

Intimate Partner Violence/Problem and Victims in Rhode Island

YONGWEN JIANG, PHD; DEBORAH DEBARE, MMHS; BEATRIZ PEREZ, MPH; SAMARA VINER-BROWN, MS

Intimate partner violence (IPV) is defined as violence or threat of violence in a close relationship, including current/former spouses or dating partners.¹⁻³ IPV affects females and racial/ethnic minorities disproportionately in the U.S.² Societal costs of IPV victimization approach \$6 billion every year based on the Centers for Disease Control and Prevention (CDC) data.^{2,3} There are many risk factors for IPV, including low education, unemployment, poor neighborhood, public assistance receipt, alcohol abuse, prior domestic violence or forced sex, abusive relationship, access to firearms, and previous mental health problems of the suspect.¹⁻³ IPV causes a substantial burden on individuals, families, and communities. Because of the prevalence and associated costs, IPV has been recognized as a major public health problem.¹⁻⁵

Recent research on IPV is focusing on evidence that it can be prevented and interventions that can stop IPV before it happens.⁶ In order to prevent IPV, we need to know the facts about IPV-related deaths. The Rhode Island Violent Death Reporting System (RIVDRS) is a statewide active surveillance system that links multiple data sources, collects information such as demographic characteristics, substance use, and circumstances including mental health status on all suicides, homicides, legal intervention deaths, unintentional firearm deaths, and undetermined deaths. RIVDRS data can provide insight into IPV deaths that can inform prevention efforts at the state level. For this study, we will estimate the prevalence of IPV using the 2005 Behavioral Risk Factor Surveillance System (BRFSS) data and examine the characteristics of IPV/intimate partner problem (IPP)-related deaths by manner of death in Rhode Island using the 2004–2013 RIVDRS data.

METHODS

Data sources

Two data sources were employed. The first was the Rhode Island BRFSS, a random-digit dialed telephone survey that collects statewide data on health risk behaviors and preventive health practices linked to chronic conditions, injuries, and preventable infectious diseases in the adult population. The 2005 survey included an IPV module, consisting of seven questions.^{3,7} We utilized the 2005 BRFSS data to provide information on the prevalence of IPV and to create a profile of this population.

RIVDRS was the second data source we used and contains

data on violent deaths from multiple Rhode Island agencies, including the Office of State Medical Examiners (autopsy reports), law enforcement (incident and investigatory reports), and the Office of Vital Records (death certificates). Specifically, RIVDRS includes data on victims, suspects, the manner of death, substance use, city of residence, as well as the circumstances surrounding the death. Trained abstractors identified eligible incidents by matching medical examiner information and death certificates using manner of death and ICD-10 codes selected by the National Violent Death Reporting System.

Measures for IPV/IPP

In the 2005 BRFSS, an intimate partner was defined as any current or former spouse, boyfriend, or girlfriend, including someone they dated.^{3,4,7} Four of the seven questions in the IPV module about violence in relationships with an intimate partner were: “Has an intimate partner ever threatened you with physical violence? This includes threatening to hit, slap, push, kick, or physically hurt you in any way.”; “Has an intimate partner ever hit, slapped, pushed, kicked, or physically hurt you in any way?”; “Has an intimate partner ever attempted physical violence against you? This includes times when they tried to hit, slap, push, kick, or otherwise physically hurt you, but they were not able to.”, and “Have you ever experienced any unwanted sex by a current or former intimate partner?”^{3,7} If any one of these four questions was answered affirmatively, the victim was defined as an IPV victim.³⁻⁵

IPV/IPP-related cases were selected from RIVDRS if the deaths indicated that the victim-suspect relationship was a current/former spouse or intimate partner, or if any of the five circumstances were noted: 1) intimate partner problem was a crisis; 2) jealousy (lovers’ triangle) was a crisis; 3) problems with a current or former intimate partner appear to have contributed to the suicide or undetermined death; 4) homicide or legal intervention death was related to immediate or ongoing conflict or violence between current or former intimate partners; 5) cases in which jealousy or distress over a current or former intimate partner’s relationship or suspected relationship with another person led to the incident.² IPV is a circumstance for homicide only and IPP is a circumstance for suicide only. We selected victims linked to IPV/IPP from 2004 to 2013 for analysis. We examined socio-demographics, manner of death, means of death,

location of injury, weapon type, toxicology test, and other circumstances among these cases.

Data Analysis

A ten-year period was used for data analysis since small numbers of Rhode Island violent deaths lead to substantial year-to-year fluctuations. Statistics were generated from multiple years of data to correct for the annual fluctuations in the data (e.g., there were a total of 59 IPV-related homicides in Rhode Island for the ten-year period 2004–2013.) The number of IPV/IPP-related deaths was summed across the years to mitigate the problem of small numbers.

We used descriptive statistics to report prevalence of IPV victims and victims' characteristics by manner of death. For the BRFSS data, we calculated frequencies, weighted frequencies, and weighted prevalence. Significance was assessed using a Chi-square test statistic. For the RIVDRS data, we calculated percentages of characteristics by manner of death among IPV/IPP-related victims. All analyses were conducted by using SAS software (release 9.4, SAS Institute Inc., Cary, NC, 2014), which can account for the complex sample design of the BRFSS.

RESULTS

An estimated 17.3% (105,175) of adults in Rhode Island reported IPV (Table 1). The 18-34 years age group had the highest prevalence of persons who reported IPV (22.2%) and the 45 years and over age group had the lowest (12.8%). Females were almost two times more likely than males to experience IPV. Those who were divorced or separated had the highest prevalence of reported IPV compared to married or widowed persons (33.8% vs. 12.1%). Persons with low education or income were more likely to report IPV than those having high education or income.

Characteristics of IPV/IPP decedents by manner of death in Rhode Island between 2004 and 2013 are presented in Table 2. Of the 406 IPV/IPP-related deaths, 76.1% were suicides, 14.5% were homicides, and 9.4% were categorized as undetermined intent. There were seven victims who were less than 18 years old. For IPP-related suicide, the majority of deaths were male (80.9%); non-Hispanic whites (89.3%); resided in non-core cities (70.1%); 72.8% of the victims injured in a residence; and suicides were more likely to die via asphyxia (50.5%) as cause of death compared to poisoning or firearms. For IPV-related homicide, the majority of decedents: were 18-34 years old; were female (74.6%); were minorities (52.5%); were never married or single (47.5%); resided in Rhode Island's high poverty 'core' cities (52.5%); and died from firearms (44.1%).

Substance use was high and similar among all groups. Deaths of undetermined intent had the highest percentages

Table 1. Prevalence of adult victim of IPV by demographic characteristics in RI, 2005 BRFSS

Demographic characteristics	Intimate Partner Violence			P value
	n	Weighted n	Weighted %	
Total	521	105,175	17.3	
Age group (years)				<0.0001
18-34	129	42,328	22.2	
35-44	135	25,989	20.2	
45 and over	256	36,769	12.8	
Sex				<0.0001
Male	135	37,686	12.9	
Female	386	67,489	21.4	
Race/Ethnicity				0.8016
Non-Hispanic white	436	88,772	17.2	
Minorities	82	15,845	17.9	
Marital status				<0.0001
Married/Widowed	202	44,481	12.1	
Divorced/Separated	169	22,488	33.8	
Never married/Unmarried couple	149	38,122	21.9	
City/Town of residence				0.3812
Core cities ^a	143	25,391	19.1	
Non-core cities	369	77,921	17.1	
Education level				0.0015
Less than college	335	73,376	19.4	
College graduate	186	31,799	13.9	
Annual household income				<0.0001
Less than \$50,000	282	55,182	22.2	
\$50,000 and higher	186	38,346	13.9	

IPV, Intimate Partner Violence; BRFSS, Behavioral Risk Factor Surveillance System.

^a Core-cities: Central Falls, Pawtucket, Providence and Woonsocket.

of alcohol or drug use except for marijuana (Table 3). Current mental health problems and treatment were higher among suicide victims. Compared to other suicide deaths, those IPP-related deaths were more likely to have had a crisis in the past or impending two weeks, having left a suicide note, or having disclosed intent to commit suicide. An argument or conflict leading up to the victim's death occurred in over one quarter of the IPV-related homicides.

DISCUSSION

Our findings showed differences between IPP-related suicide and IPV-related homicide victims in age, sex, race/ethnicity, marital status, and city/town of residence. Victims of IPP-related suicide were more likely to be older and white as compared with IPV-related homicide deaths in Rhode Island. Previous research has revealed that males

Table 2. Percentages of characteristics by manner of death among IPV/IPP victims, 2004-2013 RIVDRS

Characteristics	n	%		
		IPP-related Suicide	IPV-related Homicide	IPV/IPP-related Undetermined
Total	406	76.1	14.5	9.4
Age group (years)				
16-17	7	2.3	0.0	0.0
18-34	121	25.9	54.2	23.7
35-44	104	25.6	22.0	31.6
45 and over	174	46.3	23.7	44.7
Sex				
Male	285	80.9	25.4	52.6
Female	121	19.1	74.6	47.4
Race/Ethnicity				
Non-Hispanic white	340	89.3	47.5	97.4
Minorities	65	10.7	52.5	2.6
Marital Status				
Married/Widowed	182	47.9	35.6	35.1
Divorced/Separated	84	19.7	17.0	35.1
Never Married/Single	139	32.4	47.5	29.7
City/Town of Residence				
Core cities ^a	114	23.1	52.5	31.6
Non-core cities	265	70.1	44.1	60.5
Out of state	26	6.8	3.4	7.9
Injury Location				
House, apartment	327	78.2	88.1	92.1
Other	77	21.8	11.9	7.9
Injured at Victim Home				
Yes	292	72.8	69.0	79.0
No	109	27.2	31.0	21.1
Weapon Type				
Firearm	95	22.3	44.1	0.0
Asphyxia ^b	166	50.5	13.6	5.9
Poisoning	90	19.1	0.0	91.2
Other	51	8.1	42.4	2.9

RIVDRS has collected data on violent deaths since January 1, 2004. IPP, Intimate Partner Problem; IPV, Intimate Partner Violence; RIVDRS, Rhode Island Violent Death Reporting System.

^a Core-cities: Central Falls, Pawtucket, Providence and Woonsocket.

^b Asphyxia: hanging, strangulation, or suffocation.

Table 3. Percentages of toxicology test and circumstance by manner of death among IPV/IPP victims, 2004-2013 RIVDRS

Toxicology Test and Circumstance ^{a,b}	%		
	IPP-related Suicide	IPV-related Homicide	IPV/IPP-related Undetermined
Toxicology test positive			
Alcohol	39.1	31.6	46.0
Antidepressants	23.4	10.5	56.8
Opiates	15.8	10.5	59.5
Marijuana	12.2	7.1	8.1
Cocaine	10.2	7.0	32.4
Mental health/substance abuse circumstance			
Current depressed mood	58.9	0.0	42.1
Current mental health problem	50.5	3.5	71.1
Current mental health/substance abuse treatment	40.8	3.5	71.1
Alcohol problem	25.6	0.0	34.2
Other substance abuse problem	19.1	0.0	55.3
Interpersonal circumstance			
Had relationship problems with a family member	12.3	0.0	5.3
Problems with a friend or associate	11.0	1.7	7.9
An argument or conflict led to the victim's death	7.4	25.9	2.6
Life stressor circumstance			
Crisis in past or impending two weeks	39.8	5.2	42.1
Job problem	17.5	0.0	5.3
Financial problem	15.2	0.0	10.5
Recent criminal legal problem	9.4	0.0	5.3
Physical health problem	6.5	0.0	18.4
Suicide event circumstance			
Left a suicide note	40.8	0.0	0.0
Disclosed intent to commit suicide	33.0	0.0	13.2
History of suicide attempt(s)	23.0	0.0	15.8

RIVDRS has collected data on violent deaths since January 1, 2004.

IPP, Intimate Partner Problem; IPV, Intimate Partner Violence; RIVDRS, Rhode Island Violent Death Reporting System.

^a Subcategories do not sum to 100% because test results of victims can be positive for alcohol or multi-drugs.

^b Percentages might exceed 100% because multiple circumstances might have been coded.

are overwhelmingly represented in suicide deaths and multiple-death incidents where a suspect is also a victim. The research also revealed that females are more likely to be victims of IPV-related homicides and males are more likely to be suspects.² Our data found that 80.9% of the IPP-related suicide victims were male and 74.6% of the IPV-associated homicide victims were female. Our data also found that 85.2% of IPV-related homicide suspects were male during 2004-2013 (data not shown). To prevent IPV/IPP injury or death, intervention programs need to target high-risk vulnerable populations.⁸⁻¹⁰

National data from the Smith study reveals that most IPV-related homicides occur in homes and are more likely to involve firearms than other weapons.² IPV involving a firearm are 12 times more likely to result in death than incidents not involving a firearm.^{2, 11} Some states have laws giving police the authority to remove firearms when responding to a domestic violence crisis and authorizing courts to remove firearms when issuing protective orders.^{2, 11} A recent study shows that having such laws can decrease 19% of IPV-related homicides.¹¹ Rhode Island state laws prohibit suspects who have been issued certain types of domestic violence protective orders from purchasing or possessing firearms and/or ammunition, and require or authorize the removal or surrender of firearms or ammunition when a protective order is issued.¹¹ Enhancements to Rhode Island's domestic violence laws addressing access to firearms may lead to a reduction of incidents of IPV-related homicides.

Those who die directly of IPV are not the only IPV victims.² Our data showed that some victim and suspect relationships consisted of acquaintance, child, friend, stranger, and other person known to the victim. Corollary victims represented almost 20% of IPV-related homicide victims in the RIVDRS data. Among the 59 IPV-related homicides, 12 suspects were also victims (data not shown). In some cases, the homicide victim attempted to intervene in an IPV situation and was murdered.² Strategies that promote bystander intervention in situations where IPV exists should be an integral part of any IPV prevention program.²

Primary prevention of IPV needs to target adolescents before they have intimate relationships.² Our 2013 Youth Risk Behavior Survey data showed that the percentage of students who reported dating violence or forced sex during the past 12 months was 13.8% among all public high school students and 28.1% among lesbian/gay/bisexual/unsure students in Rhode Island (data not shown). The majority of these victims were 15-18 years old. In order to prevent adolescent dating violence and sexual violence, Rhode Island schools can integrate IPV prevention information into existing curricula and work with parents to develop in-home activities that are prevention focused.²

There are two limitations to this study. First, because of missing values of circumstances and relationship between suspect and victim, accurately identifying IPV cases presented a challenge that might have led to under-identifying

IPV-related victims. Second, although RIVDRS has ten years of data, the number of IPV-related victims is still very small compared to other states.

In summary, the impact of IPV extends beyond the intimate partners involved. Shelters, the criminal justice system, children's protective services, behavioral health and healthcare systems (including primary care providers), and schools/universities interact with IPV victims routinely. Each of these systems presents opportunities to identify IPV, assess the potential danger to victims, and protect them from harm.² The increase in IPV victims' services and changes in criminal justice responses to IPV crises can effectively decrease IPV.¹ Effective IPV prevention strategies could avert serious and fatal injuries.² IPV interventions that focus on identification of abusive relationships and bystander intervention may be effective with youth and families exposed to IPV.^{1, 2}

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References

1. Madkour AS, Martin SL, Halpern CT, Schoenbach VJ. Area disadvantage and intimate partner homicide: An ecological analysis of North Carolina counties, 2004-2006. *Violence Vict.* 2010;25:363-377
2. Smith SG, Fowler KA, Niolon PH. Intimate partner homicide and corollary victims in 16 states: National violent death reporting system, 2003-2009. *Am J Public Health.* 2014;104:461-466
3. Breiding MJ, Black MC, Ryan GW. Prevalence and risk factors of intimate partner violence in eighteen U.S. states/territories, 2005. *Am J Prev Med.* 2008;34:112-118
4. Breiding MJ, Black MC, Ryan GW. Chronic disease and health risk behaviors associated with intimate partner violence-18 U.S. states/territories, 2005. *Ann Epidemiol.* 2008;18:538-544
5. Ranney ML, Madsen T, Gjelsvik A. Predictors of being unsafe: Participation in the behavioral risk factor surveillance system 2006 intimate partner violence module. *J Interpers Violence.* 2012;27:84-102
6. National Center for Injury Prevention and Control. Funding opportunity announcement (foa): Collecting violent death information using the national violent death reporting system (NVDRS). Cdc-rfa-ce14-1402. [Http://www.Grants.Gov/view-opportunity.html?Oppid=253589](http://www.Grants.Gov/view-opportunity.html?Oppid=253589). 2014

7. Rhode Island Department of Health. Behavioral risk factor surveillance program. 2015;2015
8. Gold KJ, Singh V, Marcus SM, Palladino CL. Mental health, substance use and intimate partner problems among pregnant and postpartum suicide victims in the national violent death reporting system. *Gen Hosp Psychiatry*. 2012;34:139-145
9. Palladino CL, Singh V, Campbell J, Flynn H, Gold KJ. Homicide and suicide during the perinatal period: Findings from the national violent death reporting system. *Obstet Gynecol*. 2011;118:1056-1063
10. Beyer KM, Layde PM, Hamberger LK, Laud PW. Characteristics of the residential neighborhood environment differentiate intimate partner femicide in urban versus rural settings. *J Rural Health*. 2013;29:281-293
11. Law Center to Prevent Gun Violence. Domestic violence & firearms policy summary <http://smartgunlaws.Org/domestic-violence-firearms-policy-summary/>. 2014;2015

Authors

Yongwen Jiang, PhD, is a Senior Public Health Epidemiologist in the Center for Health Data and Analysis at the Rhode Island Department of Health, the RIVDRS epidemiologist, and Assistant Professor of the Practice of Epidemiology, School of Public Health, Brown University.

Deborah DeBare, MMHS, is the Executive Director of the Rhode Island Coalition Against Domestic Violence.

Beatriz Perez, MPH, is the Manager of Violence and Injury Prevention Programs at the Rhode Island Department of Health.

Samara Viner-Brown, MS, is the Chief of the Center for Health Data and Analysis at the Rhode Island Department of Health.

Disclosure

The authors have no financial interests to disclose.

Correspondence

Yongwen Jiang, PhD
 Rhode Island Department of Health
 3 Capitol Hill
 Providence RI 02908-5097
yongwen.jiang@health.ri.gov