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## RESEARCH

## CHARACTERIZATION OF TRAUMATIC EVENTS ATTENDED BY THE FIRE DEPARTMENT OF THE CITY OF ITAPIRANGA - SC

CARACTERIZAÇÃO DAS OCORRÊNCIAS TRAUMÁTICAS ATENDIDAS PELO CORPO DE BOMBEIROS DO MUNICÍPIO DE ITAPIRANGA - SC

CARACTERIZACIÓN DE LOS EVENTOS TRAUMÁTICOS ASISTIDOS POR LOS BOMBEROS DE LA CIUDAD DE ITAPIRANGA - SC

Diâna Simone Welter<sup>1</sup>, Jucimar Frigo<sup>2</sup>, Grasiele Busnello<sup>3</sup>, Marta Kolhs<sup>4</sup>

## ABSTRACT

**Objective:** To characterize the traumatic events attended by firefighters corporation of the city of Itapiranga - SC.**Method:** Quantitative research, documentary, where retrospective analyzed 202 records of prehospital care described in this study as roadkill, collisions, falls from bike during the year 2010. To collect data, we used a form containing personal data, characteristics of injury and accident type. **Results:** 61% of accidents were caused by motorcycle, 25% of visits occurred between 19:59 to 15h, 70% of victims were male, 48% of victims were aged between 18 and 26 years, 12% of visits to the victims had ethyl odor. **Conclusion:** The young adult males are the primary victims involved in car accidents. This work will contribute in building strategies in public policy and health services corroborating the reduction of traumatic events. **Descriptors:** Traffic accident, Population, Fire department.

## RESUMO

**Objetivo:** Caracterizar as ocorrências traumáticas atendidas pela corporação dos bombeiros do município de Itapiranga - SC. **Método:** Pesquisa quantitativa, documental, retrospectiva onde se analisou 202 fichas de atendimento pré-hospitalar descritas neste estudo como atropelamentos, colisões, quedas de moto durante o ano de 2010. Para a coleta de dados utilizou-se um formulário contendo dados pessoais, características dos ferimentos e tipo de acidente. **Resultados:** 61% dos acidentes foram causados por motocicleta; 25% dos atendimentos ocorreram entre as 15h às 19h59min; 70% das vítimas eram do sexo masculino; 48% das vítimas tinham idade entre 18 a 26 anos; 12% dos atendimentos às vítimas apresentavam odor etílico. **Conclusão:** Os adultos jovens do sexo masculino são as principais vítimas envolvidas nos acidentes de trânsito. Este trabalho contribuirá na construção de estratégias nas políticas públicas e nos serviços de saúde corroborando na diminuição de ocorrências traumáticas. **Descriptores:** Acidente de trânsito, População, Corpo de bombeiros.

## RESUMEN

**Objetivo:** caracterizar los eventos traumáticos atendidos por la corporación de bomberos de la ciudad de Itapiranga SC. **Método:** fue escogida la investigación cuantitativa, documental, donde retrospectivo analizó 202 registros de atención prehospitalaria se describe en este estudio como pisoteo, colisión, por debajo de motocicleta en 2010. Para recopilar los datos, se utilizó un formulario que contiene los datos personales, las características de la lesión y el tipo de accidente. **Resultados:** 61% de los accidentes fueron causados por motocicletas; 25% de las visitas se produjeron entre 15h a 19:59; 70% de las víctimas de sexo masculino; 48% de las víctimas de entre 18 y 26 años de edad; 12% de los casos hay olor a éter. **Conclusión:** los varones adultos jóvenes son las principales víctimas involucradas en accidentes de tráfico. Este trabajo contribuirá en la construcción de políticas públicas de salud. **Descriptores:** Accidente de tráfico, Población, Departamento de bomberos.

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## INTRODUCTION

Traffic accidents nowadays express a major impact on public health and generate high costs for society, but for a long time it stopped being seen as a serious problem. They are being recorded since the dawn of humanity, but only with the Industrial Revolution these data have been given greater visibility with the increase of self-propelled vehicles.<sup>1</sup>

The magnitude achieved by traffic accidents is important for public health, because in addition to their frequency, these events affect a young population and are considered theoretically predictable and subject to caution.

With the development and fast growth of towns, the vehicles have been given great importance to the displacement of people. Scientific advances have contributed to the development of means of transportation more agile and inexpensive, such as motorcycle, for example. This made the lives of those who need agility for a lower cost even easier, but on the other hand it has contributed to the increase in the number of traffic accidents.

In Santa Catarina, traffic accidents involving victims have become increasingly common. Data from DETRAN/SC reveal that in 2008, on federal highways, there were 12,727 accidents with 8,316 injured victims and 543 deaths. Data from the Federal Highway Police reveal that in 2008, these figures were 14,627 accidents, 10,128 injured victims and 660 fatalities, also on federal highways in the state.<sup>2</sup>

Statistics like these show how important it is to come up with a plan since there are an increased rate of accidents; there must be an adequate provision of services and resource materials, equipment and human resources to meet the victims. Therefore, it is essential to research, analyze, plan and execute public policies in an attempt to reduce these rates.

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According to the Brazilian Institute of Geography (IBGE)<sup>3</sup>, the city of Itapiranga, located in the extreme west of Santa Catarina, has a population of 15,346 inhabitants. To DETRAN-SC<sup>4</sup> in December of the same year, the fleet of vehicles was 8,603. Therefore, the average vehicle is approximately 50 to every 100 people.

To determine the situation of the community where we operate and identify what is missing, we need statistics. We associate epidemiological data to identify and describe the health status of our community, allowing strategize for prevention<sup>5</sup>. Statistical data on health may be used as a tool for planning, execution and evaluation of the activities developed by the health care team in partnership with institutions which are responsible for the subject here exposed.

By knowing the profile of morbidity and mortality in the community, we plan and restructure our public policies, basing them on education and health prevention. All these actions will have an impact in society and can occur in the social, cultural or political scenario.

A person victimized by traffic, as prescribed by the National Policy for Emergencies, should be assisted initially by prehospital care and then sent to emergency services so that it can maintain and restore their physical integrity and functionality. Therefore, we emphasize the importance of rehabilitation, because it is necessary to restore or redevelop functional abilities that were compromised as a result of the accident.

Based on the incidence of traumatic accidents in society, its characterization and risk factors, prehospital teams may plan their actions more effectively, using equipment, protocols (regulations) and facilities that best fit this perspective.

In this context, the goal of this study was

to describe the profile of the victims of traffic accidents in prehospital care and the characterization of traumatic events attended by the fire department of the city of Itapiranga - SC.

## METHODOLOGY

The method for this study was classified as a sectional, descriptive and exploratory research, with quantitative approach. We conducted a retrospective and documental study with all records concerning prehospital care. They were filled up by the Fire Department of Itapiranga - SC. According to information obtained from the fire department, from January 1<sup>st</sup> to December 31<sup>th</sup> 2010, the APH held 947 consultations. It was used as inclusion criteria in the selection of cards: attendance of traffic accidents, pedestrian accidents, collisions, falls from bike and rollovers.

The data collected from the medical records were: type of traffic accident, time of occurrence, victim's age, gender, day of the week, type of injury and whether the victim presented odor ethyl or behavioral disorder that could be associated with the use of other drugs.

We observed the rules of Resolution No. 196/96 of the National Health Council of the MS which rules research involving human subjects. The research project was approved by the Research Ethics Committee (REC) of the State University of Santa Catarina, under protocol number 198/2010.

## DISCUSSION AND RESULTS

Based on the results achieved through field research conducted with all the medical records of APH in the year 2010 with the Firefighters of Itapiranga - SC it was identified 947 (100%) visits in the area of APH, among which 155 (21%) records were of traffic accidents involving 202 victims attended.

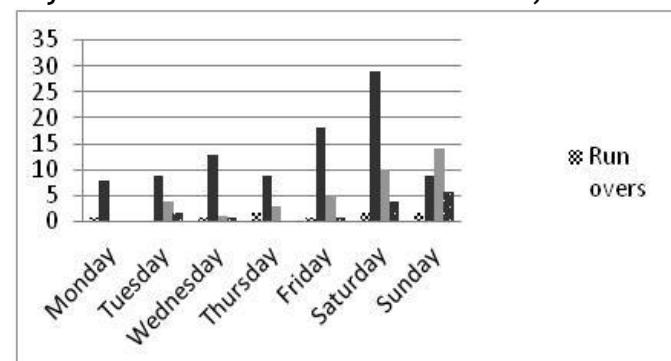
In this study, among the variables found R. pesq.: cuid. fundam. online 2013. abr./jun. 5(2):3620-25

concerning the types of accidents, falls with motorcycles had the highest incidence (61%) among the cases; followed by collisions (24%); rollover (9%) and trampling (6%).

Traffic accidents involving motorcycle falls have been increasing over the years due to the increase of the fleet of this type of vehicle on public roads; this was also confirmed in this study.<sup>1</sup>

Figure 1 shows accidents ranked according to the day of week of occurrence. The highest incidence of accidents took place on Saturday with 29 falls with motorcycles; 09 collisions, 04 overturns and 02 pedestrian accidents. Fridays come next with 18 falls with motorcycles, 05 collisions, 01 overturn and 01 pedestrian accident. Sundays with 09 falls with motorcycles, 14 collisions and 06 overturns and 02 pedestrian accidents.

**Graphic 1: Types of accidents according to the day of the week. Source: The authors, 2011.**



Data revealed in this study confirm those cited in the bibliography, which describes that the highest incidence of accidents occur on weekends and Friday nights, due to the use of alcohol, travels and increased number of motorists on public roads.<sup>5</sup>

As for the time of occurrence met, we can see that it has prevailed the period between 3:00pm to 7:59 pm (25%); from 10:00am to 2:59pm (18%); from 08:00pm to 11:59pm (16%). It is noteworthy that this information was not filled by the team that attended the event in 23% of medical records.

It was evident that the occurrences have

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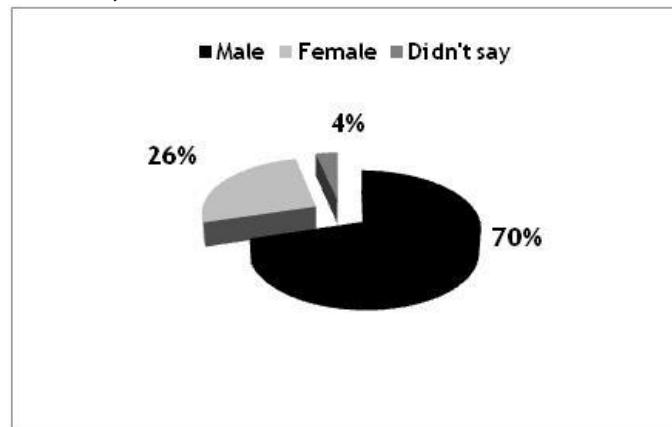
higher incidence in the evening, since the dark can decrease the driver's visibility and still because there's an increased flow of vehicles in this period.<sup>1</sup>

Regarding the victim's gender, we can see that the falls of motorcycles had a higher incidence with 81 male victims and 36 female victims. As for collisions, we see 36 male victims and 12 female victims.

Regarding the driver, there's a higher number of male drivers on public roads, but there is a steady increase of women in driving, due to female independence and its introduction into the labor market.<sup>5</sup>

Regarding the victims' gender, we can see in chart 2 that it is mostly made up of males (70%) compared to the women involved in accidents (26%).

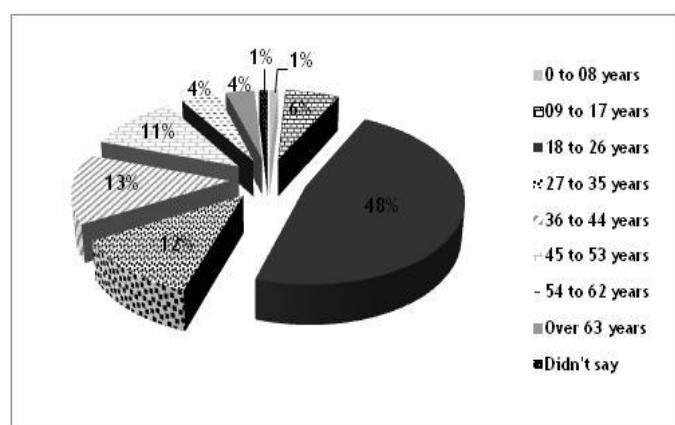
**Graphic 2: Gender of victims met. Source:** The authors, 2011.



The increased number of women involved in traffic accidents is justified by the greater presence of women in the productive sectors of society, requiring a means of transportation to take them where they want.<sup>5</sup>

With respect to age, victims are characterized by being mostly youth and young adults, where the highest incidence of age attended was 18 to 26 (48%) and 36-44 years (13%), as shown in chart 3.

**Graphic 3: Age of victims met. Source:** The authors, 2011.



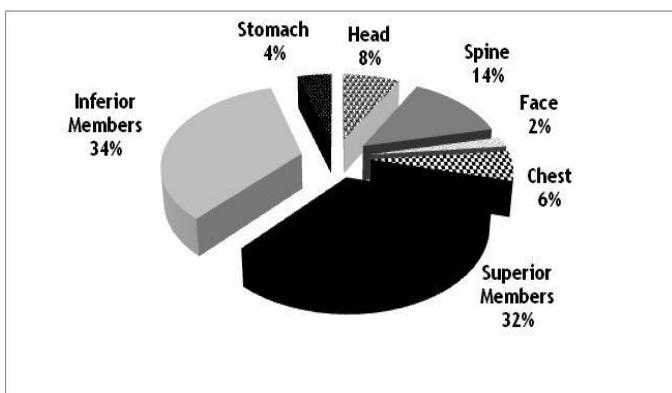
According to Bortolotti<sup>1</sup>, the age groups most affected are precisely those considered economically active and productive, generating a huge drop or loss of productivity in society.

The study also showed that in 12% of the cases, the victims who were involved in accidents had an ether odor. Even with the "Lei Seca", the data still show a considerable percentage of victims in traffic that used alcohol before the accident. This number is still high due to the failure in supervision and lack of awareness by the drivers.<sup>5</sup>

All victims are sent, according to their specific need, to hospital care. In this study, the victims sent totaled 92%, while only 8% of them did not need to conduct specialized care. All victims of traffic accidents require specialized care and appropriate monitoring. It is vital to go through hospital care after trauma by accident, as there is a risk of secondary injuries that may occur after 24 hours of initial care.<sup>7</sup>

The most commonly found Injuries in APH, figure 4, are the lower limbs (34%) and upper limbs (32%), which had a higher incidence of injury blunt cut, justified by the high rate of motorcycle accidents where the victim does not have material protection from the vehicle to avoid injuries.<sup>8</sup>

**Graphic 4: Points of injuries. Source:** The authors, 2011.



In this study, we were worried about the victims of head injuries (8%). It is known that traumatic brain injury is an injury caused by trauma in the region of the brain, which can be a serious injury that requires urgent care, vital for the victim.<sup>8</sup>

Regarding victims with column injury (14%), the same author states that this lesion may be a transient concussion or even a complete transection of the spinal cord, which may result in sensory loss or even the motor paralysis of the victim.

Regarding the distribution of fractures in the accident, we can say that the lower limbs (67%) had the highest rate of open fractures, followed by upper limbs (33%). As for fractures, there was a higher rate of upper limbs (41%), followed by lower limbs (33%). Head injuries showed up in 13% of the cases of trauma.

Extremity injuries usually do not represent the cause of death of the victim, when they are independent, ie, they are not accompanied by other severe trauma, which could compromise the victim's life<sup>8</sup>. As for fractures of the thoracic, the same author characterizes it as a serious injury, penetrating or blunt, which can affect normal breathing, which implies in immediate or potential risk to the victim.

The study revealed that in the year surveyed only 01 victim died at the site of care (when the team arrived, the victim was already without vital signs). Death can be explained due to the violence of the accident or the severity of R. pesq.: cuid. fundam. online 2013. abr./jun. 5(2):3620-

injuries to the victim.<sup>1</sup>

## CONCLUSION

With this study we can conclude that the 155 traffic accidents attended by the Fire Department of Itapiranga (SC) during the year of 2010, 61% of consultations involved accidents with motorcycle falls. We link this number to the considerable increase in the fleet of motorcycles, taking into consideration the low cost and agility of them.

The period of greatest incidence of traffic accidents reveals that 25% of visits occurred between 3pm to 07:59pm and can be justified by the increased flow of vehicles during these periods; it is also the time people leave work and even the fatigue of the day. However it is observed that the highest rate of accidents occur on weekends (Fridays, Saturdays and Sundays); also in 12% of visits to the victims, they presented a characteristic smell of alcohol, as referenced in the description of the event and attendance. It is important to highlight that the medical records did not specify whether the victims were the drivers or passengers involved in the accident.

As for injuries, it is observed that the most affected parts were the upper and lower limbs. This incidence of injuries and fractures in upper and lower members can be explained by the high rate of motorcycle accidents where the driver and victim have no physical protection of the vehicle to protect them against injury.

This paper is critical to identify the types of care and the profile of victims who are affected by traffic accidents in that county. By knowing the profile of morbidity and mortality of a given population in a given area, managers have the chance to produce municipal public policies that protect and educate the population as to punish violations of laws and take care of the population.

## REFERENCES

1. Bortolotti F. Manual do socorrista. Porto Alegre: Expansão Editorial; 2008.
2. Impactos Sociais e Econômicos dos Acidentes de Trânsito nas Rodovias Brasileira. Relatório executivo, Brasília: IPEA, DENATRAN, ANTP. 2008 Dez [acesso em 2011 Maio 12] Disponível em: <http://perkons.com.br>.
3. Ministério do Planejamento, Orçamento e Gestão. IBGE senso 2010. [acesso em 2011 Maio 10] Disponível em: <http://www.censo2010.ibge.gov.br/sinopse/index.php?uf=42&dados=1>.
4. Estatística de Trânsito. DETRAN Santa Catarina. 2008. [acesso em 2011 Maio 10] Disponível em: <http://www.denatran.sc.gov.br/estatistica.htm>.
5. Sousa RMC, Calil AM, Paranhos WY, Malvestio MA (org.). Atuação no trauma: uma abordagem para a enfermagem. São Paulo: Atheneu; 2009.
6. Brasil. Ministério da Saúde. Política nacional de atenção às urgências. Brasília, DF, 2003.
7. Oliveira M. Fundamentos de socorro pré-hospitalar. 4<sup>a</sup> ed. Florianópolis: Editograf; 2004.
8. Santos NCM. Urgência e emergência para enfermagem: do atendimento pré-hospitalar APH à sala de emergência. 5<sup>a</sup> ed. São Paulo: Látria; 2008.

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