

## EPIDEMIOLOGICAL PROFILE OF POLYTENSUMATED PATIENTS SERVED AT THE MUNICIPAL HOSPITAL OF IMPERATRIZ-MA IN YEAR 2017

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### ABSTRACT

This is a research whose subject deals with the Epidemiological Profile of Polytraumatized Patients. The general objective is to investigate the epidemiological profile of polytrauma patients treated at the Municipal Hospital of Imperatriz - MA from January to December 2017. It is a descriptive-exploratory research with a quantitative approach. It is a statistical survey for documentary analysis of the sources of data collection in medical records filled by health professionals, in the care of victims with polytrauma. The research was developed in the HMI, through information contained in the database, derived from the patient records of polytrauma patients. Data were analyzed using the statistical package SPSS version 23, adopting a significance level of 5% ( $p < 0.05$ ). A total of 370 patients were victims of polytrauma, of which 78.1% corresponded predominantly to males, while females had a quantitative of 21.9%. It was verified that the months of January, February and July present the highest incidence of traffic accidents during the months of 2017. When analyzed the type of trauma that was most prominent in the research was in the cephalic region corresponding to the highest percentage 32.1%. It was evidenced that the affected limbs that predominated in the research were: the face with the quantitative of 22.2% and the skull 21.3%. Therefore, it is essential and immediate adoption of socio-educational measures to ensure the proper behavior of individuals in traffic, aiming at reducing and preventing future accidents. It is concluded that the results can stimulate and subsidize future research in this area, both for academics and professionals in the field.

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## INTRODUCTION

Multi-traumatism in Brazil has become an increasingly common problem that has been increasing mortality statistics, affecting the different genders and ages, trauma is the main cause of death in the population under 40 years old, being the most responsible for the deaths in young adults in Brazil, when the individual does not lead to death, the lesions may leave permanent sequelae in the patient, which can lead to psychological and social problems (Guareschi *et al.*, 2015). In this way the present research has as thematic research the

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thematic polytraumatized patients attended at the Municipal Hospital of Imperatriz - MA. The study was limited to verify the epidemiological profile of polytrauma patients treated at HMI, through a survey in the database of this hospital from January to December 2017. To characterize these patients, it was necessary to describe the sociodemographic characteristics of the patients to quantify the patients seen in the HMI and to identify the clinical aspects of the polytrauma patients. A polytraumatized patient is understood to have lesions that affect more than one system of the body secondary to some type of trauma. In such cases, the primary care assessment is performed in order to quickly identify life-threatening conditions, initiate resuscitation and provide rapid transportation to the reference unit (MACEDO *et al.*, 2015).

Souza, Santos & Pereira (2013) discuss that the main causes of polytrauma patients are from external situations. Among them, one of the main causes is physical aggression, auto accidents and other forms of urban violence. third cause of death in Brazil, which corresponds to 12.5% of the total deaths in all Brazilian territory. The research is justified by the need to present information about the epidemiological characteristics of polytrauma patients treated at the Municipal Hospital of Imperatriz - MA, so that it can contribute to the sensitization of nursing professionals and academics in the area, in order to know and proceed forward to the procedures and assistance of cases of polytrauma victims, from a quick and concise evaluation to the definition of a treatment, thus contributing to the reduction of the mortality rate, given the complexity of individuals suffering from multiple trauma. In view of the above, the following problem emerged: What is the Epidemiological Profile of Politraumatized Patients Served at the Municipal Hospital of Imperatriz - MA from January 2017 to December 2017? In order to answer this guiding question, the following general objective was elaborated: To investigate the epidemiological profile of the polytrauma patients attended at the Municipal Hospital of Imperatriz - from January 2017 to December 2017.

## MATERIALS AND METHODS

This is a descriptive-exploratory research with a quantitative approach. It is a statistical survey for documentary analysis of the sources of data collection in medical records filled by health professionals, in the care of victims with polytrauma. For Gil (2006), documentary research uses materials that have not yet received an analytical treatment, or that can still be re-elaborated according to the research objectives. In this category are the documents kept in public agencies and private institutions. As Lakatos (2007) are combined exploratory-descriptive studies, those that aim to describe a certain phenomenon completely, as, for example, the study of a case for which empirical and theoretical analyzes are performed. Both quantitative and qualitative descriptions can be found as well as the accumulation of detailed information as well as those obtained through participant observation. According to Minayo (2009), quantitative methods aim to show observable data, indicators and trends, or produce abstract theoretical models with high practical applicability. Their investigations show the regularity of the phenomena. Lima (2008) adds that the approach to research is quantitative, since it has field research development, in which data are collected for the accomplishment of statistical data representative of the population. The sample of this research was composed of all cases of patients suffering from polytrauma at the HMI in 2017. The data collected came from the HMI database. It is emphasized that the database is fed by the information coming from medical records. However, the researchers did not have access to the manipulation of medical records and personal information and identification as the name and address of the patients. Excluded from an data analysis prior to and after the year 2017. Thus, the research was limited only in cases of multiple trauma of the year 2017 assisted by the HMI team made available by the database. According to data provided by the database of the HMI, the number of three hundred and seventy (370) patients suffering from polytrauma was treated in the hospital unit in 2007. The data were analyzed with the aid of the statistical package SPSS version 23, adopting a level of significance of 5% ( $p < 0.05$ ). Patient characterization was performed using the absolute (n), relative (%) and cumulative

frequency values in cases where there were multiple responses for the same patient. The descriptive presentation of these values was presented in the form of tables and figures (pie charts). The comparison of the outcome with the group profile was done using the Pearson Chi-square test. After the statistical treatment was carried out, the necessary inferences were made along the literature based on the concepts of thematic analysis proposed by Minayo. According to Minayo (2009), the Content Thematic Analysis unfolds in the stages of pre-analysis, exploration of the material or codification and treatment of the obtained results / interpretation. The pre-analysis stage comprises floating reading, constitution of the corpus, formulation and reformulation of hypotheses or assumptions. The floating reading requires the researcher to have direct and intense contact with the field material, in which the relation between the initial hypotheses or assumptions, the emerging hypotheses and the theories related to the subject may arise.

## RESULTS AND DISCUSSION

**Socio-demographic characteristics of polytrauma patients seen at HMI:** In this study, the results show the social, demographic and clinical aspects of the patients, the quantitative and distribution of polytrauma patients attended during the year 2017, at the Municipal Hospital of Imperatriz - MA, popularly known as "Socorrão". Regarding sex, 370 patients were victims of polytraumatism, of which 289 (78.1%) were male, while females had a quantitative of 81 (21.9%) cases (Table 1). According to Gomes *et al.*, (2017), males are the ones most involved in traumatic events. This prevalence can occur due to cultural, biological and social aspects that lead to violent behavior, making it more vulnerable to external causes. Research indicates that the female sex was mainly due to clinical causes. And, the occurrences occurred to a greater extent, at the end of the week, due to the relation with festive events, consumption of alcoholic drinks and reduction of the inspection. Sousa Filho (2016) points out that when gender is related to age it is observed that trauma is more prevalent in males in almost all age groups. We sought to verify the number of patients who were victims of polytrauma from the municipality of Imperatriz, in which the hospital was inserted, and from victims who had suffered polytrauma in other localities but who were brought to receive assistance in the HMI.

The majority of the patients did not live in the city of the hospital, corresponding to 239 (64.6%) and 131 (35.5%) of the patients residing in the city of Imperatriz-MA. Of these 330 patients were naturally (89.2%) from the State of Maranhão, 15 (4.1%) from the State of Tocantins, 09 (2.4%) from Goiás State, 07 (1.9%), of the State of Pará, 02 (0.5%) of the State of São Paulo, the states of Acre, Amazonas, Federal District, Minas Gerais, Pernambuco, Piauí and Rio Grande do Sul correspond to the same percentage (0.5%) of patients seen in the HMI (Table 1). From the results above, it is noticed that the HMI becomes a health facility, which, although municipal, offers support of complexity care and even reference for trauma assistance in other regions of Maranhão and other states, and it is up to the managers to have an attention directed to the supply of human and material resources satisfying the demand of the trauma received in the hospital. According to Administrative Rule No. 354 of March 10, 2014, it is necessary to have good practices for the organization and operation of Emergency and Emergency Services, since these

services are of paramount importance for the functioning of our health systems, this resolution defines desired qualities that should bring together the organization and operation of U / E services (BRASIL, 2014). Regarding the outcome of the patients treated in the HMI, 326 (88.1%) had improved discharge, 11 (3.0%) stay per recovery, 03 (0.8%) discharge due to evasion and with regard to the occurrence of victims with death, the data revealed a percentage of 30 (8.1%) (Table 1). The percentage of death, although lower when compared to the improved weights, shows that the estimates of death are always frequent in polytrauma situations, showing that every 12 patients approximately 1 becomes a victim of polytrauma. The statistics of the Ministry of Health provide data on deaths from external causes, these deaths are those that result from accidents (including transportation accidents), assaults, suicides, etc. The last annual assessment available through this channel for the number of fatal earth-transport accident victims is 37,306 in 2015 (BRASIL, 2014). The majority of participants (75.1%, 278) had high  $\leq 10$  days, from 11 to 20 days (17.0%, 63) and from 21 to 53 days (7.8%, 29). The aforementioned results will be described respectively in table 1 and in chart 1 given below.

**Table 1. Description of the demographic profile and length of hospitalization, according to information contained in the database of patients suffering from polytrauma at the HMI during the year 2017, in the municipality of Imperatriz – MA**

	N	%
Age group		
Teenager	34	9,2
Adult	281	75,9
Child	19	5,1
Old man	36	9,7
Sex		
Female	81	21,9
Male	289	78,1
Same hospital city		
No	239	64,6
Yes	131	35,4
Length of hospital stay		
$\leq 10$ days	278	75,1
11 to 20 days	63	17,0
21 to 53 days	29	7,8
Outcome		
High improved	326	88,1
High for evasion	11	3,0
Permanence by rec.	3	0,8
Death	30	8,1
State		
AC	1	0,3
AM	1	0,3
DF	1	0,3
GO	9	2,4
MA	330	89,2
MG	1	0,3
PA	7	1,9
PE	1	0,3
PI	1	0,3
RS	1	0,3
SP	2	0,5
TO	15	4,1

Source: Research Data, (2018).

The frequencies lower than 2% were classified in others, corresponding to the quantitative of (30.9%), were cities, municipalities that appeared once or twice, thus leaving the graphic very full and difficult to interpret. The variables age, sex, residence of the same city of the hospital and time of hospitalization were collected from the HMI Database, when related through the Chi-square test with the variables high improved, high by evasion, permanence by recovery and death

test revealed no significant differences ( $p < 0.05$ ). However, it can be seen in a descriptive way that the adult patients had a higher discharge number (90.9) and a higher number of deaths (76.7). In relation to sex, it was verified that the male sex has the highest number of cases due to improved discharge (78.5) and death (76.7). The majority of the patients came from other locations that did not belong to the HMI, where they received assistance due to improved discharge (65.0), discharge due to avoidance (81.8), recovery stay (66.7), and death (53, 3). The highest number of cases with improved discharge (73.3), discharge due to avoidance (90.9), recovery stay (100.0) and death (86.7) respectively had a hospital stay  $\leq 10$  days. These diseases can contribute to the increase of costs for the public health service, since this financial impact can be measured in a direct way, by the increase in expenses incurred with hospital admissions, ICU care and the high hospital stay rate. These reflexes also extend to social security, since most of the victims present temporary or permanent sequelae and thus limiting productivity at work (PRAÇA, 2015). The costs of trauma, in terms of possible loss of years of productive life, exceed both cancer and cardiovascular disease (PADOVINIL, SILVA & TANAKA, 2014).

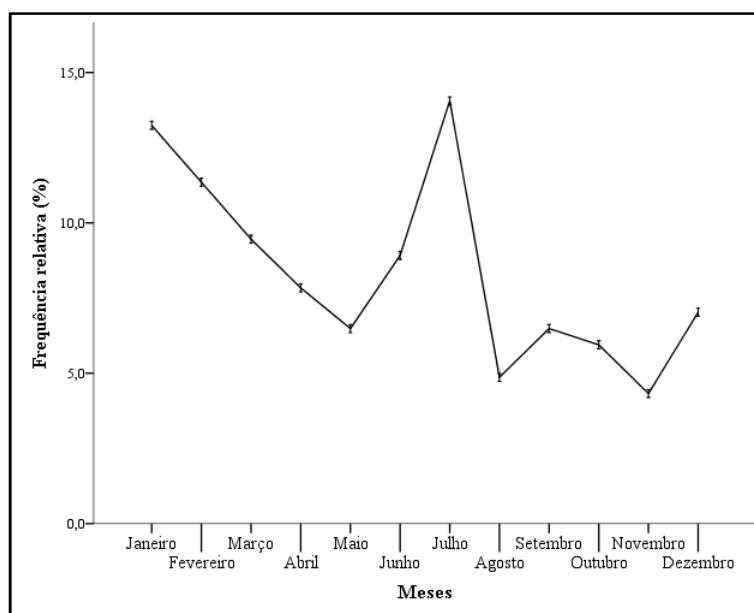
**Quantitative and distribution of polytrauma patients attended at HMI during the year 2017:** By analysis of the results, it was verified that the months of January, February and July present the highest number of cases during the months of 2017. Corresponding the quantitative: January 49 (13.2%); February 42 (11.4%); March 35 (9.5%); April 29 (7.8%); May 24 (6.5%); June 33 (8.9%); July 52 (14.1%); August 18 (4.9%); September 24 (6.5%); October 22 (5.9%); November 16 (4.3%) and December 26 (7.0%) (Graph 2). In order to better deepen the data collected, the incidence of patients from the city of Imperatriz and patients from other localities was related. The following values were obtained according to the incidence of cases during the months of patients from the same city of the hospital. In January, 22 (9.2%) patients were living in the city and 27 (20.6%) were other locations; It will be described the values that were collected respectively from the other months that there were approximately the same amount of accidents in both the city of Imperatriz and other cities and municipalities. And in continuity, in July 21 (16%) reside in the city and 31 (13%) of the cases of other places; 16 (12.2%) of the patients in the city of Imperatriz and not with the number of 18 (7.9%) and in May 13 (9.9%) residents of the city, and other percentage of 11 (4.6%), the remaining months will not be described in Chart 3, shortly thereafter. In view of the result, it can be seen that the months of January, February and July were the months with the highest incidence of accidents during the year 2017, this shows that it is months that correspond to the holiday period in January, February the festivities of the carnival for being an extended holiday and July for being a typical summer month with festivities on the beaches of the region. In addition, the month of July marks the anniversary of the city of Imperatriz-MA, where the flow of visitors from other locations increases, increasing the number of car traffic. requires more vigilance on the part of traffic guards regarding the supervision of alcoholic drivers (Graph 2 / Chart 3). Unfortunately, Brazil is still at an early stage of recognizing the behavior of drunk driving as a serious public health problem. In a complementary way, a study was carried out to estimate the ethyl consumption in drivers of vehicles that were stopped, in public traffic lanes with higher concentrations of bars, restaurants and nightclubs in Minas Gerais-BH, and the sample revealed that 38% of the

**Table 2.** Comparison of the group profile with the outcome, according to information contained in the database of patients suffering from polytrauma at the HMI during the year 2017, in the municipality of Imperatriz - MA

	Desfecho n (%)				p*
	Alta melhorada	Alta por evasão	Permanência por rec.	Óbito	
<b>Faixa etária</b>					
Adolescente	28 (8,6)	1 (9,1)	1 (33,3)	4 (13,3)	0,64
Adulto	246 (75,5)	10 (90,9)	2 (66,7)	23 (76,7)	
Criança	19 (5,8)	0 (0,0)	0 (0,0)	0 (0,0)	
Idoso	33 (10,1)	0 (0,0)	0 (0,0)	3 (10,0)	
<b>Sexo</b>					
Feminino	70 (21,5)	3 (27,3)	1 (33,3)	7 (23,3)	0,92
Masculino	256 (78,5)	8 (72,7)	2 (66,7)	23 (76,7)	
<b>Mesma cidade do hospital</b>					
Não	212 (65,0)	9 (81,8)	2 (66,7)	16 (53,3)	0,37
Sim	114 (35,0)	2 (18,2)	1 (33,3)	14 (46,7)	
<b>Tempo de internação</b>					
≤ 10 dias	239 (73,3)	10 (90,9)	3 (100,0)	26 (86,7)	0,32
11 a 20 dias	59 (18,1)	0 (0,0)	0 (0,0)	4 (13,3)	
21 a 53 dias	28 (8,6)	1 (9,1)	0 (0,0)	0 (0,0)	

\*Qui-quadrado

Source: Research Data, (2018).



Source: Research Data, (2018).

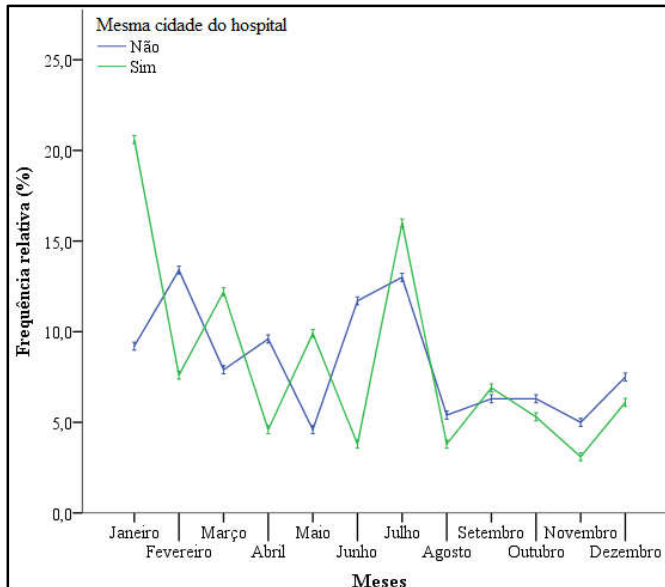
**Graph 2.** Incidence of cases over the months, according to information contained in the database of patients suffering from polytrauma at the HMI during the year 2017, in the municipality of Imperatriz - MA

drivers had some traces of alcohol in the exhaled air and 19.6% had alcohol levels above the legal limits (ALMEIDA, 2014). According to Novo (2015), it was verified in the Emergency Service of the Local Health Unit of the Northeast that the months of May, June, July and August presented the highest number of entry records in SUS by Via Verde Trauma (VVT), the only 2, 3 or 4 access records. Next, in graph 2, the incidence of polytrauma cases during the months of 2017 will be described in patients who received care in the HMI.

Figure 3 will show the number of cases that were attended at the HMI during the months of 2017, from patients from Imperatriz - MA or from other localities, cities or municipalities, who were treated at the hospital.

**Clinical aspects of polytrauma patients attended at HMI:** The research proposed to identify the polytrauma types of the 370 victims, so that the same patient could have multiple responses, several types of trauma and they were counted each time they appeared in the sample.

When the type of polytrauma was described, it was observed that the cephalic region had a greater predominance in polytrauma type, corresponding to 162 (32.1%), facial region 112 (22.2%), upper limb region 94 (18, 6%), lower limb region 77 (15.2%), thoracic region 24 (4.8%), unspecified regions 17 (3.4%), abdominal region 9 (1.8%), spinal cord region 7 (1.4%) and frequencies lower than 2% were classified in others, corresponding to 3 (0.6%) (Table 4).



Source: Research Data, (2018).

**Graph 3. Incidence of cases during the months of patients from the same city of the hospital, according to information contained in the database of patients suffering from polytrauma at the HMI during the year 2017, in the municipality of Imperatriz – MA**

When analyzed, the most prevalent type of polytrauma in the study was the cephalic region, corresponding to the highest percentage (32.1%), followed by the facial region with a quantitative of 22.2% (Table 4), which differs totally from Rezende In this study, the most affected regions with the highest frequencies are the lower limbs (LLM) with 1,055 (36%) victims, followed by upper limbs with 651 (23%), compared to 533 (18%), Cranio-Brain Trauma (TBI) 367 (13%) of the cases of polytrauma victims. Padovini, Silva & Tanaka (2014), reported that TBI was the most common type of lesion (79.3%), followed by chest trauma (34.8%), face (28.8%) and lower limbs (20.2%) of the most affected traumas. Table 4 below shows respectively the description of the regions most affected.

**Table 4. Description of the affected regions, according to information contained in the database of patients suffering from polytrauma at the HMI during the year 2017, in the municipality of Imperatriz – MA**

Affected Regions	n*	%
Abdominal region	9	1,8
Cranioencephalic region	162	32,1
Region of lower limbs	77	15,2
Region of the upper limbs	94	18,6
Facial region	112	22,2
Spinal cord region	7	1,4
Thoracic region	24	4,8
Not specified	17	3,4
Others	3	0,6

Source: Research Data, (2018).

Regarding the descriptions of the most affected members, the face corresponded to the highest of the percentages, corresponding to 124 (22.2%), then skull 119 (21.3%), unspecified causes 83 (14.8%), (MSD) 42 (7.5%), right upper limb (MSD) 40 (7.2%), lower left limb 39 (7.0%), thorax 33 (5.9%), lower limb (30.4%), right 30 (5.4), vertebral column 25 (4.5%), abdomen 14 (2.5%) and corresponding amputations occurred in 10 (1.8%) cases (Table 4). Thus, it is evident that the affected limbs that predominated in the research were: the face with the quantitative of 124 (22.2%) in second the skull 119 (21.3) and in the third the members that were not specified 83 (14, 8%). New (2015) shows that 66.1% (41) had lesions on the skull and face; 59.7% (37) in the column; 50% (31) in the thorax; 40.3% (25) in the abdomen, 41.9% (26) in the upper limbs and 37.1% (23) in the lower limbs. Table 5 below shows the descriptions as to the type of affected limb of the patients that were attended according to the information contained in the HMI database from the patient records with polytrauma in the year 2017.

**Table 5. Description of the affected limb, according to information contained in the database of patients suffering from polytrauma at the HMI during the year 2017, in the municipality of Imperatriz – MA**

Qual membro afetado	n*	%
Amputações	10	1,8
Abdômen	14	2,5
Coluna vertebral	25	4,5
Crânio	119	21,3
Face	124	22,2
MID	30	5,4
MIE	39	7,0
MSD	40	7,2
MSE	42	7,5
Não especificado	83	14,8
Tórax	33	5,9

\*Frequência cumulativa

Source: Research Data, (2018).

## Conclusion

The accomplishment of this research contributed to reach all the proposed objectives, in which the epidemiological profile of polytraumatized patients attending the HMI in 2017 was verified, the sociodemographic characteristics, quantitative investigation of patients and identification of the clinical aspects of the victims. A total of 370 patients were victims of polytrauma, of which 78.1% corresponded predominantly to males, while females had a quantitative of 21.9%. The percentage of death, although lower when compared to the improved elevations, shows that estimates of deaths are always frequent in polytrauma situations, showing that every 12 patients approximately 1 becomes a victim of traffic accidents. In view of the result, it can be seen that the months of January, February and July were the months with the highest incidence of accidents during the year 2017. When describing the regions most affected, it was observed that the cranioencephalic region has a greater predominance in type of polytrauma, then the facial region. When analyzing the traumas, it was found that the causes of auto accidents correspond to the highest percentage of polytraumatized victims, equivalent to 31.5% of the cases, and motorcycle accidents continued with 29.2%. It should be emphasized that professionals should be able and able to provide care to polytraumatized victims, both pre-hospital and in-hospital. Nurses must effectively attend inpatients, avoiding evasions and deaths of victims. For

patients who suffered from limb amputations, perform a quality care provided not only by the health team, but also by the social security system. This research contributed to the knowledge of the population involved and the circumstances in which these accidents occurred more frequently. It was possible to detect that some of these factors that contributed to traffic accidents, such as greater transport flows in festive and cultural events City. These factors constitute one of the main causes of this type of aggravation, and can be modified through preventive interventions developed by health professionals, making the population aware through lectures that alcohol and driving do not combine, not only in relation to alcohol more than driving and piloting motorcycles with awareness. Greater enforcement of traffic guards to prevent undue speeding up and better lighting and traffic signs on the streets. Therefore, it is essential and immediate adoption of socio-educational measures to ensure the proper behavior of individuals in traffic, aiming at reducing and preventing future accidents. It is hoped that the results can stimulate and subsidize future research in this area, both for academics and professionals in the field. Since the continuation of studies that approach this theme will contribute to the formulation of coping strategies.

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