



ORIGINALES

Epidemiological profile of the traumatic emergencies assisted by a mobile prehospital emergency service

Perfil epidemiológico das emergências traumáticas assistidas por um serviço pré-hospitalar móvel de urgência

Perfil epidemiológico de las emergencias traumáticas asistidas por un servicio prehospitalario móvil de urgencia

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ABSTRACT

Objective: To describe the epidemiological profile of the traumatic emergencies assisted by a mobile prehospital emergency service in Northeastern Brazil.

Methods: Documentary and quantitative study, performed from the patients' records of the emergencies between January and June 2014, consisting the sample of 1,960 records. A structured questionnaire to collect data was used, and the analysis was by descriptive statistics.

Results: There was predominance of Traffic Accidents (TA) – 67.7%; falls (17.1%); and perforation by firearms (6.8%). The most involved were men (76.2%), framed in the age group young adults (46.6%) and the largest number of occurrences was in the weekend (37.4%). Among them, 58.1% had mild trauma and 44.0% did not suffer polytrauma. There was neglect in relation to the annotation of the Glasgow coma scale in 39.0% of cases.

Conclusion: Among the traumatic emergencies, TA occurred mostly on Sunday, involving male young adults. One emphasizes that the negligence of professionals regarding basics notes in the patients' records are responsible for generating difficulties for the development of researches. Moreover, with regard to judicial proceedings, it is notorious that there is not documentary support concerning the provided assistance.

Keywords: Prehospital assistance; Emergencies; Traumatology

RESUMO

Objetivo: Descrever o perfil epidemiológico das emergências traumáticas assistidas por um serviço pré-hospitalar móvel de emergência do Nordeste do Brasil.

Métodos: Estudo documental e quantitativo, realizado a partir das fichas de atendimento das emergências entre janeiro e junho de 2014, sendo a amostra composta por 1.960 fichas. Utilizou-se um questionário estruturado para a coleta de dados e a análise foi por estatística descritiva.

Resultados: Houve destaque para os Acidente de Trânsito (AT) - 67,7%; quedas (17,1%); e perfuração por arma de fogo (6,8%). A maioria dos envolvidos eram homens (76,2%), enquadrados no grupo etário jovens adultos (46,6%) e o maior número de ocorrências foi no fim de semana (37,4%). Destes, 58,1% tiveram trauma leve e 44,0% não sofreram politraumatismo. Observou-se que houve negligência em relação a anotação da escala de coma de Glasgow em 39,0% dos casos.

Conclusão: Entre as emergências traumáticas atendidas, os AT ocorreram em maior proporção no domingo, envolvendo jovens adultos do sexo masculino. Ressalta-se que a negligência dos profissionais quanto às anotações básicas nas fichas de atendimento são responsáveis por gerar dificuldades para o desenvolvimento de pesquisas. E, no que diz respeito aos processos judiciais, é notório que não há respaldo documental quanto a assistência prestada.

Palavras chave: Assistência pré-hospitalar; Emergências; Traumatologia.

RESUMEN

Objetivo: Describir el perfil epidemiológico de las emergencias traumáticas asistidas por un servicio de urgencia prehospitalaria móvil en el Nordeste de Brasil.

Métodos: Estudio documental y cuantitativo, realizado a partir de registros de asistencia de las urgencias entre enero y junio de 2014 y la muestra se compone de 1.960 fichas. Se utilizó un cuestionario estructurado para recopilación de datos y el análisis fue por estadística descriptiva.

Resultados: Destacaron los Accidentes de Tráfico (AT) - 67,7%; caídas (17,1%); y perforación por armas de fuego (6,8%). La mayoría de los involucrados eran hombres (76,2%), encuadrados en el grupo de edad jóvenes adultos (46,6%) y el mayor número de ocurrencias fue el fin de semana (37,4%). De éstas, 58,1% tuvieron traumatismo leve y el 44,0% no sufrió politraumatismo. Se observó que hubo negligencia con respecto a la anotación de la escala de coma de Glasgow en 39,0% de los casos.

Conclusión: Entre las emergencias traumáticas atendidas, los AT ocurrieron en mayor proporción en domingo, involucrando adultos jóvenes de sexo masculino. Se destaca que la negligencia de los profesionales en cuanto a las anotaciones básicas en los registros de asistencia son responsables por generar dificultades para el desarrollo de la investigación. Y con respecto a los procesos judiciales, está claro que no hay soporte documental en cuanto a la asistencia prestada.

Palabras clave: Atención prehospitalaria; Urgencias médicas; Traumatología

INTRODUCTION

Deaths from accidents and violence, more commonly called "external causes" (EC), are the third cause of death in the general population and the first one in population aged from one to 39 years, behind cardiovascular disease and cancer, respectively⁽¹⁻²⁾.

Violence has assumed worrying role for the Brazilian society in recent decades and has become a serious public health problem because of its magnitude, severity, social impact and ability to make the individual and collective health vulnerable. External causes, which include violence and accidents, are the third cause of mortality in the general population and the sixth cause of hospital admissions in the country⁽³⁻⁴⁾.

In relation to non-fatal events, there are a large number of hospitalizations, emergency services and permanent sequelae, resulting in high costs for society, since most victims are young and in socially productive situation. Absenteeism rates from sequelae resulting from trauma are responsible for the origin of potential pension expenses^(1,5).

The scenarios of emergencies and urgencies care at public services in Brazil may not be prepared or adapted to the current epidemiological transition, to which EX contribute substantially, besides facing many difficulties regarding the structure and the material and human resources. There is a demand for greater State investment for the proper care of victims of trauma, effective public policies that can reduce the alarming rates and, consequently, the associated morbidity and mortality⁽⁶⁾.

Given this issue, the mobile prehospital emergency service plays an important role in the assistance provided to victims of trauma, since this service is characterized by quick response, rescue or transport of patients with declared urgency or emergency conditions⁽⁷⁾.

Most trauma deaths occur in the scene or in the first hour of trauma; however, 76% could be avoided. Agile and quality prehospital care becomes, then, a very important part to ensure the survival of trauma patients. Therefore, the first hour of the initial care to patients in the prehospital phase is referred to as "golden hour"⁽⁸⁾.

Thus, knowing the characteristics that involve trauma is a major factor in the development of operational strategies of multidisciplinary teams in the directed care, the educational and preventive measures to minimize the damage to human life and society.

For this, the following research question arose: How are characterized the traumatic emergencies treated by prehospital emergency service? Thus, this study aimed to describe the epidemiological profile of traumatic emergencies assisted by a mobile prehospital emergency service in Northeastern Brazil.

MATERIAL AND METHOD

This is a documentary and descriptive study, with cross-sectional design and quantitative approaches, performed from the records of occurrences assisted between January and June 2014 by the Mobile Emergency Service of Rio Grande do Norte (SAMU 192 RN). The researchers collected the data during the morning and afternoon

shifts at the filing sector of SAMU 192 RN, located in the municipality of Macaíba/RN, in the period from May to July 2014.

The study population consisted of the nursing care records of 2,952 occurrences assisted by SAMU 192 RN. The inclusion criteria were records of nursing notes of cases of traumatic emergencies, involving traffic accidents (TA), perforation by firearms (PF), perforation by white weapon (PWW), falls and physical assault by physical force. Exclusion criteria consisted of records of people with medical conditions and records with illegible notes. According to the selection criteria, 992 records were excluded, totaling a sample of 1,960.

Data were collected through a structured questionnaire, which was prepared based on the record of nursing notes of SAMU 192 RN, consisting of the following variables: service data (date, day of week, time, city and type of service), victim information (gender and age) and the gravity of the accident (vital signs, level of consciousness, Glasgow coma scale, types of injuries caused by the accident and injured anatomical segment). For the characterization of the victims, the age was classified in age groups, namely: zero to 24 years = youngster; 25 to 44 years = young adult; 45 to 59 years = adult; 60 years or more = elderly.

Data were analyzed by descriptive statistics, organized in a spreadsheet in Microsoft Excel 2010 software, and then exported to SPSS version 20.0. The results were presented using absolute and relative frequencies in tables.

The research followed the ethical and legal aspects as Resolution No. 196/96 of the National Health Council, supplemented and updated by resolution. 466/12. The study obtained a favorable opinion by the Research Ethics Committee of the University Hospital Onofre Lopes (CEP/HUOL), with protocol number 437/10 and Presentation Certificate to Ethics Assessment (CAAE): 0025.0.294.051-10.

RESULTS

The sample consisted of 1,960 records of services to victims of traumatic emergencies, being 1,327 (67.7%) by TA, 335 (17.1%) from falls, 134 (6.8%) by PF, 93 (4.7%) physical aggression by physical force and 71 (3.6%) by PWW, assisted by SAMU 192 RN between January and June 2014.

Table I shows the characterization of the victims of traumatic emergencies treated by the SAMU 192 RN, according to gender, age and day of the week when the trauma occurred.

Table I - Characterization of victims of traumatic emergencies treated SAMU 192 RN and of the day of the week when the trauma occurred, 2015

CHARACTERIZATION OF THE VICTIMS AND THE DAY OF THE OCCURRENCE		
Gender	n	%
Male	1494	76.2
Female	466	23.8
Age group		
Youngster	600	30.6
Young adult	913	46.6
Adult	269	13.7
Elderly	178	9.1
Day of the week		
Sunday	385	19.6
Monday	254	13.0
Tuesday	235	12.0
Wednesday	221	11.3
Thursday	225	11.5
Friday	291	14.8
Saturday	349	17.8
TOTAL	1960	100.0

Source: research itself.

According to Table I, most individuals were men (76.2%), classified in the age group of young adults (46.6%) with a mean of 33.9 years (± 19.0), and the largest number of calls for traumatic emergencies was during the weekend, including Saturday and Sunday (37.4%).

As for the association between the gender of victims of traumatic emergencies, and the type of trauma (Table II), men were the most involved in the five types of studied traumatic emergencies. composing 76.2% of the sample, especially by TA (52.7%). TA was the most evident traumatic emergency, followed by falls.

Table II – Association between the type of trauma and the gender of victims treated by SAMU 192 RN, 2015

TYPE OF TRAUMA	Gender				TOTAL	
	Male		Female		n	%
	n	%	n	%		
Traffic accident	1033	52.7	294	15.0	1327	67.7
Perforation by firearm	114	5.8	20	1.0	134	6.8
Perforation by white weapon	53	2.7	18	0.9	71	3.6
Falls	220	11.2	115	5.9	335	17.1
Physical assault by physical force	74	3.8	19	1.0	93	4.8
TOTAL	1494	76.2	466	23.8	1960	100.0

Source: research itself.

Regarding the association between the type of injury and age group, there was a predominance of young adults (46.6%) individuals between 25 and 44 years, in all types of traumatic emergencies, as shown in Table III.

Table III – Association between the type of trauma and age group of victims of traumatic emergencies treated by SAMU 192 RN, 2015

TYPE OF TRAUMA	Age group								TOTAL	
	Youngster		Young adult		Adult		Elderly			
	n	%	n	%	n	%	n	%	n	%
TA	429	21.9	656	33.5	173	8.8	65	3.3	1323	67.5
PF	60	3.1	64	3.3	10	0.5	1	0.1	135	6.9
PWW	21	1.1	41	2.1	9	0.5	0	0.0	71	3.6
Falls	65	3.3	102	5.2	61	3.1	109	5.6	337	17.2
Physical assault	25	1.3	50	2.6	16	0.8	3	0.2	94	4.8
TOTAL	600	30.6	913	46.6	269	13.7	178	9.1	1960	100.0

Source: research itself.

Table IV explains the association between the Glasgow coma scale and finding polytrauma, or not, in individuals who have suffered some kind of traumatic emergency, during the studied period.

Table IV – Association of the Glasgow Coma Scale with the occurrence of polytrauma in victims treated by SAMU 192 RN, 2015

GLASGOW COMA SCALE	Polytrauma				TOTAL	
	Yes		No			
	n	%	n	%	n	%
Classification						
3-8 Severe traumas	10	0.5	23	1.2	33	1.7
9-12 Moderate traumas	3	0.2	21	1.1	24	1.2
13-15 Mild trauma	277	14.1	862	44.0	1139	58.1
Ignored	157	8.0	607	31.0	764	39.0
TOTAL	447	22.8	1513	77.2	1960	100.0

Source: research itself.

One verified that 58.1% of subjects had a Glasgow Coma Scale between 13 and 15 points, being classified as mild trauma. However, among them, 14.1% suffered polytraumas and 44.0% did not suffer polytraumas. Moreover, there was negligence on the annotation of the Glasgow coma scale in 39.0% of the nursing care records.

DISCUSSIONS

The trauma can cause temporary and permanent damage, such as death, disability, prolonged and high-cost treatment, causing socioeconomic damage to patients and their families⁽⁹⁾.

A study conducted in 24 Brazilian states and another, in Cuiabá/Mato Grosso/Brazil, found that the most frequent traumatic emergencies were TA, followed by falls, PF, physical assaults by physical force and PWW, which corroborates this study⁽¹⁰⁻¹¹⁾.

TA are considered complex episodes, for they may relate to human error, the vehicle itself and even environmental errors. Some of those factors result from the driver's recklessness, such as risky maneuvers, alcoholism and drugs, excessive speed and fatigue, and may also associate with climatic factors, pathways and inadequate signage and lack of maintenance of vehicles⁽¹²⁾.

The Brazilian traffic is considered one of the most dangerous in the world and sets up a public health problem, being subject of serious proportions for modern society, for it is responsible for high rates of morbidity, mortality and disability with physical and/or cognitive permanent sequelae. In Brazil, alcohol consumption associated with driving is identified as one of the main factors responsible for accidents^(5,13).

Men are most involved in traumatic events. This prevalence may be due to cultural, biological and social factors that promote violent behavior, making them more vulnerable to external causes^(9,14). Research shows that the treatment of women occurred mainly for clinical causes⁽¹¹⁾. Moreover, those events occurred, in greater extent, during the weekend, because of the relationship with festive events, alcohol consumption and decreased supervision⁽¹⁵⁾.

Although men have been the most affected in all categories of traumatic emergencies, one cannot disregard the female victims, for it is a factor that influences health and the social context⁽⁹⁾. In this study, the highest incidence of events among women was the TA. According to the literature, in most TA cases involving women, they were in the passenger seat⁽¹⁴⁾.

Young adults, aged between 34 and 37.6 years, are the main victims of trauma^(10-11,14). All age groups, except the elderly, suffered mainly TA. It is noteworthy the number of episodes with PF and PWW among youngsters and young adults. Perhaps, violence in this group happens by social inequality and the difficult integration of the youngster in the labor market⁽¹⁶⁾.

Social and cultural determinants related to gender expose men to greater risk for trauma, such as excessive speed, risky maneuvers, violence and alcohol consumption. Nevertheless, this study found that women may be exposed to traumatic situations, although not drinking; they are accompanied by young men who use alcohol, and put their own safety and of those with them at risk⁽¹⁷⁾.

The early age of regular alcohol consumption can leave them more exposed because they are undergoing profound physical and psychological changes, and lead to socially undesirable behavior⁽¹⁷⁾.

Among the elderly, the main cause of injury was falls. People in this age group require great care due to the high mortality rate due to the type of trauma previously mentioned. A research with elderly people living in São Paulo showed that falls from their own height tend to increase the severity according to the increase in age⁽¹⁸⁾. The Glasgow coma scale assesses the level of awareness and the severity of the injury; therefore, it is of great value in trauma care to estimate the prognosis of the victim^(14,19). This scale is also used to evaluate the response-time relationship in the service according to the patient's needs⁽¹⁴⁾.

After a thorough evaluation of the protocol steps for care to the patient with polytrauma and the proper correction of the found lesions, the professional of the emergency service should identify the neurological pattern in which the victim is, and one indicates the use of the Glasgow Coma Scale for this purpose⁽²⁰⁾.

There was negligence of this data in most of the nursing care records, demonstrating the vulnerability of the team to record information, which may indicate possible lack of theoretical knowledge about the proper use of this scale. In turn, professionals

associate the decreased level of consciousness with the decrease in the breathing pattern, which, they say, requires the application of the Guedel's cannula⁽²¹⁾.

The participants of the study, as well as in this research, did not properly describe the use of the Glasgow Coma Scale as a neurological assessment tool for the polytraumatized victim. Although some information may be ignored, because of the need for speed and flexibility of services, which should prioritize the stabilization of the victim and not the filling of information, those failures make the record incomplete and with no support for situations involving the justice^(11,21).

In order to prevent the occurrence of traumatic events, reduce the severity of injuries, the occupation of hospital beds and rates of lost years and disabled, especially among young people, there should be investments in hazard and risk control strategies, using systematic measures for health promotion and disease prevention so that they can live their youth safely and without injury to health⁽¹⁷⁾.

Since the nurse is a professional focused on the implementation of health care in all life cycles, aiming at comprehensive care, he/she must be able to implement health education programs for the youngster and his/her family, planning strategies and targets to encourage harm reduction and safe behavior, in order to reduce the traumatic episodes^(17,22).

CONCLUSIONS

One observed that, among the traumatic emergencies treated by the SAMU 192 RN from January to June 2014, there was a greater quantity of TA, followed by falls. Most involved were men, aged between 25 and 44 years (young adult). Most calls occurred during the weekend, with the highest number on Sunday. As for the relationship between the type of trauma and gender, both male as female young adults experienced a higher proportion of TA. As for the elderly, they were most affected by falls.

Regarding the severity of the trauma, most victims of traumatic emergencies were classified between 13 and 15 points (mild trauma) on the Glasgow coma scale and the individual, in most cases, did not suffer polytrauma. However, it is noteworthy the neglect of professionals regarding the annotation of the classification of the Glasgow coma scale, for it is an essential data for the assessment of the severity of the trauma. In addition, the data deficiency in service records hinders the development of researches, as well as in court proceedings, since there is no evidential document support.

One knows that deaths from external causes are considered a public health problem with high rates of deaths and high absenteeism numbers by irreversible sequelae involving young people. The rapid and qualified service to this type of occurrence is directly proportional to the prognosis of the victim. It is noteworthy the importance of continuing education for health professionals working in the prehospital setting, since the first hour, called golden hour, is considered crucial to the survival of people in emergency situations.

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