

ORTHOPEDICS NURSING PATIENTS' PROFILE OF A PUBLIC HOSPITAL IN SALVADOR-BAHIA

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ABSTRACT

Objectives: To describe the profile of patients treated in the trauma and orthopedics nursing of a trauma care referral public hospital of in the state of Bahia. **Methods:** Cross-sectional study in which data were collected from medical records of patients in the period from July to December 2008. **Results:** The profile of the patients involved was formed by subjects mostly male young subjects, victims of trauma from accidents, especially those with motorcycles or car runaway. On the other hand, the most frequent traumas associated with urban violence were perforations by gunshot and stab wounds. The primary injury

presented by these individuals was exposed fracture of the femur and the most common treatment was external fixation. The most frequent in-hospital complication was wound infection, which required another surgical approach. Most inpatients were discharged and only one death was reported during this period. **Conclusion:** The results of this study corroborate those from other institutions in the country, which may contribute to elaborate public policies for accidents and violence prevention. **Level of Evidence IV, Case Series.**

Keywords: Fractures, open. Wounds and injuries. Hospitalization. Accidents.

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INTRODUCTION

Traumatic pathologies currently stand out in the statistics of diagnosis and hospitalization, in view of the increase in urban violence and the number of automotive vehicles. Trauma has already reached the first place among the diseases that affect the population aged 0 to 39, becoming a serious public health problem, due to the magnitude of the organic and psychological consequences especially in younger and potentially productive individuals.¹⁻⁴ To the Brazilian Unified Health System (SUS - Sistema Único de Saúde) the consequences of violence and accidents generate increased spending on emergency relief and rehabilitation, which are more expensive than most conventional medical procedures.⁵⁻⁷ In northeastern Brazil, the average cost of a hospital stay due to accident or violence represents to SUS 89% more than the average cost of other hospitalizations while in other regions of the country, this difference is about 37%.⁴ The magnitude of these data underscores the extent of the trauma in the setting of the country's social problems. In the state of Bahia, in the first semester of 2008, there were 20,727 hospitalizations for external causes, of which approximately 48% of admitted patients were between ages 20 and 49.⁸

In Bahia, the State General Hospital (HGE - Hospital Geral do Estado) is the referral public unit for emergency care / emergency trauma in the state, being the second largest hospital of the Health State Secretariat of Bahia. There are about 2000 employees, 80,000 patients are treated per year on average on 240 hospital beds, distributed in 8 wards, 32 ICU beds and about 700 surgeries/month are performed. Given the magnitude of the numbers of trauma victims and the complexity of orthopedic and traumatology disorders, it is necessary to know the profile of these patients for better planning and organizing their assistance. This study aims to describe the clinical and epidemiological profile of trauma victims' patients of the Trauma and Orthopaedics nursing at the trauma referral hospital in the state of Bahia.

METHODS

We conducted an exploratory study with a quantitative approach on the patients hospitalized in the Trauma and Orthopaedics nursing at the State General Hospital located in Salvador, Bahia, from July to December 2008. The study included all patients admitted to the nursing during

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the period of data collection, except those who had no trauma and orthopedic disorders, but had to be admitted in this ward for other reasons.

Data was collected in July-December 2008 by a team of physiotherapists through medical records of the hospitalized patients. For data collection we created a standardized form containing fields about the socio-demographic characteristics of the patients, clinicians and the reason they left the nursing, either, discharge, transfer or death.

The socio-demographic variables included gender, age, and place of birth. Clinical data was investigated from the etiology of the event that was classified as accidental or secondary due to violent acts. Accidental events were included as those related to falls, transportation and occupational. The injuries resulting from violence were classified into physical assault, perforation by stab (PS) and perforation by gunshot (PG). The type of injury was classified as fracture, dislocation, soft tissue injury, amputation and pyoarthritis. Medical treatments were grouped as follows: only debridement, external fixation (EF), Kirschner wires (K-wire), plaques, plaster splint (PS), transcheletal traction (TST), amputation, dislocation reduction and soft parts repair. The presence of associated injuries and intra-hospital interurrences were also analyzed. Nursing leave was ranked as discharge, transfer or death.

The statistical approach of data was the calculation of absolute and percentage distributions of data by statistical program Epi-Info 6.0. This study was approved by the hospital board after about the objectives, rationale and research methods. Were assured anonymity of research subjects and the use of data by researchers only and exclusively for the purposes of this study.

RESULTS

Patients hospitalized in the traumatology and orthopedics nursing of the hospital under study from June to December 2008 were, in most cases, young males (89.6%) with a median age of 29 (ranging from 13 to 98). Regarding the origin, there was a similar distribution between the capital city residents (49.9%) and the countryside cities residents (50.1%). Among the last, most came from cities within the metropolitan region of Salvador, such as Camaçari, Simões Filho and Lauro de Freitas.

Regarding the etiology of trauma, it was found that the main causes of admissions were accidents, which victimized 264 (77.7%) individuals, especially those related to motorcycle accidents, which affected 96 (28.2%), followed by 48 (14.1%) car run over victims and 39 (11.5%) random car accidents. The remaining accidents related cases were associated with falls, with 36 (10.6%) events, 25 (7.4%) direct trauma and five (1.5%) explosions. Only 76 (22.3%) cases corresponded to urban violence. Of these, 62 (18.2%) were due to gunshot injuries, 10 (2.9%) from stab wound and 4 (1.2%) from beating. (Table 1) The main lesions presented by patients were fractures, 186 of them exposed (54.2%), 58 closed fractures (16.9%) and 31 fracture dislocations (9.0%). There were 34 (9.9%) soft tissue lesions, followed by 14 amputations (4.1%), 14 strains (4.1%) and six hospitalizations for pyoarthritis (1.7%). (Figure 1) Regarding the body part injured, we found that 194 (58.4%) lesions affected the lower limbs and 138 (41.6%), the upper limbs. The occurrence of three or more lesions, featuring mul-

Table 1. Distribution of patients according to the trauma etiology.

Etiology	N	%	
Accident	Motorcycle accident	96	28,2
	Run over	48	14,1
	Automobile accident	39	11,5
	Fall	36	10,6
	Direct trauma	25	7,4
	Occupational accident	15	4,4
	Explosion	5	1,5
Violence	Perforation by gunshot (PG)	62	18,2
	Perforation by stab (PS)	10	2,9
	Physical assault	4	1,2

Salvador, 2008

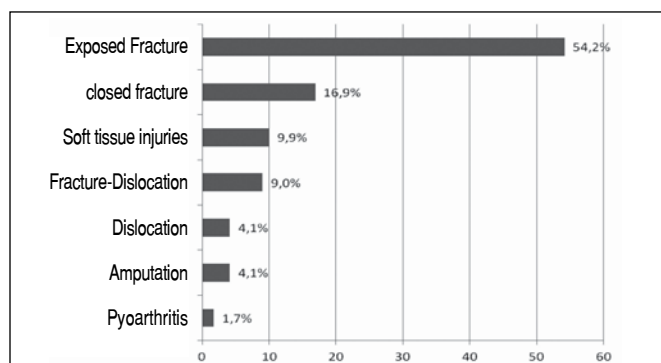


Figure 1. Distribution of patients according to diagnosis.

Salvador, 2008.

iple traumas, was found in 53 (15.5%) patients, the anatomical region most affected being the femur (15.5%), followed by hands (14.6%), forearm (12.9%) and tibia (12.8%). (Figure 2) The external fixator was the treatment of choice in 114 (24.4%) cases. One hundred and six (22.7%) patients received only surgical cleaning of the traumatized area at first, 78 (16.7%) underwent open reduction internal fixation with plate and 58 (12.4%) were subjected to the use of plastered splint. (Figure 3) Associated to skeletal muscle trauma 25.7% of patients presented other injuries, among which head trauma (30.3%) and vascular lesions (30.3%) stand out. The other injuries are related to abdominal wounds, such as hemorrhagic acute abdomen, chest trauma and spinal trauma. Of the 346 patients admitted in the period, only 16 (4.62%) developed complications during the hospitalization period. Among the complications, the most common, with six individuals, was severe wound infection requiring a new surgical approach, and secondly osteomyelitis with four cases, followed by pleural effusion, gas gangrene, broken Schanz pin, pulmonary thromboembolism, emergency tracheostomy and bone spicules of the stump, which required a different approach in case each. The occurrence of one death was reported in the

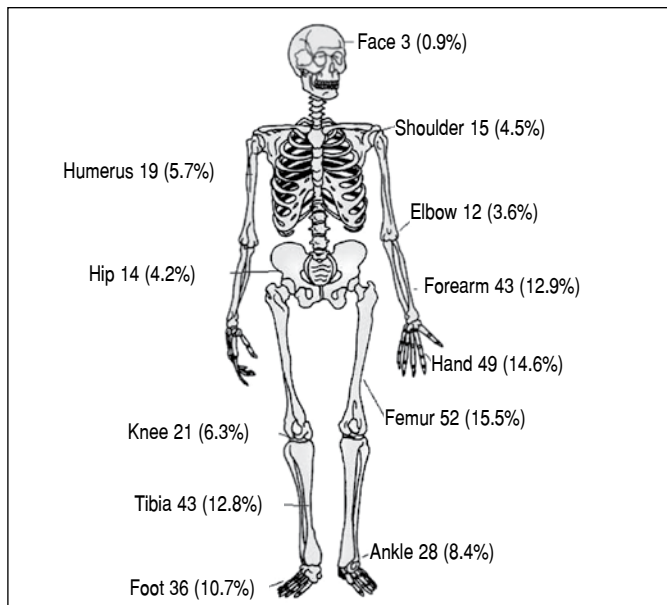


Figure 2. Distribution of lesions according to anatomical parts.

Salvador, 2008.

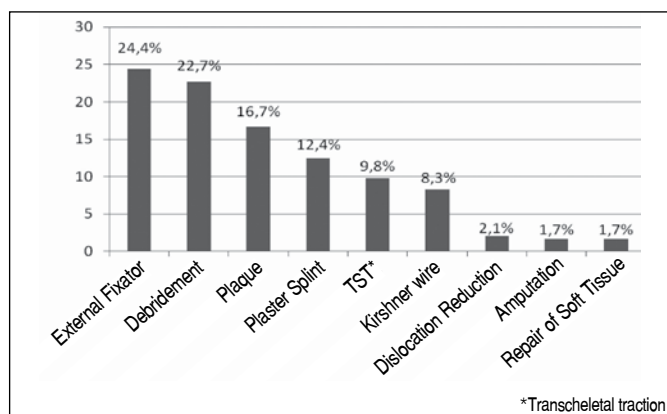


Figure 3. Distribution of patients according to treatment received.

Salvador, 2008.

nursing during the period analyzed. The majority of the patients (65.9%) were discharged and 33.8% of them were transferred to other hospital wards or other hospitals in the state of Bahia.

DISCUSSION

The clinical and epidemiological profile of patients hospitalized in the traumatology and orthopedics nursing of the State General Hospital during the period studied was formed by mostly young male individuals, victims of trauma due to accidents, especially those involving motorcycles and car run over. However, the most frequent violence-associated traumas were perforations by gunshot (PG) and perforation by stab (SW). The primary lesion presented by those individuals was fracture of the femur, with the mostly used treatment external fixator. The in-hospital complication that these individuals mostly faced was wound infection requiring another surgical approach. Almost all patients who were admitted were discharged, and only one death was recorded during this period.

The prevalence of male patients (89.6%) among the victims of injuries from external causes in this study approximates the data from other studies, ranging between 77.8 and 86.9%.^{7,9-12} These numbers can be explained by the higher frequency of men as cars and motorcycles drivers and the greater vulnerability of men towards urban violence. In Brazil more than 80% of the violent acts strike males, of which the younger ones are the main victims and perpetrators.^{6,12-15}

In this study 92.1% of hospital admissions due to violent acts were of males individuals and 61.8% were young adults (age 20 to 40). These numbers are in accordance with the study of Minayo and Deslandes,¹⁶ who reported that in Brazil, in the last 25 years, about 70% of all homicides were of teens and young men aged 10 to 39.

Regarding the origin of the patients, the distribution between the capital city inhabitants and countryside cities inhabitants was quite similar. The high number of patients from the countryside may suggest insufficient investment in hospitals far from the major urban centers, resulting in an increased demand in emergency rooms in the capital city which end up supporting these patients.

Similarly to the study by Santos et al.,⁶ traffic accidents were the leading cause of admissions, especially motorcycle accidents, since drivers of these vehicles do not rely on an outer structure to protect them, absorbing most of the impact energy and therefore are commonly thrown against the floor. Those victims suffer, besides the impact from the accident itself, also the impact against the ground, usually followed by sliding. Thus, these are likely victims of serious injury, and therefore need prompt hospitalization more frequently.² These data are directly related to the number of circulating motorcycles, a fact that is occurring in most cities of the country, given that these vehicles are increasingly gaining acceptance and approval by the population.¹²

The second leading cause of hospitalizations due to accidents was run overs. The pedestrian, with its relatively small mass compared to that of a motor vehicle, offers little resistance, absorbing the impact energy, which increases the morbidity and mortality rates for this group of victims.² The large number of injuries by firearms found in our study could be explained by the fact that the hospital is a referral institution for treating these lesions, relying, moreover, on a team of civilian and military police to help attending these events. The number of fractures caused by firearm projectiles dramatically increases every year. The World Health Organization estimated that from the 2.3 million violent deaths in the world occurred in 2000 involved firearms, many of them resulting in murders, suicides and deaths in armed conflicts.^{15,17}

Regarding the body part injured, the present study showed that in more than half of the victims (58.4%), lower limbs represent one of the most affected body parts, and fracture of the femur being the most common injury among patients. According to Minayo and Deslandes,¹⁸ fractures account for about 38% of hospitalizations for external causes. The incidence of fractures varies, as expected, from region to region, depending on the people's professional activity, the size of cities, among other variables. In this study the incidence of exposed fractures was 54.2%. It has been established that open fractures should be treated with debridement, fracture stabilization, antibiotics and

early coverage of soft tissue. However, there are some controversies regarding the best method for stabilizing a fracture.¹⁹ In a transversal study performed during the 36th Brazilian Congress of Orthopaedics and Traumatology, in order to identify the opinion of Brazilian orthopedists about their preferences for treatment of tibia open fractures in adults, the external fixator was appointed as the preferred method of fracture stabilization in 52.1% of Gustillo type II fractures, 74.4% in IIIA fractures, 88.6% in IIIB and 89% in IIIC.¹⁹

The high cost of implants, the lack of available equipment in an emergency situation, the technical difficulties and the degree of infection of traumatic wounds make the use of internal osteosynthesis limited at first. Thus, methods such as external fixation and immobilization are still widely used, with the advantage of being, in most cases, simple to apply and less traumatic to the already injured area, besides allowing to access the wound in case of an external fixator.^{17,19,20} The exposed fractures by involving high energy to occur, with concomitant injury of the soft parts, present a great risk of infection. In this study the most common complication was a severe infection of the wound requiring another surgical approach.

Studies have shown that deaths by accidents and violence occur with high frequency in adolescents and young adults.^{6,15} The mortality rate seen in the period studied was very small (0.3%), but it must not be forgotten the victims who die before hospitalization.

The high number of transfers detected in this study is explained by the fact that this is an emergency hospital with a huge demand by trauma patients. When a second surgical procedure is necessary, most of hospitalized patients are transferred to other hospitals, freeing up beds for acute conditions. This fact highlights the role of regulation centers that have an important role in SUS allowing better planning of the health network for corrections inequalities in the use of public services in order to reach a more equitable system.

CONCLUSION

The results of this investigation illustrate the profile of trauma patients victims hospitalized in the trauma and orthopedics nursing of a referral hospital in the state of Bahia, enabling better planning and organization of care for these patients. The profile made in this study corroborates with research results from other institutions in the country, which may contribute to the targeting of public policies for the accidents and violence prevention.

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