61 - CHARACTERIZATION OF MOTORCYCLE ACCIDENTS: A STUDY ON MOTORCYCLE DRIVERS VICTIMIZED BY TRAFFIC ACCIDENTS IN RIO GRANDE DO NORTE

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INTRODUCTION

External Causes (EC's), consisting of traffic accidents, homicides, suicides, other accidents and violence, are public health problems in industrialized countries, are responsible for a substantial parcel of morbidity and mortality in general, as well as considerable social-economic costs (DALOSSI, 1993).

In this context, the expressive growth in the number of running vehicles and the widespread occurrence of inadequate behavior, alongside with insufficient vigilance, have made traffic accidents (TA's) involving motor vehicles a considerable cause for trauma in world population, appearing among the main factors contributing to EC's (BASTOS; ANDRADE; SOARES, 2005).

In Brazil, according to a document presented by the Brazilian Traffic Medicine Association (ABRAMET), close to 1,000,000 accidents happen every year, resulting on 350,000 injured people, among which 150,000 present some disability and 50,000 others die (ABRAMET, 2007).

Beyond the high rate of mortality, traffic accidents have in common the tendency to cause injuries related to acceleration, direction of the force involved, victim's position in the vehicle, type and size of involved vehicles (MALVESTIO; SOUZA, 2002).

Among AT's, we underline the importance of motorcycles, especially in the proportion of injured victims when compared to other vehicle types. In this sense, Bastos; Andrade and Soares (2005) stress that, after World War Two, there was a considerable increase in the amount of running motor vehicles in the world as a consequence of capitalist ascension. Under these influences, there was a progressive popularization of motorcycles, especially with Japanese dominance over the world market and its low acquisition cost.

Andrade and Mello Jorge (2001) state that knowing how these events happen is indispensable so specific prevention actions can be planned and put into practice. These data allow us to detect differentiated risk situations for these events' occurrence, as well as for severe results, including death.

That said, beginning from the presupposition that knowledge of these events can contribute with the designing of motorcycle accident prevention programs and serve as base in order to plan assistance, we ask: what are the characteristics of traffic accidents involving motorcycle drivers, attended to in the Monsenhor Walfredo Gurgel hospital emergency room, in the city of Natal/RN?

We thus have as our objective to characterize traffic accidents involving motorcycle drivers, attended to in the Monsenhor Walfredo Gurgel hospital emergency room, in the city of Natal/RN.

MATERIAL AND METHOD

Exploratory-descriptive research with quantitative approach, developed in the Monsenhor Walfredo Gurgel hospital complex. This hospital is the largest emergency service and is reference in the State of Rio Grande do Norte/RN. The population consisted of 371 motorcycle drivers admitted into this hospital complex.

Motorcycle accident victims that took part in the study comply with the following inclusion criteria: aged 18 or older, be the motorcycle's driver in the time of the event, accept taking part on the study and, when in coma or unable to communicate verbally, to be accompanied by someone legally capable of authorizing the patient's participation in the research and able to give out necessary information.

For data collection we used a closed-question instrument regarding victim and accident characterization. The collection took place in the months of October, November and December 2007. This process took place after approval in the ethics committee from Universidade Federal do Rio Grande do Norte, report #221/07, complying with the legal dispositions of resolution 196/96 which regulates research on human beings (BRASIL, 2000).

The data collection procedure happened as follows: first, we consulted the patient report in order to identify whether the patients fit or inclusion criteria.

We then approached each patient, identified ourselves and explained our research objectives. When they accepted to be part of our investigation, we presented a term of free and clear consent (TCLE). In cases when the patient was unable t verbally communicate, this approach was directed at his companion. After the TCLE was signed, we interviewed them on personal data and accident characteristics.

The data were analyzed by descriptive statistics and presented as tables. To that end we use Statistica 6.0 and Microsoft-Excel XP software.

RESULTS

On 371 motorcycle drivers, we observed the predominance of the male gender, with 328 subjects (88.40%). In regard to age, the group aged 18 to 24 was the most frequent 148 (39.90%). Similar data were found by Silva (2006) whose research on the work of motoboys and factors involved in traffic accidents observed a predominance of the 18 to 24 age group (50.41%).

When studying motorcycle accidents, Santos et al. (2008) also found a predominance of the male gender, corresponding to 85.8% of victims. In regard to age, the group aged 13 to 34 was the most frequent (68,13%). This authors underline the fact that this data give us insight on social-cultural patterns regarding gender issues which perpetuate in our society and tend to lead to high morbidity and mortality rates on young adult males, at the height of their capabilities, causing the nation considerable economic damage.

From out total studied subjects, 178 (47.98%) were married and 176 (47.44%) single. It's important to mention that the data we gathered differ from those identified by most authors, in which a considerable part of traffic accident victims are single. In this regard, Fazal-Carvalho et al. (2002) found a predominance of single people (53.4%) among traffic accident victims attended

to in a trauma care center in São Paulo (SP).

Regarding family earnings, 279 subjects (75.20%) had monthly income of up to 2 minimum wages, considering the minimum wage at the time of data collection (R$ 380,00). Similar data were found by Braga Júnior (2005) with trauma victims in Fortaleza (CE) in which 60% of the population referred to having a family income of up to 2 minimum wages.

Accident Characterization

TABLE 01 Distribution of motorcycle drivers victimized by traffic accidents according to accident location. HMWG NATAL/RN, 2007.

ACCIDENT LOCATION	N	%
Natal	143	38,54
Greater Natal	34	09,16
Other cities in the State	96	25,88
Federal roads (BR)	72	19,41
State roads (RN)	24	06,47
Unknown	02	00,54
TOTAL	**371**	**100,00**

In regard to accident locations observed on Table 01, most, 143 (38.54%) happened in the State's capital city. The predominance of these events in the capital can be explained by some aspects such as: the capital has the largest population in the State (RN) with 774.230 inhabitants, and the reference hospital is also located in the capital (BRASIL, 2007).

Mauro (2001), investigating traffic accidents in Campinas (SP) found that 61.6% of the accidents occurred in the city itself. Likewise, Nakassa (2002) found a predominance of the urban perimeter (67.6%). The knowledge of the location where the accident happens most often allow the formulation of prevention strategies for these events as well as an improvement in the distribution of mobile pre-hospital rescue units.

TABLE 02 Distribution of motorcycle accidents according to the type of accident. HMWG NATAL/RN. 2007.

TYPE OF ACCIDENT	N	%
Motorcycle-motorcycle	37	9,97
Motorcycle-car	104	28,03
Motorcycle-bus	11	2,96
Motorcycle-pedestrian/animal	15	4,04
Motorcycle-fixed object	19	5,12
Motorcycle-bicyclist	12	3,23
Motorcycle-train	00	0,00
Motorcycle-animal cart	02	0,54
No collision*	171	46,09
TOTAL	**371**	**100,00**

* Falling or rolling

Regarding the type of accident, by analyzing Table 02 we observe fall and rolling were the most frequent with 171 events (46.09%); if we consider all types of collision, however, they add up to 53.91%, and among them the motorcycle-car collision is predominant (28.03%). Specifically in Rio Grande do Norte, collisions represented 59.2% of all accidents in 2004 (MELLO-JORGE; KOIZUMI, 2007).

Silva (2006) found through reports from motoboys that 65% of their accidents were collisions with another vehicle (car, motorcycle, bicycle, or other), followed by falling from the motorcycle.

Regarding legal authorization for driving an automotive vehicle, that is, possessing a driver's license (CNH) category A (motorcycle), it was found that 196 (53%) of the investigated individuals claimed to possess CNH, while 176 (47%) did not, and among these 103 (58.52%) originated from towns in the State's interior. Similar data were found by Mauro (2001), with 49% of the accident victims possessing a driver's license.

Another important aspect in the analysis of motorcycle accidents is the use of helmet. In this sense, among 371 subjects that were affected by accidents, 245 (66,03%) were wearing a helmet in the time of the accident. However, although most motorcyclists were wearing a helmet, we still found a very high percentage (34%) that was not, given that it's use is mandatory and there's scientific evidence attesting its efficacy in preventing cranium injuries.

TABLE 03 Distribution of motorcycle drivers victimized by traffic accidents according to ingestion of alcohol and day of the week. HMWG NATAL/RN, 2007.

DAY OF THE WEEK	INGESTED ALCOHOL					
	YES		NO		TOTAL	
	N	%	N	%	N	%
Sunday	57	36,08	37	17,37	94	25,34
Saturday	41	25,95	38	17,84	79	21,29
Friday	20	12,66	32	15,02	52	14,02
Thursday	12	07,59	24	11,27	36	09,70
Monday	11	06,96	29	13,62	40	10,78
Wednesday	10	06,33	34	15,96	44	11,86
Tuesday	7	04,43	19	08,92	26	07,01
TOTAL	**158**	**100,00**	**213**	**100,00**	**371**	**100,00**

As we can observe on Table 03, when we cross the data related to day of the week and alcohol ingestion, we notice sunday was the day when the most accidents happened, with 94 occurrences (25.34%) and 57 (36.08%) intoxicated victims. Saturdays are second, with 79 accidents (21.29%) and 41 (25.59%) had consumed alcohol.

Silva et al. (2002), when analyzing alcohol dosage in post-mortem victims in the Londrina forensic medicine institute (IML), detected a higher percentage of the substance's use in the weekends (44.93%). With comments on the day of the week alone, Bastos, Andrade and Soares (2005) state about 20% of the accidents in Londrina (PR), from 1997 to 2000, occurred on Saturdays.

FINAL CONSIDERATIONS

In this study, we identified that among 371 motorcycle drivers victimized by traffic accidents 328 were male, aged between 18 and 24 (148), married (178) with a monthly income of up to 2 minimum wages (279). Regarding the characteristics of accidents involving motorcycle drivers, 172 happened in the afternoon shift; 94 of the accidents happened on Sunday; 200 victims suffered falls or vehicle rolling and 104 were involved in motorcycle-car collisions; 245 were wearing a helmet in the time of the accident; 213 were not intoxicated, and among the 158 that were, 115 had ingested alcohol.

That said, this study characterized the population at greater risk of traffic accidents, as well as focusing an acute need for intervention from motorcycle drivers, health professionals and administrators, in preventive actions. Furthermore, more efficient monitoring by the traffic authorities. We hope thus that, by presenting some aspects of motorcycle accident characterization, this work may contribute to the formulation of strategies to face these problems, minimizing the accidents themselves as well as their drastic consequences.

KEYWORDS: Motorcycle; Accidents, Traffic; Nursing

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CHARACTERIZATION OF MOTORCYCLE ACCIDENTS: A STUDY ON MOTORCYCLE DRIVERS VICTIMIZED BY TRAFFIC ACCIDENTS IN RIO GRANDE DO NORTE

ABSTRACT

Exploratory descriptive study, prospective, with a quantitative approach, performed in the Monsenhor Walfredo Gurgel hospital complex (HMWG), in the city of Natal/RN, aiming to characterize the accidents involving motorcycle drivers attended to in the HMWG emergency room. The population consisted of 371 motorcycle drivers, with data collected from October to December 2007. For data collection, we used an instrument containing closed questions related to the characterization of the victims and accidents. The results show that among 371 motorcycle drivers affected by traffic accidents, 328 (88.40%) were male, aged 18 to 24 with 148 (39.90%), married 176 (47.98%) with a monthly income of up to 2 minimum wages with 279 (75.20%). Regarding the characteristics of accidents involving motorcycle drivers, 172 (46.36%) happened in the afternoon shift; 94 (25.34%) of the accidents happened on Sunday; 200 (53.91%) of the victims suffered falls or vehicle rolling and 104 (28.03%) were involved in motorcycle-car collisions; 196 (53%) of the investigated individuals claimed to possess driver's license (CNH); 245 (63,03%) were wearing a helmet in the time of the accident; 213 (57.41%) were not intoxicated, and among those that did 158 (42,59%), alcohol was the substance most consumed with 115 (98.10%). We conclude that for motorcycle drivers victimized by traffic accidents, age, gender, day of the week, type of accident, use of drugs and not wearing a helmet signal increases in the risk

for these events. We thus hope this study to contribute with the formulation of strategies for the facing of these problems.
KEYWORDS**:** Motorcycle; Accidents, Traffic; Nursing

CARACTÉRISATION DES ACCIDENTS DE MOTO: ÉTUDE MENÉE AUPRÈS DE MOTOCYCLISTES VICTIMES D'ACCIDENTS DE LA CIRCULATION À RIO GRANDE DO NORTE

RÉSUMÉ

Étude exploratoire descriptive, prospective, quantitative, menée au Centre Hospitalier Monsenhor Walfredo Gurgel (HMWG) de Natal/RN, ayant pour but de caractériser les accidents de la circulation de motocyclistes, traités aux urgences de l'HMWG. La population compta 371 motocyclistes et les données furent recueillies d'octobre à décembre 2007. Pour l'obtention des données, on utilisa un questionnaire aux questions fermées, liées à la caractérisation des victimes et des accidents. Les résultats montrèrent que sur les 371 motocyclistes victimes d'accidents de la circulation, 328 (88,40%) étaient de sexe masculin, âgés de 18 à 24 ans 148 (39,90%), mariés 176 (47,98%) et ayant des revenus allant jusqu'à deux fois le salaire minimum 279 (75,20%). Quant aux caractéristiques des accidents, la majorité se produisit le soir 172 (46,36%), 94 (25,34%) ayant lieu le dimanche; 200 (53,91%) des motocyclistes chutèrent ou se renversèrent; parmi les collisions, il y eut une prédominance entre motos et voitures 104 (28,03%); 196 (52,6%) avaient le permis et 245 (63,03%) de ces derniers portaient un casque au moment de l'accident, n'avaient pas fait usage de drogues 213 (57,41%) et parmi les autres 158 (42,59%),, l'alcool fut la substance la plus utilisée 115 (98,10%). Nous avons conclu que pour les motocyclistes victimes d'accidents, l'âge, le sexe, le jour de la semaine, le type d'accident, l'usage de drogues et l'absence de casque sont liés au risque d'occurrence de tels accidents, de sorte que nous souhaitons que cette étude puisse contribuer à l'élaboration de stratégies pour les combattre.
MOTS-CLÉS: Motocyclette; Accidents de la Circulation; Soins Infirmiers

CARACTERIZACION DE LOS ACCIDENTES DE MOTOCICLETA; ESTUDIO EM CONDUCTORES DE MOTOCICLETA, VICTIMAS DE ACCIDENTES DE TRANSITO EM RIO GRANDE DO NORTE

RESUMEN

Estudio exploratorio descriptivo, prospectivo, con abordaje cuantitativa, realizado en el Complejo Hospitalar Monseñor Walfredo Gurgel (HMWG). Natal/RN, com el objetivo de caracterizar los accidentes de motocicleta de los conductores, victimas de accidentes de tránsito atendidas en la Emergencia del Hospital Monseñor Walfredo Gurgel. La población constó de 371 conductores de motocicleta, con datos colectados de octubre a diciembre de 2007. Para la colecta de datos usamos un instrumento conteniendo preguntas cerradas. Relacionadas a la motocicleta victimas de accidente de tránsito, 328 (88,40%) eran del sexo masculino entre los 18 y 24 años, 148 (39,90%) y casados 176 (47,98%) y con renta de hasta 2 sueldos mínimos 279 (75,20%). Cuanto a las características del accidente, el horario predominante fue el vespertino 172 (46.36%), y 94 (25,34%) fueron accidentados en el domingo, 200 (53,91%) sufrieron caídas y vuelcos. De entre las colisiones se destacó aquellas entre moto-carro 104 (28,03%), siendo 196 (52,6%) habilitados y de estos 245 (63,03%) estaban usando casco de protección en el momento del accidente. No utilizaron droga 213 (57,41%), y de los que usaron 158 (42,59%), alcohol,fue la mayoría 115 (98,10%). Concluimos, que para los conductores de motocicleta víctimas de accidentes, la edad, sexo, .día de la semana, tipo de accidente, uso de droga y no uso de casco de protección apuntan para el riesgo de ocurrencia de esos eventos. De ese modo, esperamos que este trabajo pueda contribuir con la formulación de estrategias de enfrentamientos de esos agravios.
PALABRAS CLAVE: Motocicletas, Accidentes de Tránsito, Enfermería

CARACTERIZAÇÃO DOS ACIDENTES DE MOTOCICLETA: ESTUDO EM CONDUTORES DE MOTOCICLETA VÍTIMAS DE ACIDENTES DE TRÂNSITO NO RIO GRANDE DO NORTE

RESUMO

Estudo exploratório descritivo, prospectivo, com abordagem quantitativa, realizado no Complexo Hospitalar Monsenhor Walfredo Gurgel (HMWG), Natal/RN, com o objetivo de caracterizar os acidentes de motocicleta dos condutores vítimas de acidentes de trânsito, atendidas no pronto-socorro do Hospital Monsenhor Walfredo Gurgel. A população constou de 371 condutores de motocicleta, com dados coletados de outubro a dezembro de 2007. Para a coleta de dados usamos um instrumento contendo questões fechadas, relacionadas à caracterização das vítimas e do acidente. Os resultados mostraram que dos 371 condutores de motocicleta vítimas de acidente de trânsito, 328 (88,40%) eram do sexo masculino na faixa etária entre 18 e 24 anos com 148 (39,90%), casados com 176 (47,98%), e renda de até 2 salários mínimos 279 (75,20%). Quanto às características do acidente, o turno predominante foi o vespertino 172 (46,36%), 94 (25,34%) foram acidentados no domingo; 200 (53,91%) sofreram quedas e capotamentos; dentre as colisões, destacaram-se aquelas entre moto-carro 104 (28,03%); 196 (52,6%) eram habilitados; 245 (63,03%) estavam usando capacete no momento do acidente, não utilizou droga 213 (57,41%) e dos que usaram 158 (42,59%), o álcool foi a mais consumida 115 (98,10%). Concluímos que para os condutores de motocicleta vítimas de acidente, a idade, sexo, dia da semana, tipo de acidente, uso de drogas e o não uso de capacete sinalizam para o risco de ocorrência desses eventos. Desse modo, esperamos que este trabalho possa contribuir com a formulação de estratégia de enfrentamento desses agravos.
PALAVRAS-CHAVE: Motocicletas; Acidentes de Trânsito; Enfermagem.