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Care for young victims of assault in public emergency services in 2011: Sex differences

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Abstract *This article aims to describe the characteristics of assaults among youth victims of violence treated in Public Emergency Departments, according to sex. This is a descriptive study using data from the Brazilian Violence and Accidents Surveillance System based on a multicenter survey conducted by the Ministry of Health in 71 public emergency departments, located in 24 state capitals and the Federal District in 2011. Male subjects predominated among the victims (75.1%) and also among aggressors (83.1% and 69.7% of cases of violence against male and female victims, respectively). Among female victims, episodes of violence were more frequent at home (43.6%). The perpetrator was a stranger in 49.7% and 26.8% of cases among male and female victims, respectively, while the perpetrator was a partner or ex-partner in 3.9% and 31.5% cases, respectively ($p < 0.001$). Greater severity of injuries among men was consistent with the higher proportion of deaths in the first 24 hours (2.1%) compared to women (0.2%) ($p < 0.001$). The violence profile among youth victims treated in Public Emergency Departments was substantially different according to the sex of the victims. The results highlight the need to implement intersectoral policies, in line with the Brazilian Youth Statute.*

Key words *Health surveys, Young adult, Violence, Sex*

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Introduction

Youth health patterns have been affected by economic and social changes and global policies during recent decades worldwide[1]. In Brazil, the Youth Statute (Law No. 12852/2013)[2] was enacted in 2013. Among its principles and directives, the Statute includes the promotion of safe lives and the culture of peace, as well as the need for information management and the production of knowledge about youth, with the aim of developing intersectoral public policies, programmes and actions for youth. The Statute defines youth as being aged between 15 and 29 and in 2010 this corresponded to approximately 52 million young people or more than a quarter of the Brazilian population[3].

Injuries are the main causes of death among Brazilian youth. In 2013, 73.200 deaths due to violence and accidents were registered, with significant differences between the sexes: 80.5% were young males[4]. With regard to homicides, a predominance of male victims was found in all age groups in Brazil and in the Americas between 1999 and 2009[5].

In Brazil high violence-related mortality rates are attributed to homicides in urban settings, whereby both aggressors and victims are mainly young men and social inequalities are one of the main determinants[6], this being different to the reality in the majority of World Health Organization (WHO) member countries where deaths due to assault are related to civil conflicts[1].

In view of this, some studies have discussed differences in morbidity and mortality patterns as being particularly related to masculine role models[7-9]. According to Souza et al.[10], men expose themselves more to risk situations because of masculinity reinforcing behaviours characterized by machismo and practices capable of causing premature death.

In turn, women are the main victims of domestic and family violence. Intimate partners are the main murderers of women. A systematic review revealed that approximately 40% of all murders of women worldwide are committed by intimate partners[11]. A study conducted in the Brazilian states of São Paulo and Pernambuco in 2003 found that in approximately half the cases of violence against women, the aggressor was an intimate partner (including husbands, partners, boyfriends or ex-partners)[12].

Violence has been described as a socio-historical phenomenon which is an important public health problem which therefore demands the formulation of specific policies and practices[13]. The recent enactment of the Youth Statute and the fact that violence among young people involves unique characteristics and marked differences between the sexes justify studies being performed on this issue capable of providing elements for tackling the problem of violence among youth in Brazil.

This article aims to describe the characteristics of assaults among youth victims of violence treated in Public Emergency Departments in Brazil, according to sex.

Method

This was a descriptive study using data on victims of violence treated at public emergency services provided by the Unified Health System (*Sistema Único de Saúde - SUS*). The data were obtained by means of a cross-sectional survey conducted in 2011 within the framework of the Violence and Accident Surveillance System (*Sistema de Vigilância de Violências e Acidentes - VIVA*).

For the purposes of this study, only young victims aged 15 to 29 were included who had received care at 71 emergency services located in 24 Brazilian state capitals and the Federal District. The capital cities of the states of Amazonas (Manaus) and São Paulo (São Paulo) were excluded owing to lost information.

The emergency services were selected from records held on the National Registry of Health Establishments using the following inclusion criteria: (1) being an emergency service provider and (2) being a referral service for external causes within the municipality.

The VIVA survey data were collected at each of the participating services over a period of 30 consecutive days, divided into sixty 12-hour shifts, between September and October 2011. The minimum sample size for each capital city was 2000 patient attendances. This number was arrived at by dividing the average number of attendances owing to external causes per shift at the same service in previous years. This information was obtained from the Unified Health System Hospital Information System (*SIH/SUS*) and from VIVA Surveys relating to services participating in the survey in previous years, namely 2006, 2007 and 2009).

The shifts were selected using probability sampling. The health establishments were considered to be conglomerates and the shifts corresponded to primary sampling units. All atten-

dances owing to accidents and violence during the selected shifts were included in the VIVA Survey sample. Victims were excluded who sought care two or more times for the same complaint, such as return appointments and/or treatment complications. Additional information is available in a specific publication[14].

Data was collected through interviews performed by trained interviewers using a standard form. The type of incident that led patients to seek care was classified according to the replies given during the interviews and in line with definitions contained in Chapter XX–External Causes of Morbidity and Mortality of the 10th review of the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Incidents classified as "assault/mistreatment" were selected for the purposes of this study.

The variables studied were:

- sex: male, female;
- age: 15-18, 19-24, 25-29;
- skin colour: white/yellow/indigenous, black or brown;
- consumption of alcoholic drink by the victim during six hours prior to the incident, either self-reported by the interviewee or suspected by the interviewer: no, yes;
- seeking care at another service for the same complaint before receiving care at the place of the interview: no, yes;
- day of the week on which the incident occurred: Monday to Friday, Saturday to Sunday;
- time of day/shift: morning (6 a.m. to 11:59 a.m.), afternoon (12 noon to 5:59 p.m.), night (6:00 p.m. to 11:59 p.m.) or early morning (12 midnight to 5:59 a.m.);
- nature of the assault: physical, sexual, psychological, other;
- means of assault: brute force/beating, firearm, sharp object, heavy objects, other;
- probable perpetrator of the assault, as reported by the victim: father/mother/other family member, partner/ex-partner, friend/acquaintance, law enforcement officer, stranger, other;
- sex of the probable perpetrator of the assault: male, female, both sexes;
- place of assault: household, public thoroughfare, bar or similar, other;
- nature of the injury: no injury, bruising, cut/laceration, sprain/dislocation, fracture, traumatic brain injury/multiple trauma, other;
- affected part of the body: head/neck, torso, upper and lower limbs, multiple organs, other;
- progression in the emergency service in the first 24 hours: discharge, admitted to hospital, outpatient service referral, referral to other service, left without being discharged, death).

The chi-square (Rao-Scott) test with a 95% significance level was used to investigate differences between proportions between the sexes in the variable categories studied. Analysis was performed with the assistance of Stata version 12 (StataCorp), using the survey module, given that the data were obtained through a complex sampling plan.

The 2011 VIVA Survey project was reviewed and approved by the Ministry of Health's National Research Ethics Commission under Opinion No. 006/2011. Data was collected after obtaining verbal consent from the victims or from their legal guardians or persons accompanying them when they were under 18 years old or were unconscious.

Results

A total of 16,120 young people attended emergency services taking part in the 2011 VIVA Survey (11,461 males and 4,659 females). 1,894 (11.7%) of them were victims of violence, with males predominating (n = 1,422; 71.5%) in relation to females (n = 472; 24.9%).

Table 1 describes the characteristics of the victims and the incident for the entire sample and by sex. Almost half the young victims were aged 19 to 24 (45.3%), with no significant differences between the sexes ($p = 0.157$). More than two thirds (75.2%) had black or brown skin colour, also with no differences between the sexes ($p = 0.150$). Consumption of alcoholic drink during the six hours prior to the incident was reported in a higher proportion by male victims (52.8%) in relation to female victims (33.9%) ($p < 0.001$). Seeking care at another service for the same complaint was reported in 23.6% of the cases, with no differences between the sexes ($p = 0.577$).

Episodes of violence were more frequent on Saturdays and Sundays, accounting for 46.1% of incidents among males and 40.3% among females (Table 1, Figure 1).

As for the time of day the incident occurred, frequency was higher at night and in the early hours of the morning among males (34.4% and 27.3%, respectively) and at night and in the afternoon among females (36.0% and 27.7%, respectively) (Table 1). Figure 2 illustrates the distribution of incidents by sex and time of day. The volume of incidents can be seen to increase with effect from 7 p.m. in both sexes.

Table 1. Description of the characteristics of young victims of assault (aged 15-29) attending emergency services, according to sex. VIVA Survey, 2011.

Variables	Male		Female		Total		p*
	n	%	n	%	n	%	
Age (years)							0,157
15-18	271	18,4	114	22,8	385	19,5	
19-24	645	45,2	213	45,5	858	45,3	
25-29	506	36,4	145	31,7	651	35,2	
Skin colour							0,150
White/yellow/indigenous	303	23,8	122	27,7	425	24,8	
Black/brown	1.110	76,2	347	72,3	1.457	75,2	
Alcoholic beverage consumption[a]							< 0,001
No	541	47,2	257	66,1	798	51,8	
Yes	641	52,8	129	33,9	770	48,2	
Sought care at another service[b]							0,577
No	1.075	76,8	353	75,3	1.428	76,4	
Yes	317	23,3	110	24,7	427	23,6	
Day of week incident occurred							0,080
Monday to Friday	734	53,9	274	59,7	1.008	55,3	
Saturday or Sunday	681	46,1	196	40,3	877	44,7	
Time of day incident occurred							0,089
Morning	228	16,5	69	13,4	297	15,8	
Afternoon	304	21,8	126	27,7	430	23,3	
Night	492	34,4	169	36,0	661	34,8	
Early hours	395	27,3	107	22,9	502	26,2	

* Chi-square test (Rao-Scott). [a]During the previous 6 hours, reported by the interviewee, or suspected by the interviewer. [b]For the same incident, before receiving care at the place of the interview.

Statistically significant differences were found between the sexes in all characteristics of assault studied ($p < 0.001$) (Table 2). The most frequent form of assault was physical violence among males (99.2%) and females (97.9%). Among female victims, sexual (1.1%) and psychological (0.6%) violence was more frequent in relation to males (0.6% and zero, respectively). Brute force or beating was the main means of assault and was more frequent among female victims (58.7%) compared to male victims (35.9%). Assault with firearms was more frequent among male victims (23.1%) in relation to females (7.4%) (Table 2).

The main aggressors of female victims were partners or ex-partners (31.8%), whilst the aggressors of males were mainly strangers (27.1%). Assault by law enforcement officers was more frequent among males (4.1%) than among females (0.6%). Males stood out as the main perpetrators of assault, both against male victims (92.8%) and female victims (72.5%). Assault against male victims occurred most frequently in public thoroughfares (55.4%), whilst among females it occurred most frequently in the household (44.1%) (Table 2).

With regard to the nature of the injury, cuts or lacerations were most frequent in victims of both sexes (60.3% male and 49.8% female), followed by traumatisms (11.0% and 7.1%, respectively). During the first 24 hours after emergency care the majority of the victims were discharged, more so among females (77.2%) in relation to males (60.6%). Death occurred more frequently among males in the first 24 hours (2.1%) compared to females (0.2%) (Table 2).

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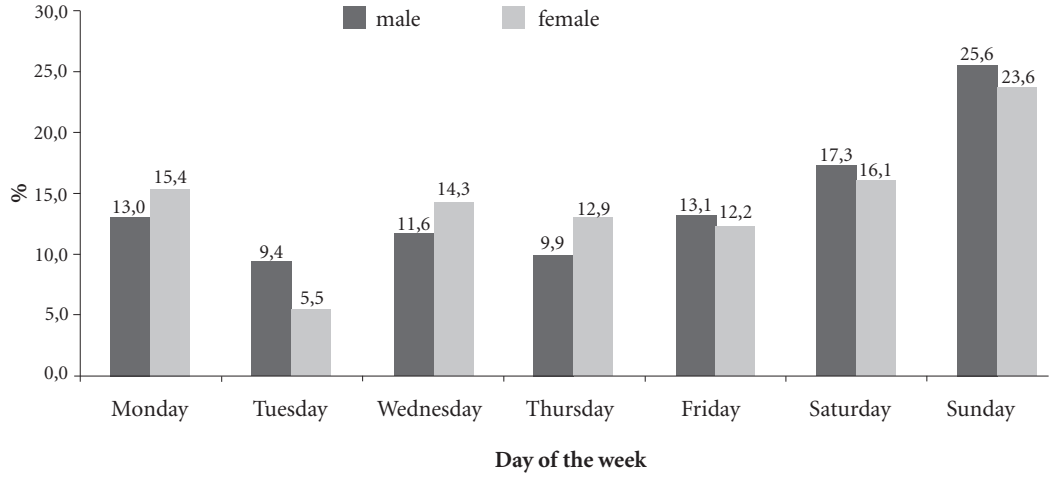

Figure 1. Distribution of care provision to young victims of assault (aged 15-29) at emergency services, according to day of week of incident and sex. VIVA Survey, 2011.

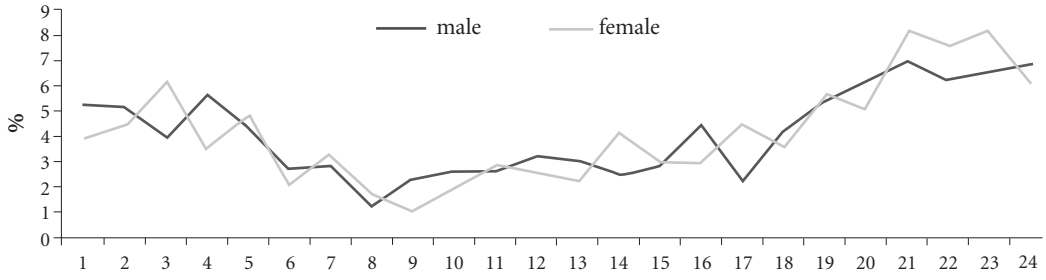

Figure 2. Distribution of care provision to young victims of assault (aged 15-29) at emergency services, according to time of occurrence and sex, VIVA Survey. 2011.

Discussion

Marked differences were found between the characteristics of the victims and the characteristics of the assaults among young people attending public emergency services. Males were predominant among the victims and were also the main aggressors. Among males most assaults occurred in public thoroughfares and their perpetrators were strangers. Household incidents of violence were predominant among female victims and were perpetrated by partners, ex-partners, family members or acquaintances. A higher proportion of more serious injuries and deaths in the first 24 hours was found among male victims when compared to female victims. Another noteworthy finding was the high level of alcohol intake by assault victims, this being reported by more than half the male victims and one third of female victims.

The findings of this study are consistent with those of other studies conducted in Brazil and abroad[5,13,15] with regard to the predominance of males as both victims of assault and aggressors. A national study of morbidity and mortality among Brazilian youth owing to assault during the period 1996 to 2007 found a male:female sex ratio of 11.6 with regard to the number of deaths, 4.5 for the number of hospital admissions and 2.8 for the number of emergency attendances[16].

Gender differences regarding patterns of morbidity and mortality, use of services and health needs as related to masculine role models have been widely discussed[7]. According to Alves

Table 2. Description of the characteristics of assaults among young people (aged 15-29) attending emergency services, by sex. VIVA Survey, 2011.

Variables	Male		Female		Total		p*
	n	%	n	%	n	%	
Nature of assault							0,002
Physical	1403	99,2	457	97,9	1860	98,9	
Sexual	3	0,2	6	1,1	9	0,4	
Psychological	-	-	6	0,6	6	0,2	
Other	7	0,6	1	0,3	8	0,7	
Means of assault							< 0,001
Brute force/Beating	512	35,9	268	58,7	780	41,4	
Firearm	306	23,1	30	7,4	336	19,4	
Sharp object	429	29,1	118	21,6	547	27,3	
Heavy object	148	11,1	36	9,3	184	10,7	
Other	14	0,8	18	2,9	32	1,3	
Probable perpetrator of assault							< 0,001
Father/Mother/Other family member	115	8,0	72	15,9	187	9,9	
Partner/Ex-partner	61	4,1	152	31,8	213	11,0	
Friend/acquaintance	412	30,1	113	23,2	525	28,4	
Law enforcement officer	56	4,1	3	0,6	59	3,2	
Stranger	685	52,5	115	27,1	800	46,2	
Other	18	1,2	8	1,5	26	1,3	
Sex of probable perpetrator of assault							< 0,001
Male	1174	92,8	315	72,5	1489	87,6	
Female	71	5,0	125	25,8	196	10,3	
Both sexes	32	2,2	6	1,7	38	2,1	
Place of occurrence							< 0,001
Household[c]	289	19,9	221	44,1	510	25,8	
Public thoroughfare	757	55,4	153	34,3	910	50,3	
Bar or Similar	194	13,5	52	13,4	246	13,5	
Other	155	11,1	37	8,3	192	10,4	
Nature of injury							< 0,001
No injury	11	1,1	20	3,5	31	1,6	
Bruising	150	12,1	81	18,5	231	13,6	
Cut/Laceration	891	60,3	245	49,8	1136	57,8	
Sprain/Dislocation	55	3,5	40	11,4	95	5,4	
Fracture	86	6,7	24	5,2	110	6,4	
Traumatic brain injury/Multiple trauma	148	11,0	27	7,1	175	10,1	
Other	72	5,2	24	4,5	96	5,1	
Part of the body affected							0,022
Head/neck[d]	544	37,1	190	40,3	734	37,8	
Torso[e]	252	17,5	50	10,7	302	15,9	
Upper/Lower Limbs	400	28,8	141	32,6	541	29,7	
Multiple organs	212	16,7	67	16,3	279	16,6	
Progression in emergency service first 24 hours							< 0,001
Discharge	837	60,6	348	77,2	1185	64,6	
Admission to hospital[f]	426	29,7	79	16,4	505	26,5	
Referral to outpatient service	85	6,3	28	4,6	113	5,9	
Left without being discharged	23	1,3	8	1,7	31	1,4	
Death	24	2,1	1	0,2	25	1,7	

* Chi-square test (Rao-Scott). [c] Includes residence and shared dwelling. [d] Includes mouth/teeth, other region of head/face, neck. [e] Includes backbone/spinal cord, chest/back, abdomen/hip and genital/anus. [f] Includes admission to hospital and referral to other service.

et al.[17], the vulnerability of males is aggravated by their social and cultural origin which conditions them to taking on a dominant stance, seeing violence as something inherent to their nature, as well as putting them in the condition of both victims and perpetrators of violence.

In this study public thoroughfares were the most frequent place of assault among male victims and this is compatible with greater involvement of males in urban violence. A study of the characteristics of municipalities and the risk of homicide among males found that municipalities that had a larger number of inhabitants and were more urbanized had higher rates of homicide, reinforcing the idea of the role of demographic characteristics as explanatory components of the growth of violence in Brazil[18].

Firearms were an important means of assault and involved almost a fifth of attendances. Almost one in four injuries among male victims were caused by firearms. A study conducted in Argentina covering the period from 1991 to 2006 found that 48.5% of victims of fatal injuries caused by firearms were aged 15 to 29[19]. Moreover, analysis of homicides in women of childbearing age undertaken in Recife/PE between 2003 and 2007 indicated that more than 80% of deaths occurred as a result of assaults in which firearms were used[20].

Despite males being predominant among the victims of violence, the profile of female victim emergency care deserves reflection. Prevalent among these victims are less serious injuries and assault in circumstances consistent with domestic and family violence, with most incidents occurring at home. A study of deaths among women owing to assault in Brazil between 2001 and 2011 highlighted that on average 13.5 women per day die as a result of assault and that the profile of the majority of these deaths was consistent with situations of domestic and family violence against women[21].

Nonfatal injuries correspond to the most direct effect of intimate partner violence which, in addition, is related to diverse harmful consequences for women's health. It is estimated that among women who experience some kind of intimate partner violence, 42% suffered injuries[22], indicating the important public health burden of injuries caused by violence against women. The World Health Organization stresses the need to improve the ability of health services to identify victims of domestic violence and thus attempt to prevent risk of death from this cause[22].

It is noteworthy that approximately a quarter of young victims of violence had sought care at another service for the same incident, before receiving care at the place of the interview. This finding indicates the need for health services to be aware and prepared to attend to and to provide adequate care to victims.

The higher proportion of more serious injuries among men corroborates the findings of previous Viva Surveys. The 2009 Survey found that male adolescents aged 15 to 19 were more subject to more serious injuries requiring hospital admission within the first 24 hours after initial emergency care (18.3%) than younger individuals (5.6%)[23].

The 2011 Survey found a high frequency of alcoholic beverage intake among young victims of assault. Alcohol use increases the risk of involvement in episodes of accidents and violence[24,25]. Data from the 2013 National Health Survey showed that the prevalence of abusive alcohol use among the Brazilian population was 3.3 times higher among males when compared to females and that the highest levels of prevalence were found in young adults aged 18 to 29 (18.8%)[26].

A study conducted with 9th grade elementary school students attending public and private schools in Brazil found that half (50.3%) of these adolescents had already begun drinking alcohol, showing early alcohol initiation which was even more frequent between those aged 12 to 13[27]. This provides evidence of the need for protective legislative measures, as well as stricter inspection of alcohol sales to young people, especially in venues such as bars and the like which, in this study, appear as important places for the occurrence of assaults.

The findings of this study should be considered in the light of some limitations. With regard to external validity, it is important to highlight that the study population is that of individuals receiving care in public emergency services in 24 state capitals and the Federal District. As such, the results refer to this source population. Precise data is not available to estimate the percentage coverage of Brazil's public emergency services, although more than half the Brazilians seeking health services in the two weeks prior to the 2008 National Household Sample Survey reported having received care in public health services[28]. With regard to measurement errors, the outcome was built based on information reported by victims or people accompanying them. This fact may have resulted in some cases of assault not being taken into consideration owing to their being incorrectly classified as accidents, and

may also have resulted in errors in classifying the perpetrators of assault, given that victims of domestic violence, for instance, may not reveal this information.

In conclusion, the characteristics of assaults on young people attending emergency services showed themselves to be substantially different depending on their sex. The Viva System has huge potential for generating evidence and inputs for public policies intended to address violence involving youth in Brazil. There is evident need for intersectoral public policies to be implemented aimed at preventing violence among this specific population, as provided for in the Youth Statute. In the case of young males, we suggest that actions should be directed above all to preventing urban violence and associated factors such as alcohol consumption and carrying firearms, whilst actions for young females should also include the prevention of domestic and family violence.

Collaborations

ACM Melo: study conception and design, results analysis and interpretation and writing of critical text on the intellectual contents. LP Garcia: study conception and design, writing and critical review of the contents. All the authors have approved the final version of the manuscript and state that they are responsible for all the aspects of this work and assure its precision and integrity.

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