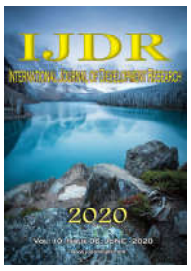
ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 10, Issue, 06, pp. 36518-36523, June, 2020
https://doi.org/10.37118/ijdr.19002.06.2020



RESEARCH ARTICLE OPEN ACCESS

CHARACTERIZATION OF TRAFFIC ACCIDENTS WITH VICTIMS ASSISTED BY THE MOBILE EMERGENCY CARE SERVICE (SAMU)

Gláucia de Souza Abreu[1], Anubes Pereira de Castro[2], Maria do Socorro Sarmento Pereira[3], Fátima Rosangela de Sousa Dias[4], Maria Aparecida de Freitas Silveira*[5], Elaine Cristina Batista Tavares[6], Marcia Maria Almeida da Silva[7], Danielly Raquel de Souza Fernandes[8], Tatiana Farias Teódulo Palitot[9] and Alessandro Leite Cavalcanti[10]

[1]Master's degree in Public Health at Paraíba State University (UEPB), Cajazeiras – PB, Brazil; [2]DoctoratedegreeinPublic Healthat Escola Nacional de Saúde Pública (ENSP/FIOCRUZ), Campina Grande - PB, Brazil; [3]Postgraduate in ICU, Urgency and Emergency at Faculdades Integradas de Patos (FIP), Cajazeiras – PB, Brazil; [4]Postgraduate in Work Nursing at Faculdades Integradas de Patos (FIP), Cajazeiras – PB, Brazil; [5]Postgraduate in Obstetrics Nursing and Neonatology at Santa Maria University (FSM), São Miguel – RN, Brazil; [6]Postgraduate in Dermatological Nursing at Estácio de Sá University, São José de Piranhas – PB, Brazil; [7]Postgraduate in ICU, Urgency and Emergencyat Centro Integrado de Tecnologia e Pesquisa (CINTEP), Paulista – PB, Brazil; [8]Postgraduate in ICU, Urgency and Emergency at FAMEC – Faculdade de Metropolitana de Ciências e Tecnologia - Parnamirim – RN, Brazil; [9]Master's degree in Public Health at Paraíba State University (UEPB), Parnamirim – RN, Brazil; [10]Post-doctorate in Pediatric Dentistry at Minas Gerais Federal University (UFMG), Campina Grande, PB – Brazil

ARTICLE INFO

Article History:
Received 20th March, 2020
Received in revised form
14th April, 2020
Accepted 06th May, 2020
Published online 25th June, 2020

Key words:

Traffic Accident. Emergency Medical Services. Emergency Care. Wounds and Injuries.

Corresponding author:
Maria Aparecida de Freitas Silveira

ABSTRACT

Objective: To characterize traffic accidents involving victims assisted by the Mobile Emergency Care Service (SAMU, in its Portuguese initials). **Materials and Methods:** Cross-sectional, quantitative study, using data from 1,318 records of SAMU occurrences with trauma victims due to traffic accidents attended between 2014 and 2016. **Results:** There was a high prevalence of traffic accidents (56.2%), with motorcycles being the most commonly recorded (86.0%). The percentage of multiple traumas was 48.0%. The patterns of injuries frequently observed were excoriation (91.9%) and head trauma (88.0%). Trauma usually affected the facial region (60.1%) and the upper limbs (79.0%). Based on the adjusted Poisson model, it was found that traffic accidents showed an association with males (PR = 1.14; 95% CI = 1.06-1.23; p = 0.001), the age group from 20 to 29 years (n = 2.72; 95% CI = 2.26-3.28; p <0.001), weekends (PR = 1.08; 95% CI = 1.02-1, 15; p = 0.013) and multiple traumatic injuries (PR = 1.80; 95% CI = 1.67-1.94; p <0.001). CONCLUSION: Traffic accidents involving motorcycles showed a significant association with the type of trauma mechanism, injuries to the face and limbs, sex and age group.

Citation: ***Gláucia de Souza Abreu, Anubes Pereira de Castro, Maria do Socorro Sarmento Pereira, Fátima Rosangela de Sousa Dias et al.*** "Characterization of traffic accidents with victims assisted by the mobile emergency care service (samu)*", International Journal of Development Research*, 10, (06), 36518-36523.

INTRODUCTION

The World Health Organization (WHO) defines traffic as a Public Health problem, urging the United Nations (UN) to define the period from 2011 to 2020 as the Decade of Action for Traffic Safety, with the aim of reducing traffic accidents (BIFFE *et al*., 2017). Among the countries with the highest number of traffic deaths, Brazil ranks third, after India and China.

However, among the group of countries with economic development and similar population (Brazil, India, China, Russia and the United States), Brazil has the highest risk of death, with a rate of 22.5% of deaths per 100,000 inhabitants (WINGERTER, 2017). Regarding vehicles that are part of the traffic, motorcycles represent 27% of the national vehicle fleet, being responsible for the highest number of accidents and victims: motorcycles accumulated 285,662 insurance claims or

74% of the indemnities paid in 2017 by DPVAT insurance (DPVAT, 2017). Motorcycles are more susceptible to collisions, provide greater body exposure of their users, and consequently result in greater numbers of serious injuries (ALMEIDA *et al*., 2016). Data from the Institute of Applied Economic Research (IPEA, in its Portuguese initials) estimate that accident costs for society are approximately R$ 50 billion per year. It is noteworthy that the increase in the number of traffic accidents directly influences the health sector, overburdening emergency care services and extending to other sectors that involve the rehabilitation of these victims (IPEA, 2015). This research aimed to describe the characteristics of traffic accidents with victims rescued by the Mobile Emergency Care Service (SAMU).

MATERIALS AND METHODS

A cross-sectional, quantitative study was conducted at the Mobile Emergency Care Service (SAMU) in the city of Cajazeiras–Paraíba, Brazil. The study included 1,318 records of victims of trauma caused by traffic accidents attended by SAMU, in the period from February 1, 2014 to December 31, 2016 that involved cars, motorcycles, bicycles and pedestrians. The variables studied were victim's sex, age and information about the occurrence of trauma, such as part of the day, time, place, day of the week, month and year, trauma mechanism, main injuries, injured part of the body, presence of alcohol breath odor, use of legal or illicit drugs and outcome of the victim's situation. The categories for the different trauma mechanisms were extracted from Chapter XX of ICD-10: External causes of morbidity and mortality (V01-Y98) which included transport accidents (V01-V99) (CBCD, 2010). There were cases in which the victim had more than one grouping of injuries at different parts of the body, so the priority of care criterion was used according to the severity of the injuries. In the association and analysis of the variables, incomplete records and those with illegible letters were excluded. The analysis was performed using descriptive statistics (absolute and relative frequencies). Pearson's chi-square test (or Fisher's exact test when appropriate) was used to identify possible associations between the occurrence of traffic accidents and the independent variables. The level of significance was set at 5% ($p < 0.05$). All statistical analyzes were performed using IBM SPSS software version 20.0 and considering a 95% confidence interval. The Research Ethics Committee of the State University of Paraíba approved this research under Protocol number 69253617.0.0000.5187.

RESULTS

In the present study, data were collected from 2,567 records of occurrences related to trauma due to external causes, with 220 of these referring to the years 2014, 2015 and 2016 being excluded, respectively, 100, 50 and 70 records of occurrences with no data exceeding 10%. Table 1 shows the distribution of cases according to the socio-demographic characteristics of the victims and the circumstances of the events. In general, most victims of external causes were men (70.5%) and were generally between 20 and 29 years old (27.1%). Regarding the part of the day (52.5%), occurrences happened both during the day (47.5%) and night. Concerning the day of the occurrence, 61.9% happened on working days and 38.1% at weekends.

Table 1. Distribution of cases according to the socio-demographic characteristics of the victims and circumstances of the events

Variables	n	%
Victim's sex [2,347]		
Male	1,654	70.5
Female	693	29.5
Victim's age group [2,347]		
≤ 19 years old	396	16.9
20 to 29 years old	637	27.1
30 to 39 years old	518	22.1
40 to 49 years old	251	10.7
50 to 59 years old	157	6.7
≥ 60 years old	388	16.5
Part of the day [2,347]		
daytime (06:00 to 17:59)	1,233	52.5
Nighttime (18:00 to 05:59)	1,114	47.5
Day of occurrence [2,347]		
Weekend	895	38.1
Working days	1,452	61.9
Traffic accident [2,347]		
Yes	1,318	56.2
No	1,029	43.8
Type of vehicle involved in the accident [1,240]		
Car	123	9.9
Motorcycle	1,066	86.0
Bicycle	51	4.1
Mechanism of accident involving automobile [122]		
Overturning	79	64.8
Car-to-car collision	19	15.6
Animal-vehicle collisions	3	2.5
Car-motorcycle collision	9	7.4
Other	12	9.8
Mechanism of accident involving motorcycle [1,064]		
Crash	657	61.7
Motorcycle-motorcycle collision	147	13.8
Motorcycle-animal collision	43	4.0
Motorcycle-car collision	188	17.7
Other	29	2.7
Mechanism of accident involving bicycle [51]		
Crash	41	80.4
Bicycle-motorcycle collision	2	3.9
Bicycle-car collision	5	9.8
Collision	3	5.9
Occurrence of being run over [2,347]		
Yes	80	3.4
No	2,267	96.6
Run over by [2,347]		
Car	12	15.0
Motorcycle	64	80.0
Bicycle	4	5.0

Source: Research Data (SAMU- Medical regulation/care records, 2014 to 2016). Note: The values between [] indicate the total of valid cases for each variable.

The prevalence of traffic accidents was quite high (56.2%) and those involving motorcycles were the most recorded (86.0%). Table 2 shows that 96.8% of the victims had injuries, 52.0% of which were single injuries. As for the type, excoriation (28.4%), laceration (37.2%), hematoma (14.3%), crushing (0.3%), fracture (30.4%), dislocation (1, 9%), traumatic brain injury (4.6%) and limb amputation (0.5%) were documented. It is also observed the affected body region, being head (20.9%), face (33.0%), upper limb (41.8%), trunk (7.3%), abdomen (5.0%) and lower limb (49.6%). With regard to the presence of alcohol breath odor, it was found that 41.2% of the victims had it at the time of care and 6.4% were under the effect of illicit drugs, with crack being the most consumed (89.3%). The proportion of victims referred to the hospital right after the trauma occurred was 92.2%. Table 3 shows the bivariate analysis between the occurrence of traffic accidents, the socio-demographic characteristics of the victims, the circumstances of the events and the pattern of injuries. In this table, it is possible to observe a predominance of males (60.6%), in the age group of 20 to 29 years (70.0%), during

nighttime (60.9%) from 6:00 pm to 5:59 am, being Saturday and Sunday (61.5%) the most frequent days of occurrences.

Table 2. Distribution of cases according to the nature / severity of the injuries, affected body region, use of alcohol or other drugs and the outcome of the victim's situation

Variables	n	%
Presenceof injuries [2,347]		
Yes	2,272	96.8
No	75	3.2
Quantityof injuries [2,272]		
One	1,182	52.0
Multiple	1,090	48.0
Excoriation [2,347]		
Yes	667	28.4
No	1,680	71.6
Laceration [2,347]		
Yes	873	37.2
No	1,474	62.8
Hematoma [2,347]		
Yes	336	14.3
No	2,011	85.7
Crushing [2,347]		
Yes	6	0.3
No	2,341	99.7
Fracture [2,347]		
Yes	714	30.4
No	1,633	69.6
Dislocation [2,347]		
Yes	45	1.9
No	2,302	98.1
Traumaticbraininjury [2,347]		
Yes	108	4.6
No	2,239	95.4
Limbamputation [2,347]		
Yes	11	0.5
No	2,336	99.5
Affectedbodyregion [2,347]		
Head		
Yes	490	20.9
No	1,857	79.1
Face [2,347]		
Yes	775	33.0
No	1,572	67.0
Upperlimb [2,347]		
Yes	982	41.8
No	1,365	58.2
Trunk [2,347]		
Yes	172	7.3
No	2,175	92.7
Abdomen [2,347]		
Sim	118	5.0
Não	2,229	95.0
Lowerlimb [2,347]		
Yes	1,165	49.6
No	1,182	50.4
Presence of alcohol breath odor[2,347]		
Yes	968	41.2
No	1,379	58.8
Use ofillicitdrugs [2,347]		
Yes	150	6.4
No	2,197	93.6
Typeofdrug [150]		
Crack	134	89.3
Cocaine	13	8.7
Marijuana	2	1.3
Other	1	0.7
Outcome of the victim's situation [2,347]		
Dischargedaftercare	22	0.9
Refusalofcare	69	2.9
Death at the place of the accident	40	1.7
Deathduringcare	51	2,.
Referredto hospital	2,165	92.2

Source: Research Data (SAMU- Medical regulation / care records, 2014 to 2016). Note: The values between [] indicate the total of valid cases for each variable.

As for the presence of injury, it was observed that 57.9% of the victims of traffic accidents had some type of injury to the body, mostly multiple injuries (78.3%), with a prevalence of excoriation (91.9%). The most affected regions of the body were: head (44.7%), face (60.1%), upper limb (79.0%), trunk (58.1%), abdomen (47.5%), and lower limb (73.5%). It was observed that the predominant regions were the upper and lower limbs and the face. Regarding the presence of alcohol breath odor, 60.0% of the victims showed signs of intoxication during the service and 38.7% of the victims showed signs of using some type of narcotic. It is observed, in relation to the referral of the victims, that most were referred to the hospital (56.9%),some were released after care (31.8%), refused care (52.2%), died at the place of the accident (47.5%) or died during care (47.1%). Table 4 presents the Poisson regression analysis to determine the factors associated with the occurrence of traffic accidents based on the adjusted model. Traffic accidents were found to be associated with males (PR = 1.14; CI 95% = 1.06-1.23; p = 0.001), aged 20 to 29 years (n = 2.72; CI 95% = 2.26-3.28; p <0.001), weekends (PR = 1.08; CI 95% = 1.02-1.15; p = 0.013) and multiple injuries (PR = 1.80; CI 95% = 1.67-1.94; p <0.001).

DISCUSSION

The study described the demographic characteristics and occurrences of victims of trauma due to external causes related to traffic accidents rescued by the Mobile Emergency Service (SAMU) in a city in Northeast Brazil. This information is fundamental for observing the peculiarities and specificities of traumas caused by external causes in the population, as well as being important for strengthening promotion and prevention actions. External causes related to traffic accidents are the third leading cause of death in Brazil. However, among young people and young adults they represent the first cause of death. It can be noted that young males suffer more traffic accidents when compared to females. This fact has been attributed to cultural issues, which encourage boys to perform activities with a greater potential for exposure to accidents and violence, the freedom given to young people often results in a greater risk of suffering trauma which may extend to adult life(MALTA *et al*., 2012). Regarding the age of the victims, the age group of 20 to 29 years old predominated, being the one with the highest frequency of morbimortality due to external causes related to traffic accidents. In this perspective, traffic accidents stand out as an important cause of emergency care for external causes among young people and young adults, since it is related to risky behavior resulting from immaturity, challenging spirit, combination of alcohol and drugs with driving, resulting in abuse of speed and risky maneuvers, in addition to the lack of safety equipment (ALMEIDA *et al*., 2016). The impact of these events on the health of the population has contributed to the decrease in life quality and expectancy among adolescents and young adults, so that it has an impact on the increase in social costs with health care, social security, absenteeism from school, in addition to spending on infrastructure and road maintenance (MEDEIROS AND MALFITANO, 2012). Motorcycle crashes was shown to be one of the most common types of accidents. Regarding the victim's means of locomotion, a previous study shows similar results, with motorcycles occupying the first place in traffic accidents. The motorcycle has become a very popular vehicle due to its ease of acquisition and financing, agility provided in the slow traffic of large cities and economy with fuel and maintenance (GONSAGA *et al*., 2012).

Table 3. Bivariate analysis between the occurrence of traffic accidents, socio-demographic characteristics of the victims, circumstances of the events and pattern of injuries.

	Traffic accident						
Variables	Yes		No		Total		p-value
Victim's sex	n	%	n	%	n	%	< 0.001[(a)]*
Male	1,002	60.6	652	39.4	1,654	100.0	
Female	316	45.6	377	54.4	693	100.0	
Victim's age group							< 0.001[(a)]*
≤ 19 years old	263	66.4	133	33.6	396	100.0	
20 to 29 years old	446	70.0	191	30.0	637	100.0	
30 to 39 years old	310	59.8	208	40.2	518	100.0	
40 to 49 years old	130	51.8	121	48.2	251	100.0	
50 to 59 years old	82	52.2	75	47.8	157	100.0	
≥ 60 years old	87	22.4	301	77.6	388	100.0	
Time of the occurrence							< 0.001[(a)]*
Daytime (06:00 to 17:59)	640	51.9	593	48.1	1.233	100.0	
Nighttime (18:00 to 05:59)	678	60.9	436	39.1	1.114	100.0	
Day of the occurrence							< 0.001[(a)]*
Weekend	550	61.5	345	38.5	895	100.0	
Working days	768	52.9	684	47.1	1,452	100.0	
Excoriation							< 0.001[(a)]*
Yes	613	91.9	54	8.1	667	100.0	
No	705	42.0	975	58.0	1,680	100.0	
Laceration							< 0.001[(a)]*
Yes	404	46.3	469	53.7	873	100.0	
No	914	62.0	560	38.0	1,474	100.0	
Hematoma							< 0.001[(a)]*
Yes	157	46.7	179	53.3	336	100.0	
No	1,161	57.7	850	42.3	2,011	100.0	
Crushing							0.038[(b)]*
Yes	6	100.0	0	0.0	6	100.0	
No	1,312	56.0	1,029	44.0	2,341	100.0	
Fracture							0.783[(a)]
Yes	404	56.6	310	43.4	714	100.0	
No	914	56.0	719	44.0	1,633	100.0	
Dislocation							0.600[(a)]
Yes	27	60.0	18	40.0	45	100.0	
No	1,291	56.1	1,011	43.9	2,302	100.0	
Traumaticbraininjury							< 0.001[(a)]*
Yes	95	88.0	13	12.0	108	100.0	
No	1,223	54.6	1,016	45.4	2,239	100.0	
Limb amputation							0.914[(a)]
Yes	6	54.5	5	45.5	11	100.0	
No	1,312	56.2	1,024	43.8	2,336	100.0	
Affected body region							
Head							< 0.001[(a)]*
Yes	219	44.7	271	55.3	490	100.0	
No	1,099	59.2	758	40.8	1,857	100.0	
Face							0.006[(a)]*
Yes	466	60.1	309	39.9	775	100.0	
No	852	54.2	720	45.8	1,572	100.0	
Upper Limb							< 0.001[(a)]*
Yes	776	79.0	206	21.0	982	100.0	
No	542	39.7	823	60.3	1,365	100.0	
Trunk							
Yes	100	58.1	72	41.9	172	100.0	
No	1,218	56.0	957	44.0	2,175	100.0	
Abdomen							0.051[(a)]
Yes	56	47.5	62	52.5	118	100.0	
No	1,262	56.6	967	43.4	2,229	100.0	
Lower limb							< 0.001[(a)]*
Yes	856	73.5	309	26.5	1,165	100.0	
No	462	39.1	720	60.9	1,182	100.0	
Presence of alcohol breath odor							0.002[(a)]*
Yes	581	60.0	387	40.0	968	100.0	
No	737	53.4	642	46.6	1,379	100.0	
Use ofillicitdrugs							< 0.001[(a)]*
Yes	58	38.7	92	61.3	150	100.0	
No	1,260	57.4	937	42.6	2,197	100.0	
Outcome of the victim's situation							0.057[(a)]
Discharged aftercare	7	31.8	15	68.2	22	100.0	
Refusal of care	36	52.2	33	47.8	69	100.0	
Death at the place of the accident	19	47.5	21	52.5	40	100.0	
Deathduringcare	24	47.1	27	52.9	51	100.0	
Referred to hospital	1,232	56.9	933	43.1	2165	100.0	

Source: Research Data (SAMU- Medical regulation / care records, 2014 to 2016). Note: (a) Pearson's chi-square test; (b) Fisher's exact test; * p <0.05.

Table 4. Poisson regression analysis to determine the factors associated with the occurrence of traffic accidents.

6				
	Bivariate Analysis		Multivariate analysis	
	An adjusted PR (CI 95%)	p-value	Adjusted PR (CI 95%)	p-value
Victim's sex				
Male	1.16 (1.11-1.21)	< 0.001*	1.14 (1.06-1.23)	0.001*
Female	1.00		1.00	
Victim's age group				
≤ 19 years old	2.96 (2.43-3.61)	< 0.001*	2.71 (2.24-3.29)	< 0.001*
20 to 29 years old	3.12 (2.58-3.78)	< 0.001*	2.72 (2.26-3.28)	< 0.001*
30 to 39 years old	2.67 (2.19-3.25)	< 0.001*	2.39 (1.97-2.90)	< 0.001*
40 to 49 years old	2.31 (1.85-2.88)	< 0.001*	2.15 (1.75-2.65)	< 0.001*
50 to 59 years old	2.33 (1.84-2.96)	< 0.001*	2.10 (1.68-2.64)	< 0.001*
≥ 60 years old	1.00		1.00	
Time of occurrence				
Daytime (06:00 to 17:59)	1.00		1.00	
Nighttime (18:00 to 05:59)	1.17 (1.09-1.26)	< 0.001*	1.04 (0.98-1.11)	0.192
Day of the occurrence				
Working days	1.00		1.00	
Weekend	1.16 (1.08-1.25)	< 0.001*	1.08 (1.02-1.15)	0.013*
Quantity of injuries				
One	1.00		1.00	
Multiple	2.01 (1.86-2.17)	< 0.001*	1.80 (1.67-1.94)	< 0.001*
Presence of alcohol breath odor				
Yes	1.12 (1.05-1.21)	< 0.001*	1.06 (0.99-1.13)	0.099
No	1.00		1.00	
Use ofillicitdrugs				
Yes	1.00		1.00	
No	1.48 (1.21-1.82)	< 0.001*	1.65 (1.37-2.00)	< 0.001*

Source: Research Data (SAMU- Medical regulation / care records, 2014 to 2016). Note: PR = prevalence ratio; CI = confidence interval; * p

All these factors directly influence the choice of means of transportation for the population, thus causing an increase in these vehicles on the roads and, consequently, an increase in the frequency of motorcycle accidents. It must also be considered that this growth in the motorcycle fleet is not accompanied by adequate investment in the safety of drivers. Observing the day of the week and time of the occurrences, the literature shows that the highest frequency of traffic accidents occurs on Saturdays and Sundays, probably due to the greater number of celebration events, among other factors, such as alcohol consumption, exceeding the speed limit and risky maneuvers (GONSAGA *et al*., 2012). Regarding alcohol intake, the research reveals a significant association between traffic accidents and alcohol consumption by the individuals involved in the claims. It is very important and noteworthy that, according to the Brazilian traffic legislation, drunk driving represents a very serious infraction, liable to a fine, suspension of the driver's license and even imprisonment in some cases (MARTINS AND JORGE, 2013).

The hours that concentrate the highest number of appointments are possibly related to the peak or rush hours of the city, that is, the time when there is a greater number of vehicles circulating due to returning home from work and school. A similar study conducted in the city of Olinda – PE found that there was a predominance of appointments between 6:00 pm and 11:59 pm, and that this fact can be explained by fatigue as well as physical and mental exhaustion, which leave people more vulnerable to accidents (DAMACENA *et al*., 2016). This research showed that the limbs are the most affected body regions. Similarly, research involving motorcyclists showed that the most affected body area was the lower limbs, followed by the upper limbs (MENDONÇA *et al*., 2017). The authors explain that, for motorcyclists, the limbs are precisely the most unprotected regions, since the safety equipment used offers protection only for the head region. In another study, the results showed that motorcycle occupants had a higher percentage of injuries in the limbs / pelvic girdle, while pedestrians suffered proportionally more injuries in the head / neck region (MENDONÇA *et al*., 2017). The most common types of lesions in the upper and lower limbs are lacerations, bruises, abrasions or cut contused wounds (MARTINS AND JORGE, 2013). In the case of traumatic brain injuries, as well as facial trauma, 1.6 million visits to victims take place each year in the urgency / emergency units in Brazil and automobile collisions are the main cause of this trauma and stand out for the severity and, mainly, for being cause of death and disability among the younger age groups. In the United States, it is the most frequent neurological cause of mobimortality among young people (SOARES *et al*., 2012). Regarding the outcome of trauma victims related to traffic accidents rescued by the Mobile Emergency Care Service (SAMU), most of them were referred to the local hospital for care in the Urgency and Emergency sector, but the most serious cases requiring surgical intervention are referred to state administrative divisions. Given the above, there is a need to continue to seek more information on this topic, in order to contribute to more actions and the elaboration of planned activities that can promote a more positive control of the interventions and their results. There is a great difficulty in identifying reliable numbers of deaths caused by external causes due to the underreporting that exists in the databases, which often interferes in the planning and elaboration of strategies and policies that aim to reduce or change this statistic, since it arouses great concern in the field of health and for society. The present study h ad limitations regarding the lack of data, as many occurrence files were incomplete, making it impossible to fill in the elaborated form.

Conclusion

In this study, it was observed that being a young adult, male, having drunk alcohol and driving automotive vehicles, especially motorcycles, at night and on weekends arerisk

factors for traffic accidents. Injuries resulting from these accidents often cause temporary or permanent disabilities, which interfere with the victims' quality of life and result in public expenditure. Therefore, in view of the demographic characteristics and the occurrences of traumas among victims related to traffic accidents, it is necessary to early identify the age group most exposed to these risks and to implement education programs about traffic laws, aiming to reach these risk groups, in addition to the elaboration of public policies aimed at sensitizing the population about their rights and duties as effective participants of the traffic.

REFERENCES

Biffe CRF, Harada A, Bacco AB, Coelho CS, Baccarelli JLF, Silva KL, *et al*. 2017. Perfil epidemiológico dos acidentes de trânsito em Marília, São Paulo, 2012. Epidemiologia Serviço Saúde, Brasília, 26(2): 389-398, April-June.

Wingerter DG. 2017. Mortality for traffic accidents in a northeast brazilian capital, 2010- 2014. Revista Ciência Plural, 3(2): 16-29. Availableat: https://periodicos. ufrn.br/ rcp/article/view/12394. ISSN: 2446-7286.

DPVAT [Online] 2017. Relatório Anual Seguradora Líder DPVAT. [cited in February 12, 2018]. Available at: https://www.seguradoralider.com.br/Documents/Relatorio-Anual/Relatorio-Anual-Seguradora-L%C3%ADder-DPVAT-2017.pdf

Almeida GCM, Medeiros FCD, Pinto LO, Moura JMBO, Lima KC. 2016. Prevalência e fatores associados a acidentes de trânsito com mototaxistas. Revista Brasileira Enfermagem [Online]. March-April; 69(2):382-8.

IPEA – Instituto de Pesquisa Econômica Aplicada [Online] 2015. Acidentes de trânsito nas rodovias federais brasileiras caracterização, tendências e custos para a sociedade. Brasília: IPEA. [cited in February 13, 2018]. Available at: http://www.ipea.gov.br/portal/images/stories/PDFs/relatoriopesquisa/150922_relatorio_acidentes_transito.pdf

CBCD [Online] 2010. Centro Brasileiro de Classificação de Doenças. CID 10. [citedin February 13, 2018]. Available at: http://apps.who.int/classifications/icd11/browse/l-m/en

Malta DC, Mascarenhas MDM, Bernal RTI, Andrade SSCA, Neves ACM, Melo EM, et.al. 2012. Causas externas em adolescentes: atendimentos em serviços sentinelas de urgência e emergência nas capitais Brasileiras – 2009. Ciência & Saúde Coletiva, 17(9): 2291 – 2304.

Medeiros TJ, Malfitano APS 2012. Mortalidade de jovens por causas externas em São Carlos, SP, de 2000 a 2010: Consequência da interiorização da violência? BEPA, Boletim Epidemiológico Paulista (Online), 9 (105): 4-17.

Gonsaga RAT, Rimoli CF, Pires EA, Zogheib FS, Fujino MVT, Cunha MB 2012. Evaluation of the mortalitydue to external causes. Revista do Colégio Brasileiro de Cirurgiões, 39(4): 263-267.

Martins CBG, Jorge MHPM. 2013. Óbitos por causas externas em Cuiabá, 0 a 24 anos: perfil das vítimas e famílias segundo a intencionalidade. Revista Brasileira de Epidemiologia, 16(2): 454-68.

Damacena GN, Malta DC, Boccolini CS, Souza Júnior PRB, Almeida WS, Ribeiro LS, *et al*. 2016. Consumo abusivo de álcool e envolvimento em acidentes de trânsito na população brasileira, 2013. Ciência & Saúde Coletiva, 21(12): 3777-3786.

Mendonça MFS, Silva APSC, Castro CCL 2017. Análise espacial dos acidentes de trânsito urbano atendidos pelo Serviço de Atendimento Móvel de Urgência: um recorte no espaço e no tempo. Revista Brasileira Epidemiologia, 20(4): 727-741.

Soares RAS, Pereira APJT, Moraes RM, Vianna RPT 2012. Caracterização das vítimas de acidentes de trânsito atendidas pelo Serviço de Atendimento Móvel de Urgência (SAMU) no Município de João Pessoa, Estado da Paraíba, Brasil, em 2010. EpidemiologiaServiço de Saúde, Brasília, 21(4): 589-600.

****