

Accidents involving Brazilian indigenous treated at urgent and emergency services of the Unified Health System

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Abstract *We analyzed the accidents with Brazilian indigenous treated at urgent and emergency services of the Unified Health System (SUS). Data were obtained from the 2014 Viva Survey, which included 86 services from 24 capitals and the Federal District. The demographic profile of the indigenous, the event and the attendance were characterized. Most of the attended people were male in the 20-39 years age group. Falls and traffic accidents were the main reasons for attendance. Alcohol use was informed by 5.6% of the attended people, a figure that increases to 19.1% in traffic accidents, 26.1% among drivers and 22.8% among motorcyclists. There was a statistical difference between genders in relation to age, disability, place of occurrence of the event, work-related event and victim's condition in the traffic accident. We emphasize the importance of providing visibility to accidents with indigenous and engage them in the prevention of such events. Data reliability depends on the adequate completion in indigenous health information systems.*

Key words *Accidents, Traffic accidents, Falls, Indigenous, Use of alcohol*

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Introduction

This paper examines information on accidents involving indigenous treated at urgent and emergency services of the Unified Health System (SUS) collected from the 2014 VIVA Survey. An accident is understood as an unintentional and preventable event, causing physical and/or emotional harm at home and in other social settings, such as workplace, traffic, sports and leisure, among others¹. The present study considered traffic accidents, falls, burns and other accidental events, such as cuts with sharp objects, object falling on people, accidental poisoning, suffocation, drowning, among others.

In addition to cultural and sociodemographic aspects, the great diversity of Brazilian indigenous people appears in the complex range of factors that are reflected in the health indicators of the ethnic groups². These people live in different territories that have suffered historically the interference of fronts spreading in all Brazilian regions, which implies varying vulnerabilities and exposure to accidents and violence, among other issues affecting their lifestyles and habits in situations of village or urban settings.

The 2010 census of the Brazilian Institute of Geography and Statistics (IBGE) revealed the existence of 896,900 indigenous people in the country, of which 36.2% living in urban areas and 63.8% in rural areas. There are 305 ethnic groups and 274 spoken languages³. They are in all regions, but the most populous proportion is located in the North. *Portal Brasil* reports that 78,900 people residing on indigenous lands declared being of another color or race (mostly browns, 67.5%), but they considered themselves as “indigenous” according to traditions, customs, culture and ancestors⁴.

Due to the large differences between the indigenous people and their life contexts, studies show specificities of the precarious health situation, not only among the different ethnic groups, but also when compared to other portions of the population. Inequalities appear in their living and health conditions and care aspects^{2,5-8}.

In the health sector, the Special Secretariat of Indigenous Health (SESAI) was established in 2010 and is responsible for coordinating the National Indigenous People Health Care Policy, of 2002⁹, and managing the Indigenous Healthcare Subsystem (SasiSUS) within the Unified Health System (SUS), of 1999¹⁰.

SasiSUS multidisciplinary staff working in Special Indigenous Health Districts (DSEI) per-

forms basic care actions to the benefit of about 640,000 indigenous from villages demarcated throughout Brazil¹¹ and records them in the Indigenous Healthcare Information System (SIA-SI), which brought advances in the methodology and tools for the collection of data on the health of these people. However, scholars highlight its restricted access and little use for systematic analysis of the indigenous health situation by external users¹², its still inadequate completion by professionals. This has produced indigenous health indicators of low trustworthiness and reliability, something which needs to be worked on¹³.

The few indicators available on accidents of Brazilian indigenous population and few studies show specific data about groups or regions inhabited by indigenous people, such as snake-bites accidents¹⁴. Sometimes they are studies in which the indigenous population is not the object of study and appears only as a race/skin color variable category^{15,16}. We emphasize that the Violence and Accident Surveillance System (VIVA) was established in 2006 in order to capture data of attendance due to external causes (accidents and violence) by the urgent and emergency services of the Unified Health System (SUS) network that are not covered by the Hospitalization Information System (SIH) or the Mortality Information System (SIM). In its two components, namely, *VIVA Contínuo* and *VIVA Inquérito*, the system has shown a different morbidity than the observed in hospitalizations¹⁷, hence the importance of the analysis carried out here, which takes the indigenous population as the object of this study.

Methodology

We conducted the analysis of data of the emergency care provided to self-reported indigenous race/color patients due to accidents. Data stem from a cross-sectional study on attendance to victims of external causes (accidents and violence) in 86 urgent and emergency services within the SUS, located in the Federal District (DF) and 24 Brazilian state capitals in 2014 (excluding Florianópolis/Santa Catarina and Cuiabá/Mato Grosso, because of managerial, technical and operational issues).

In each capital and the DF, we included establishments that met the following criteria: a) be a reference of emergency response to external causes, after consulting the National Register of Health Facilities (CNES) and the Hospital Infor-

mation System of Unified Health system (SIH/SUS); b) participation in the 2006, 2007¹⁸, 2009 to 2011¹⁹ surveys. The selected units were confirmed by coordinators of the Noncommunicable Diseases and Disorders Surveillance (DANT) unit of the state and municipal health secretariats participating in the research, as the main gateways of accidents and violence cases attended in each city's emergency services.

Sample size was at least 2,000 attendances due to external causes in each capital and the DF, considering a coefficient of variation of less than 30% and a standard error below 3. Data collection occurred during 30 consecutive days, split into 60 shifts of 12-hour between September and November 2014. The shift selection procedure was the single-stage cluster sampling stratified by establishment, and shift was the primary sampling unit. All attendances due to external causes in the selected shift in each establishment were eligible for interview. We excluded cases of patients seeking the same service for the second time or more, as well as returning patients or patients with care complications.

Data were collected and recorded in a standardized form by trained interviewers. We adopted the definitions of the 10th revision of the International Classification of Diseases and Related Health Problems (ICD-10) related to Chapter XX-External causes of morbidity and mortality to identify the type of occurrence that led to the attendance.

This paper considered traffic accidents (V01-V99), falls (W00-W19), burns (W85-W99, X00-X19) and other accidental events, such as cuts with sharp piercing objects, object falling on people, accidental poisoning, suffocation, drowning, among others. The variables analyzed were: gender, age group, schooling, disability, health plan, place of residence of the victim, location of the event, event data (day, time, location), nature of injury, body part injured, work-related event, alcohol consumption in the six hours prior to the event, means of transportation used to get to the emergency service, shift and day of attendance, prior attendance in another service, emergency development and type of accident. In road traffic accidents, variables were victim's condition and means of transport at the time of the accident, other party involved in the accident, use of seat belt and helmet. Falls were investigated by type (same level, bed/furniture, stair/step, tree/roof/scaffold/slab, hole/other levels).

Analyses were performed in Stata's "svy" module, version 14, to obtain unbiased estimates

when data derive from complex sample designs. Differences among qualitative variables were analyzed by chi-square test (Rao-Scott) with 5.0% significance level.

The 2014 VIVA Survey project was evaluated and approved by the National Research Ethics Committee (CONEP), Ministry of Health. Data collection was performed following verbal agreement of victims or their legal guardians/caregivers when under 18 years of age or when the victim was unconscious.

Results

Figure 1 shows the proportion of indigenous victims of accidents in relation to total attended in urgent and emergency services of state capitals and DF participating the 2014 VIVA Survey 2014. This proportion stands at around 1.5% in all areas; seven (07) cities appear with 2.0% or more, among which Brasília, Belém and Belo Horizonte stand out; eleven (11) state capitals report around 1.0% and proportions are less than 1.0% in the remaining seven (07). Porto Alegre is the capital with the lowest percentage of indigenous accident victims treated in such services.

Records with information about the federal unit of residence of these patients evidenced that 53.9% live in the northern region of the country, followed by 17.1% in the Northeast, 14.0% in the Midwest region, 12.2% in the Southeast and 2.7% in the South. Among those for which the accident's federative unit was registered, 53.3% occurred in the North, 16.1% in the Northeast, 14.8% in the Midwest, 13.1% in the Southeast, and 2.7% in the South.

Three hundred seventy-five attendances to indigenous were recorded, with 235 males and 140 females. Regarding the sociodemographic characteristics of the victims shown in Table 1, the 20-39 years age group gathered almost 40.0% of attendances, and most of them (53.3%) were for men, while among women, 25.9% of cases referred to those in the 0-9 years age group and 25.8% to those in the of 40-59 years age group. This different age distribution between genders was statistically significant ($p = 0.000$).

About 36.0% of indigenous attended with information on schooling reported having up to five (05) years of study, 26.8% studied 6-9 years, but the share of those with 10 or more years of study (37.1%) is quite significant.

More than 90.0% of treated indigenous have no disability, however, this occurs more frequent-

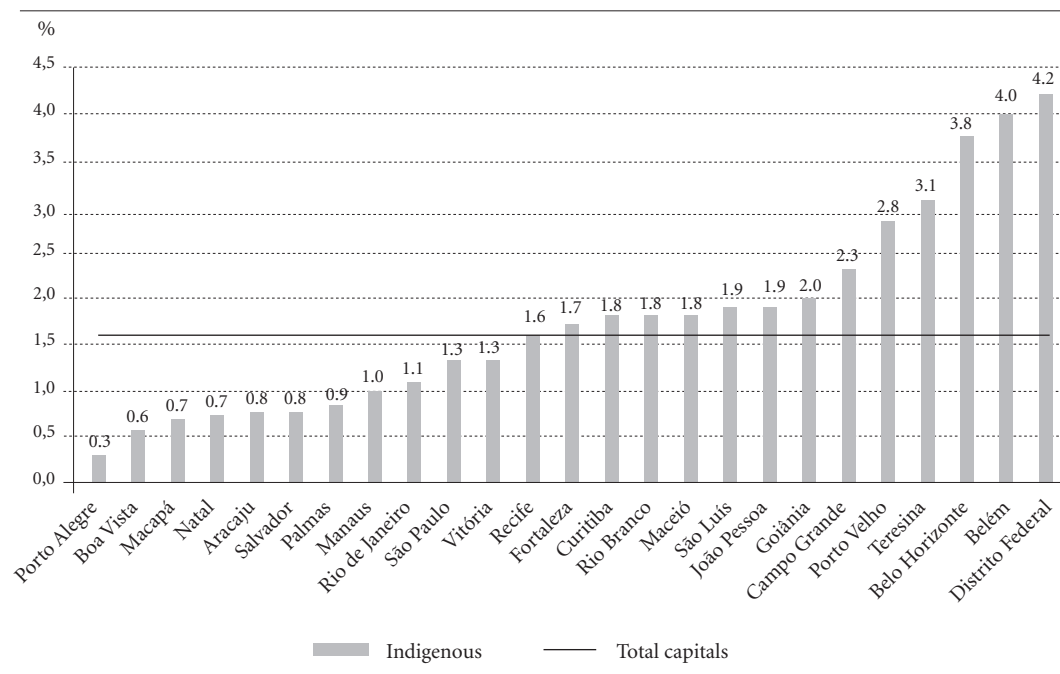


Figure 1. Proportion of indigenous self-declared patients in relation to all accident victims treated at urgent and emergency services in 24 capitals and the Federal District, Brazil, September to October 2014.

Source: Ministry of Health, Health Surveillance Secretariat, Violence and Accidents Surveillance System-VIVA, 2014 Survey.

ly among females (6.5%), with significant difference compared to males ($p = 0.039$). For the valid records, 8.2% of the ones attended had health insurance.

Table 2 shows that road traffic accidents and falls are the most frequent types in indigenous treated at emergency services. Further analysis of road traffic accidents evidenced that most indigenous attended were drivers, especially males; females were predominantly passengers, with a statistically significant difference ($p = 0.007$).

The motorcycle stands out as victim's means of transport at the time of the accident (62.0%), both overall and in both genders, followed those who move around walking (15.2%), while the other party involved in accident was mainly a car, followed by the "other" category, which consisted of accidents involving any means of transport caused by slippage, hole, stone/gravel, imbalance, radius/wheel/chain.

The analysis of traffic accidents by life cycle showed that these events affect more children (0-9 years) and the elderly (60 and over) as pedestrians and passengers; part of children/adolescents (10-19 years) and adults (20-59 years) were more victims as drivers.

While most attended informed wearing helmets (83.4%) and seat belts (62.8%), it is important to note that considerable proportions of 37.2% and 16.6%, of these indigenous did not use, respectively, these safety devices at the time of accident.

Also in Table 2, fall from same level was the most frequent event among the indigenous treated (54.3%), followed by fall from ladder/step (18.0%) and fall in hole/other levels (12.2%). Considering the life cycle, fall from same level appears as the main type in childhood/adolescence, part of adulthood and old age, except in the 20-39 years age group, in which falls from ladder/step prevail.

Alcohol consumption was investigated with regard to all accidents and showed that a small proportion (5.6%) of indigenous claimed to have consumed alcohol six hours before the event, 6.8% among men and 3.4% among women. In road traffic accidents, consumption was positive for 19.1% of valid records of treated indigenous and was more frequent among drivers (26.1%), followed by pedestrians (17.3%). With regard to means of transport, alcohol consumption was more frequent among those who were on mo-

Table 1. Sociodemographic characteristics of indigenous victims treated at urgent and emergency care, by gender, in 24 capitals and the Federal District, Brazil, September to October 2014.

Sociodemographic characteristics	Gender ^a						p ^{**}
	Male (n = 235)		Female (n = 140)		Total (n = 375)		
	N	% [*]	N	% [*]	N	% [*]	
Age group (years)							0.000
0 to 9	33	9.7	38	25.9	71	15.5	
10 to 19	58	21.4	32	23.2	90	22.1	
20 to 39	98	53.3	29	16.2	127	39.9	
40 to 59	37	14.1	29	25.8	66	18.3	
60 and over	7	1.5	12	8.9	19	4.2	
Schooling (years of study)							0.452
0 to 5	83	33.0	62	42.1	145	36.2	
6 to 9	58	28.9	31	22.8	89	26.8	
10 and over	69	38.2	34	35.1	103	37.1	
Has some kind of disability ^b							0.039
Yes	6	1.6	7	6.5	13	3.4	
No	227	98.4	132	93.5	359	96.6	
Has health insurance plan							0.279
Yes	14	9.7	9	5.6	23	8.2	
No	212	90.3	126	94.4	338	91.8	

Source: Ministry of Health, Health Surveillance Secretariat, Violence and Accidents Surveillance System-VIVA, 2014 Survey.

^{*} Percentage weighted for sample design. ^{**} Chi-square association test (Rao-Scott). ^a The number of attendances for some variables diverged due to missing data (ignored / blank). ^b Includes physical, mental, visual, hearing impairments and other disabilities / syndromes.

torcycles (22.8%) and bicycles (20.7%) at the time of the accident. Regarding falls, alcohol consumption accounted for 2.0% of attendances to indigenous and were more frequent in falls in holes/other level and falls from bed/furniture.

With reference to the event, we observed that public roads and home accounted for 61.5% of records with information on the location of accidents (Table 3). These locations preponderate among women. The “other” category prevailed among men, such as bar or similar, trade/services, industry/construction among other locations. There was statistical difference in the distribution of this variable ($p = 0.001$).

The valid records on injuries evidenced concussion/sprain/dislocation (44.6%) and cut/laceration (29.7%) as the most frequent events. Fractures/amputation/trauma also represented 14.3% of injuries among indigenous treated. Upper and lower limbs were most frequently affected body parts in 69.0% of attendances, while head/neck accounted for 16.1% and 10.0% of injuries affected multiple organ/body parts.

A considerable part of the attended indigenous (36.3%) reported that the accident was

work-related. Among men, this percentage was even more significant: 48.0% versus only 4.2% of women, with statistically significant differences ($p = 0.000$).

Table 4 characterizes the attendance. Among valid records, we observed that the highest proportions were means of transport to the hospital by private car (48.9%), daytime care (63.2%) and in the period Monday through Friday (78.1%). Some 76.8% received no prior care in another service; 82.1% resulted in discharge and 12.8% were hospitalized.

Discussion

In this section, we highlight and discuss some of the results of this study. Most attendances to indigenous people who have suffered accidents occurred in the northern region of the country (here represented by the highest frequencies in Belém and Porto Velho), along with the Midwest region (with highest frequencies in Brasília, Campo Grande and Goiânia). These data suffer the influence of these two regions that are home

Table 2. Characteristics of types of accidents among indigenous treated at urgent and emergency care services, by gender, in 24 capitals and the Federal District, Brazil, from September to October, 2014.

Types of accidents characteristics	Gender ^a						p ^{**}
	Male (n = 235)		Female (n = 140)		Total (n = 375)		
	N	% [*]	N	% [*]	N	% [*]	
Type of accident							NA
Traffic accident	76	23.9	40	21.3	116	23.0	
Fall	51	23.7	51	48.2	102	32.4	
Cutting injury	25	10.5	6	3.6	31	8.0	
Foreign body	16	7.3	9	4.0	25	6.2	
Collision with object/person	16	8.5	8	2.7	24	6.4	
Accidents with animals	13	2.5	9	3.3	22	2.8	
Object falling on people	10	8.9	5	6.0	15	7.8	
Sprain	12	8.4	3	3.9	15	6.8	
Other accidents ^b	16	6.3	9	7.0	25	6.6	
Traffic accident: type of victim							0.007
Pedestrian	6	17.5	5	10.6	11	15.2	
Driver	55	64.0	16	33.2	71	53.8	
Passenger	15	18.5	19	56.2	34	31.0	
Traffic accident: means of victim's transport							NA
Walking	6	17.5	5	10.6	11	15.2	
Car	4	7.7	5	15.9	9	10.4	
Motorbike	55	65.1	20	55.5	75	62.0	
Bicycle	8	6.1	7	13.2	15	8.4	
Bus/minibus/other	3	3.6	3	4.8	6	4.0	
Traffic accident: other party involved							NA
Car	26	41.4	10	23.1	36	35.9	
Motorbike	12	10.7	3	8.1	15	10.0	
Bus/minibus	3	9.9	1	1.7	4	7.5	
Bicycle	3	5.3	1	1.7	4	4.3	
Fixed object	7	9.6	5	10.4	12	9.8	
Animal	7	7.1	1	2.4	8	5.7	
Other	16	16.0	15	52.6	31	26.8	
Type of fall							NA
Same level	24	42.4	31	64.7	55	54.3	
Bed/furniture	6	6.8	8	6.7	14	6.7	
Ladder/step	8	34.8	3	3.2	11	18.0	
Tree/roof/scaffold/slab	5	6.0	4	11.2	9	8.8	
Hole/other levels	8	10.0	5	14.2	13	12.2	

Source: Ministry of Health, Health Surveillance Secretariat, Violence and Accidents Surveillance System-VIVA, 2014 Survey. NA: not applicable because the chi-square test and the p value were not calculated due to the existence of a cell with a value below five. * Percentage weighted for sample design. ** Chi-square association test (Rao-Scott). ^a The number of attendances for some variables diverged due to missing data (ignored / blank). ^b Includes choking / suffocation, foreign body, drowning, poisoning / intoxication, crushing, injury by firearms, others.

to the largest proportion of Brazilian indigenous people²⁰⁻²².

Research indicates that indigenous living in areas far from urban centers have very restricted access and care to their health problems. Distance from facilities and poor existing health services can exacerbate these issues^{23,24}. However, the health of those living in urban areas or nearby

can be worse than those living in remote areas. The analysis of these characteristics must consider the cultural issues involved in serving these populations²⁵.

It is important to clarify that while about 70.0% of the accidents analyzed here have occurred in urban areas, this does not necessarily mean that municipalities where these events oc-

Table 3. Characteristics of accidental events involving indigenous treated at urgent and emergency care services, by gender, in 24 capitals and the Federal District, Brazil, September to October 2014.

Characteristics of accidental events	Gender ^a						p ^{**}
	Male (n = 235)		Female (n = 140)		Total (n = 375)		
	N	% [*]	N	% [*]	N	% [*]	
Location of the event							0.001
Home ^b	59	21.7	63	35.1	122	26.5	
Public Road	77	29.1	54	45.4	131	35.0	
School	15	6.5	8	10.0	23	7.8	
Leisure area	16	6.6	8	4.6	24	5.9	
Other ^c	63	36.1	6	4.9	69	24.8	
Nature of injury							0.174
No injury	13	6.3	10	6.4	23	6.4	
Concussion / sprain / dislocation	76	41.2	53	51.1	129	44.6	
Cut/laceration	92	35.1	38	20.1	130	29.7	
Fracture / amputation / trauma ^d	35	13.7	24	15.2	59	14.3	
Other ^e	13	3.7	12	7.2	25	5.0	
Body part affected							0.892
Head / neck	37	16.9	20	14.6	57	16.1	
Chest / abdomen / pelvis	11	4.3	11	6.0	22	4.9	
Upper and lower limbs	145	68.9	81	69.0	226	69.0	
Multiple organs / parts	31	9.9	14	10.4	45	10.0	
Work-related event							0.000
Yes	56	48.0	6	4.2	62	36.3	
No	130	52.0	74	95.8	204	63.7	

Source: Ministry of Health, Health Surveillance Secretariat, Violence and Accidents Surveillance System-VIVA, 2014 Survey.

^{*} Percentage weighted for sample design. ^{**} Chi-square association test (Rao-Scott). ^a The number of attendances for some variables diverged due to missing data (ignored / blank). ^b Includes residence and collective housing. ^c Includes bar or similar, trade / services, industry / construction and other. ^d Includes head trauma, dental trauma and polytrauma. ^e Includes poisoning, burns and other.

curred are close to the capital where attendances were held.

Studies on the health situation of indigenous people have highlighted the difficulty in tracing a common profile, because of ethnic differences. However, they can identify some overlap of traditional patterns of infectious and parasitic diseases, such as diarrhea and tuberculosis, combined with the emergence of chronic diseases such as diabetes, hypertension and obesity, respiratory diseases and sexually transmitted diseases/AIDS^{23,26,27}. One of the emerging health issues of indigenous groups are accidental and violent injuries (external causes) that affect the morbidity and mortality of these populations^{2,22,23,27,28}.

Regarding the characteristics of victims, data show that the indigenous treated for accidents are concentrated in the 20-39 years age group and are male. These data corroborate findings of studies analyzing the profile of all treated for accidents

in urgent and emergency services in 2009^{29,30} and also the pattern of hospital admissions due to external causes in the general population³¹.

We observed that a considerable share (37.1%) of indigenous treated has 10 or more schooling years. This percentage is similar to all persons attended due to accidents in the 2006 and 2009 VIVA surveys, in which high proportions of people with more schooling years were also observed^{32,33}.

Falls and traffic accidents involving mainly motorcycles led the indigenous to seek more care at a health facility. This finding coincides with the pattern of accidents of the general national population¹⁶.

Literature has pointed to the use of alcohol among those injured in traffic, both as vehicle drivers and passengers. In the present study, the declaration of alcohol consumption in the six hours before the event was higher among mo-

Table 4. Characteristics of care to indigenous victims of injuries treated in urgent and emergency care services, by gender, in 24 capitals and the Federal District, Brazil, September to October 2014.

Characteristics of care	Gender ^a						p ^{**}
	Male (n = 235)		Female (n = 140)		Total (n = 375)		
	N	% [*]	N	% [*]	N	% [*]	
Transport to hospital							0.289
Walking / bus / minibus	42	28.0	22	20.0	64	25.2	
Private car	104	47.4	68	51.9	172	48.9	
SAMU / ambulance / rescue	70	18.0	39	24.8	109	20.4	
Other ^b	16	6.6	10	3.3	26	5.5	
Period of care							0.398
Daytime	141	65.3	79	59.5	220	63.2	
Nighttime	89	34.7	59	40.5	148	36.8	
Day of care							0.143
Saturday and Sunday	55	18.7	35	27.6	90	21.9	
Monday through Friday	180	81.3	105	72.4	285	78.1	
Previous care in another facility							0.720
Yes	53	22.3	37	24.6	90	23.2	
No	176	77.7	100	75.4	276	76.8	
Development							NA
Discharge	177	86.0	99	75.0	276	82.1	
Hospitalization ^c	32	9.2	23	19.5	55	12.8	
Outpatient referral	15	3.9	12	5.5	27	4.5	
Other ^d	3	0.9	-	-	3	0.6	

Source: Ministry of Health, Health Surveillance Secretariat, Violence and Accidents Surveillance System-VIVA, 2014 Survey. NA: not applicable because the chi-square test and the p value were not calculated due to the existence of a cell with a value below five. * Percentage weighted for sample design. ** Chi-square association test (Rao-Scott). ^a The number of attendances for some variables diverged due to missing data (ignored / blank). ^b Includes police car and other. ^c Includes hospitalization and referral to other service. ^d Includes evasion / escape, death and other.

torcyclists, corroborating literature³⁴. A study in Northern Paraná observed increased indigenous deaths, mainly caused by road traffic accidents, which take place nearby major highways on which a significant number of indigenous circulate to sell their crafts²⁸.

Among the features of the event, this study showed that public roads and homes were the main places of occurrence of accidents, especially among women, while other locations prevail in men, included therein bars or similar and commercial establishments. These data confirm findings of the 2006³² and 2009²⁹ VIVA Survey.

Befitting the types of accidental events, almost 70.0% of the attended had their upper and lower limbs affected without differentiations of the group analyzed here compared to all treated under the 2006 VIVA Survey³².

Although little more than a third of the victims has informed that the accident was work-related and that a small part was involved in the use

of alcohol, it is important to highlight the issue of alcoholism among indigenous as an aggravating factor to the overall health and accidents in particular. However, information about the use of alcohol and safety equipment such as helmets are underestimated, given that users can evade them and the record of such data has been little or inadequately completed.

Most of the indigenous victims drove to the urgent and emergency services in a private vehicle. However, there is a very significant share of those who walk or go by bus/minibus (25.2%) and those who are taken there by the SAMU (20.4%). These same means of transport were identified in a previous study of the 2009 VIVA Survey¹⁸. It is important to emphasize the relevance of SAMU as a pre-hospital mobile service whose swift provision of care to accident victims saves lives and prevents sequelae³³.

Most of indigenous were discharged after treatment (82.1%), indicating that injuries were

not serious, but almost 13.0% required hospitalization. These data show the importance of the VIVA system for the registration of these minor cases that did not require hospitalization and did not even result in deaths, without which they would be unknown.

Conclusions

Despite public policies that aim to give visibility to the morbidity and mortality problems of the indigenous, the health of these group still lacks comprehensive care and more extensive and systematic epidemiological data that reflect the realities of different regions of the country and its various ethnicities.

More reliable accidents data can lead to more effective planning and monitoring of policies and programs related to issues that affect the health of the indigenous population, aiming at increasing and improving the quality of care, but also working on prevention. In this regard, such indicators could be better characterized if there was a greater dialogue between national information systems with the SIASI.

Road traffic accidents, especially those involving the use of motorcycles, are aggravated by the fact that children and adolescents are drivers without license, as evidenced by this study. Alcohol use increases the likelihood of accidents in general and particularly traffic accidents, but is also associated with the degradation of the social, economic and family life of some indigenous groups, worsening their health conditions and facilitating the occurrence of these accidents³⁴.

We believe that there is a significant underreporting of data on accidents and violence due to the lack or the improper completion of records on ethnicity and accidental or violent events. The difficulty in obtaining qualified and reliable information on accidents and violence has been highlighted by scholars of the subject^{35,36}, moreover, part of these events is not captured in the existing official information systems. This is just one of the contributions of this paper: to disseminate information underused in the field of Brazilian indigenous health that is not reported in the other national information systems.

As such, the VIVA system represents a breakthrough as it enables knowledge about data of the urgent and emergency services on accidents and violence not recorded in other national information systems. However, this system also has limitations because it does not cover all accidents, and much less violence in all its extent, besides not being representative from the population's or statistical standpoint. Its information are exclusively limited to individuals attended at these reference services located in state capitals.

Finally, we consider that it would be important to reflect on the need to empower indigenous population and have them take preventive actions involving awareness of the social, emotional and physical impacts of accidents on individuals and their groups, and the factors that predispose to these events and aggravate their occurrence, such as the use of alcohol and the lack of safety equipment use in traffic. Health professionals can be important stakeholders in this dialogue with indigenous people to raise their awareness and sensitize them to the prevention of accidents.

Collaborations

ER Souza and K Njaine designed the study and wrote the text; MDM Mascarenhas elaborated data review and wrote the methodology; MC Oliveira collaborated in the writing of the text.

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