

Violence Against Women: Injuries and Deaths in Rhode Island

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ABSTRACT

Violence against women is a public health issue. Monitoring assault-related injury and homicide death among women is imperative for understanding this public health issue. We used data from the 2014 Rhode Island emergency department (ED), hospital discharge (HD), and 2004–2014 Rhode Island violent death reporting system (RIVDRS) to provide a broad picture for violence against women injuries and deaths in Rhode Island. ED visit and HD data show that the majority of female assault injuries occurred among women aged 25–44, resided in the core cities, and had public insurance. RIVDRS data showed that over half of the homicides among women were aged 25–64; nearly two in five were non-Hispanic black or Hispanic. Precipitating circumstances include intimate partner violence, a preceding argument or a conflict, and precipitated by another crime. Evidence-informed interventions need to target high-risk populations and urban areas to effectively reduce violence against women.

KEYWORDS: assault; emergency department visit data; homicide; hospital discharge data; Rhode Island Violent Death Reporting System (RIVDRS); violence against women

The United Nations defines violence against women as “any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life”.¹ Women refers to all females, including girls.¹

In the United States, the crisis of domestic violence has reached epidemic proportions. Women are the victims in over 94% of all spousal assaults, as reported by the National Crime Survey data. According to the United States Senate Committee on the Judiciary, this problem affects up to four million women nationally each year.

Rhode Island is no exception to the national norm. In 2015, RI’s six domestic violence agencies provided a comprehensive array of services to 8,934 victims of domestic violence, and responded to over 18,830 crisis calls through hotline services. Five hundred and four victims of abuse were sheltered in emergency shelters, for over 21,000 shelter nights.

In the U.S., there were 3,318 females who died of homicide (assault) in 2014; 1,619 of them were Non-Hispanic white, 1,049 Non-Hispanic black, and 485 Hispanic.² About 1,500 women are killed per year by their husband/boyfriend/intimate partner.³ Violence against women is listed as a priority of public health problems because girls and women are frequently victims of severe injuries of interpersonal abuse.^{4, 5} Age-adjusted death rates for homicide among women was 2.1 per 100,000 U.S. standard population in 2014. Female homicide (assault) mortalities vary by race/ethnicity: non-Hispanic black was 4.8, Hispanic 1.7, and non-Hispanic white 1.6.²

There are a number of risk factors that increase the likelihood of an individual’s potential for experiencing domestic violence, including individual, relationship, community, and societal factors, such as lower levels of education; witnessing family violence; harmful use of alcohol; exposure to child maltreatment; and attitudes that are accepting of gender inequality and violence.^{5, 6} Monitoring assault-related injury and homicide death among women is imperative for understanding this public health problem. Dissemination of surveillance findings to key stakeholders is crucial in improving intervention. Effective data-driven assault and homicide intervention programs can improve public health professionals, law enforcement, and community collaboration for prevention efforts. We used data from the 2014 Rhode Island emergency department (ED), hospital discharge (HD), and 2004–2014 Rhode Island violent death reporting system (RIVDRS) to provide a broad picture for violence against women injuries and deaths in Rhode Island.

METHODS

We used the 2014 Statewide ED and HD data for describing assault injuries. ED data are available for ED visits on or after January 1, 2005 at all ten non-federal acute-care hospitals in RI as well as RI’s women’s hospital and RI’s two psychiatric hospitals, and one rehab. HD data collected since 1989 include data on hospitalizations. Cases of violence against women are potentially identifiable from ED or HD data through ICD-9 codes specific to assault. E-codes are specialized ICD-9-CM codes used to identify the cause of the fatal injury and are identified by an ‘E’ before the number. Assault-related ED visits and hospitalizations ICD-9-CM E-codes are E960–E969. We excluded those ED visits which

ended up being admitted to the same hospital. Since three specialty hospitals did not have any visits for acute assault, this analysis only used 2014 data from the 11 acute-care hospitals.

We used the 2004–2014 RIVDRS data for describing homicides. RIVDRS is an incident-based public health surveillance system of suicides, homicides, deaths from legal intervention, deaths of undetermined intent, and unintentional firearm deaths.⁷ Comprehensive data are collected from death certificates, Medical Examiner investigative, autopsy, and toxicology reports; police reports; mental health records, hospital records, social service records, and ballistics reports, as applicable. A unique feature of the RIVDRS is the detailed circumstance information. Homicides associated with women can be identified based on abstractor-assigned manners of death.

We calculated percentages of characteristics by the three different data sources among female assault injury and homicide victims. All analyses were performed by using SAS software (release 9.4, SAS Institute Inc., Cary, NC, 2014).

RESULTS

There were 1,676 ED visits and 86 hospitalizations due to assault injuries for women in 2014 in RI. When comparing the three data sources examined, it is noteworthy to mention that the age groups representing the highest proportion of ED visits, were those aged 18–24 (28.9%) and 25–44 (44.2%). These data differ from the hospitalization and death data, where the age group with the highest proportions were the 25–44 and 45–64 categories. About 38% of the female homicide decedents were non-Hispanic black and Hispanic. It should be noted that women account for 51.7% of the Rhode Island population based on 2010 census data. Over half of the ED visits and hospitalizations for female assault injuries were among those who resided in four urban core cities including Central Falls, Pawtucket, Providence, and Woonsocket. Over half of the homicides occurred in the core cities, which represents only 29.3% of the

Table 1. Characteristics of Female Assault Injury and Homicide Deaths in Rhode Island*

Characteristic	%		
	2014 ED Visit (N=1676)	2014 Hospitalization (N=86)	2004–2014 Death (N=91)
Age Group			
Less than 18 years	9.8	19.8	12.2
18-24 years	28.9	11.6	21.1
25-44 years	44.2	30.2	33.3
45-64 years	15.6	30.2	24.4
65 years and older	1.5	8.1	8.9
Race/Ethnicity			
Non-Hispanic white	61.5	68.6	56.7
Non-Hispanic black	15.0	15.1	20.0
Hispanic	19.9	10.5	17.8
Other	3.6	5.8	5.6
City/Town of Residence			
Urban core cities	53.7	52.3	52.8
Suburban regions	36.1	38.4	36.3
Non-metro/Rural areas	6.6	7.0	6.6
Out of state	3.7	2.3	4.4
Primary insurance			
Self pay	14.2	2.3	
Medicare	9.1	23.3	
Medicaid	47.0	48.8	
Private	23.8	23.3	
Other	5.9	2.3	
Patient Status			
Discharged to home/Self care (Routine discharge)	94.8	62.8	
Transferred to general hospital for inpatient care	2.0		
Transferred to skilled nursing facility with Medicare Certification		8.1	
Transferred to home under care of organized home health service org		16.3	
Other	3.3	12.8	
E-code (external causes of injury)			
E960:Fight, brawl, and rape	44.6	16.3	
E961:Assault by corrosive or caustic substance, except poisoning	0.1		
E963:Assault by hanging and strangulation	0.6		
E965:Assault by firearms and explosives	0.2	4.7	
E966:Assault by cutting and piercing instrument	2.7	5.8	
E967:Child and adult battering and other maltreatment	11.2	37.2	
E968:Assault by other and unspecified means	39.4	27.9	
E969:Late effects of injury purposely inflicted by other person	1.2	8.1	

Data sources: Rhode Island emergency department visit, hospital discharge, and violent death reporting system data.

*ED visits in this analysis do not include those subsequent admissions to the same hospital.

state's female population. Almost half of the females who visited the ED and who were hospitalized for assault injuries used Medicaid insurance. Most of those women were discharged to home. About 45% of the ED visits were due to fight, brawl, and rape. (Table 1)

The majority of these female homicides occurred in a house or apartment. Most of the homicides took place at the victim's residence. The most common method of injury was a firearm (29.9%), and the second most-common was a sharp instrument (20.7%). Twenty-eight percent of cases tested positive for alcohol, 12% for cocaine, 11% for marijuana, 11% for opiates, and 11% for antidepressants. In 38 of 88 cases, the decedent had an intimate partner violence (43.2%); 24 cases had argument or conflict (27%), and 16% precipitated by another crime. (Table 2)

Total charges for the ED visits (n=1,676) related to assault injuries among women were about \$5.5 million; and total charges for hospitalizations (n=86) was over \$3 million, length of stay was 468 days (data not shown). The residents of the cities including Central Falls, Newport, Providence, West Warwick, and Woonsocket had a higher rate of ED visits for assault injury among women compared to other cities/towns. (Figure 1)

DISCUSSION

ED visit and HD data show that the majority of female assault injuries occurred among women aged 25–44, resided in the core cities, and had public insurance. RIVDRS data showed that over half of the homicides among women were aged 25–64; nearly two in five were non-Hispanic black or Hispanic.

Cohen and Chehimi's Spectrum of Prevention encourages organizations' adoption of multiple strategies to engage men in violence prevention.⁴ It includes strengthening individual boys and men's knowledge and skills; early childhood and family-based approaches; school-based programs; reducing alcohol abuse; gender equality training; public awareness campaigns; promoting community education; educating providers; fostering coalitions

Table 2. Characteristics, Toxicology Tests, and Circumstances Among Female Homicide Deaths, RI 2004-2014 (N=91)

Characteristic, Toxicology, and Circumstance	n	%
Marital Status		
Never married	39	42.9
Married/Civil Union/Domestic Partnership	28	30.8
Divorced/Married, but separated	16	17.6
Single, not otherwise specified/Widowed	8	8.8
Victim to Suspect Relationship		
Domestic Relationship	51	75.0
Person, known to victim	13	19.1
Stranger	<5	5.9
Injury Location		
House or apartment	73	83.0
Street/Road, sidewalk, alley, highway, freeway	6	6.8
Other	9	10.2
Injured at Victim Home		
Yes	63	72.4
No	24	27.6
Weapon Type		
Firearm	26	29.9
<i>Handgun</i>	<i>18 (78.3%)</i>	
Sharp instrument	18	20.7
Hanging, strangulation, suffocation	17	19.5
Blunt instrument	13	14.9
Personal weapons (hands, feet, fists)	6	6.9
Other	7	8.1
Toxicology Tested	84	92.3
Toxicology Test Positive		
Alcohol	23	27.7
<i>Blood Alcohol Concentrations ≥ 0.08 g/dl</i>	<i>13 (56.5%)</i>	
Cocaine	10	12.2
Marijuana	9	11.4
Opiates	9	11.1
Antidepressants	9	11.1
Circumstance Reported	74	84.1
Interpersonal circumstance		
Intimate partner violence-related	38	43.2
Jealousy (lovers' triangle)	10	11.4
Victim of interpersonal violence within past month	6	6.8
Life stressor circumstance		
Argument or conflict	24	27.3
Crisis within previous or upcoming 2 weeks	6	6.8
Caretaker abuse/neglect led to death	5	5.7
Crime and criminal activity circumstance		
Precipitated by another crime	14	15.9
Crime in progress	8	9.1
Drug involvement	5	5.7

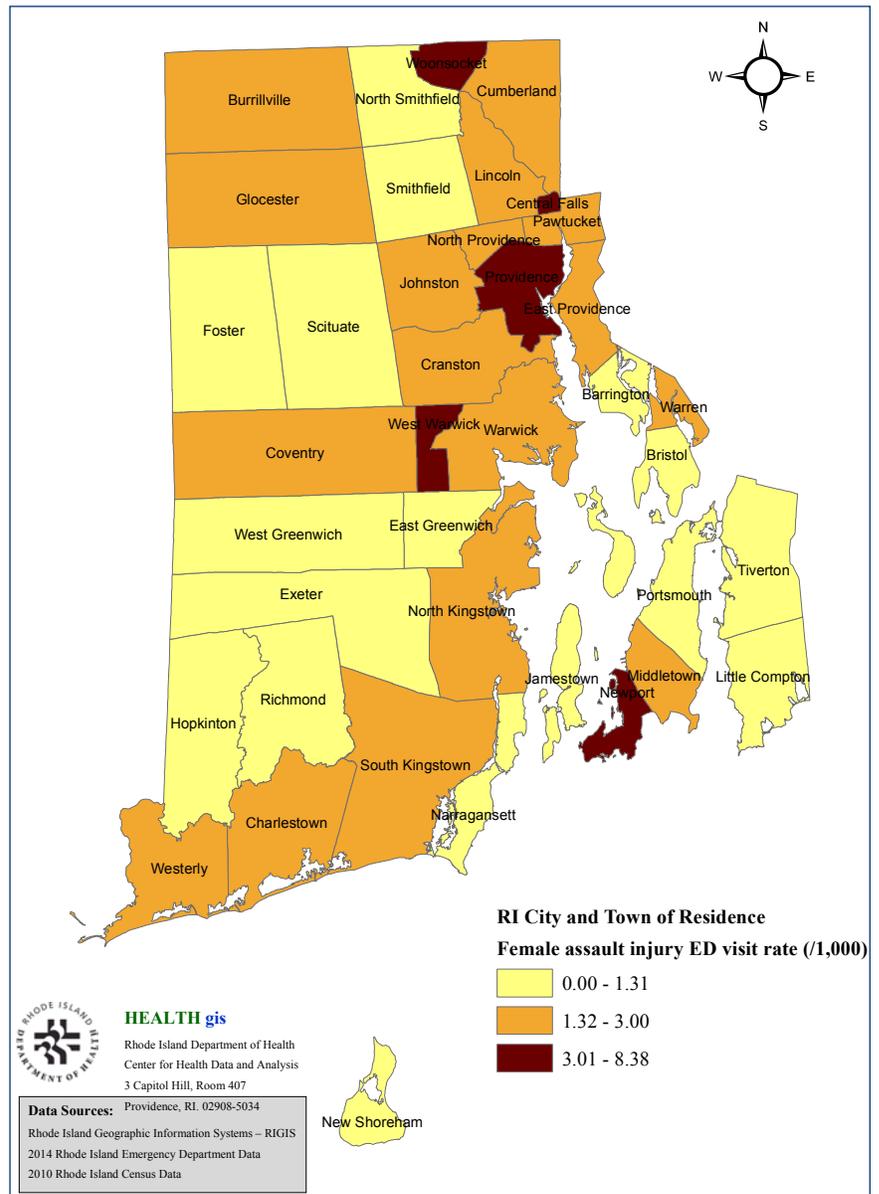
Data source: Rhode Island Violent Death Reporting System

and networks; and involving men in legislative advocacy efforts.^{4,5}

The State Police, Governor’s Office, the Institute for the Study and Practice of Nonviolence are interested in using data to highlight the issue of violent crimes against women. Human trafficking is of specific interest. However, unfortunately, RIVDRS does not capture this information. It was noted that there is a Domestic Violence/Sexual Assault (DV/SA) database that can be used as an additional data source. In RI, police-reported data are compiled in a statewide database known as the DV/SA database. Rhode Island State Police and each police department are mandated to complete a DV/SA form when they respond to or investigate any DV/SA case. The Rhode Island Supreme Court Domestic Violence Training and Monitoring Unit (DV Unit) maintains accurate data on the extent and severity of DV/SA (arrested or non-arrested data). Another great potential database is the National Incident-Based Reporting System.

There are several limitations to our analysis. We cannot distinguish whether suicide attempts or suicide deaths were caused by domestic violence or intimate partner violence/problem, so we only included assault injuries or homicide deaths in our study. Post-traumatic stress disorder (PTSD), depression, and anxiety are commonly observed among assault survivors. Assault survivors may suffer inability to work, limited ability to care for themselves and their family, isolation, or lack of capability to participate in regular activities.⁵ We cannot calculate those economic and social costs, which have enormous effects on society. Many victims of domestic violence use alcohol to self-medicate, and many use prescribed anti-depressants to address symptoms caused or triggered by the abuse. In the future, we need to distinguish them from illicit substance abusing behavior. We used only the 11 acute care hospitals’ data in RI, and we did not have those who sought care in private physicians’ offices. In the future, we may utilize the CurrentCare data to include “walk-in” clinic data. Women from more affluent communities, where partner violence is considered shameful, might be less inclined to seek medical attention for injuries or to report that their injuries were caused by a partner. Our study might therefore underestimate female assault injuries.

Figure 1. Female Emergency Department Visit Rate of Assault Injury by Rhode Island Cities and Towns of Residence, 2014.



There are some effective intervention strategies across a range of settings, including emergency departments, inpatient hospital stays, schools, and the criminal justice system.⁸ The RI State Steering Committee (SSC) tried to address the violence before it starts. They developed the primary prevention plan to target men and teens, and identified evidence-informed prevention strategies to alter attitudes, beliefs, behaviors, and cultural norms. In RI, policy makers use evidence-based information to target high-risk populations and urban areas to reduce violence against women. Subpopulation- or neighborhood-based interventions can be effective in parallel with improving neighborhood economic and social conditions.

More detailed information regarding the E-code could provide more useful data about violence against women and lead to further studies to better understand the trends and patterns of female homicide due to domestic violence. With the transition from ICD-9-CM to ICD-10-CM on October 1, 2015, the assault-related ICD-10-CM external cause codes can identify the cause of any physical injuries, assign a perpetrator code when the perpetrator of the abuse is known, and include whether the maltreatment was suspected or confirmed. The enhanced specificity in coding hospital data allows for the inclusion of suspected domestic violence, which will increase the number of documented domestic violence cases and may help in the treatment and prevention of domestic violence injuries and deaths.

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Disclosure

The authors have no financial interests to disclose.

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