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EPIDEMIOLOGICAL PROFILE OF VICTIMS OF AUTOMOBILE COLLISIONS ATTENDED BY MOBILE EMERGENCY CARE SERVICE

PERFIL EPIDEMIOLÓGICO DE VÍTIMAS DE COLISÕES AUTOMOBILÍSTICAS ATENDIDAS PELO SERVIÇO DE ATENDIMENTO MÓVEL DE URGÊNCIA

PERFIL EPIDEMIOLÓGICO DE LAS VÍCTIMAS DE COLISIÓN DE VEHÍCULOS ASISTIDAS POR SERVICIO DE ATENCIÓN MÓVIL DE URGENCIAS

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ABSTRACT

Objective: to characterize the victims of automobile collisions involving motorcycles attended mobile emergency care service of the municipality of Ananindeua, in the state of Pará, PA, Brazil. **Method**: It's a retrospective epidemiological study in which was consulted the traumatic events of records of patients attended by the mobile emergency care service. A retrospective epidemiological study with a quantitative approach, from tokens of mobile emergency care service, from January 2013 to January 2016, totaling 4,056 visits. A margin of 5%, with a confidence level of 95%, was adopted as sampling error, establishing as sample n = 354 appointments recorded in the database of the service. The data were stored in a database, and analyzed by means of descriptive statistics. The data were stored in a database, and analyzed using descriptive statistics. Using the following categorical variables: gender, age, day of the week, month, hour and shift, use of licit and illicit drugs, use of controlled drugs, support involved in the occurrence, being Basic Support Unit (USB) or Advanced Support Unit (USA), helmet use, patient's destination, organic system involved and the type of vehicle involved in the accident and procedures performed during transportation. **Results:** 74.6% of the victims were males aged 26-35 years (37.0%), and (78.2%) did not wear a helmet. The highest rates of traumatic events occurred due to a collision of motorcycles with a car (36.4%), followed by motorcycle crashes (29.1%), on Sundays (15.5%), between 20:00 and 21:00 (14, 1%). **Conclusion**: It is indispensable to implement traffic education strategies based on studies about the determinants that permeate idiosyncrasy, making possible changes in human behavior.

DESCRIPTORES: accidents of traffic; motorcycles; medical services emergency; epidemiological studies

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RESUMO

Objetivo: caracterizar as vítimas de colisão automobilística envolvendo motocicletas atendidas pelo Serviço de Atendimento Móvel de Urgência (SAMU) do município de Ananindeua, Estado do Pará, Brasil. **Método**: estudo epidemiológico retrospectivo com abordagem quantitativa, a partir das fichas do SAMU, no período de janeiro de 2013 a janeiro de 2016, totalizando 4.056 atendimentos. Adotou-se como erro amostral uma margem de 5%, com um nível de confiança de 95%, estabelecendo-se como amostra n=354 atendimentos registrados na base de dados do serviço. Os dados foram armazenados em um banco de dados, e analisados por meio de estatística descritiva. Utilizando-se das seguintes variáveis categóricas: gênero, faixa etária, dia da semana, mês, hora e turno, uso de drogas lícitas e ilícitas, uso de fármacos controlados, suporte envolvido na ocorrência sendo elas, Unidade de Suporte Básico (USB) ou Unidade de Suporte Avançado (USA), uso de capacete, destino do doente, sistema orgânico acometido e o tipo de veículo envolvido no acidente e procedimentos realizados durante o transporte. **Resultados**: 74,6% das vítimas eram do gênero masculino na faixa etária de 26 a 35 anos (37,0%), e (78,2%) não usavam capacete. Os maiores índices de eventos traumáticos ocorrem por colisão de motocicletas com carro (36,4%), seguida de queda de moto (29,1%), aos domingos (15,5%), entre às 20h e às 21h (14,1%). **Conclusão**: É indispensável implementar estratégias de educação para o trânsito a partir de estudos realizados sobre os fatores determinantes que permeiam a idiossincrasia, possibilitando mudanças no comportamento humano.

DESCRITORES: Acidentes de trânsito; Motocicletas; Serviços Médicos de Emergência; Estudos epidemiológicos.

RESUMEN

Objetivo: caracterizar a las víctimas de colisión automovilística involucrando motocicletas atendidas por el Servicio de Atención Móvil de Urgencia (SAMU) del municipio de Ananindeua, Estado de Pará, Brasil. **Método**: estudio epidemiológico retrospectivo con abordaje cuantitativo, a partir de las fichas del SAMU, en el período de enero de 2013 a enero de 2016, totalizando 4.056 atendimientos. Se adoptó como error muestral un margen del 5%, con un nivel de confianza del 95%, estableciéndose como muestra n = 354 atendimientos registrados en la base de datos del servicio. Los datos se almacenaron en una base de datos, y se analizaron mediante una estadística descriptiva. El uso de drogas lícitas e ilícitas, uso de fármacos controlados, soporte involucrado en la ocurrencia siendo ellas, Unidad de Soporte Básico (USB) o de las siguientes variables categóricas: género, grupo de edad, día de la semana, mes, hora y turno, uso de drogas lícitas e ilícitas, uso de fármacos controlados, soporte involucrado en la ocurrencia, Unidad de Soporte Avanzado (USA), uso de casco, destino del paciente, sistema orgánico acometido y el tipo de vehículo involucrado en el accidente y procedimientos realizados durante el transporte. **Resultados**: 74,6% de las víctimas eran del género masculino en el grupo de edad de 26 a 35 años (37,0%), y (78,2%) no usaban casco. Los mayores índices de eventos traumáticos ocurren por colisión de motocicletas con coche (36,4%), seguida de caída de moto (29,1%), los domingos (15,5%), entre las 20h y las 21h (14,1%). **Conclusión**: Es imprescindible implementar las estrategias de educación de la educación basada en los estudios sobre los determinantes que permean idiosyncrasy, hacer posibles cambios en el comportamiento humano.

DESCRIPTORES: accidentes de tráfico; motocicletas; servicios médicos de emergencia; estudios epidemiológicos

INTRODUCTION

Today, external causes are among the main causes of morbidity and mortality in the world. In the economically active population, it has a great economic and social impact, both due to the number of deaths caused, and the number of individuals who develop some sequel. Traffic accidents occupy an important part of this group of diseases, if not the most significant part[1]. It is estimated that in the year 2020, the traffic accidents will be the second cause of premature death. Worldwide, every year 1.2 million people die from this cause that represents three thousand deaths daily. [2]

The municipality of Ananindeua is located in the State of Pará, and integrates the metropolitan area of Belém. With an estimated population of 510.830 inhabitants, is the second most populous municipality in the state and the fourth in the Northern Region of Brazil[3]. The state of Pará is nationally recognized for its strong religious tradition culminating in a large religious festival, the Candle of Nazareth, in the state capital, held on the second Sunday in October, but which extends until the end of the month, and involves thousands of people from various parts of the country and especially from the nearest municipalities.

According to data from the Transit Department of the State of Pará, are observed during this festive period the highest rates of traffic accidents in the state, mainly in the capital and in the Metropolitan Region. It is estimated that in 2015, 1565 people died as a result of traffic accidents in the State of Pará. [4]

The impact on the economy can be estimated from balance sheets of insurance companies. Data of the company that manages the compulsory insurance of personal injuries caused by motor vehicles of land show expressive expenses with victims of motor vehicle collisions involving motorcycles. In the first half of 2013, the indemnities reached amounts of 151.1 million reais being 76% attributed to permanent disability, the others, for cases of death. [5]

The epidemiological bulletin of 2015 published by Seguradora Líder shows that the highest incidence of indemnities paid was for the male gender (74%). In relation to the age group, it is recorded that 51% of total indemnities paid were destined for

young adults (18-34 years) which corresponds to more than 330 thousand indemnities. It is noted that most of the indemnities paid were for motorcycle accidents (76%), although this vehicle represents only 27% of the national fleet. [6]

With the strong expansion of the fleet of motorcycles in Brazil, in the last years, the main road traffic victim is the motorcyclist. And is already considered a major public health problem. Data from the National Department of Transit shows that Brazil has a fleet of 20.216.193 motorcyclists, of which 739.193 are in the state of Pará and in the municipality studied, this fleet reaches 35.142 vehicles. [7]

Knowledge of the reality of traffic accidents with motorcycles and mortality and morbidity can contribute not only to the elaboration of measures and programs to prevent injuries and deaths, but also to implement, inform and develop assistance programs. [8]

In this context, in what concerns the epidemiological importance of the theme it is understood that to know thoroughly the events involving motorcyclists the first step is to characterize how the phenomenon occurs being essential to obtain as much information as possible, in order to, systematically, to gather data about the extent of this grievance. The understanding of the factors related to these incidents has demonstrated the need to be available resources for their prevention with action in directing the interventions according to the specific risk factors of the target population.

Against the above, the present study aimed to characterize the victims of automobile collisions attended by mobile emergency care service of the municipality of Ananindeua, in the state of Pará, PA, Brazil.

METHOD

This is a retrospective epidemiological study, developed from April to May 2016 using as a technical basis the documentary research of quantitative approach. The casuistry was constituted of all the records of traumatic events (medical records) involving motorcycles attended by mobile emergency care service from January 2013 to January 2016, in municipality of Ananindeua – PA, obtaining a population (N) of 4.056, equivalent to the total number of health care. From the population (N= 4056) was obtained as a systematic random sample (N=354). For such, we adopted

as a sample error, a margin of 5%, with a confidence level of 95%. For purposes of sample calculation it was used a systematic random sampling of categorical variables, using the following formula [9]:

$$n = \frac{N.\ Z^2\ .\ p.\ (1 - p)}{Z^2.p.\ (1 - p) + e^2.\ (N - 1)}$$

At where;

n - Calculated sample

N - Population

Z - Normalized standard variable associated with the level of confidence

p - True probability of the event

e - Sampling error

To perform the data collection, a database was created in the MS Access® program, with the following categorical variables: gender, age, day of the week, month, time and shift, use of licit and illicit drugs, use of controlled drugs, support involved in the occurrence, such as Basic Support Unit or Advanced Support Unit, helmet use, patient's destination, organic system affected and the type of vehicle involved in the accident and procedures performed during transport.

The collected data were stored in a computerized SPSS 24.0 software database, grouped in the form of graphs and tables, and analyzed by means of descriptive statistics; The significance level alpha = 0.05 was previously set for rejection of the null hypothesis. The variables were presented by measures of central tendency and variation. The Chi-square test of adhesion was performed.

The project was submitted to the Ethics and Research Committee of the Metropolitan Faculty of the Amazon, CAAE: 53113615.8.0000.5701, opinion number: 1.459.908, with the prior authorization of the institution and followed the prescriptions that regulate research involving human beings contained in the resolution nº 466/2012 of the CNS. The research included the data provided by the mobile emergency care service involving motorcyclists in various contexts, namely: drivers, passengers, road users and drivers of the vehicles involved in the traumatic event. Were excluded from the search the calls in which USB and USA have moved, and that the victim had already been removed by popular means, by the fire department, addresses not found, trot and occurrences of clinical, psychiatric,

obstetric (if not associated with motorcycle collisions) and events that occurred outside the time period established for the research.

RESULTS

The male gender represented the majority of patients attended. There was a higher prevalence of accidents in young adults with a productive age between 26 and 35 years, the second group being between 36 and 45 years old and the third group with ages between 16 and 25 years. Amazingly the results also demonstrated the presence of victims under the age of 16. Regarding the level of consciousness, the prevalence is of Glasgow with a score between 14 and 15, as shown in table 1.

TABLE 1: Distribution of accident victims with motorcycles in Ananindeua-PA, from January 2013 to January 2016. (n = 354)

DESCRIPTION	N	%	P-VALUE
Gender			<0.0001*
Male	264	74.6	
Female	90	25.4	
Age range (years)			<0.0001*
10 a 15	9	2.5	
16 a 25	84	23.7	
26 a 35	131	37.0	
36 a 45	90	25.4	
46 a 59	37	10.5	
60 a 80	3	0.8	
More than 80	0	0	
Glasgow			<0.0001*
3 a 8	6	1.7	
9 a 13	77	21.8	
14 a 15	271	76.6	

Source: Field Research, 2016. * chi-square of adhesion.

Regarding the use of helmets, it was observed that 277 (78.2%) of the victims did not use this equipment at the time of the event, compared with 77 (21.8%) who used. In relation to alcoholic beverage intake and drug use, the data show that 298 (84.2%) of the victims had not ingested alcohol and 318 (89.8%) did not use any hallucinogenic substances, as can be observed in table 2.

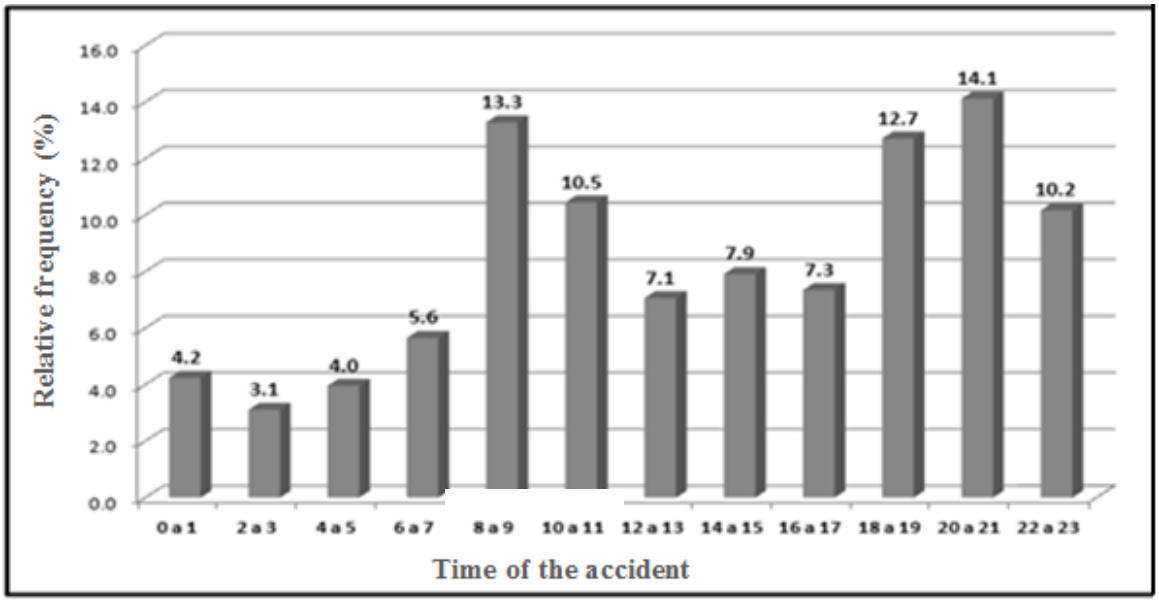
TABLE 2: Distribution of accident victims with motorcycles in Ananindeua-PA, from January 2013 to January 2016, regarding the use of helmet, alcohol and drugs.

DESCRIPTION	N	%	P-VALUE
Use of helmet			<0.0001*
YES	77	21.8	
NO	277	78.2	
Use of alcohol			<0.0001*
YES	56	15.8	
NO	298	84.2	
Use of drugs			<0.0001*
YES	36	10.2	
NO	318	89.8	

Source: Field Research, 2016. * chi-square of adhesion.

Indicated in Chart 1, regarding to the time of occurrence, it was found that the highest frequency occurs in the hours of 8pm to 9pm in 50 cases (14.1%), the hours 8am to 9am appear in second place in 47 cases (13.3%), in the third place appears the hours from 6pm to 7pm in 45 occurrences (12.7%) and the dawn appears with a minimum percentage of occurrences in the hours of 2am to 3 am in 11 calls (3.1%).

CHART 1: Relative frequency of time of occurrence involving motorcyclists in Ananindeua-PA from January 2013 to January 2016.



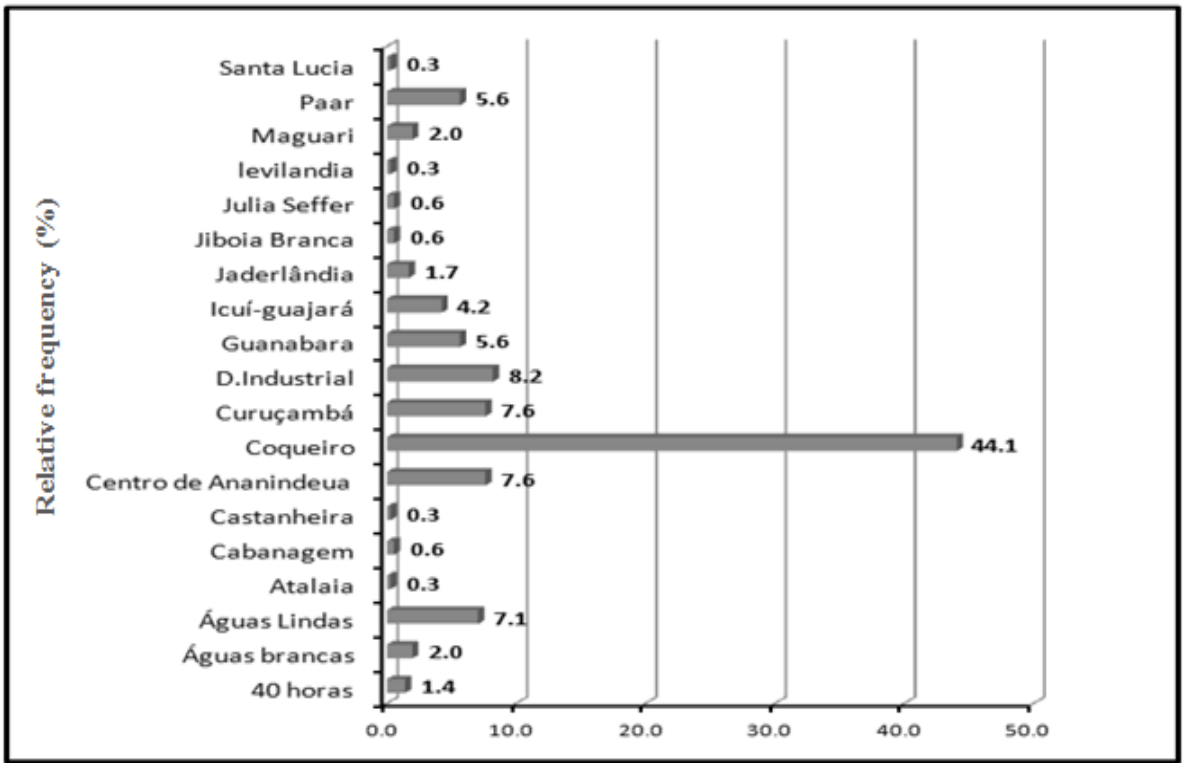
Source: Field Research, 2016

The present study also demonstrated that the victims are mainly intended for some reference hospital 182 (51.4%), however, a considerable portion was transported to emergency care units 135 (37,9%). The month with the highest number of accidents was October with 39

accidents corresponding to (11%) of the cases, the second month was January with 36 cases (10.2%) and in the third month of February, 32 cases (9%), and the months of March, May and August had the lowest number of occurrences with 25 cases (7.1%). There was no change in relation to the day of the week, since the result was Sunday (15.5%), Tuesday and Saturday (15.3%) and fifth (15%), without statistical relevance, corresponding to approximately 55 cases.

Within the municipality of Ananindeua, the distribution of accidents in the neighborhoods showed that more accidents occurred in the Coqueiro neighborhood, showing that surprisingly almost half of the victims suffered accidents in this locality, as can be seen in chart 2.

CHART 2: Description of relative frequency of accidents per neighborhood involving motorcyclists in Ananindeua-PA from January 2013 to January 2016

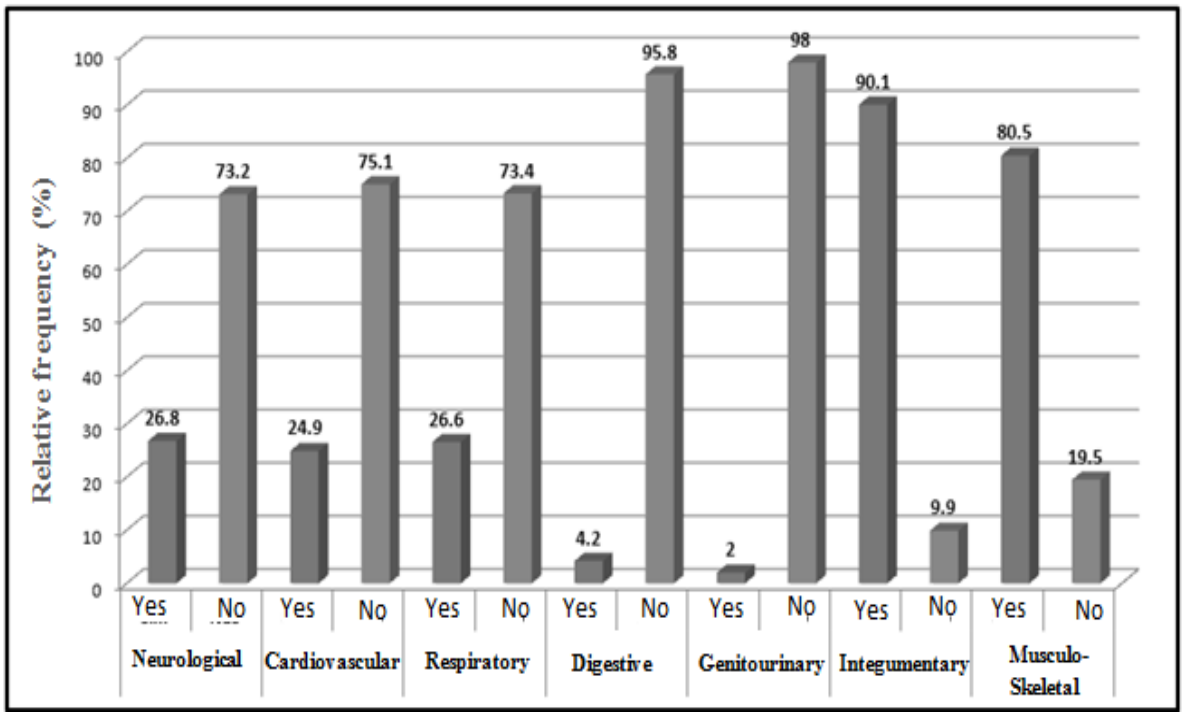


Source: Field Research, 2016

The comparison between the organic systems affected presented a difference statistically significant (p-value <0.0001 *), and considering that more than one system can be reached, it is observed that the tegumentary systems 319 (90.1%) and musculoskeletal 285 (80.5%) are the

most frequently affected. The other systems were affected in the following proportions: neurological 95 (26.8%), cardiovascular 89 (24.9%), respiratory 95 (26.6%), digestive 15 (4.2%), genitourinary 8 (2, 0%) as shown in chart 3.

CHART 3: Description of the relative frequency of organic systems reached in accidents involving motorcyclists in Ananindeua-PA from January 2013 to January 2016.



Source: Field Research, 2016

The most requested vehicle was the Basic Support Unit compared to 43 (12.4%), of services performed by the Advanced Support Unit. Collisions between motorcycles and cars represented the main mechanism of trauma 129 (36.4%), followed by motorcycle crash 104 (29.1%), being seem a small portion of motorcycle versus truck 10 (2.8%), the other 116 cases refers to other causes, or are not recorded on the tokens.

Concerning the initial conduct in the care of victims of automobile collisions attended by mobile emergency care service it was observed the use of cervical collar 323 (91.2%), long board 313 (88,4%) and oximetry 290 (81,9%) and in contrast the smaller number of procedures were central

venous catheter insertion and defibrillation (0.3%), both corresponding to 1 case. The prevalence of death at the site was 0.3% (n = 1 victim). There were no deaths during transport.

DISCUSSION

Among the services performed by the mobile emergency care service of Ananindeua-PA in the period from January 2013 to January 2016 predominated occurrences involving individuals of the male gender, in the age range between 26 and 35 years, presenting predominance in relation to the other ages. We can also observe a significant number of young people in the age range between 16 to 25 years, evidencing the vulnerability of the young population in this scenario.

Another aspect that deserves attention is the fact that we identified several drivers in the age range below 16 years considering that in Brazil, the legal minimum age for obtaining the motorcycle license is 18 year. Thus, besides the inexperience common to all beginner motorcyclists, the illegality is something to be considered. A large number of adolescents and younger motorcyclists during the first few months after acquiring their licenses are involved in accidents. It is believed that these endanger their physical integrity in the search for limits and need for self-assertion. [10]

Similar data are observed in other studies which confirm the profile of drivers of motorcycles involved in traumatic events, highlighting the male gender, and young adults in the full productive phase of life. In a study on the same subject, similar results are found, the statistics show that 88.5% of the participants in their study were male, with a predominance of the age range between 15-35 years. [2]

These data bring reflections about a new reality of Brazilian traffic and emergency care, where the male gender has contributed to the higher incidence of this aggravation with predominance of young adults, in the full productive phase of life, bringing drastic consequences to the economy of the country, strongly affecting the sectors of health and social welfare, disregarding the physical and emotional sequels that in most cases extends for the rest of life.

The use of personal protective equipment, especially the helmet, represents an important attenuation of the complications resulting from the traumatic events involving motorcycle,

therefore, it becomes indispensable to the correct use of it during the whole route. The objective of the helmet is to mitigate the impact shock, therefore, victims of motorcycle accidents suffer fewer injuries, reducing by two thirds the risk of head injuries and by half in the cervical spine. [11]

In this study, the victims presented multiple injuries and trauma, however, the relevance of Cranioencephalic Trauma stands out as representing the main worldwide cause of morbidity and mortality in individuals less than 45 years of age, being the main determinant of disability within this age range, with a higher prevalence in males.

Another recent study on motorcycle accidents in Brazil assert that when motorcycle accidents occur, the injuries are often found in various parts of the body. The polytrauma can be justified by the fact that victims of motorcycle accidents are more exposed, since in most cases, they do not have other protective equipment besides the helmet, favoring the occurrence of several traumas in the same victim.[12]

Regarding consumption of alcoholic beverage, the present study shows that 84.2% of the victims did not use alcohol. It is inferred that traffic violence is associated with recklessness, excessive speed, self-confidence, disregard for traffic legislation, lack of signage and poor illumination in roads. However, a study on musculoskeletal injuries in a motorcycle accident, conducted in the state of Bahia, conducted in the state of Bahia, identifies that there is an underreporting of data on the use of alcoholic beverage in the records of occurrence in most Brazilian states.[13]

In this context, the processes of more careful filling of fact sheets are discussed by the service team, as they are important information for the planning of the emergency system and future studies. It was also evidenced the scarcity of information related to the use of controlled drugs and illicit drugs in the fact sheets since we obtained a percentage of 10.2% of users using drugs (no type informed) and no record on the use of controlled drugs, and when referring to other substances appeared registration of 1.7% also not informed which substance.

For the traumatized patient, assessment is the basis for all care and transportation decisions. The first goal is to determine the patient's current condition, including respiratory, circulatory and neurological systems[14].

Concerning the level of consciousness, analyzed by the Glasgow Coma Scale score, we obtained a score of 14 to 15 represented by 76.6% of the analyzed charts, thus indicating light severity.

As for the turn, there was a higher incidence in the night period, with a high number of occurrences. Consistent with another study, it is suggested that a more intense inspection be carried out on the days and times with the highest risk of accidents, such as weekends and night periods. [13]

In relation to the destination, we can observe that most of the victims were transported to reference hospital; this shows that most of the victims had lesions that needed specific care in a trauma center. Based on these needs, the Ministry of Health, in 2013, establishes two ordinances in order to establish differences between emergency and clinical emergency care. The first instituted the trauma care line in the emergency care network and the second established the organization of the Trauma Centers within the trauma care line in the emergency care network. [15]

In relation to the month of greatest intensity of occurrence the highlight is for the month of October representing 11% of the visits. We infer that the result is linked to the fact that the region receives a large number of visitors to the festival of the Candle of Nazareth, which remains almost all month. This phenomenon reflects an increase in the fleet of motorcycles circulating in the public roads of the municipality, because it is part of the metropolitan region, where several vehicles pass through it towards the capital, where the event happens.

Compared to these data, we observed that in Sousa, a Brazilian municipality located in the interior of the state of Paraíba (PB), a similar phenomenon occurs, , in the month of December, there is a high number of vehicles and people who migrate from nearby municipalities, towards the festivity that happens in the city, and about 49.7% of the patients are victims of motorcycle accidents, which allows us to infer that this problem does not affect only the large urban centers, being present also in small cities.[16]

Regarding the day of the week, the search shows that there is no specific day for an accident, which justifies a high number of events occurring daily on public roads, demonstrating the need to provide resources for their prevention and the development of campaigns focused on

preventing these events, on every day of the week.

With respect to neighborhood, Coqueiro is the region that most happens accidents involving motorcyclists. This area is the largest urban development in the municipality, where a large number of people travel daily to carry out their activities, justifying the percentage of 44.1% of occurrences are concentrated in this neighborhood. Corroborating with the study, research conducted in the year 2016, the district of Dirceu Arcoverde in Teresina, in the state of Piauí (PI), the most populous neighborhood in the city, the most populous neighborhood of the city presented a high number of accidents, noting also that in the neighborhood is concentrated several establishments that are part of the daily life of people (bank, college, businesses, etc.) which attracts large numbers of people and vehicles circulating on the roads, increasing the risk for traffic accidents.[17]

The affected systems were: tegumentary and musculoskeletal systems. A study on the profile of traffic accidents attended by prehospital mobile service demonstrated a predominance of tegumentary and skeletal muscle injuries in motorcyclists, justified by the vulnerability of these drivers, considering that the integumentary system is the protection barrier of the human organism, and is the first to come in contact when colliding with other vehicles, ground or barriers. [2]

About the type of ambulance used in the occurrence, the great majority was the Basic Support Unit, thus, we infer that most of the occurrences were mild to moderate in nature, in this case, it is the duty of the regulatory doctor to move to the accident site an Advanced Support Unit, according to the severity of the accident.

With regard to the mechanism of trauma, the collision motorcycle x car and motorcycle fall together account for 65.5% of occurrences in the municipality, We infer that this data is related to the fact that motorcycle drivers have habits of traffic in the corridors of the roads, performing dangerous maneuvers, which does not allow other vehicles to visualize them with precision.

In nursing, as in other sectors, the emergency is a service that needs faster and more accurate care that is capable of promoting greater chances of survival for victims. Recognizing the importance of early care for trauma

patients, the nurses need to make immediate decisions and conduct care safely in order to prevent, protect and restore health.

In the prehospital care environment, the nurse also plays an important role, especially with regard to the educational approach, which aims to raise awareness and clarify any doubts of the family and patients besides having a fundamental role in maintaining the vital conditions of the patient, maintaining the balance of the organism in order to ensure the possibility of reaching the hospital.[18]

It is important to emphasize that the services performed by this professional within this system include both the direct assistance and the administrative, operational, and educational procedures that extend from the first call (before service) until arrival at the referral center. The nurse, therefore, stands out as a key piece in the various contexts of health work, including mobile emergency care service; however, his work requires technical-scientific competence in constant updating. [19]

CONCLUSION

This study allowed us to conclude that young men of productive age, attended at night during the months of October and who did not wear a helmet are the main victims of motorcycle collisions in the city of Ananindeua-PA, but with a worrying index of young minors affected. We have shown that recklessness, speeding, distraction, among other factors are mainly responsible for such traffic accidents.

The research accomplished the objectives proposed, allowing us to trace the epidemiological profile of the victims attended and to know the complexity of the factors associated to traffic accidents, noting that they are permeated by a set of circumstances that contribute to the occurrence of such events.

Although the study presented a representative sample (n = 354), it still shows less than 10% of the total number of visits, which weakens the data analysis and is characterized as a limitation of the study. Another limitation present in the study refers to the lack of registration, or incomplete data in the records of attendance by the professionals involved, harming the process of associations of variables.

The registry is of great relevance in the professional practice and,

although the dynamics of the emergency service make this practice difficult, the managers must elaborate integrated protocols with the team, the managers should develop integrated protocols with the team that will enable the registration of the assistance provided and which guarantees this right to the victims and also contributes with data for the research, essential to the direction and design of health actions.

It is important that all those involved in traffic comply with the traffic rules and reflect on their behavior. We understand that regardless of what governs the law, it is society's role to preserve people's lives and their physical integrity, and also to form responsible citizens. In this context, it is necessary to implement traffic education strategies as a prevention mechanism based on studies on the determinants of human behavior in traffic, making possible its alteration from educational strategies.

Considering the role of education in the preparation for the exercise of citizenship, it is suggested to include this theme in the curricular programs of both basic education and higher education and social agenda. It is also recommended to carry out other studies on the subject, which explore both the consequences of motorcycle accidents for the quality of life and the economic and social factors associated with these traffic accidents in the municipality under analysis.

REFERENCES

1. Oliveira GB, Marcelino PS. Perfil epidemiológico dos acidentes automobilísticos na cidade de Volta Redonda – RJ, no ano de 2015. Caderno UniFOA. 2017; 33 (1): 111-119.

2. Cavalcante AKCB, Holanda VM, Rocha CFM, Cavalcante SW, Sousa JPR, Sousa FHR. Perfil dos acidentes de trânsito atendidos por serviço pré-hospitalar móvel. Revista Baiana de Enfermagem. 2015; 29 (2):135-145.

3. Instituto Brasileiro de geografia e Estatística (BR). Censo Demográfico 2010. [Acesso em : 19/12/2016]. Disponível em <http://www.cidades.ibge.gov.br/ >

4. Departamento de trânsito do Estado do Pará (DETRAN-PA). Estatísticas de acidentes no Pará. [acesso em: 09/09/2017]. Disponível em <http://vias-seguras.com/os_acidentes/estatisticas/estatisticas_estaduais/estatisticas_de_acidentes_no_para>

5. Simoneti FS, Cunha LO, Gurfinkel Y, Mancilha TS, et al. Padrão de vítimas e lesões no trauma com motocicletas. Rev Fac Ciênc Med. Sorocaba. 2016; 18(1): 36-40

6. DPVAT. Seguradora Líder. O Seguro do Trânsito. Boletim estatístico ano 05, v.4, jan/dez. 2016 [acesso em: 23/05/2016]. Disponível em:

<http://www.seguradoralider.com.br/Documents/boletim-estatistico/Boletim-Estatistico-Ano-05-Volume-04.pdf >.

7. Departamento Nacional de Trânsito (BR). Frota Nacional Dezembro de 2015. Brasília, 2015. [acesso em 20/05/2016]. Disponível em: <http://www.denatran.gov.br/frota2015.htm>.

8. Oliveira NLB, Souza EM, Cunha ZG. Mortalidade de motociclistas em acidentes de trânsito: tendência temporal entre 1997 e 2012. Cienc Cuid Saude. 2017; 16(1): 1-7.

9. Santos GEO. Cálculo amostral: calculadora on-line. 2011 [acesso em 12/12/2015]. Disponível em: http://www.publicacoesdeturismo.com.br/calculoamostral

10. Oliveira AL, Petroianu A, Gonçalves DMV, Pereira GA, Alberti, LR. Characteristics of motorcyclists involved in accidents between motorcycles and automobiles. Rev. Assoc. Med. Bras. 2015; 1(61):61-64.

11. Dutra VC, Caregnato RCA, Figueiredo MRB, Schneider DS. Traumatismo crânio cerebrais em motocicletas: relação do uso do capacete e gravidade. Acta Paul Enferm. 2014; 27(5):485-91.

12. Santos AMJ, Souza MA, Rocha FL, Souza VP, Muniz MAS, Rodrigues JA. Caracterização dos fatores de risco para acidentes de trânsito em vítimas atendidas pelo serviço móvel de urgência. Rev enferm UFPE on line. 2016; 10 (10): 3819 -24.

13. Almeida LC. Lesões musculoesqueléticas em traumas por Acidente motociclístico atendidos pelo Serviço de Atendimento Móvel de Urgência em Salvador, Bahia. [Monografia]. Bahia (BA): Universidade Federal da Bahia/UFBA; 2014. 52 f

14. Schweitzer G, Nascimento ERP, Nascimento KC, Moreira AR, Amante LN, Malfussi, LBH. Intervenções de emergência realizadas nas vítimas de trauma de um serviço aeromédico. Rev. Bras. Enferm. 2017; 70 (1): 48-54

15. Silveira ES. Análise de um centro de trauma a partir do modelo proposto pela Secretaria de Estado do Rio de Janeiro. [monografia]. Rio de janeiro (RJ): Escola Nacional de Saúde Pública Sérgio Arouca/ENSP; 2015. 69 f

16. Barbosa MQ, Abrantes KSM, Júnior WRS, Casimiro GS, Cavalcanti AL. Acidente Motociclístico: Caracterização das Vitimas Socorridas pelo Serviço de Atendimento Móvel de Urgência (SAMU). Rev bras ci Saúde. 2014; 18(1):10

17. Santos AMR, Rodrigues RAP, Santos CB, Caminiti GB. Distribuição geográfica dos óbitos de idosos por acidente de trânsito. Esc Anna Nery. 2016; 20(1): 130-137.

18. Oliveira WA, Brandão EC, Reis MCG, Giustina FPD. A importância do enfermeiro na evolução do atendimento pré-hospitalar no Brasil. Refaci. 2017; 2 (2): 1-11.

19. Luchtemberg MN, Pires DE. Enfermeiros do Serviço de Atendimento Móvel de Urgência: perfil e atividades desenvolvidas. Rev Bras Enferm. 2016; 69 (2): 213-220.

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