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Treatment for cases of violence by Brazilian emergency services focusing on family relationships and life cycles

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Abstract *This article analyzes data regarding cases of domestic violence treated by the emergency services through the following: the sociodemographic characteristics of the people who were treated; the events themselves; the evolution of care (from childhood to old age by gender); and the factors that differentiate cases of domestic violence compared to those committed by non-family members. Data from 24 Brazilian state capitals and the Federal District were analyzed, comprising 86 emergency services: a total of 4,893 individuals were surveyed. Of those people who were treated by emergency services, 26.6% suffered domestic violence: 40.0% were children/adolescents, 57.2% were adults and 2.8% were elderly. The adjusted model, which compared victims of violence committed by other family members with those who were not family members, showed that males were less likely to suffer from domestic violence; those that had fewer years of education were at increased risk; and that women were more likely to commit domestic violence compared to the category of "both genders". This study reinforces the fact that health sector professionals need to be able to deal with domestic violence by providing support, performing good practices, abiding by care protocols, taking care of injuries, and facilitating access to other services.*

Key words *Domestic violence, Surveys, Emergency health services*

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Introduction

This article is the result of epidemiological research that incorporates the monitoring component of the "Violence and Accidents Survey Conducted in Sentinel Emergency Departments[1]. This recent, and highly relevant, monitoring system is a governmental response to the serious context of violence that exists in Brazil, which requires consistent policies from the Ministry of Health. In response to this social demand, the Ministry of Health prioritized attention on the impacts of violence on the health of the population, implementing the following policies: "The National Policy for the Reduction of Morbidity and Mortality due to Accidents and Violence"[2], "The National Policy for Emergency Care"[3] and "The National Health Promotion"[4].

From the health sector perspective, violence can be conceptualized as "the use of force against a group or a community that results in, or has any possibility of causing, injury, death, psychological damage, developmental disability or deprivation". A distinction is drawn between violence that is directed at oneself, interpersonal violence, and collective violence. Of the different forms of interpersonal violence, the following stand out: (1) domestic violence, which generally occurs within the home, but not exclusively; and (2) community violence, which occurs between people without kinship (consanguineous or otherwise), known or unknown, and which usually occurs outside the home[5]. The concept of domestic violence focuses on conflicts between family members that are transformed into intolerance, abuse and oppression, but which do not necessarily have the domestic unit as a priority area of occurrence[6].

Domestic violence and community violence are very common worldwide and they affect people in an unequal way in relation to gender, race/color, age and socioeconomic condition[5]. Children, adolescents, females (of all ages) and the elderly are the groups which are most affected by domestic violence due to their physical, social and economic dependence, as well as the continuation of patriarchal cultural norms[7-10]. Young, black men are most affected by community violence[5].

In *childhood*, domestic violence overlaps with community violence and is usually caused by those who are responsible for the children. It affects younger children most, and boys are generally more likely to be victims of physical aggression, while girls are more likely to suffer from sexual violence. Poverty has a significant impact on domestic violence through its effects on parental behavior and family dynamics, together with factors such as the prescence of many children in the home, the use of alcohol and drugs by parents or guardians, and the violence that occurs between the latter. In *adolescence*, the victimization of community violence is highlighted, as well as the authorship of situations of violence. For boys, poor school performance, difficulty in dealing with family and friends, as well as having only one parent at home and having to deal with family conflicts, are all factors that lead to a predisposition to violence in this phase. In *adult life*, domestic violence is mainly perpetrated by intimate partners, with a significant pecentage committed against women, while community violence affects young men more and often results in homicides. Factors such as being young, alcohol abuse, mental health problems, unemployment, poverty and traditional gender norms all undepin both these types of violence. Among the *elderly*, the violence of children against their parents is evident. In these cases, the nature of the former relationship between caregiver and the elderly, depression among caregivers, as well as alcoholism and financial difficulties are all triggers for violence at this stage in life[5,11].

Fractures and bruises, lacerations and traumas, palpitations, breathlessness and chronic pain are some of the symptoms expressed by people in situations of violence requiring emergency care[12]. Melo et al.[13] point out that for many individuals, being involved in violent situations is often their first contact with a health unit. The aforementioned authors argue that there should be an appropriate approach by a multiprofessional team, which is geared to the needs of individuals, in order to provide access to protection services. In general, very little is known about the health services at the emergency level which attend to victims of extreme cases of violence[14-16].

The aim of this article is to analyze data regarding domestic violence provided by the emergency services in relation to: (1) the sociodemographic characteristics of the people attended to, the event, and the evolution of care (from childhood to old age by gender); and (2) the factors that differentiate domestic violence from violence comitted by non-family members.

Materials and methods

This article uses data from the Violence and Accidents Monitoring System (VIVA), which is a cross-sectional study carried out in Brazilian

emergency services every three years that analyzes the trend of accidents and violence in the country, as well as profiling the victims who are attended. The survey was conducted in 24 Brazilian state capitals, the Federal District and in 11 selected municipalities, making up 114 participating services. However, in this article only data from the state capitals and the Federal District are used, which comprised 86 emergency services.

The data were collected over 30 consecutive days, between September and December 2014; they were divided into 60, 12-hour shifts and selected by probabilistic lottery. The sample size was calculated to obtain a coefficient of variation of less than 30% and a standard error of less than three; a minimum of 2,000 cases that were attended due to external causes in the state capitals were calculated. The number of shifts in each establishment was calculated by the ratio between the established minimum size (2,000) and the average number of cases dealt with by the establishment in previous years.

The instrument used to collect the data contained the following five blocks: (1) general data, with information about the municipality, the location of the care center, date, time, and the consent to participate in the study; (2) the data of the person attended to, with variables such as age, gender, race, education, employment and any disabilities; (3) the victim's residence data; (4) incident-specific data, with questions about the type of violence or accident, specifying the means used, the likely perpetrators, whether the event was intentional or not, and whether the assailant had consumed alcohol; and (5) data regarding injuries and development, including issues such as the body parts affected, as well as the nature of the injury and the outcome of the case.

The variable outcome analyzed in this article was "domestic violence", which was defined as any form of violence inflicted by a father/mother, partner or any other family member. Focusing on domestic violence, in the statistical analyses these cases were then compared to cases where the aggressors were not members of the family, i.e. friends/ acquaintances, public legal agents, unknown etc. Cases that were classed as accidents were not included in this study.

For the description of the data, the frequency distributions of the variables according to gender were constructed for each of the following age groups: childhood and adolescence (0-19 years), adult (20-59) and elderly (60 and over). In order to verify the associations, the Rao-Scott test was used with a 5% significance level.

In the modeling stage, separate models were initially adjusted for each of the studied age groups. The first stage of this process involved bivariate analysis of the outcome (having suffered from domestic violence) in relation to all of the following variables: race/skin color (white; black/mixed race; Asian/indigenous); disability (yes/no); vulnerability (gypsy, living in a *quilombola*, living in a village, living on the street); years of education; employment (yes/no); nature of violence (physical, psychological, sexual, negligence and other); use of alcohol (yes/no); aggressor (father/mother; partner; former partner; other family member; friend/acquaintance; public legal agent; unknown; other); gender of the aggressor (male, female, both); means used (bodily force; firearm; poisoning; sharp object; blunt object; threat; hot substance/item; other); place of occurrence (home; school; recreation area; public road; other); type of injury (no injury; bruise/sprain/dislocation; cuts/lacerations; fracture/amputation/trauma; intoxication/burns/other); part of the body affected (head/neck; spine/thorax/abdomen; genitals/anus; lower and upper limbs; multiple organs/regions) and outcome of the case (discharge; hospital admission, outpatient referral; other).

The modeling was subsequently performed only using the variables whose p-values were less than 0.20. We then proceeded to model the outcome of all the age groups together. As in the previous stage, the first step consisted of bivariate analysis between the outcome and the other variables. The evaluation of the fit quality of the models was performed using McFadden's R-squared statistic, whose values varied from 0 to 1. All the analyses were performed using the Complex Samples module of the 20.0 SPSS statistical package.

The Ministry of Health's National Research Ethics Commission (CONEP) approved the research through Decision No. 735,933/2014. The verbal consent of the patient, or those responsibe for them, was obtained at the moment of the interview. In accordance with Resolution 466/2012, the survey participants were guaranteed total anonymity, as well as the freedom to terminate the interview at any time without any prejudice to them or their relatives.

Results

A total of 4,893 individuals were surveyed in relation to access to Brazilian emergency services during the period under investigation. Of these, 26.6% suffered domestic violence (40.0% children and adolescents, 57.2% adults and 2.8% elderly) and 73.4% were victims of violence committed by a non-family member.

Table 1 shows that of the 413 children and adolescents who suffered violence caused by relatives, 50.5% were male, 54.5% were black or mixed race, and 89.1% had up to eight years of education. In a gender analysis, it was verified that 16.1% of the female cases reported having 9-12 years of education, compared with only 3.6% of males ($p = 0.010$). Regarding the type of violence, negligence (58.5%) and physical violence (37.7%) were most common. It is noteworthy that 6.9% of the cases involving female children and adolescents resulted from sexual violence and 0.7% from psychological violence; in comparison practically no male was involved with these types of violence ($p = 0.001$). Alcohol use was reported by 4.4% of the victims in this age group and 33.4% stated that the violence was intentional. Fathers or mothers were the main aggressors in relation to domestic violence against children and adolescents (59.9%), especially females ($p = 0.026$). The most frequent location in relation to violence between family members was the home (84.8%); 57.5% of cases occurred between Monday and Thursday, and 51.3% occurred in the night or at dawn.

Beatings and bodily strength were used by 24.4% of aggressors. It is noteworthy that 33.5% of female children and adolescents were victims of beatings, compared with 15.6% of males ($p = 0.004$). In relation to males, the use of sharp objects (10.4%) and blunt objects (8.0%) stood out, compared to 6.8% and 3.1% respectively for females. It should also be pointed out that threats were made to 2.6% of females but none were reported for males.

Cuts and lacerations occurred in 31.4% of cases and the head/neck were affected in 51.5% of cases. The outcomes of the cases showed that 79.4% were discharged after attendance by the emergency services.

Table 2 shows the characteristics of the 725 adults who were assisted by emergency services due to domestic violence. It was found that 57.7% were female; 73.0% were black/mixed race; 39.1% had 9-11 years of education; and approximately 60% were in employment. In the comparison based on gender, there was a predominance of black and mixed race men, of people with less years of education, and those who worked ($p < 0.001$, $p = 0.009$ and $p < 0.001$ respectively).

Physical violence occurred in 97.7% of the cases and 37.1% of individuals reported having consumed alcohol; a much higher percentage among men (55.2% compared with 23.8% of women) ($p < 0.001$). In a total of 87.8% of cases the event was intentional; in 61.4% of cases the aggressor was the victim's partner, and in 73.3% of cases the aggressor was male. In the case of female victims, 89.4% of the offenders were male ($p < 0.001$). Beatings and physical force were used in 58.1% of cases and violence against women was highlighted (73.1% compared with 37.6% of men). In the case of male assailants the use of a sharp object predominated (40.5% compared with 11.3% for women) ($p < 0.001$). A total of 76.4% of cases occured in the home. Contrary to what was observed in the cases of children and adolescents, violence occurred from Friday to Sunday in 60.2% of cases and 51.8% occured during the night or at dawn. As was the case for the younger age group, there was a large frequency of cuts and lacerations (47.7%) and the head and neck were mainly affected (38.3%). Women were more affected by bruises/sprains/dislocations; fractures/amputations/ trauma; and intoxication/burns; while men were more subject to cuts and lacerations ($p < 0.001$). The parts of the body that were affected also differed according to gender: there was a predominance in relation to the spine/thorax/abdomen among men, and multiple organs among women ($p < 0.001$). It is interesting to observe that discharge after treatment by emergency services was more frequent among women (83.4% compared to 69.4% of men), while hospitalizations were more common among men (21.3% compared to 11.8% for women) ($p = 0.005$).

Table 3 shows the characterization of the 36 elderly victims of domestic violence: 57.4% were female, 55.8% were black or mixed race, and 26.2% had a disability. The number of elderly women in situations of domestic violence (41.4%) was much higher than elderly men (7.3%) ($p = 0.03$). Physical violence and neglect were highlighted in this age group and 70.7% of cases were classed as intentional. Beatings, poisoning and the use of blunt objects were most common. A total of of 94.5% of cases occured in the home; men were mostly attacked in the afternoon (77.5%) and women in the morning (44.1%) ($p = 0.001$). It was noted that 41.9% of

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Table 1. Characterization of children and adolescents who were victims of domestic violence, and who were assisted by emergency services in Brazilian state capitals participating in the VIVA project, by gender in 2014 (N = 413*).

Variable	GENDER		Total	p-value
	Male	Female		
	%	%	%	
Race/skin color				
White	41.0	45.8	43.4	0.430
Black/mixed race	56.0	52.9	54.5	
Asian/indigenous	3.0	1.3	2.2	
Disability				
Yes	2.3	-	1.2	0.055
No	97.7	100.0	98.8	
Vulnerabilities				
Yes	0.3	2.0	1.2	0.102
No	99.7	98.0	98.8	
Years of education				
0-4	70.9	52.6	61.2	**0.010**
5-8	24.2	31.1	27.9	
9-11	3.6	16.1	10.2	
12 or more	1.2	0.2	0.7	
Employed				
Yes	4.2	5.9	5.0	0.508
No	95.8	94.1	95.0	
Type of violence				
Physical	35.7	39.8	37.7	**0.001**
Sexual	0.1	6.9	3.5	
Psychological	-	0.7	0.3	
Negligence/abandonment	64.2	52.6	58.5	
Use of alcohol				
Yes	2.7	6.2	4.4	0.137
No	97.3	93.8	95.6	
Perception of violence				
Intentional	29.2	37.6	33.4	0.236
Unintentional	68.4	57.6	63.0	
Don't know	2.4	4.8	3.6	
Gender of aggressor				
Male	25.7	41.9	33.7	**0.026**
Female	58.5	47.5	53.1	
Both	15.8	10.6	13.2	
Method used				
Bodily force/beating	15.6	33.5	24.4	**0.004**
Firearm	0.9	0.1	0.5	
Poisoning	0.4	1.0	0.7	
Sharp object	10.4	6.8	8.6	
Blunt object	8.0	3.1	5.6	
Threat	-	2.6	1.3	
Hot substance/object	1.6	2.9	2.3	
Other	63.0	50.0	56.6	

it continues

Table 1. continuation

Variable	GENDER		Total	p-value
	Male	Female		
	%	%	%	
Location of attack				
Home	85.3	84.2	84.8	
School	0.1	-	0.1	
Recreation area	1.0	0.9	0.9	0.897
Public road	11.5	13.5	12.5	
Other	2.1	1.4	1.7	
Day violence occured				
Monday to Thursday	56.5	58.5	57.5	0.743
Friday to Sunday	43.5	41.5	42.5	
Time of day				
Morning	14.5	20.2	17.3	
Afternoon	36.4	26.1	31.4	0.141
Night/dawn	49.0	53.6	51.3	
Type of injury				
No injury	17.1	15.8	16.4	
Bruise/sprain/dislocation	20.7	23.5	22.1	
Cuts and lacerations	33.3	29.5	31.4	0.842
Fracture/amputation/ trauma	18.7	17.3	18.0	
Intoxication/burns/other	10.3	13.9	12.1	
Part of the body affected				
Head/neck	58.5	44.4	51.5	
Spine/thorax/abdomen	2.3	5.4	3.8	
Genitals/anus	1.5	3.2	2.3	0.107
Lower and upper limbs	30.2	33.4	31.8	
Multiple organs/regions	7.5	13.5	10.5	
Outcome of case				
Discharge	78.1	80.6	79.4	
Hospital admission	17.0	11.6	14.3	0.283
Outpatient referral	3.5	3.6	3.6	
Other	1.5	4.1	2.8	

* Sample size without expansion.

men suffered cuts and lacerations and 51.6% of women suffered from fractures/amputations/ trauma. Among the elderly, injuries affecting multiple organs were most common (42.6%). For females, the upper and lower limbs were most common (47.7%) (p = 0.049). Regarding the outcomes of the cases, 64.2% were discharged after attendance, with no distinction in terms of gender.

Table 4 presents the results of the bivariate analysis regarding the cases of domestic violence, and the cases of violence by people not belonging to the victim's family. There was statistically significant difference for all the variables except the following: day of occurrence (p = 0.952); disability (p = 0.078); and time of day (p = 0.078). Nevertheless, the last two variables were included in the logistic regression model because they presented a p-value lower than the defined cut-off point (0.2).

Table 4 also shows the characteristics of those who suffered violence committed by non-family members, which approximates to a profile of community violence: 76.1% were male; 72.1% were aged 20-59; 69.4% were black or mixed race; about 41% had nine or more years of ed-

Table 2. Characterization of adults who were victims of domestic violence and who were assisted by emergency services in Brazilian state capitals participating in the VIVA project, by gender in 2014 (N = 725*).

Variable	GENDER		Total	p-value
	Male	Female		
	%	%	%	
Race/skin color				**0.000**
White	17.5	32.3	26.0	
Black/mixed race	80.8	67.2	73.0	
Asian/indigenous	1.7	0.4	0.9	
Disability				
Yes	2.6	2.0	2.2	0.649
No	97.4	98.0	97.8	
Vulnerabilities				
Yes	99.4	98.6	98.9	0.335
No	0.6	1.4	1.1	
Years of education				
0-4	32.4	28.2	29.9	**0.009**
5-8	30.4	21.0	24.9	
9-11	34.2	42.5	39.1	
12 or more	3.0	8.3	6.1	
Employed				
Yes	76.5	49.8	60.8	**0.000**
No	23.5	50.2	39.2	
Type of violence				
Physical	98.1	97.4	97.7	0.176
Sexual	-	0.9	0.5	
Psychological	0.4	1.6	1.1	
Negligence/abandonment	1.4	-	0.6	
Other	0.1	-	0.0	
Use of alcohol				
Yes	55.2	23.8	37.1	**0.000**
No	44.8	76.2	62.9	
Perception of violence				
Intentional	87.4	88.1	87.8	0.128
Unintentional	12.2	9.7	10.8	
Don't know	0.4	2.2	1.4	
Gender of aggressor				
Male	51.5	89.4	73.3	**0.000**
Female	46.7	8.8	24.8	
Both	1.8	1.9	1.9	
Method used				
Bodily force/beating	37.6	73.1	58.1	**0.000**
Firearm	2.3	1.1	1.6	
Poisoning	-	-	-	
Sharp object	40.5	11.3	23.6	
Blunt object	14.9	10.2	12.2	
Threat	0.3	1.6	1.0	
Hot substance/object	0.8	0.4	0.6	
Other	3.7	2.3	2.9	

it continues

Table 2. continuation

Variable	GENDER		Total	p-value
	Male	Female		
	%	%	%	
Location of attack				
Home	76.1	76.6	76.4	0.977
School				
Recreation area	0.3	0.4	0.4	
Public road	17.6	17.4	17.5	
Other	6.1	5.5	5.7	
Day violence occured				
Monday to Thursday	36.4	42.2	39.8	0.224
Friday to Sunday	63.6	57.8	60.2	
Time of day				
Morning	19.7	19.0	19.3	0.358
Afternoon	25.2	31.7	28.9	
Night/dawn	55.1	49.3	51.8	
Type of injury				
No injury	3.8	6.5	5.4	**0.000**
Bruise/sprain/dislocation	16.5	32.6	25.9	
Cuts and lacerations	65.4	34.8	47.7	
Fracture/amputation/ trauma	11.3	21.0	16.9	
Intoxication/burns/other	2.9	5.1	4.2	
Part of the body affected				
Head/neck	38.1	38.4	38.3	**0.000**
Spine/thorax/ abdomen	15.7	6.0	10.2	
Genitals/anus	0.8	1.1	1.0	
Lower and upper limbs	31.8	26.9	29.0	
Multiple organs/regions	13.6	27.6	21.5	
Outcome of case				
Discharge	69.4	83.4	77.5	**0.005**
Hospital admission	21.3	11.8	15.8	
Outpatient referral	5.7	3.5	4.4	
Other	3.6	1.3	2.3	

* Sample size without expansion.

ucation; and 52.3% were working at the time of the study. Regarding the type of violence, physical violence was most prevalent (96.6%); alcohol consumption was reported by 36.9% of individuals; and 83.1% considered that the violence was intentional. In 60.3% of cases the identity of the offender was unknown and in 87.2% of cases the offender was male. The means of violence employed included physical force/beating (46.9%), firearms (20.3%) and the use of sharp objects (18.6%). In 50.3% of cases the event occured in a public road and in 55.6% of cases it occurred at night or at dawn. Cuts and lacerations occurred in 48.6% of cases of this type of violence. The most common injuries were those to the head and neck (32.4%) and upper and lower limbs (30.5%); 61.6% of cases resulted in discharge after attendance by the emergency services. The profile of those who suffered domestic violence (all ages) was predominantly female, adult, black or mixed race, with elementary education, unemployed and who were victims of physical violence by male aggressors.

The results of the adjusted model according to age range (Table 5) shows the following variables that were significant and which remained

Table 3. Characterization of elderly people who were victims of domestic violence and who were assisted by emergency services in Brazilian state capitals participating in the VIVA project, by gender in 2014 (N = 36*).

Variable	GENDER		Total	p-value
	Male	Female		
	%	%	%	
Race/skin color				
White	47.0	40.6	43.3	
Black/mixed race	53.0	57.9	55.8	0.768
Asian/indigenous	-	1.5	0.9	
Disability				
Yes	7.3	41.4	26.2	**0.030**
No	92.7	58.6	73.8	
Vulnerabilities				
Yes	-	-	-	
No	100.0	100.0	100.0	
Years of education				
0-4	55.9	86.2	72.4	
5-8	13.1	8.0	10.3	0.235
9-11	31.0	5.8	17.2	
12 or more				
Employed				
Yes	31.6	5.9	17.4	**0.037**
No	68.4	94.1	82.6	
Type of violence				
Physical	60.9	44.3	51.4	
Sexual	-	-	-	
Psychological				0.556
Negligence/abandonment	39.1	54.1	47.7	
Other	-	1.6	0.9	
Use of alcohol				
Yes	18.2	8.4	13.0	0.419
No	81.8	91.6	87.0	
Perception of violence				
Intentional	91.3	55.5	70.7	
Unintentional	8.7	28.2	19.9	0.222
Don't know	-	16.3	9.4	
Gender of aggressor				
Male	32.5	50.8	43.2	
Female	33.1	44.7	39.9	0.153
Both	34.3	4.4	16.9	
Method used				
Bodily force/beating	21.6	34.0	28.6	
Firearm	2.0	-	0.9	
Poisoning	24.0	-	10.5	
Sharp object	10.6	-	4.6	0.093
Blunt object	25.5	12.7	18.3	
Threat				
Hot substance/object	-	2.2	1.2	
Other	16.3	51.1	35.9	

it continues

Table 3. continuation

Location of attack				
Home	97.9	92.1	94.5	
School	-	-	-	
Recreation area	-	-	-	0.587
Public road	-	4.0	2.3	
Other	2.1	3.9	3.2	
Day violence occured				
Monday to Thursday	62.9	71.8	68.5	0.595
Friday to Sunday	37.1	28.2	31.5	
Time of day				
Morning	2.1	44.1	26.6	
Afternoon	71.5	24.7	44.2	**0.001**
Night/dawn	26.4	31.2	29.2	
Type of injury				
No injury	11.0	-	4.7	
Bruise/sprain/dislocation	13.0	22.5	18.5	
Cuts and lacerations	41.9	18.3	28.4	0.103
Fracture/amputation/ trauma	10.1	51.6	33.9	
Intoxication/burns/other	24.0	7.5	14.5	
Part of the body affected				
Head/neck	35.7	43.3	40.3	
Spine/thorax/ abdomen	4.5	5.4	5.1	
Genitals/anus				**0.049**
Lower and upper limbs	17.2	47.7	35.5	
Multiple organs/regions	42.6	3.6	19.1	
Outcome of case				
Discharge	58.7	68.4	64.2	
Hospital admission	31.2	25.7	28.0	0.860
Outpatient referral	10.1	5.9	7.7	
Other	-	-	-	

* Sample size without expansion.

in the final model for the group of *children and adolescents*: gender (male); gender of aggressor (female); and education (lower). In relation to those who suffered violence from non-family members, being male constituted a protection or reduced risk of suffering from domestic violence, when compared to being female. As for education, it was verified that less years of education increased the chance of suffering from domestic violence (p = 0.001). There was a lower chance that aggressors who committed domestic violence were male, when compared to the category "both" and violence committed by non-family members.

For the *adult* group, gender, race/skin color and the gender of the aggressor were significant. Once again, when compared with violence committed by non-family members, it was observed that male adults were less likely than females to experience violence committed by family members (OR = 0.19; 95% CI = 0.14-0.25). Furthermore, black and mixed race people had a higher chance (OR = 2.37; 95% CI = 1.03-5.46) of suffering from domestic violence compared to Asian/indigenous people when comparing violence committed by family members with violence committed by non-family members. As regards the gender of the aggressor, there was a

Table 4. Characterization of victims of violence who were assisted by emergency services in Brazilian state capitals participating in the VIVA project in 2014 (N = 4.893*).

Characteristics	Violence comitted by non-family members	Domestic violence	Total	p-value
	%	%	%	
Gender				
Male	76.1	45.6	68.0	**0.000**
Female	23.9	54.4	32.0	
Age group				
0-19 years	25.0	40.0	29.0	**0.000**
20-59	72.1	57.2	68.1	
60 or more	2.8	2.8	2.8	
Race/skin color				
White	28.4	33.3	29.7	**0.035**
Black/mixed race	69.4	65.3	68.3	
Asian/indigenous	2.1	1.4	2.0	
Disability				
Yes	3.9	2.5	3.5	0.078
No	96.1	97.5	96.5	
Vulnerabilities				
Yes	3.8	1.1	3.1	**0.000**
No	96.2	98.9	96.9	
Years of education				
0-4	29.7	40.2	32.3	**0.000**
5-8	29.3	25.3	28.3	
9-11	34.4	30.1	33.4	
12 or more	6.5	4.4	6.0	
Employment				
Yes	52.3	36.5	48.0	**0.000**
No	47.7	63.5	52.0	
Type of violence				
Physical	96.6	72.5	89.5	**0.000**
Sexual	1.5	1.7	1.5	
Psychological	0.7	0.8	0.7	
Negligence/abandonment	1.0	25	8.1	
Other	0.3	0.0	0.2	
Use of alcohol				
Yes	36.9	23.2	33.2	**0.000**
No	63.1	76.8	66.8	
Perception of violence				
Intentional	83.1	66.2	78.6	**0.000**
Unintentional	13.4	31.3	18.2	
Don't know	3.5	2.5	3.3	
Aggressor				
Father/mother	-	25.9	7.9	**0.000**
Partner	-	39.5	12.1	
Other family member	-	34.6	10.6	
Known friend	32.1	-	22.3	
Public legal agent	4.8	-	3.3	
Unknown	60.3	-	41.8	
Other	2.8	-	1.9	

it continues

Table 4. continuation

Characteristics	Violence comitted by non-family members	Domestic violence	Total	p-value
	%	%	%	
Gender of aggressor				
Male	87.2	57.0	77.4	**0.000**
Female	8.4	36.3	17.4	
Both	4.4	6.7	5.2	
Method used				
Bodily force/beating	46.9	43.8	46	**0.000**
Firearm	20.3	1.2	14.7	
Poisoning	0.1	0.6	0.2	
Sharp object	18.6	17.3	18.2	
Blunt object	10.6	9.7	10.3	
Threat	0.6	1.1	0.8	
Hot substance/object	0.1	1.2	0.5	
Other	2.7	25.1	9.3	
Location of attack				
Home	23.4	80.1	38.6	**0.000**
School	5.0	0.0	3.7	
Recreation area	2.9	0.6	2.3	
Public road	50.3	15.2	40.9	
Other	18.3	4.1	14.5	
Day violence occured				
Monday to Thursday	47.6	47.5	47.6	0.952
Friday to Sunday	52.4	52.5	52.4	
Time of day				
Morning	18.3	18.8	18.4	0.078
Afternoon	26.2	30.3	27.3	
Night/dawn	55.6	50.9	54.3	
Type of injury				
No injury	5.7	9.8	6.8	**0.000**
Bruise/sprain/dislocation	18.2	24.1	19.7	
Cuts and lacerations	48.6	40.5	46.4	
Fracture/amputation/ trauma	17.1	17.8	17.3	
Intoxication/burns/other	10.5	7.8	9.7	
Part of the body affected				
Head/neck	32.4	43.1	35.2	**0.000**
Spine/thorax/ abdomen	14	7.7	12.3	
Genitals/anus	0.9	1.4	1.1	
Lower and upper limbs	30.5	30.3	30.5	
Multiple organs/regions	22.2	17.4	20.9	
Outcome of case				
Discharge	61.6	77.6	65.9	**0.000**
Hospital admission	29.2	15.6	25.6	
Outpatient referral	5.3	4.4	5.0	
Other	3.9	2.4	3.5	

* Sample size without expansion.

Ciência & Saúde Coletiva, 22(9):2825-2840, 2017

Table 5. Adjusted odds ratios with respective confidence intervals for the variables associated with the outcome of domestic violence according to age groups, Brazil, 2014.

Characteristic	Adjusted OR	95% CI
All age groups		
Gender		
Male	0.23	0.18-0.29
Female	reference	
Years of education		
0-4	1.65	1.31 - 2.08
5 or more	reference	
Gender of aggressor		
Male	0.79	0.43 - 1.47
Female	3.24	1.65 - 6.38
Both	reference	
Children and adolescents		
Gender		
Male	0.34	0.21 - 0.57
Female	reference	
Years of education		
0-4	2.28	1.41 - 3.69
5 or more	reference	
Gender of aggressor		
Male	0.26	0.11 - 0.61
Female	1.48	0.57 - 3.9
Both	reference	
Adults		
Gender		
Male	0.19	0.14 - 0.25
Female	reference	
Race/skin color		
White	1.75	0.74 - 4.1
Black/mixed race	2.37	1.03 - 5.46
Asian/indigenous	reference	
Gender of aggressor		
Male	2.48	1.04 - 5.91
Female	9.69	3.69 - 25.45
Both	reference	
Elderly		
Gender		
Male	0.27	0.09 - 0.75
Female	reference	

9.69 chance that the aggressor would be female when compared to being attacked by people of both genders, and a 2.48 chance that the aggressor would be male compared to both genders.

For the *elderly* group, only the variable of gender remained in the final model and, as for the other age groups, there was protection for males in terms of suffering from violence by family members (OR = 0.27, 95% CI = 0.09-0, 75).

The model adjusted *for all the age groups together* showed that the variables of gender, education of the victim, and gender of the aggressor remained in the final model and that the latter were key factors in the occurrence of domestic violence. Males were less likely to suffer from domestic violence (OR = 0.23; 95% CI = 0.18 - 0.29); people with fewer years of education had an increased risk of suffering from domestic violence (OR = 1.65; 95% CI = 1.31 - 2.08); and females were more likely to commit domestic violence compared to the category of "both sexes" (OR = 3.24; 95% CI = 1.65 - 6.38) (Table 5).

Discussion

The demand for care provided by emergency medical services due to violence, especially domestic violence, is an area that is still largely unknown, under-exploited and under-utilized, despite the fact that violence constitutes an important public health problem in Brazil and worldwide, as well as being responsible for high levels of morbidity and mortality in Brazil[17,18]. Consequently, the present study provides a rich, unprecedented approach to the study of domestic violence; it investigates, separately, the stages of the life cycle affected by violence that arrive at the emergency services of various Brazilian state capitals. The findings of this study make it possible to identify key factors in the characterization of cases of domestic violence which have caused injuries and are therefore treated as emergencies. In addition, it is worth mentioning that the investigation of this phenomenon in the context of the provision of emergency services is unprecedented in Brazil. Greater knowledge regarding domestic violence, especially when compared to cases of community violence, makes it possible to perform strategic planning and also provides pointers for action that can adequately deal with the results of this violence and promote access to other services.

Of the different type of violence that exist, domestic violence has particularities that deserve specific attention on the part of health professionals because it is imbued with values, beliefs, behaviors and forms of communication that are distorted between family members. Understanding factors such as the context of violence; the ways that family members relate to each other;

the presence of previous violent episodes; the fear of providing information; the pact of silence in families regarding the issue; as well as aspects related to social, cultural and community issues all have a profound impact on the way in which reception, care, referral and resolution of situations are provided at the various levels of health care.

One of the most notable findings of this study is that a quarter of the cases brought to emergency services were caused by aggressions from family members. More specifically, mothers were the main aggressors in childhood and adolescence; partners were the main aggressors in terms of adults; and children were the main aggressors in relation to the elderly. A high prevalence of cases of women who were victims of violence by their partner was found, which was in line with the findings of a study by Stark and Flitcraft[19]. The aforementioned study identified conjugal violence as the major cause of bodily injuries encountered by emergency services, and the authors warn that the dimensions of this problem are not being considered in medical treatment because the same diagnosis and procedures are prescribed to women who suffer fractures from a fall and women who suffer fractures that result from beatings by their partners. It is estimated that 16,993 femicides occurred in Brazil from 2009-2011, which is equivalent to an annual mortality rate of 5.82 deaths per 100,000 women[20]. In the United States, it is estimated that each year more than half a million injuries requiring medical care result from this form of violence, and that more than 145,000 cases require hospitalization. Nearly one in three female patients are victims of violence from their partner[21].

Another relevant finding of the present study was that being female was an important factor in relation to domestic violence for practically the entire period of life, which is linked to cultural gender issues that are strongly present in family relations, where being a girl or a woman or an elderly woman impose inferiority and inequality for female family members and can result in punches, humiliation and even death[22]. Less education is another aspect that deserves attention[5] because education fosters a culture of tolerance and respect for human rights.

Due to the punctual and sporadic characteristics of the services offered by emergency care, physical violence is the main cause of attention during all the stages of the life cycle. However, it is worth noting the frequency of sexual violence among girls in childhood/ adolescence and neglect among the elderly. Regarding sexual violence, despite the fact that it is often under-reported, data from the Special Secretariat for Human Rights[23] show that from May 2003 to May 2004 there were approximately 5,000 complaints related to sexual violence and about 4,000 related to sexual exploitation. Among the elderly, neglect and family abandonment are the most common forms of violence during this stage of life, which are often caused by the stress and emotional exhaustion of caregivers and the dependency of the elderly[24,25].

Regarding the context of care provided by emergency services, the following are some of the factors that create barriers to providing more in-depth care regarding cases involving domestic violence: an emphasis on flow, rapid intervention and the technological aspects of care; an overload of work for healthcare professionals; disarticulation in relation to referral services; the frustration of healthcare professionals regarding their inability to solve problems or provide help; as well as the helplessness and isolation of emergency teams and the lack of preparation of healthcare professionals to deal with the issue of violence, particularly domestic violence[26-29].

The limitations of the present study include the selection bias, since not all cases of domestic violence reach the emergency services, especially those perceived to be of lesser severity. Other aspects include the convenience sample, which precluded generalizations; the punctual reality analysis, which only revealed data regarding non-fatal victims treated by emergency units over a short period of time; the quality of completion of the survey; and finally, the difficulty of comparing this data with similar findings in the context of emergency services.

Collaborations

JQ Avanci, LW Pinto and SG Assis participated in the writing of the article, contributed to its design and delineation, the critical review of the content, as well as the analysis and interpretation of the results. The authors declare that they are responsible for all aspects of this article, ensuring its accuracy and integrity.

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