

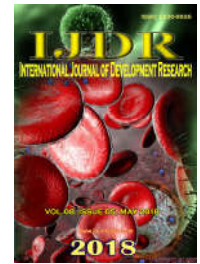


ISSN: 2230-9926

Available online at <http://www.journalijdr.com>

IJDR

International Journal of Development Research
Vol. 08, Issue, 05, pp.20396-20400, May, 2018



ORIGINAL RESEARCH ARTICLE

OPEN ACCESS

PROFILE OF VICTIMS OF TRAUMATIC BRAIN INJURY TREATED AT A UNIVERSITY HOSPITAL

*¹Sidnei Roberto Alves, ¹Fernando Meneghete, ¹Flávia Patrícia Farias de Lima, ¹Reginaldo Passoni dos Santos, ²Mayara Aparecida Passaura da Luz and ³Bruna Tais Zack

¹Unioeste - Western Paraná State University, University Hospital (HU) – Department of Nursing. 3224 Tancredo Neves Avenue – Cascavel – PR, Brazil 85806-470

²Unioeste, Postgraduate in the Residency Program in Nursing Management in Medical and Surgical Clinic

³Unioeste, Postgraduate in the Residency Program in Health Surveillance and Infection Control, Brazil

ARTICLE INFO

Article History:

Received 08th February, 2018

Received in revised form

29th March, 2018

Accepted 15th April, 2018

Published online 28th May, 2018

Key Words:

Brain injury,
External causes,
Health profile,
Nursing.

ABSTRACT

Introduction: Cranioencephalic trauma is one of the causes that contributes most to the high death rate and permanent sequelae among the population, which generates socioeconomic harm to society as a whole, and thus becomes a worrying factor for collective health in the population. Which concerns the promotion of health.

Objective: to identify the profile of traumatic brain injury patients treated at the emergency room of a Brazilian university hospital.

Materials and Methods: quantitative, descriptive-exploratory study. Secondary data were collected from 158 patients seen between February and June 2013. The analyzes were performed using simple statistics.

Results: the majority were male (n = 112, 70.9%), aged up to 29 years (n = 92, 58.2%) and students (n = 47, 29.7%). Traffic accident was the main mechanism of trauma (n = 58; 36.7%). Victims who remained in the emergency room after 24 hours of care (n = 87, 55.1%) and with mild trauma (n = 88, 55.7%) were predominant.

Conclusion: the majority of the victims of cranioencephalic trauma in the research institution occur with men, young adults, economically active, who are cared for by Integrated Emergency Care Service and who are involved in traffic accidents.

Descriptors: Brain injury; External causes; Health profile; Nursing.

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Citation: Sidnei Roberto Alves, Fernando Meneghete, Flávia Patrícia Farias de Lima, Reginaldo Passoni dos Santos, Mayara Aparecida Passaura da Luz and Brunna Tais Zack, 2018. "Profile of victims of traumatic brain injury treated at a university hospital", *International Journal of Development Research*, 8, (05), 20396-20400.

INTRODUCTION

The injuries by external causes constitute a world public health problem. This, because of its large impact on the mortality rates of developed countries, and especially those in development (Imamura, 2012). In this context, traumatic brain injury (TBI) is indicated in the conjuncture of deaths by external causes as one of the main factor (Moura, 2011). It is worth noting that in addition to high death rates, several other factors contribute to this type of trauma being seen as a problem of global public health (Imamura, 2012 and Moura, 2011).

*Corresponding author: Sidnei Roberto Alves,

Unioeste - Western Paraná State University, University Hospital (HU) – Department of Nursing. 3224 Tancredo Neves Avenue – Cascavel – PR, Brazil 85806-470.

Thus, the large number of injuries, prolonged hospitalization time and economic-financial cost, too, are considered decisive when discussing issues related to the care of victims of TBI (Moura, 2011; Santos, 2013 and Scholten, 2014). It is important to salient, that in most cases the victims are young and / or young adults involved in traffic accidents (Imamura, 2012; Moura, 2011; Santos, 2013 and Scholten, 2014). This fact has implications not only for health managers, but also for society, especially with regard to productivity and social security aspects (Scholten, 2014). It is worth remembering that, other characteristics to do part of the profile of patients victims of TBI. These characteristics have their importance and social and scientific relevance, which is based on the need to implement strategies and interventions that prioritize the prevention and control of TBI cases, as well as adjacent

damages (Imamura, 2012; Moura, 2011; Santos, 2013 and Scholten, 2014). In a survey conducted by Brazilian researchers, whose objective was to analyze studies published between 2002 and 2011 on the epidemiology of TBI in the national territory, it was found that male patients, aged between 21 and 60 years and who suffered some type of fall are the most affected. It was also inferred in the study, that traffic accidents were strongly related to TBI (Gaudêncio, 2013). According to data from the Centers for Disease Control and Prevention (CDC), in the United States of America, between 2001 and 2010, the rate of individuals who entered a hospital emergency service showed a continuous increase. In all years of the cited period, prevalence of male patients was observed. Concerning age, TBI rates were significantly higher in children up to four years of age, and trauma caused by falls was predominant among individuals in this age group and in those aged 65 and over. For those aged between 15 and 24 years, traffic accidents were closely linked to the occurrence of TBI (CDC, 2017).

In Europe, transport / transit-related elements make up about half of the causes of TBI. According to other realities, in the elderly the falls justify most hospitalizations. It is emphasized that brain injury is the main cause of death and disability in the universal scope, and convulsive disorders are caused, in the majority, due to cerebral traumas (International Brain Injury Association, 2018). It is noted that, both in the national and international scenario victims of TBI have similar characteristics (Gaudêncio, 2013; CDC, 2017 and International Brain Injury Association, 2018). However, all services have characteristics intrinsic to the geographical location that, in one way or another, reflect in the patients' profile (Viégas, 2013). Thus, it is considered that the accomplishment of studies by researchers from different regions give subsidy for the identification of the specific aspects of each institution, guiding the clinical practice of the team and corroborating for the implantation of effective interventionist methodologies and listed from the situational diagnosis local. In view of the above, this study aims to identify the profile of TBI victims treated at the emergency room of a Brazilian university hospital.

MATERIALS AND METHODS

Quantitative study, with a descriptive-exploratory type design. The population consisted of patients with TBI treated at the Emergency Room (ER) of a public university hospital in the South region of Brazil, from February to June 2013. It was established as inclusion criterion: to have been affected by TBI and attended in the ER of the hospital. It was determined that they would be excluded patients who registry entry at the unit was earlier than the period studied; patients who did not have records of at least two sociodemographic characteristics and two related to TBI. It was found that during the study period, 862 patients with TBI were admitted at ER of the hospital. Of this total, 704 patients were excluded, because they were not affected by TBI. Thus, 158 patients were included in the present study, which met the inclusion/exclusion criteria. To collect data, a semistructured instrument was created that enabled the researchers to collect the following information: gender, age, occupation, origin; mechanism of the trauma, evolution of the case after the first 24 hours of care; severity of the injury (according to the Glasgow Scale score - mild (13 to 15), moderate (9 to 12) and severe (03 to 08)). All the data collected were tabulated through the Microsoft Office Excel®

program, version 2010. The analyzes were performed with descriptive statistical application, and the results were presented through figure and tables. The study was approved by the local Ethics Committee (protocol number 497,431) and met the ethical standards established by the Declaration of Helsinki.

RESULTS

Of the 158 patients, the majority were male (n = 112, 70.9%); aged up to 29 years (n = 92, 58.2%); (n = 47, 29.7%) and referred through the Integrated Emergency Response Service (SIATE) (n = 55, 34.8%), as can be seen in Table 1. Regarding the mechanism of trauma, the majority of patients suffered a traffic accident (auto + motorcycle) (n = 58, 36.7%), and fall was the second major cause of TBI (n = 48, 30.4%) Table 2 shows all mechanisms of trauma. About the evolution of the case, after 24 hours of hospital admission, the majority (n = 87; 55.1%) of the patients remained in the emergency department, as shown in Figure 1. Regarding the severity and type of the lesion, 88 (55.7%) patients presented TBI grade I (mild); 25 (15.8%) with grade II (moderate) and 45 (28.5%) had grade III (severe).

Table 1. Sociodemographic characteristics of patients Cascavel, PR, Brazil, 2015

Variables	N	%
Gender		
Male	112	70,9
Female	46	29,1
Age (years)		
Until 29	92	58,2
30 – 44	25	15,8
60 years and over	28	17,7
13	8,2	
Occupation		
Self employed	10	6,3
From home	11	6,9
Student	47	29,7
Others	40	25,3
Not declared	50	31,6
Provenance		
SIATE	55	34,8
SAMU	23	14,6
UPA	22	13,9
Road accident	9	5,7
Other hospital	4	2,5
Other city	25	15,8
Free demand	11	7,0
Not declared	9	5,7

Legend: SIATE: Integrated Emergency Response Service; SAMU: Emergency Mobile Care Service; UPA: Non-Hospital Emergency Care Unit

Table 2 Mechanism of trauma. Cascavel, PR, Brazil, 2015

Variables	N	%
Trampling	18	11,4
Traffic-accidents	58	36,7
Physical aggression	9	5,7
Gunshot wound	2	1,3
Falls	48	30,4
Others	23	14,5

DISCUSSION

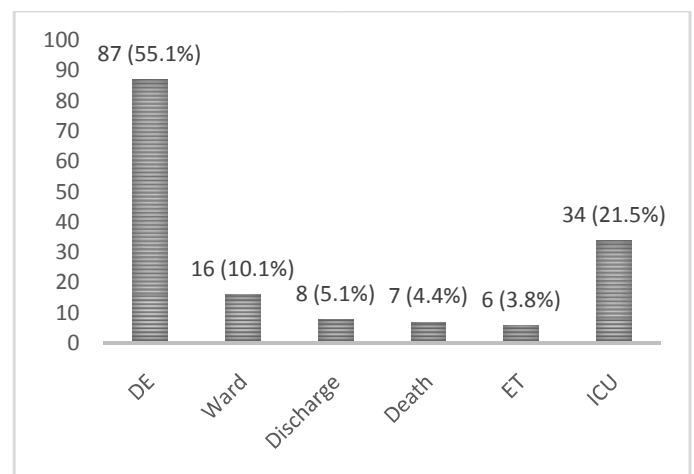
The sociodemographic profile of the subjects in this study resembled, in most of the characteristics, those presented in the literature (Moura, 2011; Santos, 2013; Scholten, 2014; Gaudêncio, 2013; CDC, 2017; International Brain Injury Association, 2018 and Viégas, 2013). In this sense, we identified in our research that 70.9% of the victims affected by TBI were male (Table 1). Researchers from the Brazilian

Northeast identified that of the 101 patients who were victims of TBI analyzed 86.14% were men (Moura, 2011). In a study conducted in Southern Brazil, the prevalence of male patients was 63.3%(Santos, 2013). In a national epidemiological survey, conducted through an analysis of studies published in Brazil, it was possible to indicate that the predominance of the male gender among victims of TBI is observed in surveys conducted all over the country (Gaudêncio, 2013). It is worth mentioning, that this characteristic is not unique to Brazil, since even in developed countries it is possible to verify that male TBI victims are treated in hospital emergency services in a considerably larger number than those of the female gender (Scholten, 2014; Gaudêncio, 2013 and CDC, 2017). Regarding age, adding all victims up to 29 years of age, it is possible to observe that these represented 58.2%, that is, more than half of the patients affected by TBI within the studied period. In a survey conducted in Northern Brazil, victims up to 30 years old accounted for 56.4% of the total number of patients treated by TBI in an emergency and emergency service (Viégas, 2013).

In another hospital in Brazil, a reference in trauma, 51.59% of the victims of TBI were aged between 21 and 40 years (Moura, 2011). The prevalence of age in Brazilian studies is different from that observed in the United State of America (USA), where in a ten-year period prevalence of TCE care was observed for children up to four years of age (CDC, 2017). In the Netherlands, it was identified that individuals up to 24 years old had a high incidence of hospital care, however, with a relatively low financial cost, on the other hand, there was a low incidence of TBI in those aged 25-64 years, with higher financial cost. The researchers of the mentioned study also point out that the high incidence of TBI in the elderly with more than 64 years resulted in high direct costs with health care (Scholten, 2014). In a recent systematic review, it was found that research on the epidemiology of TBI is scarce and there is considerable methodological diversity among the existing studies. This fact, to a certain extent, corroborates negatively in the construction of an analytical-comparative exalted discussion. According to the researchers, "TBI is considered an important cause of death and disability worldwide, affecting mainly individuals under the age of 45"(Magalhães, 2017 and Maia 2013).

The results of our study confirm this evidence. However, it should be noted that we have found many records with "undeclared" data. This, of course, further constrained the different possibilities of analyzing the results and, therefore, of providing an in-depth and in-depth reflection on the profile of individuals with TBI in our institution. There were no studies in the national literature that presented the estimated costs of providing health care to victims. However, researchers affirm that the economic and financial impact of TBI in Brazil is great, not only for the managers of the Brazilian health system, but also for the victims and their relatives (Fukujima, 2013). The observation of students as the main victims, meets the prevalent age group of patients (Table 1). In the same way, the survey of the provenance made it possible to infer that when the pre-hospital care was performed, 49.4% of the time, by the SIATE and by Emergency Mobile Care Service (SAMU), these were answered in public. Following the context presented, it should be noted that, as in other studies, it was observed in this study that in most of the cases of TBI treated in the ER were victims of a traffic accident (auto + motorcycle) (36.7%) (Table 2). Accidents involving motorized means of transport (automobiles and motorcycles) were also

pointed as the main mechanism of trauma in victims of TBI in studies conducted in different regions of Brazil (Moura, 2011; Gaudêncio, 2013; Viégas, 2013 and Eloia, 2011) and even in European countries (International Brain Injury Association, 2018). A study carried out in the interior of the North region shows that the use (and abuse) of alcoholic beverages among young university students is high, a fact that makes them more vulnerable to being involved in situations of injury and / or injury to life (such as TBI), among which are cited traffic accidents among the most frequent situations (Pedrosa, 2011). Thus, it is pointed out that strategies for education in traffic must be vehemently and constantly listened and put into practice in order to minimize the number of accidents and victims (Abreu, 2012). Another point that deserves attention is the falls. These were reported as the second leading cause of TBI (30.4%) in the present study, while in another Brazilian study (Santos, 2013), falls were the first cause, accounting for 40.4% of cases among victims of the male gender and 58.2% among female patients. In the USA (CDC, 2017), falls are the main cause of TBI in children and the elderly, similar to that observed in a study carried out in the Netherlands (Scholten, 2014). Regarding the evolution of the case after the first 24 hours of care, Figure 1 shows that the majority (n = 87; 55.1%) of the victims remained hospitalized in the ER of the hospital.



Legend: DE – Department of Emergency; ET – External Transference; ICU – Intensive Care Unit.

Figure 1. Evolution of patients after first 24 hours in the hospital

In another study (Santos, 2013), which evaluated the evolution of patients in the first in-hospital 12 hours was predominant (n = 213, 41.4%). In addition, the rate of patients who died in the study was considerably lower (0.2%) than in the present study (4.4%). In another study, the rate of discharge was 88.12%, with a death rate of 7.92% (Moura, 2011). Other researchers observed that mortality reached 22% of the victims, but the study does not present the time of clinical evolution until the death (Viégas, 2013). In this sense, the allocation of human resources with continuous training and improvement, as well as the acquisition of new health technologies (both for diagnosis and treatment) by the institution favors the maintenance of life and better clinical outcome / outcome to victims of injuries from external causes (such as TBI) (Gaudêncio, 2013; CDC, 2017; International Brain Injury Association, 2018; Viégas, 2013; Magalhães, 2017; Fukujima, 2013; Eloia, 2011; Pedrosa, 2011; Abreu, 2012 and Moura, 2012). Regarding the degree of injury of TBI victims, Table 3 shows that there was a predominance of patients with mild TBI (n = 88, 55.7%). In another emergency hospital, there was also a prevalence of mild TBI (53.47%) (Moura, 2011). In a study

carried out in the city of Pelotas (southern Brazilian region), the authors point to the fragility regarding the record of TBI severity, and in 56.3% of the charts, there were no annotations referring to this data. According to the Glasgow Scale, it was identified that 40.7% presented mild TBI (Santos, 2013). It is noteworthy that, as in other studies conducted by Brazilian researchers (Gaudêncio, 2013; CDC, 2017; International Brain Injury Association, 2018; Viégas, 2013; Magalhães, 2017; Fukujima, 2013; Eloia, 2011; Pedrosa, 2011; Abreu, 2012; Moura, 2012 and Maia, 2013), severe TBI was presented in this investigation in second place regarding the severity of the trauma. Thus, the health professional should be alert to the signs arising from complications of trauma severity such as seizures, lowering of consciousness level, disorientation, headache and others (Santos, 2013; Gaudêncio, 2013 and Magalhães, 2017).

The identification of the profile of the victims of TBI, attended at the emergency units, has important implications for the planning and practical execution of nursing care. In this context, it is necessary for the professionals to be aware of the physiopathological aspects present in the trauma and to make associations between these aspects and the intrinsic characteristics of the assisted clientele. Likewise, understanding that most of the victims are children affected by falls and young adults who are involved in traffic accidents makes it possible to list specific strategies and interventions with greater focus (Santos, 2013 and Gaudêncio, 2013). Among the conducts to be taken at the hospital admission, it is highlighted that performing hemodynamic monitoring by means of multiparameter devices and assessment of the level of consciousness is presented as immediate measures. In addition, since alcohol is present in most cases of caring for victims who are involved in traffic accidents, measuring glycemic levels corroborates the clinical evaluation (Feyen, 2012). In this same direction, many victims of TBI present with intra-cranial hemorrhage, requiring the nursing professional to have technical-scientific knowledge that allows him to identify, evaluate and establish therapeutic behaviors (along with the multidisciplinary team) in the face of neurological changes (Feyen, 2012 and Cunha, 2015).

Conclusion

The development of this study made it possible to meet the objective initially listed. Thus, it is concluded that the majority of the victims of TBI in the institution studied occur with men, young adults, economically active, who are cared for by SIATE and who are involved in traffic accidents. Therefore, it is believed that it is essential to know the profile of the users who use the health service so that the dynamics of care of the units can be planned and organized, as well as the Nursing assistance and the multiprofessional team, aiming to provide care resolute, humanized and with less damage to the patient.

Disclosure of Potential Conflicts of Interest

The authors declare that they have no conflicts of interests.

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