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ORIGINAL ARTICLE

EPIDEMIOLOGICAL PROFILE OF THE MORBIDITY AND MORTALITY BY EXTERNAL CAUSES IN A GENERAL HOSPITAL

PERFIL EPIDEMIOLÓGICO DA MORBIMORTALIDADE POR CAUSAS EXTERNAS EM UM HOSPITAL GERAL

PERFIL EPIDEMIOLÓGICO DE MORBIMORTALIDAD POR CAUSAS EXTERNAS EN UN HOSPITAL GENERAL

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ABSTRACT

Objective: to describe the morbidity and mortality characteristics from external causes in a general hospital in the countryside of the Bahia state, Brazil, in 2009. ***Method:*** It is a cross-sectional and descriptive study, with use of extracted data from medical charts of victims of external causes who were admitted in a general hospital in the municipality of Jequié/BA/Brazil, which were provided by the Epidemiology Hospital Nucleus. Data were analyzed using Epi Info statistical program, version 3.5.1. Analyze was performed by means of descriptive statistics and the data presented in absolute and relative frequencies. The study was approved by the Ethics Research Committee from the *Universidade Estadual do Sudoeste da Bahia* (UESB), under the Protocol n ° 069/2010. ***Results:*** 638 victims of external causes were admitted, especially due to other external causes of accidental injury (45.9%) and transport accidents (30.7%). ***Conclusion:*** The higher frequency of external causes among men demonstrates the vulnerability of this gender, especially, in the young age group. ***Descriptors:*** Epidemiology, Injury; Morbidity, Mortality.

RESUMO

***Objetivo*:** descrever as características da morbimortalidade por causas externas em um hospital geral no interior da Bahia, no ano de 2009. ***Método*:** estudo transversal, descritivo, com o uso de dados extraídos dos prontuários das vítimas de causas externas internadas em um hospital geral no município de Jequié/BA, disponibilizados pelo Núcleo Hospitalar de Epidemiologia. Os dados foram analisados utilizando-se o programa Epi Info, versão 3.5.1. A análise foi realizada por meio de estatística descritiva, sendo os dados apresentados em frequências absoluta e relativa. O estudo foi aprovado pelo Comitê de Ética em Pesquisa da Universidade Estadual do Sudoeste da Bahia (UESB), sob Protocolo nº 069/2010. ***Resultados*:** foram hospitalizadas 638 vítimas de causas externas, especialmente devido as demais causas externas de lesões acidentais (45.9%) e aos acidentes de transporte (30.7%). ***Conclusão*:** a maior frequência de causas externas entre os homens demonstram a vulnerabilidade deste gênero, especialmente, na faixa etária jovem. ***Descritores*:** Epidemiologia; Causas Externas; Morbidade; Mortalidade.

RESUMEN

Objetivo: describir las características de la morbimortalidad por causas externas en un hospital general en el interior del Estado de Bahia, en el año 2009. ***Método:*** estudio transversal descriptivo utilizando los datos obtenidos en los registros médicos de las víctimas de causas externas, internadas en un hospital general en la ciudad de Jequié, Bahia, proporcionados por el Núcleo Hospitalario de Epidemiología. Los datos fueron analizados usando el programa Epi Info, versión 3.5.1. El análisis se realizó mediante estadística descriptiva y los datos fueron presentados en frecuencias absoluta y relativa. El estudio fue aprobado por el Comité de Ética en Investigación de la Universidad Estatal del Sudoeste de Bahia, Nº 069/2010. ***Resultados:*** fueron hospitalizadas 638 víctimas de causas externas, especialmente debido a las demás causas externas de lesiones accidentales (45,9%) y a accidentes de transporte (30,7%). ***Conclusión:*** la mayor frecuencia de causas externas entre los hombres demostraron la vulnerabilidad de este género, especialmente en edad joven. ***Descriptores:*** Epidemiología; Causas externas; Morbilidad; Mortalidad.

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INTRODUCTION

External causes conceptualized by the World Health Organization (WHO), such as intentional injuries (aggressions, murders, suicides, deprivation or neglect) and non-intentional injuries (transport accidents, drowning, falls, burns, among others), occupy an highlight place among the morbidity and mortality causes in the country.[1]

Such injuries, since the 1980s, started to represent the second leading cause of deaths in Brazil, which shows the change in the morbidity and mortality pattern, contributing to the epidemiological transition marked by a significant reduction in the participation of infectious and parasitic diseases, as well as the increased number of chronic and degenerative diseases and external causes.[2]

According to WHO, accidents and violence types are responsible for 9% of all deaths across the world, about 5 million/year. The WHO still estimates that for every death from this type of injury, there are dozens of hospitalizations and hundreds of admissions in the urgency and emergency medical services.[3]

In Brazil, in 2009, 22.060 people died due to accidents and violence types, representing 5.7% of total of deaths in the country. Regarding the hospital morbidity due to such injuries, 884.665 people occupied admission beds in public hospitals or associated to the Unified Health System - *Sistema Único de Saúde* (SUS), which corresponds to 7.9% of the total of admissions, especially due to other external causes of accidental injuries and traffic accidents.[4]

Such injuries are responsible for a significant proportion of health and social problems, acquiring epidemic character and becoming one of the most serious public health problems worldwide.[1]

The hospital environment is considered as a source of information for health problems and needs, enabling the follow-up of the morbidity and mortality profile of the population and providing to the service itself, besides information storage, a data analyze, which can be used in actions planning for changing and restructuring the health services. Thus, analyzing the external causes as regards the characteristics of the victims, aggravation and hospital care has importance for the recognition of the occurrence and consequences of such events, by supporting the actions planning at pre-hospital, intra-hospital and post-hospital levels, as well as the adoption of preventive measures.

This study aims to describe the morbidity and mortality characteristics from external causes in a general hospital in the countryside of the Bahia state, Brazil, in 2009.

METHOD

It is a cross-sectional study, with data collected from medical charts of victims of external causes who were admitted into the municipality of Jequié, Bahia, Brazil, in 2009, at the *Hospital Geral Prado Valadares* (HGPV), reference in attendance for the health micro-region, which totals 25 municipalities.

The study was conducted in partnership with the Epidemiology Hospital Nucleus (EHN) from the HGPV, a service that aims at consolidating and processing data of morbidity and mortality in the attendances of the HGPV. The EHN members did a search for medical charts on the Statistical and Archival Medical Service - *Serviço de Arquivo Médico e Estatística* (SAME) and made them available to the pre-test and data collection. In the pre-test, it was found that there was not the correct coding of the International Classification of Diseases (ICD-10) in the sheets for issuing Authorization for Hospital Admissions (known in Brazil as AIH) of the medical charts of victims of external causes. In the wholeness of the medical charts, there was no registration of the secondary ICD-10 and, in many of them, there was not the chapters XIX (Injury, poisoning and some other consequences of external causes) and XX (morbidity and mortality external causes) as diagnoses.

For this reason, the inclusion criterion for the study, it was considered the definition of external cause of WHO[1] in seeking the description leaves for issuing AIH, as well as in medical and nursing notes contained in the medical charts. The study has included all individuals who were victims of external causes and were admitted to the HGPV in 2009, disregarding, thereby, attendances in the emergency sector of this hospital unit that did not require admission, as well as deaths at the site of the occurrence of accident or other violence forms.

The studied variables were sociodemographic characteristics (gender, age in years, marital status, ethnicity, profession, municipality and neighborhood of residence) related to the injury (municipality and place of occurrence, primary ICD-10, secondary ICD-10, type of external cause, resulting injury, affected body part and specificities of each external cause); related to the admission (month, day of week, time of attendance, evolution, length of stay) and related to the

mortality (gender, age group, type of external cause, injury and affected body part).

Data were analyzed by using Epi Info statistical program, version 3.5.1. Analyze was performed by means of descriptive statistics, and the data were presented in absolute and relative frequencies.

The study was submitted to the Ethics Research Committee from the *Universidade Estadual do Sudoeste da Bahia* (UESB) and approved in its ethical and methodological aspects by the Research Protocol nº 069/2010.

RESULTS

We found 638 medical charts of victims of external causes admitted to the HGPV, which corresponds to 5.6% of total admissions in the public health service in the year 2009.

♦ Sociodemographic characteristics of victims

The victims are mostly men (79.6%), with a male to female ratio of 6:1. By analyzing male to female ratio, according to each type of external cause, it was possible to observe that there were differences, depending on the injury, in the following proportions: traffic accidents (6.3:1); aggressions (7.7:1); other accidental causes (2.5:1) and self-inflicted injuries (1.2:1).

The found average age was 33.8 years, with a median 31 and a standard deviation of 22.9. Overall, the interval between 20 and 29 years had higher frequency of admitted victims (19.7%), (Table 1).

Table 1. Distribution of victims of external causes who were assisted in a general hospital in Bahia, in 2009, according to each injury, by sex and age group. Jequié/BA/Brazil, 2012.

Characteristics of victims	External Causes					
	Transport accident %	Other accidental causes %	Self-inflicted %	Aggressions %	Others and undetermined %	Total %
Gender						
Female	13,8	27,6	45,4	11,4	28,6	20,4
Male	86,2	72,4	54,6	88,6	71,4	79,6
Age group (years)	6,1	25,9	–	4,6	14,3	15
Less than 10	14,8	12,6	–	12,9	28,5	13,3
10 ├ 20	27,1	9,9	36,3	29,8	14,3	19,7
20 ├ 30	18,9	10,2	9,1	29	-	16,6
30 ├ 40	16,3	9,6	27,3	9,9	28,5	12,2
40 ├ 50	9,7	8,9	18,2	9,2	14,3	9,4
50 ├ 60	6,6	22,9	9,1	4,6	–	13,6
60 or over	0,5	–	–	–	–	0,2
Unanswered	0,5	-	-	-	-	0,2

Some characteristics were not registered due to the lack of such information in the surveyed medical charts, namely: marital status (43.6%), occupation (99.2%), ethnicity (99.8%) and schooling (100%).

Most victims lived in the municipality of Jequié (52.3%); 4.4% of admissions were of individuals from municipalities that do not compose the health micro-region, and they were, especially, victims of transport accidents (44.4%) on nearby highways of the city of Jequié.

♦ Characteristics of injuries

According to Table 2, we can see that other external causes of accidental injuries accounted for 45.9% of admissions due to accidents and violence types, and falls were the main cause (48.5%), followed by contact with animals (33.1%).

Tabela 2. Distribution of causes of assisted in a general hospital in the countryside of Bahia, in the year 2009. Jequié/BA/Brazil, 2012.

Type of external cause	n	%
Other external causes of accidental injuries	**293**	**45,9**
Falls	142	48,5
Intoxication	08	2,7
Contact with animals	97	33,1
Burn	18	6,1
Others	28	9,6
Transport accidents	**196**	**30,7**
Motorcycle	99	50,5
Car and pickup	43	21,9
Pedestrian	27	13,8
Biker	18	9,2
Others	08	4,1
Unanswered	01	0,5
Aggressions	**131**	**20,6**
Beating	31	23,7
Sharp tool	50	38,2
Firearm	48	36,6
Others	02	1,5
Self-inflicted injuries	**11**	**1,7**
Poisoning	07	63,6
Melee weapon	02	18,2
Unspecified	02	18,2
Others and undetermined	**07**	**1,1**
Undetermined cause	01	14,3
Medical care complications	02	28,6
Sequelae from external causes	04	57,1
Total	**638**	**100**

Transport accidents appear as the second leading cause of admissions due to external causes (30.7%), highlighting those that are involved with motorcycles (50.5%). Aggressions are in third place (20.5%), highlighting the use of sharp tools (38.2%) and firearms (36.6%).

Much of external causes had the place of occurrence ignored, since such information was not found in 42.8% of the medical charts. Indeterminate external causes and aggressions had higher proportion of unregistered data, with 85.7% and 64.1% respectively (Table 3).

The nature of the injury varied with the type of external cause. For transport accidents and aggressions, the traumatisms were the main suffered injury (61.2% and 72.5% respectively); for other external causes of accidental and self-inflicted injuries, poisonings have prevailed, with 34.8% and 46%, respectively. Head/neck represented the body segment with greater frequency in involvement of injuries from transport accidents (46%) and by aggressions (29.8%); the abdomen/ back/hip was the most affected segment by undetermined external causes (42.8%), (Table 3).

Table 3. Distribution of causes of assisted in a general hospital in the countryside of Bahia, in the year 2009. Jequié/BA, 2012

Characteristics of injuries	External Causes					
	Transport accident %	Other accidental causes %	Self-inflicted %	Aggressions %	Others and undetermined %	Total %
Place of occurrence						
Home	1,5	30,0	54,5	13,0	14,3	18,0
Public road	55,1	3,1	9,1	16,1	-	21,8
Farm	-	28,3	-	3,8	-	13,8
Work	-	4,8	-	1,5	-	2,5
Outros	-	1,7	-	1,5	-	1,1
Unanswered	43,4	32,1	36,4	64,1	85,7	42,8
Nature of injury						
Traumatism	61,2	25,9	27,3	72,5	-	46,1
Fracture	31,1	28,3	9,1	17,5	28,6	26,6
Distensions, sprains	4,1	1,0	-	0,8	-	1,9
Burns	0,5	6,5	-	-	-	3,2
Intoxications	-	34,8	63,6	0,8	-	17,2
Others	3,1	3,4	-	8,4	71,4	5,0
Location of injury						
Head/neck	46,0	19,5	-	29,8	-	29,2
Thorax	1,5	3,1	-	14,5	-	4,9
Abdomen/back/hip	7,1	2,0	18,2	19,1	42,8	7,8
Upper limbs	13,8	15,4	-	18,3	28,6	15,4
Lower limbs	16,8	18,4	9,1	7,6	28,6	15,7
Multiple body segments	13,8	40,6	72,7	9,9	-	26,1
Others	1,0	1,0	-	0,8	-	0,9
Evoltion						
Discharge	85,7	91,1	81,8	85,5	85,7	88,1
Transfer	8,2	4,4	-	4,6	14,3	5,7
Death	4,6	4,1	9,1	9,1	-	5,3
Drop out	1,5	0,3	9,1	0,8	-	0,9

• Characteristics of admissions

The night shift, period between 18 and 23 hours and 59 minutes, appeared as the most common for victims of traffic accidents (39.8%) and aggressions (51.9%). The morning shift, from 6 to 11 hours and 59 minutes, was the period with more attendances to victims of self-inflicted injuries (36.3%) and undetermined external causes (42.8%). As for the individuals who have suffered other external causes of accidental injuries, they accounted, in their most part, to the attendance in the afternoon shift, between 12 and 17 hours and 59 minutes, with 33.8% of the attendances.

Regarding the day of attendance, weekends had a higher percentage of traffic accidents (41.8%) and aggressions (42.7%). For other external causes of accidental injuries, there was equable distribution between weekdays. For self-inflicted injuries, it should be emphasized the Fridays, 36.6%. Concerning the month of attendance, there was uniformity among the months of the year.

The calculation of length of stay of the admitted victims showed that 35.6% of the affected people remained in the hospital from 1 to 3 days, and 33.7% from 4 to 7 days. As for the others: 26.6% remained from 8 to 24 days, and 1.6% from 24 to 30 days. Regarding the length of stay over 30 days, this period was observed in 2.5% of medical charts.

The average of length of stay was 7.1 days, with a standard deviation of 7.3, which shows that there is significant dispersion among the data. According to each type of external cause, the falls had a higher length of stay, with average of 8.9 days, followed by transport accidents, 7.3 days, and aggressions, 7.1 days. Self-inflicted injuries had the lowest average (5.2 days).

♦ Characteristics of deaths

Of the total admissions due to external causes, 5.3% (n = 34) have passed away. The responsible types of accidents and violence were the aggressions (n = 12, 35.3%); moreover, other external causes of accidental injuries (n = 12, 35.3%), transport accidents (n = 9, 26.5%) and self-inflicted injuries (n = 1, 2.9%).

Among the deaths by aggressions, use of a firearm stood out, with 50% of deaths (n = 6), followed by deaths caused by beating (n = 4, 33.3%) and use of sharp tools (n = 2, 16.7%). Falls accounted for the highest percentage (83.3%) among the other causes of accidental injuries, and most of them were from the very high (70%). Subsequently, accidental

intoxication and contact with animals were the causes for 8.3% of deaths from other causes of accidental injuries in each one.

To transport accidents, the motorcycle ones were the main used means with fatal victims (n = 4, 44.4%), followed by 22.2% involving pedestrians (n = 2) and with the same percentage for car and pickup occupants (n = 2), being that 11.1% of cases were not specified (n = 1).

When considering the total number of admissions for each type of external cause and progression to death, it was found that 9.2% are due to aggressions; 9.1% due to cases of self-inflicted injuries; 7% due to other external causes of accidental injuries and 4.6% due to transport accidents.

It was observed that the proportion of deaths among men (88.2%) surpassed that of women (11.8%). The analyze of the gender ratio according to the type of external cause shows relevant differences: for victims of aggression, the ratio was 11:1; for other accidental causes, it was 3:1, transport accidents and self-inflicted injuries accounted for all deaths of male individuals.

With regard to age group, we have found differences according to the type of injury. For aggressions, the main age groups were the ones from 30 to 39 and from 20 to 29 years, respectively with 41.7% and 33.3%. Individuals aged 60 years or over formed the main age group affected by other external causes of accidental injuries, specifically by falls (83.4%), as well as due to self-inflicted injuries (100%). Among transport accidents, the most involved age groups were the ones from 20 to 29 (33.3%) and from 40 to 49 years (33.3%).

Traumatic brain injury was shown as the main diagnosis (61.8%) among the deaths that occurred in admissions for external causes, accounting for 66.7% of deaths due to aggressions; 80% due to falls and 55.6% due to transport accidents.

The other traumatisms, which were distributed to other body segments, totaled 23.5%. Other diagnoses were related to signs and symptoms related to the digestive system and abdomen (8.8%), and toxic effects arising from non-medicinal substances (5.9%).

DISCUSSION

It was possible to verify that the profile of the studied victims, as well as the occurrences, is similar to ones from other studies on accidents and violence forms met in public health services.[5-6-7]

The main limitations of this study were the admissions that do not reflect the whole mortality from external causes, since a large number of victims was even met in the urgency/emergency services, while others were attended and released after treatment. Furthermore, some victims died in the place of the accident or violence. Nevertheless, the study on morbidity and mortality from external causes in admissions may reflect the severity of these events, as well as help healthcare services in actions planning for the care and prevention of such injuries.

Another important factor was the observation that the filling quality of the AIH and admission sheets was not homogeneous for all the surveyed variables. The lack of filling in already existing fields in these charts and the detailing only for the caused injury to the detriment of more precise descriptions of the occurrence of the accident or violence has hindered the understanding of situations that provoked the injuries. This issue has been found in other studies, especially with regard to the variables: ethnicity, occupation, schooling and secondary diagnosis.[5,8]

It was found an inadequate and incomplete coding regarding the nature of the injury and type of external cause, due to the use of ICD-10 codes in fields related to primary and secondary diagnoses, without considering the requirement, according to the Ordinance nº 142, of November 13th, 1997. This Ordinance establishes filling these diagnostic fields with the chapters XIX “injuries, poisoning and some other consequences of external causes” regarding the consequences of the accident or violence (fractures, burns, wounds, among others), for the field “principal diagnosis”, and XX “external causes of morbidity and mortality”, as for the causes of these injuries (run over cases, motorcycle accidents, aggressions, suicide attempts, among others), as a secondary diagnosis.[9]

Thus, inadequate filling in the AIH sheets can lead to a distorted supply of the Hospital Information System (HIS-SUS), generating a unreliable analyze with regard to the health status of a given population and trends of admissions due to external causes. Some researchers, when addressing this situation, point out to possible reasons for its occurrence, as little use of information produced for epidemiological and assessment studies, lack of or insufficient training of the coders of external causes, main conformation of the system to act in the remuneration of hospitals and lack of descriptions about the reasons (external cause) that generated the

injury or poisoning in the sectors urgency/ emergency on the part of the doctors.[10-11-12]

The fact regarding the location of occurrence, in over 40% of the surveyed cases, is ignored can make the situations of involvement are not known, which may hinder the design of preventive measures.

The analyze according to the classification of the injury, when unveiling that the other accidental causes, transport accidents and aggressions occupy the first place in the cases of admitted victims from external causes, resembles the other data referring to Brazil, which was elaborated by the SUS in the year 2010.[4]

This current study converges with a research conducted in Campina Grande-PB/Brazil and the data from Brazilian Ministry of Health presenting that falls were highlighted in admissions, behind only transport accidents. [4,6] Some authors point out that there is a high proportion of falls, reaching the top spot in the cases of other accidental causes in the attendances of the urgency / emergency units.[5]

The male predominance was found, likewise, in studies conducted in Cuiaba-MT, Aracaju-SE and São Luís-MA (Brazilian cities), both in morbidity and mortality and in the attendance of emergency units.[5,7,13] Such fact demonstrate that there is greater vulnerability of the male gender to these types of injuries due to behaviors and activities that they socially assume, which put them at higher risk. This issue is addressed in the Comprehensive Healthcare Policy for Men - *Política Nacional de Atenção Integral à Saúde do Homem* (PNAISH), instituted by the Brazilian Ministry of Health in the year 2008, showing that men mainly die due to external causes. These premature deaths bring psychophysical and socioeconomic consequences, since they are young lives lost in a full productive phase because of traffic accidents and other violence forms.[14]

This finding regarding the gender is different, only, for cases of self-inflicted injuries, where there was a similar proportion between the genders.

In analyzing regarding the transport accidents, with predominance of those involving motorcyclists, it should be evidenced a similarity with the admission data from external causes in Brazil, for the same time period. [4] Possible hypotheses for this high number of motorcycle accidents may be associated with increasing number of motorcycles in the municipality, surpassing the number of cars.[15] Moreover, if motorcyclists are large part of the unemployed youths who resort to the practice of motorcycle taxi services to ensure some financial return, since motorcycle are agile vehicles, with reduced and economical cost-effective, in addition, they not always use personal protective equipment, the supervision is inadequate and there is an incipient public transport service in the city in question, factors that, together, contribute to the vulnerability of this portion of the population to traffic accidents.[16]

Another important finding is related to the occurrence of falls in the elderly and children. The physical vulnerability, immaturity and curiosity, which are characteristics of the children's development phase, can contribute to high rates of injuries on the childish age group. [17-18-19] As for the elderly, they have risk factors for such events, for example: the physiological changes related to the advanced age life, the presence of pathologies, psychological factors, adverse medicinal drugs reactions, the physical structure of the house and the family relationship. [20] Thus, it is essential that prevention activities are directed, by contemplating caregivers of children and elderly, including changes in the home environment, asylums and in recreational areas.[21]

The aggressions have represented the main causes among the deaths in hospital admissions due to external causes, which match the national data and others from a study conducted in Campina Grande-PB/Brazil, which also revealed the increased number of murders. [4,6,22] The use of firearms demonstrates the seriousness of the actions, as well as the possible easy access to such tools.

The lethality found in relation to self-inflicted injuries is just below the cases of aggressions, indicating the seriousness of such acts. This serious reality is still denied by a good portion of society, being that these events have individual, environmental and social influences, but they are increasingly frequent.[29]

Thus, it is clear that violence is becoming a significant burden to society and to reduce its morbidity and mortality is one of the main challenges for the public healthcare sector.[22]

As for hospital care, it was found that there was a variation in day of attendance, according to each type of external cause. For victims of transport accidents and aggressions, the predominance of attendance occurred during the night shift, which may be related to the period in which individuals return from

work to their homes, or after a period of individual or family leisure.

It should be cited, furthermore, that the traumatic brain injuries were representative diagnoses for the morbidity and mortality from external causes, corroborating other studies on violence forms and accidents. [7,23] These traumatic injuries produce changes, temporary or permanent, in the sensitive, cognitive and motor functions of the involved victims, by demonstrating the severity of the injury, which may be related to the intentionality of the aggression or the seriousness of the accident, when it is considered as a fatal consequence for external causes.

The average time of admission that we have found was above the average for the Bahia state in 2009, with 4.8 days, as well as for the country, in the same year, with 5.2 days, on average. [4] This may represent injuries that require longer recovery time of victims treated at the municipality of Jequié, as well as the characteristics of the healthcare service itself. A high admission time means higher expenses to healthcare services. By comparing natural and external causes, researchers from the Maranhão state found that the latter represented less than 10% of admissions; they had shorter length of stay and spent about 10% of the total amount paid for all admissions.[13]

Furthermore, harms, injuries, traumas and deaths caused by accidents and violence forms correspond to high emotional and social costs and also to public security apparatuses, causing economic prejudices because of days of absence from work, untold mental and emotional harms that are caused in the victims and their families, besides the decrease in the productivity and in the life years, which are lost.[5]

CONCLUSION

Through this study, it was possible to delineate the profile of victims of external causes met in a general hospital of the municipality of Jequié/BA/Brazil, as well as the suffered injuries and the provided care. The high number of falls in children and elderly also has revealed the vulnerability of these groups to such injury that, on average, requires an admission time greater than other analyzed external causes.

When characterizing the morbidity and mortality from external causes in the hospital environment, this study sought to contribute by giving information to support the adoption of preventive measures to reduce accidents and violence forms, as well as the appropriateness of hospital services to be provided, based on the profile of attended demand.

Preventive and health promotion measures could help in reducing the morbidity and mortality rates from external causes, since initiatives concerning this aspect would provide lower costs for the public sector, when compared with the economic onus of the pre-hospital, intra-hospital and post-hospital assistances. Such measures could also prevent the suffering caused by the onset of violence types and accidents for the involved victims and family members. An example of this initiative is the National Policy for Reduction of Morbidity and Mortality from Accidents and Violence Forms, established in 2001.

When noting that the hospital registrations, here represented by medical charts, present limitations with regard to the quality of information, it should be verified the need and importance of more precise data, since such registrations are manually filled and with incomplete information about the facts. Hence, by contributing to a better understanding of the pattern of involvement of external causes, this paper can promote the necessary support for the elaboration and implementation of public healthcare policies.

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