



Journal of Nursing

Revista de Enfermagem

UFPE On Line

ISSN: 1981-8963

ORIGINAL ARTICLE

PROFILE OF ROAD TRANSPORT ACCIDENTS MET BY THE MOBILE URGENCY ATTENDANCE SERVICE

PERFIL DOS ACIDENTES DE TRANSPORTE TERRESTRE ATENDIDOS PELO SERVIÇO DE ATENDIMENTO MÓVEL DE URGÊNCIA

PERFIL DE LOS ACCIDENTES DE TRANSPORTE TERRENO A LOS QUE ASISTIERON POR EL SERVICIO MÓVIL DE URGENCIA

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ABSTRACT

Objective: describing the epidemiological profile of road accidents. **Method:** an epidemiological descriptive and cross-sectional study with data collection in chips and SAMU service books, in 2012, attended by the Mobile Urgency Attendance Service/SAMU in Guanambi/BA. There were studied variables of victims of the damages and the service, being analyzed descriptively through the Epi Info 7.0 program. The study had the project approved by the Research Ethics Committee, CAAE: 24677313.0.0000.0057. **Results:** road accidents were more frequent in men (74,1%), aged 20-29 (36,2%) in the use of motorcycles (72%). The accident resulted in 86,9% injury victims and in multiple segments (55,5%). There was found sub-record regarding the use of safety equipment, alcohol consumption and work accidents. **Conclusion:** there was a higher vulnerability of men and young men for road accidents, especially involving motorcycles. We stress the importance of inspections and educational activities in order to reduce the ATT (Traffic Accidents). **Descriptors:** Traffic Accidents; Emergency Medical Services; Epidemiology.

RESUMO

Objetivo: delinear o perfil epidemiológico dos acidentes de transporte terrestre. **Método:** estudo epidemiológico descritivo e transversal com coleta de dados nas fichas e livros de atendimento do SAMU, no ano de 2012, atendidos pelo Serviço de Atendimento Móvel de Urgência/SAMU, de Guanambi/BA. Foram estudadas variáveis das vítimas, dos agravos e do atendimento, sendo analisadas descritivamente por meio do programa Epi Info 7.0. O estudo teve o projeto aprovado pelo Comitê de Ética em Pesquisa, CAAE: 24677313.0.0000.0057. **Resultados:** os acidentes de transporte terrestre foram mais frequentes em homens (74,1%), de 20 a 29 anos de idade (36,2%), no uso de motocicletas (72%). Os acidentes ocasionaram lesão em 86,9% das vítimas e em múltiplos segmentos (55,5%). Foi encontrado subregistro quanto ao uso de equipamentos de segurança, consumo de bebidas alcoólicas e acidentes de trabalho. **Conclusão:** verificou-se maior vulnerabilidade de homens e jovens para os acidentes de transporte terrestre, especialmente envolvendo motocicletas. Ressalta-se a importância de fiscalizações e atividades educativas com vistas à redução dos ATT. **Descritores:** Acidentes de Trânsito; Serviços Médicos de Emergência; Epidemiologia.

RESUMEN

Objetivo: describir el perfil epidemiológico de los accidentes de tráfico. **Método:** estudio epidemiológico descriptivo y transversal con recogida de datos en las fichas y los libros de servicios del SAMU, en 2012, al que asistieron el Servicio Móvil de Emergencia/SAMU en Guanambi/BA. Se estudiaron las variables de las víctimas, de las lesiones y la atención, y se analizaron descriptivamente a través del programa Epi Info 7.0. El estudio tenía el proyecto aprobado por el Comité de Ética en la Investigación, CAAE: 24677313.0.0000.0057. **Resultados:** los accidentes de tráfico fueron más frecuentes en los hombres (74,1%), de 20-29 años (36,2%), en el uso de las motocicletas (72%). Los accidentes resultaron lesiones en 86.9% de las víctimas y en múltiples segmentos (55,5%). Sub-registro fue encontrado en el uso de equipo de seguridad, consumo de alcohol y los accidentes de trabajo. **Conclusión:** hubo una mayor vulnerabilidad de los hombres y jóvenes para los accidentes de tráfico, especialmente la participación de las motocicletas. Hacemos hincapié en la importancia de las inspecciones y actividades educativas con el fin de reducir los ATT (Accidentes por Transporte Terreno). **Descritores:** Los accidentes de tráfico; Servicios Médicos de Emergencia; Epidemiología.

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INTRODUCTION

From the 1980s, external causes were included in the second cause of death in the general population of Brazil and the first for those who are in the age group of 5 to 39 years old. In the United States of America/USA is the 4th cause of death. Epidemiological data show that among the external causes of morbidity and mortality, transport accidents are prominent among the causes of death in Brazil and the world, especially the Land Transport Accidents (ATT), recording, in 2010, 1.24 million deaths worldwide.^{1,2}

The accident is described as an intentional event, in the case of a preventable occurrence, especially when it involves risk factors such as alcohol use, excessive speed, among others. Such occurrences can cause economic and social consequences, both in the domestic environment and in the public and private sectors. In this sense, to be considered an avoidable event, it is necessary to establish affirmative action towards its reduction.³

We understand from traffic accidents, according to the International Statistical Classification of Diseases and Related Health Problems, in its 10th revision (ICD - 10), as any accident that is related to a type of vehicle and even those used at the time of the accident, particularly when it involves transportation, either of people or goods moved from one place to another.⁴ Make up to other types of accidents and violence, the so-called external causes of morbidity, including the codes of ICD-10 V01 to V99.

In Brazil, according to data from the Mortality Information System (SIM), between 2002 and 2010, the total number of deaths due to land transport accidents increased by 24%, from 32.753 to 40.610 deaths,⁵ expressing the need to re-evaluate public policies to contain or reduce these figures. Currently, in the country there are about 43.000 traffic deaths per year, totaling an expense of 8 billion Reals (R\$), causing high demand for health services, and suffering for the victims and their families, as well as sequelae, which affect the quality of life of those who suffered this event.⁶

On the verge of an ATT, one of the health services responsible for initial assistance to victims is the SAMU (Mobile Emergency Service), which is a component of the system of assistance for emergency.⁷

In the municipality of Guanambi, the SAMU is responsible for the pre-hospital victims of

ATT, among other events and injuries. According to data from Mortality Information System in 2011, the city of Guanambi occupied the 7th place of death in the micro in a total of 33 cities recorded in Bahia.⁸ In this sense, taking into account the magnitude of the ATT from the care of SAMU, this study aims to:

- Outlining the epidemiological profile of road accidents.

METHOD

This is an epidemiological descriptive and cross-sectional study with collection of secondary data on road accidents attended by the SAMU of Guanambi/BA, in 2012, a city located in Southwestern Bahia. According to the Brazilian Institute of Geography and Statistics (IBGE), the population of this municipality in 2013 was estimated in 84.645 inhabitants.⁹

The population of this research consisted of all records of users who suffered traffic accidents and were rescued by teams SAMU of Guanambi, in the period from January 1st to December 31st, 2012. We examined the medical records which were stated in registration accident involving traffic where the victim was found alive.

The variables studied were gender and age, the type of accidents caused injury, injured body part, use of seat belt and helmet, use of alcohol or signs suggestive and work accident. Regarding the event, the variables studied were the attendance neighborhood, day of week, month, shift, offset unit type and destination of the victim.

Data were collected in March 2014 by the research team and with the collaboration of the SAMU team that carried out the search of all the medical records of service, both USB as the USA in 2012, as well as books records of missed events, thus adding a total of 3.103 calls during the year. Regarding the ATT were observed 806 records, representing 26% of visits this health service in the year under study.

The collected data were entered into the forms of research and have been tabulated and treated statistically using the Statistical Epi Info program, version 7.0, through frequency calculations for categorical variables. Figures and tables were built from Microsoft Office Excel program.

The study project was submitted and approved by the Research Ethics Committee - CEP of the University of the State of Bahia, with CAEE: 24677313.0.0000.0057; thus, respecting the ethical principles governing

research involving human beings directly or indirectly.

RESULTS

As instrument used for research, there were listed three groups of features for better understanding of the results, which are: characteristics of victims, patterns of injuries and characteristics of care.

♦ Characteristics of victims

The study found that most of the ATT hit men (74,1%), almost three times higher than women from accidents (25,9%), showing that the male is the more prevalent when referring to this involvement (table 1), showing that in all types ATT males were more common.

Table 1. Distribution of gender characteristics, type of ATT and age range of land transport accident victims met by the SAMU, in the municipality of Guanambi/BA, in 2012.

Characteristics of victims	Types of road accidents					
	Cyclist %	Pedestrian %	Motorcyclist %	Car and other %	NI* %	TOTAL %
Gender						
Male	83,3	56,2	74,3	78,3	71,1	74,1
Female	16,7	43,8	25,7	21,7	28,9	25,9
Age (in years)						
< 10	4,2	12,5	1,2	4,3	2,6	2,5
10 - 20	12,5	14,6	17,4	15,2	23,7	16,9
20 - 30	29,2	18,8	39,3	25,0	47,4	36,2
30 - 40	25,0	8,3	21,9	19,6	10,5	20,5
40 - 50	14,6	4,2	10,3	16,3	5,3	10,7
50 - 60	4,2	16,7	4,8	6,5	7,9	5,8
60 and over	4,2	18,8	2,2	6,5	-	3,7
NI	6,3	6,3	2,8	6,5	2,6	3,6
Total	100	100	100	100	100	100

* There was not found of the type of ATT. Source: SAMU, Guanambi/BA, 2014.

♦ Characteristics of harms

According to figure 1, it can be seen that the most common ATT during the study period was related to motorcycle, comprising 72% of

When analyzed the effect of ATT for males and type of transport vehicle, a greater risk for those involving cyclists, since 83,3% of the cases reached 16,7% of men and women was found, which an almost fivefold increased risk is for men.

With regard to age, it was found in this study that the age group most frequently of all ATT is between 20-29 years old (36,2%), as noted in Table 1. For almost all types of ATT this age group was the most affected, with the exception of accidents involving pedestrians, which showed a high number of elderly.

accidents (n = 580), followed by cars, trucks and buses (vehicle/other), with 11,4% (n = 91).

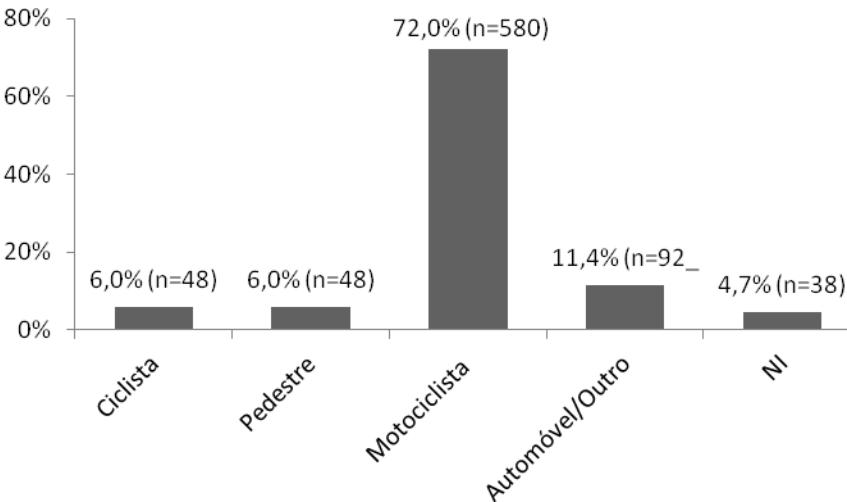


Figure 1. Distribution of Types of Land Transport Accidents met by SAMU in Guanambi/BA, in 2012. Source: SAMU, Guanambi/BA, 2014.

It is recognized the importance of using protective equipment during transport, thus, other data found in the study was related to the use of seat belt, showing that the ATT by car/other, it was announced that 7,8% of individuals made use of seat belts, 18,8% did not use at the time of the accident and found that in 73,8% of the chips attendance record was not identified as the use of seat belts. Given this finding, it is valid to point out that the absence of such identification in the service plug hampered the accuracy of the data, thus enabling not infer whether or not the patient was using the equipment.

Another fact studied respect to helmet use in motorcycle accidents. At the time of the accident, 43,7% of victims of ATT for motorcycles made helmet use, but in most cases the record was not identified in the medical record regarding this variable (51,6%).

At the moment of the accident 14,3% of the victims reported using alcohol, but in 85,7% of the chips of care was not identified such registration. It is worth considering that this percentage can not be identified due to lack of information recorded in the medical record

professional rescuer or the lack of criteria to support the judgment as to whether or not alcohol use, since drunkenness corresponds only to a diagnosis doctor can be done only by the USA.

It was evaluated on the ATT in the form of industrial accident, showing that in 2012 was recorded in the records of attendance 1 work accident (0,1%), 2 stating that it was not due to work accidents (0,2 %) and 803 unidentified failures to record (99,6%).

Much of the damage caused ATT, accounting 86,9% (n = 700) of injured patients. The nature of the injury varied as noted in Table 2 identifying the abrasions are seen as the most common, accounting for 46,2% (n = 339) of injured also followed by multiple injuries, with 30,5% (n = 224).

Table 2. The distribution characteristics of injuries suffered by the victims of accidents at land transport serviced by the SAMU, in the city of Guanambi /BA, in 2012.

Variables	n	%
There was lesion		
Yes	700	86,9
No	71	8,8
NI	35	4,3
Type of the lesion		
Fracture	39	5,3
Abrasions	339	46,2
Blunt Injury	50	6,8
Puncture Wound	16	2,2
Contusion	20	2,7
Burn	04	0,6
Multiple Injuries	224	30,5
Other Types	5	0,7
NI	37	5
Body segment affected		
Head/Neck	74	10,1
Thorax/Abdomen/Back	14	1,9
Upper Limbs	66	9
Lower Limbs	131	17,8
Multiple Segments	407	55,5
NI	42	5,7

Source: SAMU, Guanambi/BA, 2014.

◆ Characteristics of the service

The ATT can occur in different environments, and in this study it was observed that the highest incidence occurred in city neighborhoods for a total of 73,2% (n = 590).

Regarding the day of service, during the weekends there was a higher percentage of ATT, and recorded on Sunday with 21,8% (n = 176) of accidents, followed by Saturday with 20,5% (n = 165), as seen in table 3.

Table 3. Characteristics of the distribution of land transport accident victims met by the SAMU, in the city of Guanambi /BA, in 2012.

Characteristics of the attendance	n	%
Place of attendance		
Neighborhood	590	73,4
Railway	211	26,2
NI	5	0,6
Weekday		
Sunday	176	21,8
Monday	112	13,9
Tuesday	77	9,6
Wednesday	80	9,9
Thirsdays	99	12,3
Friday	97	12
Saturday	165	20,5
SHIFT OF CARE		
Morning (06:00 to 11:59 h)	148	18,4
Afternoon (12:00 to 17:59 h)	290	36
Night (18:00 to 23:59 h)	318	39,5
Early morning (00:00 to 05:59 h)	47	5,8
NI	3	0,4

Source: SAMU, Guanambi/BA, 2014.

The time of day with the highest frequency of ATT was the night, between the 18 and 23 hours and 59 minutes, totaling 39,5% (n = 318) of calls (Table 3). As for the month of care of patients with ATT, the month of December he prevailed with 11,9% of cases.

According to analysis of the type of care unit of victims of ATT, BHU had a greater amount of care, 68% (n = 548) of cases, and the rest of the calls, 32% (n = 258) was conducted by the advanced support unit. Of treated individuals, 86,4% (n = 696) were referred to the public hospital health unit of the municipality; others receive other types of referrals (13,2%, n = 106). No records were found for such information in 4 cases (0,5%).

DISCUSSION

We observed that the profile of the victims studied, as well as occurrences, is similar to other studies on accidents and other external causes in hospital setting and emergency pre-hospital care,¹⁰⁻³ which shows that men and young people are most affected by ATT. This fact shows that the male appears more vulnerable to the ATT.

Some attitudes are shown as responsible for this fact, since that put men at greater risk of accidents such as: direction exceeded speeds, more aggressive, alcohol consumption, performing risky maneuvers and other.¹³

According to the National Policy for Integral Attention to Men's Health (PNAISH) established in 2008 by the Ministry of Health (MOH), men are affected more often, due to external causes, which cause fatal consequences in such an important phase as the production phase on the job, forming a

family and leverage a promising future lost due to traffic accident.¹⁴

The occurrences of accidents due to external causes are highlighted as one cause of death in people under 40 years old, especially in males, thus raising the importance of greater visibility to this theme.¹⁵

Among the types of ATT, only there was no predominance of cases in young people, for accidents involving pedestrians. For this type of ATT, the elderly were the most affected. Individuals over 60, considered elderly in Brazil may present own physiological difficulties of aging, slow body movements, making it difficult to fast and safe passage, decreased vision prevents the sharpness of the traffic signal and differentiation colors as well, there is a higher probability to fall, and these events make them more susceptible to ATT.¹⁶

There was a high frequency of cases of ATT involving motorcycles, a finding that corroborates other studies.^{1,7,11,17} In a study conducted in Jequié-BA, 13 with hospitalization data from external causes, the authors suggest some possible causes the high frequency of motorcycle accidents, such as the increase in the motorcycle fleet, both for personal use, such as work in the form of chain taxismo; inappropriate use of personal protective equipment; inefficient supervision and an incipient public transport service in the city. These characteristics are similar to the city of Guanambi.

The motorcycles have become the most popular means of individual transport in Brazil due to affordability for its acquisition; however, the way of driving and the increased

vulnerability of the driver, as well as the passenger contribute to a high number of accident.^{1,7,11,17} According to DMV data, in the municipality of Guanambi, of the 34.366 registered vehicles in the city, more than 46% (15,926) correspond to motorcycles.¹⁸

An important fact to be studied for ATT concerns the use of safety equipment, the type helmets for motorcycles and belts for automobiles/other vehicles; however, could not find such information in the researched records.

According to the Brazilian Traffic Code, established by Federal Law No. 9503, effective since January 21st, 1998, the non-use of protective equipment by size of drivers and motorcyclists appears as lack of high seriousness¹⁹. It is important stress that under Resolution No. 203 of the Brazilian Transit Council, in its article 1, it is mandatory helmet use, both by the driver and by the motorcycle passenger. Improper use of this safety equipment for accident victims intensifies increasingly the need to increase both educational measures, as the inspection itself, seeking the fulfillment of the use of collateral and reduce the consequences.^{19,20-2}

Another risk behavior for the ATT is the use of álcool.²³ However, such analysis could not be performed due to lack of information in the records. The relationship between alcohol intakes with transport accident is punctuated by some surveys as a major cause of morbidity and mortality and affects mostly men in the young age group. The use of alcohol along with direction is a harmful habit, responsible for the loss of countless victims. It is estimated that the driver has drunk four times more likely not to use protection equipment, requiring more inspections.^{7,17,20,24-5}

With respect to lesions caused by ATT, abrasions are common in ATT were the most frequent and multiple body regions, confirming that some studies show that the victims have up to five or more members affected^{13,21}. The ATT had a higher incidence in the districts of the city (73,2%), but researchers point out that the number of ATT on the highway is quite significant as it presents imminent risk of death, where the victims, mostly at little traffic increase speed, do dangerous overtaking, and depending on the distance of the journey become wearisome, factors that increase the likelihood of ATT on highways.²⁴

In other studies about the subject there is unanimity on the days of higher prevalence of ATT, designating the weekends as those more common and may be related as to alcohol consumption are more frequent these days,

thus increasing the risk of accidents caused by the union of alcohol and traffic.^{15,20,22-4}

Concerning the day of the period some authors point out that there is a predominance of this time, which can be explained by decreased visibility at night, higher speed due to less traffic, increased sleep and physical fatigue, making it even more serious the ATT.^{1,26}

In another study¹⁰ it was observed that the number of victims that are transported to hospitals after the accident is clearly high, which can reveal the severity of accidents, with an even greater predominance of referrals to the referral hospital. It is also a fact of the present study. Another relevant fact is that the most frequent month (December) may be related to the fact that the parties that occur in the last month of the year like Christmas and New Year's Eve, as it is a period that many people find themselves as much as the school holidays work.

CONCLUSION

It was possible to trace the profile of ATT served by the SAMU in the city of Guanambi/BA. It was identified that the male is the most affected in ATT, particularly among young people aged 20-29 years old.

This study sought to contribute to the expansion of information on the subject, especially at the local level, to demonstrate the profile of pre-hospital care for ATT emergency in Guanambi, which may contribute to the establishment of strategies to reduce ATT numbers, as well as reducing the negative consequences that may result.

It is important raising awareness about the importance of major inspections and educational activities that bring to society all the key information to reduce ATT numbers, not only for people who use the means of transport but also for companies that hire the services which use the formal and informal services.

ACKNOWLEDGEMENTS

To the Team of Mobile Service of Urgency from the city of Guanambi - BA.

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Silva JK da, Rios MA, Amaral TFS et al.

Profile of road transport accidents met...

Submission: 2015/06/25
Accepted: 2015/08/08
Publishing: 2016/01/01

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