

Profile of grievers and location of adult patient injuries attended in the yellow room of the Federal District public hospital

Perfil dos agravos e local das lesões do paciente adulto atendido na sala amarela de um hospital público do Distrito Federal

Rodrigo Escobar Guerra¹, Iel Marciano de Moraes Filho², Jessica de Arêa Leão Silva¹, Ailane Milard Moreira de Souza¹, Acza Araújo Soreas de Alcântara¹, Sandra de Nazaré Costa Monteiro¹

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REVISA

1. Escola Superior de Ciências da Saúde, Departamento de Enfermagem, Brasília, DF, Brasil.

2. Faculdade de Ciências e Educação Sena Aires, Departamento de Enfermagem, Valparaíso de Goiás, GO, Brasil.

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RESUMO

Objetivo: identificar quais são os mecanismos de trauma e os tipos de lesões mais frequentes nos pacientes de 30 a 49 anos atendidos na sala amarela do centro de trauma de um hospital público do Distrito Federal. **Método:** estudo epidemiológico descritivo transversal sobre o perfil, epidemiológico e clínico. Os critérios de inclusão foram: admissões primárias, faixa-etária 30 a 49 anos, ambos os sexos e vítima trauma, totalizando amostra com 697 admissões. **Resultados:** foi evidenciado que nesta faixa etária, prevaleceram os motociclistas traumatizados com 27,7% (n= 193), seguido de ocupante de automóvel traumatizado com 17,5% (n= 122) e queda da própria altura com 11,04% (n=77). **Conclusão:** o trabalho evidencia a necessidade das equipes componentes dos sistemas hospitalares e demais unidades que atuam diretamente ou indiretamente, com pacientes traumáticos, a necessidade de se aperfeiçoarem, na tentativa de se conhecer melhor o perfil de pacientes que buscam tratamentos nesta unidade, além de poder proporcionar uma assistência de melhor qualidade.

Descritores: Adulto Jovem; Centros de Traumatologia; Ferimentos e lesões; Causas externas; Traumatismo múltiplo.

ABSTRACT

Objective: to identify the mechanisms of trauma and the most frequent types of injuries in patients aged 30 to 49 attended of the Federal District Public Hospital trauma center, specifically in the yellow room. **Method:** This is a cross-sectional descriptive epidemiological study on the epidemiological and clinical profile.). Inclusion criteria were: primary admissions, age range 30 to 49 years, both sexes and trauma victim. The sample was composed for 697 admissions. **Results:** Among the injuries, it was evidenced that in this age bracket, traumatic motorcyclists prevailed with 27.7% (n = 193), followed by a traumatic motor vehicle occupant with 17.5% (n = 122) and fall of the height itself with 11.04 % (n = 77). **Conclusion:** This work evidences the need of the hospital system components teams and other units that act directly or indirectly, with trauma patients, the need to improve themselves, in an attempt to better understand the profile of patients who seek treatment in these units, besides being able to provide assistance.

Descriptors: Young Adult; Traumatology Centers; Wounds and injuries; External causes; Multiple trauma.

ORIGINAL

Introduction

The World Health Organization (WHO) estimates that 90% of traumas occur in developing countries due to a lack of infrastructure, education, housing, sanitation, public safety, among others, and can be further evidenced if these problems are compounded by the acquisition of vehicles and illegal weapons.¹

It is also estimated by the same institution that 5.8 million people die each year due to trauma mechanisms. Evidence that more than 9 people per minute die from trauma or violence. The mortality from trauma is 32% higher when compared to the sum of deaths from malaria, AIDS and tuberculosis.¹

In Brazil, the great repercussions due to the traumatic events, which occur at all times, are especially evident, mainly evolving population with the adult age. The Brazilian Institute of Geography and Statistics, IBGE in Brazilian Portuguese, in 2010 the Brazilian population was 190,755,979 inhabitants, and of these 54,475,950 corresponded to the population of adults in the age group of 30 to 49 years.²

When we talk about health problems caused by traumatic accidents, we must understand that trauma is a disease that can be prevented, since it has a causative agent - physical agent, a human being and a favorable environment - event's place.³

It is also worth noting that trauma is also one of the most important causes of morbidity and disability in the adult age, representing a serious public health problem in Brazil and in several countries.⁴

Given these aspects and the serious repercussions, traumatic accidents constitute a high-cost global disease, accounting for 12% of expenditure, when it is equated with other diseases in the world, with global costs estimated to exceed 500 billion dollars.⁵

In order to understand the impact of the trauma both in relation to the health of the affected population and the demand for expenditures, we must understand how the mechanism of trauma is defined. In this way, we can say that the traumatic biomechanics is the energetic interaction that occurs between the aggressor agent and the victim, its mechanism of action occurs in three times: the pre-collision, the collision and the post-collision.⁶

In this way the changes in human physiology by trauma mechanisms are contemplated by the risks involved in these times, and the second one is the main aggravating factor, being of primary importance of the reassessment of those who are reached by large trauma mechanisms, due to late risks that are not present at the moment.

With that in mind, proper management is required for the patient involving traumatic injuries, from the scene of the accident, during transportation, to hospital care. Attendance to the trauma patient should occur systematically, in a predefined sequence, independent of the mechanism involved in the individual's injury.⁷

The correct classification of the severity of the victim is fundamental, since it allows the patient to receive the treatment directed according to their priority. In this work, we will approach the patients classified and attended in the Yellow Room of the Trauma Center of a Public Hospital of the Federal District, a reference institution in the care of patients who are victims of trauma.

The present study aims to identify the mechanisms of trauma and the most frequent types of injuries in patients aged 30 to 49 attended at the trauma center of a HPDF - Public Hospital of the Federal District, specifically in the yellow room.

Methods

This is a cross-sectional descriptive epidemiological study on the epidemiological and clinical profile. The cross-sectional study is the one in which measurements are taken in a single moment, with no follow-up period, and may also examine associations. It is a study that demands little expense and it is quick to be performed, as it does not need to wait for the occurrence of an outcome.⁷

Cross-sectional studies provide data on the prevalence of a particular disease or clinical condition at a given time point. Taking as steps, the definition of criteria, sample selection and the measurement of current values of predictor and outcome variables.⁷

The study population consisted of all adult patients seen in the Yellow Room of the Trauma Center of a Public Hospital of the Federal District (SA-CT-HPDF). Inclusion criteria were: primary admissions, age group 30 to 49 years, victims of trauma. Total sample with 697 admissions. The data collection was stratified between March and August of 2016, with alternation in the weeks surveyed, that is, in day and night weeks from Monday to Friday, interspersed. In daily shifts of 12 hours, including 2 weekends each month of collection. The collection period was comprised from March to August 2016, with a total of 6 months of collection.

The data were entered into a database in the Excel® program for later analysis in SPSS software version 20.0 for Windows. The results were presented by means of absolute frequencies and percentage. The collection instrument was developed specifically for the investigation of the profile of the injuries and local of the lesions of the adult patient attended in the yellow room of the trauma center of a HPDF and comprises 30 qualitative variables on patients victims of trauma, of which only 7 were analyzed, containing data on: sex, age, origin, place of accident, signs and symptoms, ailments and injury. As for the data on origin, there are a diversity of places where traumatic accidents occur, in this study it is necessary to designate as "other", accidents that do not contemplate domicile, school, highway and public road.

The present study is a summary of a larger study titled "Clinical and epidemiological profile of patients seen in the Yellow Room of the Trauma Center of the Base Hospital of the Federal District", approved by the Research Ethics Committee of the Foundation for Teaching and Research in Health Sciences of the Federal District - FEPECS-DF in Brazilian Portuguese, with favorable opinion number 994.833 dated 09/03/2015. The research is funded by the aforementioned research support foundation, expected to expire in 2017.

Results

A quantitative study of 697 patients attended in the yellow room of the HPDF trauma center in the respective age group of adults aged 30-49 years was obtained. Table 1 shows the distribution of patients seen in the yellow room of a Trauma center regarding gender, age group and origin.

Table 1. Distribution of patients seen in the yellow room of a Trauma center regarding gender, age group and origin.

Variable	n	%
Sex		
Female	227	32,6%
Male	470	67,4%
Age group	n	%
30 - 34	211	30,3%
35 - 39	206	29,6%
40 - 44	158	22,7%
45 - 49	122	17,5%
Origin	n	%
Domicile	48	6,9%
School	1	0,1%
Others	89	12,8%
Highway	7	1,0%
Public road	552	79,1%

It was noticeable after the study that, of these patients, there was a greater attendance of males, as shown in Table 1, corresponding to 67.4% (n = 470) of the patients attended.

In relation to the age group of trauma treated in the yellow room, 30 to 34 years old, corresponding to 30.3% (n = 211) of the patients attended, followed by 35 to 39 years of age, with 29.6% (n = 206), 40 to 44 years, with 22.7% (n = 158) and 45 to 49, with 17.5% (n = 122). Realizing that as the age increases the attendance rates involving traumatic events decrease, since we can observe a decrease in percentage of attendance, as the age group increases.

Amongst the places that most frequently occur, it was verified that the public road represents the main environment conducive to traumatic events, corresponding to 79.1% (n = 552), followed by others with 12.8% (n = 89). In addition, home accidents represent a significant percentage, with 6.9% (n = 48), since the home environment is a medium that has a greater ease of adaptation and prevention of accidents. Table 2 shows the distribution of signs and symptoms found in patients treated at the unit studied.

Table 2. Distribution of Signs and Symptoms of Patients Served in the Yellow Room of an HPDF Trauma Center.

Signs and symptoms	n	%
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Sweating	0	0,0%
Loss of consciousness	2	0,27%
Bradipnea	0	0,0%
Tachipnea	0	0,0%
Hypoxemia	0	0,0%
Coma and sedated	0	0,0%
Somnolence	2	0,27%
Vomit	0	0,0%
Cyanosis	0	0,0%
Pallor	0	0,0%
Mental confusion	4	0,54%
Myalgia	0	0,0%
Shaking	5	0,67%
Pain	694	93,40%
Bradycardia	0	0,0%
Headache	5	0,67%
Nausea	7	0,95%
Tingling	1	0,13%
Respiratory distress	3	0,40%
Bleeding	17	2,28%
Tachycardia	1	0,13%
Vertigo	2	0,27%
Total	743	100,0%

The most prevalent signs and symptoms were 93.78% (n = 694), 2.28% (n = 17) had active bleeding and 0.95% (n = 7) reported nausea. The signs and symptoms show in an objective way that the victim of trauma has a high chance of reporting pain as the main sign and symptom.

It is important to emphasize the importance of the lesions of the integral tissue, which allow the loss of significant blood volume, depending on its depth and local affected. It may cause greater physiological changes, causing a worsening of the patient's clinical condition.

Signs of exposure and cases of collapse, hypoxemia, coma, vomiting, cyanosis, pallor, bradycardia, and myalgia were not included. Signs that defer state of greater severity to the patient, which may lead to a hypothesis of even lowering of level of consciousness, shock, Cranio-Encephalic Trauma - Severe CET, Thromboembolism Pulmonary Embolism - TPE, these being some of the main traumatic aggravation, leading the patient to the emergency states of care. Table 3 provides information on the diseases that affect the patients, leading them to be seen in the yellow room.

Table 3. Ailments of patients seen in the yellow room of an HPDF Trauma center.

Ailment	n	%
Physical aggression	55	7,9%
Traumatized cyclist	19	2,7%
PAB	15	2,2%

Self-harm	4	0,6%
Bite of animals	1	0,1%
Traumatized motorcyclist	193	27,7%
Traumatized automobile occupant	122	17,5%
Traumatized bus occupant	17	2,4%
Others	58	8,3%
PAF	6	0,9%
Traumatized pedestrian	39	5,6%
Penetration of a foreign body or object through the skin	4	0,6%
Fall above height	61	8,8%
Fall of own height	77	11,04%
Trauma for perforating or cutting material	26	3,7%
Total	697	100,0%

Among the injuries, it was evidenced that in this age group, traumatized motorcyclists prevailed with 27.7% (n = 193), followed by a traumatized automobile occupant with 17.5% (n = 122) and fall of own height with 11.04 % (n = 77). It was also verified that people in this age group have a low index in relation to harmful events by means of weapon either white or fire, corresponding respectively to 2,2% (n=15) and 0,9% (n=6) of injuries.

Regarding the low rate of harmful events, due to violent events, it is due to the fact that this HPDF, to concentrate, for the most part, patients from the Brasília region, which in the study, was the region with the highest number of injuries.

By means of these data it is clear the predominance of accidents involving motorcyclists, leading to the inference of the necessity of accomplishment, of works and awareness about the education in transit, in order to minimize attendance and hospitalizations as a result of these trauma events. Table 4 shows information on the locals where the lesions occurred, due to the traumatic event.

Table 4. Distribution of the local of lesion of patients seen in the yellow room of the trauma center of an HPDF.

Local of lesion	n	%
Head	233	24,5%
Back	21	2,2%
Pelvis	37	3,9%
Non-specific	13	1,4%
Neck	58	6,1%
Shoulder and arm	76	8,0%
Foreign body penetration through natural orifice	1	0,1%
Chest	103	10,8%
Hip and thigh	28	2,9%
Fist and hand	75	7,9%
Elbow and forearm	43	4,5%

Local of lesion	n	%
Multiple regions of the body	4	0,4%
Abdomen	35	3,7%
Knee and leg	107	11,3%
Ankle and foot	53	5,6%
Lumbar spine	64	6,7%
Total	951	100,0%

The most affected locals were head with 24.5%, knee and leg with 11.3% and chest with 10.8%. Thus, it is possible to verify that this patient profile may be more susceptible to brain involvement, due to the local of lesion prevalence. It is also possible to infer the relation of the head injury, with the high index of traumatized motorcyclists preponderant in table 3, together with traumatized automobile occupant, considering the hypothesis of not wearing the seat belt and also the fall of own height, through to the mechanism of trauma involved. Table 5 presents information on the type of injury.

Table 5. Distribution of lesion type of patients treated in the yellow room of the trauma center of an HPDF.

Type of lesion	n	%
Suspected sprain	4	0,4%
Amputation	2	0,2%
Medullary	2	0,2%
Corrosion	1	0,1%
Non-specific	31	2,8%
Excoriation	130	18,6%
Fracture suspicion	313	28,7%
Exposed fracture	13	1,2%
Bruise	44	4,0%
Deformity	10	0,9%
Edema	8	0,7%
Drilling	21	1,9%
Crush	5	0,5%
Laceration	134	12,3%
Burn	2	0,2%
TEC	148	13,6%
Contusion	215	19,7%
Suspected dislocation	9	0,8%
Total	1092	100,0%

The types of lesions with greater percentage were suspected of fracture with 28.7%, contusion with 19.7% and Laceration with 18.5%. The fact that the suspected fracture was the highest index, may be justified by the types of injuries that are most evident in Table 3, mainly demonstrating that the motorcyclist due to the lack of vehicle protection, are strong candidates for this type of injury.

The low rates of spinal cord injury 0.2%, amputation 0.2%, corrosion 0.1% and burn 0.2% found in this study are related to emergency events. Showing that such types of injuries mentioned above are not characteristic of urgent care. During the study it was evidenced among the most recurrent injuries, established in Table 3, traumatized motorcyclist, traumatized automobile occupants and fall of own height. It was predominant the male age group, except for the fall of own height where the evidence of female people occurred. It was also observed that in the age groups between 30 and 34 years, most of the injuries occurred due to traumatized motorcyclists with 38.34% of the attendance due to this eventuality, occurring a decrease according to the increase of the age group.

When analyzing the injury, traumatized occupant automobile, it was verified that there was a greater constancy of this aggravation over the male age group, with an exception to the age group from 45 to 49, in which the highest prevalence of female patients occurred with 10.65% of the visits performed in this age group.

Regarding falls attendance at the fall of own height, there was a prominence of females, with a higher occurrence in the age group of 35 to 39 years, with 16.88% of visits, although males were not the most prevalent at the same time, it stood out with a greater number of attendances in relation to the other age groups.

Table 6. Crossing between injuries, sex and age group of patients seen in the yellow room of the trauma center of an HPDF.

Sexo	30 - 34			35 - 39			40 - 44			45 - 49			Grand Total
Line labels	FEM	MA	Total	FEM	MA	Total	FEM	MA	Total	FEM	MA	Total	
Physical aggression	5	15	20	3	20	23	3	6	9	2	1	3	55
Traumatized cyclist	1	5	6	1	2	3	1	5	6	1	3	4	19
FAB		9	9		3	3		2	2		1	1	15
Self-harm	1	2	3				1		1				4
Bite of animals					1	1							1
Traumatized motorcyclist	11	63	74	9	54	63	6	26	32	4	20	24	193
Traumatized automobile occupant	18	29	47	9	30	26	9	10	19	13	4	17	122
Trumatized bus occupant	5		5		2	2	4	3	7	2	1	3	17
Others	5	6	11	7	10	17	5	11	16	3	11	14	58
PAF		4	4		1	1		1	1				6
Traumatized pedestrian	6	1	7	6	4	10	8	7	15	4	3	7	39
Penetration of foreign body or object through the skin				2		2		1	1		1	1	4
Fall above height	6	7	13	3	19	22	4	8	12		14	14	61
Fall of own height	4	8	12	13	5	18	12	13	25	10	12	22	77
Trauma for perforating or cutting material	1	6	7	1	10	11	2	3	5	1	2	3	26
Grand total	63	155	218	54	161	215	55	96	151	40	73	113	697

Discussion

Our study showed that in the age group 30-49, the majority of males were affected by automobile accidents, especially in the case of motorcyclists injured on public roads. These data corroborate a study carried out at the University Hospital of Sergipe (Hospital Universitário de Sergipe), where 92 of the 100 patients interviewed involved in accidents were male, with a more frequent age range of 25-49 years⁸, reinforcing the idea that males are more susceptible to trauma.

In another study on injuries due to trauma in a Neurological Physiotherapy Outpatient Clinic of the Regional University Hospital of the North of Paraná (Hospital Universitário Regional do Norte do Paraná), it was verified that 80% of the patients corresponded to male patients, and the age group was between 18 and 47 years.⁹

The traumatic events correspond to a great demand for hospital care, with varying degrees of severity ranging from urgent care to emergency care, which may include compromising hemodynamic instability, obtaining a great relation with the deaths involving traumatic events.

Men are seen as belonging to a group susceptible to a higher death rate due to traffic accidents, according to a study carried out at the units of the Instituto Médico Legal - IML in São Paulo, men aged between 30 and 35 years were the most obvious fatal victims. It is also directly related to the use of alcohol, since the ratio of blood alcohol content between men and women is 20 times greater in males.¹⁰

The traumatic events are responsible for physiological changes, reported by the patients as signs and symptoms resulting from the mechanisms involved, which for the most part may reveal greater severity in the clinical picture, showing the need for more specific care, and may change its classification of a urgency for an emergency

In addition, signs and symptoms that are associated with shocks due to traumatic events, especially hypovolemic shock, such as sweating, tachypnea, tachycardia, cyanosis and pallor¹². They were not significantly evidenced in Table 2, once again proving the relationship of proper classification of an urgent care.

In addition, two of the signs and symptoms mentioned are related to the Revised Trauma Score (RTS), a scale used to assess the severity of the patient affected by traumatic mechanisms, in which the severity is assessed according to the values of the Glasgow Coma Scale (GCS), blood pressure and respiratory values.¹¹

In this study that contemplates patients seen in the yellow room, it was not possible to measure the RTS, but some indirect signs as mentioned above, subsidize the patient's orientation to the red room, acting as warning signs and symptoms. It occurs many times as a result of some non-visible lesion and may be related to the involvement of internal organs, making it difficult to locate them immediately, promoting a worsening of the patient's clinical condition.

Pain was the most evident symptom prevailing in 94%. Acute pain always accompanies trauma patients, but efficient perception of identification, quantification, and treatment is necessary for proper performance in their relief.¹²

In the Trauma Center, analgesia is performed immediately after the primary evaluation of the patient, aiming at minimizing pain, in addition to being given preference for administration of medications that have a rapid effect. It is subsequently sent to perform complementary tests, which help in the plausible diagnosis, for the taking of conduits.

Concerning the local of injury most affected, the head was as shown in table 4. In a study carried out by means of files of traumatized victims between January 1997 and December 2003 in São Paulo it was verified that the head / neck injuries occurred due to falls (43.1%), accidents (36%), motor vehicle accidents (39.1%) and accidents involving heavy vehicles (32.3%).¹³

In a study carried out on the profile of traumatized motorcyclists in the city of Teresina-PI, it was verified that injuries occurred with sequelae of greater proportion in the lower limbs (55%), face (52.2%) and head (47.89%).¹⁴

In this way it is well known that there is a relationship between the data found and the study carried out, evidencing a correlation between the reported analyzes, in the results referring to tables 3 and 4.

In relation to the injuries, traumatic accidents were the ones that appeared the most, they may involve multiple factors, being necessary during the attendance the disclosure of the injury that allowed the mechanism of trauma, which for the most part brings as one of the types of injuries the suspicion of fractures.

In a study on skeletal muscle trauma, performed in São Paulo, it was evidenced that the trauma has detailed physical examination needs as a priority, in addition to knowing the trauma mechanism involved. Likewise, needs of radiological study of skeleton, in order to discard any fractures.¹⁵

The blunt trauma is directly related to the most diverse mechanisms of trauma, precisely because it is an injury resulting from an impact with energy dispensing distributed over a large area, not just being located in a specific region. These may be due to run-down, collision, and falls.¹⁶

Blunt trauma, also known as closed trauma on most occasions, comes from accidents involving motorcycles, cars, among others. Being in some developing countries, directly related to the increasing technological evolutions, without the accompaniment by adequate structures and lack of security.¹⁷

The penetrating trauma, on the other hand, results from an impact with concentrated energy in a small body area, favoring in this case the physiological changes due to the penetration of the object.¹⁸

Due to these eventual traumas, the clinical evaluation should be complemented by radiological examinations and specialized care so that any damages or injuries greater than those previously established can be avoided.¹⁸⁻¹⁹⁻²⁰

Our study makes us rethink strategies of education and prevention of traumatic events, especially those related to the use of motor vehicles, in order to minimize the indexes that are predominant in this work.

The study had as limitations, the lack of information regarding to the use of seat belts in traumatic events involving automobile occupants, as well as the lack of means to identify the use of alcohol and drugs, in an attempt to correlate these factors with the injury.

During the collection of data, the research group noticed the difficulty of collecting reliable and more detailed data, the patient turnover that circulates

through the trauma center, as well as the lack of a database that was available for eventual consultations. That was when the proposal for creating software arised. The System of Service of Trauma of the Base Hospital of the Federal District - Sistema de Atendimento em Trauma do Hospital de Base do Distrito Federal (SISAT-HBDF) in Brazilian Portuguese, aims to qualify and reorganize the hospital service, with a view to continuing care, reaffirm the need to share information and thus contribute to a dissemination of knowledge among professionals and the quality of care.

Conclusion

The profile of the injuries and local of lesions of the adult patient treated in the yellow room of the HPDF Trauma Center, obtained a quantitative of 697 patients, outlining the profile of adult patients in the 30 to 49 age group, addressing types of ailments and injuries that were found. In addition, the study made possible the exposure of age groups more susceptible to trauma and place of origin.

Accidents in transit are characterized in this work as an aggravation of important repercussion since they occupied, as the first and second position of more frequent events, becoming notorious the necessity of having greater investments as the issues of education in transit, with the intention to prevent and reduce its incidence in Brazil.

This work evidences the need of the hospital system components teams and other units that act directly or indirectly, with trauma patients, the need to improve themselves, in an attempt to know better the profile of patients who seek treatment in these units, besides being able to provide assistance.

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Corresponding author:

Iel Marciano de Moraes Filho
Faculdade de Ciências e Educação Sena Aires. Acre
St., Qd. 02. Lts.17/18, s/n, Setor de Chácaras
Anhanguera. ZIP- 72870-508. Valparaíso de Goiás,
Goiás, Brazil.
ielfilho@senaaires.com.br