderly.

Due to the importance of falls as a major elderly health problem, measures should be taken such as basic safety care and prevention of falls, at least in regards to situations connected to environmental factors.

The second cause of trauma in the researched population was traffic and transportation accidents (Table 3). Most of the events involved being struck by a motor vehicle.. Results corroborate literature data[7,13] showing that elderly subjects are struck by motor vehicles more frequently than any other age group, and experience a high mortality rate due to the multiplicity and severity of injuries.

It is important to point out that the combination of physiological aging with comorbidities, as well as the use of many medications and movement difficulties, can predispose the elderly to higher occurrences of accidents, especially running over accidents.

Therefore, the prevention of such accidents must take into consideration the characteristics and limitations of this life stage, positively compensating the environment.

The third cause of trauma in the elderly revealed by this research was abuse and violence. Violence against elderly citizens constitutes a universal problem[14-17]. Nationally, violence within the homes of the elderly is an irrefutable fact[16] requiring further research to aid civil society in proposing strategies on preventing violence against the elderly.

A study carried out in Brazil[7] found a mortality coefficient for external causes among elderly people of 92.1/100,000 (7.5% for men and 3.9% for women). In addition, it demonstrated that these values are much higher than in the general population, especially among women. Transportation accidents lead these causes (27.5% of the total) and falls took third place in mortality at 15.2%. These data agree with those found in this present study.

In the USA[8-9], falls occupy sixth place as the most frequent cause of death among the elderly, with 10,000 deaths per year. For this reason, they are considered to be a critical public health problem in the country.

Death by unnatural causes are, in the majority, susceptible to prevention; hence, there is a need for professionals and managers from many power sectors to be sensitized to understanding the particularities of life, health, illness and the deaths of elderly subjects.

CONCLUSIONS

This present study presented the profile of elderly trauma victims in Londrina-PR and the types of trauma they have sustained, as well as their consequences. Results demonstrated that most of the studied elderly were married and male and that the most frequent trauma was falls. These data can serve as the foundation for future studies related to the theme. Consequently, new investigations with a view to the prevention of trauma in the elderly population are recommended, aiming at minimizing the repercussion of these events on the functional capacity of the elderly and therefore contributing to healthy aging.

Results demonstrated that the initially proposed objectives were achieved. They refer to falls as the main cause of trauma for the elderly population, highlighting that they can be avoided, providing the health care team and the family are aware of the intrinsic and extrinsic factors that influence falls, providing prevention strategies for this type of trauma.

Hence, this study is intended to contribute to planning, implementation actions and evaluation projects for the prevention of mortality in the elderly population due to external causes.

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