

Homicide-Suicide in Virginia 2006-2010:

Who is at risk?

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Homicide-suicide is a relatively rare occurrence, yet it devastates the families, friends, and communities surrounding the event while attracting much media attention. A short news search of murder-suicide reveals many recent national cases that put this phenomenon in the front of our minds and sparks massive debates about current laws and policies. But what is the real burden of homicide-suicide, and who is really at risk? Studies of homicide-suicide in the United States show the rate to be between approximately 0.20 and 0.30 incidents per 100,000 people, putting the number of deaths from homicide-suicide between 1,000 and 1,500 annually in the United States.¹ Previous research further indicates that these events most commonly occur in the context of domestic violence.^{2,3,4}

There is an effort to understand lethal domestic violence in Virginia: The Family and Intimate Partner Homicide Surveillance (FIPV) Project. Operating under the Virginia Department of Health, Office of the Chief Medical Examiner (OCME), this project examines circumstances in all homicides occurring in the state and distinguishes those related to domestic violence. The project also captures every domestic violence related homicide-suicide in Virginia. Then the project collects demographic, relationship, and event information to further the understanding of this type of violence. Some cases of homicide-suicide seem to come without warning signs, however many cases exhibit multiple indicators of the violence to come. For this study, FIPV data from 2006 to 2010 are used to answer these questions: ‘who is most at risk for domestic violence related homicide-suicide?’ and ‘what relationship characteristics create the most danger for homicide-suicide?’

Methodology

For this analysis, homicide-suicide is defined as a homicide followed within one week by the homicide offender’s suicide. The FIPV project utilized newspaper articles and records collected by the OCME during death investigation, including law enforcement records, death certificates, court records, and toxicology reports, to identify and investigate cases of homicide-suicide related to domestic violence. Cases of homicide-suicide in which the event did not occur in the context of domestic violence were drawn from the Virginia Violent Death Reporting System. All cases were then analyzed to understand populations at risk for homicide-suicide, as well as the circumstances and motivations that shaped the fatal event.

¹ Marzuk, P. M., Tardiff, K., & Hirsch, C. S. (1992). The epidemiology of murder-suicide. *Journal of the American*

² Eliason, S. (2009). Murder-suicide: a review of the recent literature. *The Journal of the American Academy of Psychiatry and the Law*, 37, 371-376.

³ Langley, M. (2012). *American Roulette: Murder-Suicide in the United States* Fourth Edition. Washington DC: Violence Policy Center. Retrieved April 9, 2013, from <http://www.vpc.org/studies/amroul2012.pdf>.

⁴ Hannah, S. G., Turf, E. E., & Fierro, M. F. (1998). Murder-suicide in central Virginia: a descriptive epidemiologic study and empiric validation of the Hanzlick-Koponen typology. *American Journal of Forensic Medicine and Pathology*, 19, 275-283.

The FIPV project uses six mutually exclusive categories, defined in Table 1, to identify cases of Domestic Violence homicide. Of these six categories, two - intimate partner and intimate partner associated - are consolidated for this study. “Intimate partner related” includes cases where the fatal conflict occurred between intimate partners or to a third party to the intimate partner violence.

Some homicide-suicide data are represented here by the number of *events* and some data are represented by number of *homicide victims* and *suicide decedents*. For example, if a man kills his wife, daughter and then himself, this is one event with two homicide victims and one suicide decedent.

Finally, rates are calculated using the population over the 5 year period between 2006 and 2010, and represent the number of deaths per 100,000 people. For example, if a homicide victimization rate is 2.00, then 2 out of every 100,000 people in the population died from homicide during a homicide-suicide event. Rates based on numbers smaller than 20 are statistically unreliable and should be interpreted with caution.

Table 1: Family and Intimate Partner Violence Homicide Classifications

Intimate Partner Related Homicide	
Intimate Partner Homicide (IPH)	A homicide in which a victim was killed by one of the following: spouse (married or separated), former spouse, current or former boyfriend, girlfriend or same-sex partner, or dating partner. This group could include homicides in which only one of the parties had pursued a relationship or perceived a relationship with the other, where at least one of the following was historically noted: rejection, threats, harassment, stalking, possessiveness, or issuance of a protective order.
Intimate Partner Associated (IPA)	A homicide in which a victim was killed as a result of violence stemming from an intimate partner relationship. Victims could include alleged abusers killed by law enforcement or persons caught in the crossfire of intimate partner violence such as friends, co-workers, neighbors, relatives, new intimate partners, or bystanders.
Other Domestic Homicide	
Child Homicide by Caregiver (CHC)	A homicide in which a victim was a child under the age of 18 killed by a caregiver.
Elder Homicide by Caregiver (EHC)	A homicide in which a victim was an adult 55 years or older who was killed by a caregiver.
Other Family Homicide (OFH)	A homicide in which a victim was killed by an individual related to them biologically or by marriage (e.g. grandparents, [step] parent, [step] sibling, cousin, in-laws) and who does not meet the criteria for one of the four groups above.
Family Associated Homicide (FAH)	A homicide in which a victim was killed as a result of violence stemming from a familial relationship. Victims could include persons killed by law enforcement during a familial conflict or persons caught in the crossfire, such as friends, co-workers, neighbors, relatives, or bystanders.

All Homicide-Suicide in Virginia: A Brief Overview

Between 2006 and 2010, there were 128 separate homicide-suicide events with 176 homicide victims and 128 suicide decedents in Virginia. This totals 304 lives lost from homicide-suicide. The number of homicide-suicide events and the corresponding rate in Virginia increased slightly during the five year period, with incidence rates at a low of 0.23 in 2007 and a high of 0.41 in 2010.⁵

Figure 1: Number of Homicide Victims in Homicide-Suicide Events in Virginia by Year between 2006 and 2010: (N=176)

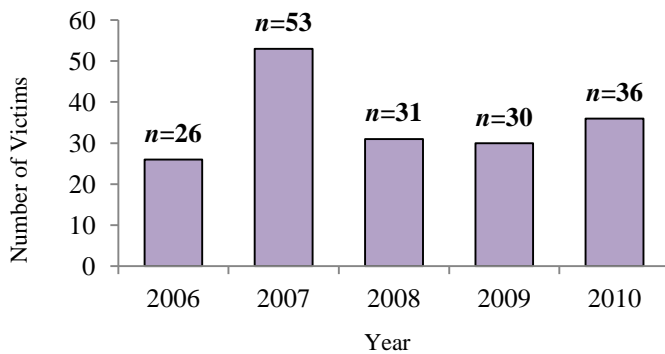
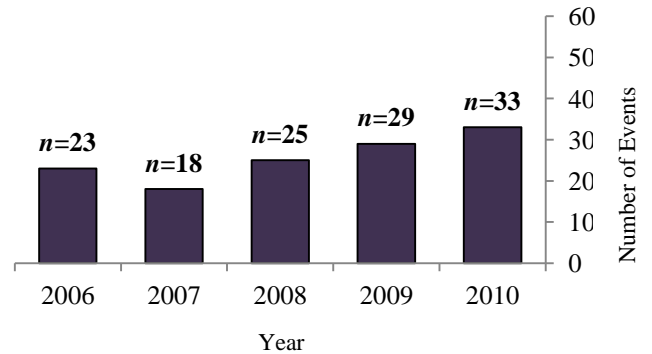


Figure 2: Number of Homicide-Suicide Events in Virginia by Year between 2006 and 2010: (N=128)



Types of Homicide-Suicide

All 128 homicide-suicide events were further categorized by the relationships between the homicide victims and the suicide decedents. This categorization revealed that homicide-suicide most often occurs in the context of domestic violence:

- Of the 128 separate events, 109 (85.2%) were related to problems between intimate partners.
- Twelve homicide-suicide events (9.4%) were due to discord between family members related by blood or by marriage, but who were not intimate partners.
- The other 7 homicide-suicide events (5.5%) were between people that were not intimate partners or otherwise related.

**85.2% of Homicide-Suicide events in Virginia
between 2006 and 2010 were
Intimate Partner Related**

⁵ The year 2007 reflects a much higher number of homicide victims and a lower number of homicide-suicide events. This change in pattern reflects a unique circumstance, the mass fatality event at Virginia Tech that resulted in 32 homicides.

Intimate Partner Related Homicide-Suicide

Intimate partner violence is the catalyst for the majority of homicide-suicide in Virginia and is the focus for the remainder of this report. The following pages identify the disparities that exist within and between homicide victims and suicide decedents, and addresses relationship and event characteristics that create high levels of risk for homicide-suicide.

Between 2006 and 2010, there were 109 homicide-suicide events occurring due to intimate partner discord, resulting in the loss of 123 lives to homicide. Victims included intimate partners and bystanders to the violence, such as children, friends, and law enforcement officers. In addition, 109 people completed a suicide after committing a homicide, totaling 232 deaths.

Sex and Race

- While Intimate Partner Related homicide-suicide can occur across all races and sexes, most homicide victims were female and White. When looking at rates, Black females had the highest likelihood of homicide victimization among women, and Black males had the highest risk among men.

Table 2: Homicide Victims by Race, Ethnicity, and Sex in Virginia between 2006 and 2010: (N=123)

	Female			Male			Total		
Race	No.	%	Rate	No.	%	Rate	No.	%	Rate
White	64	61.5	0.44	10	52.6	0.07	74	60.2	0.26
Black	35	33.7	0.84	8	42.1	0.21	43	35.0	0.54
Other	5	4.8	0.42	1	5.3	0.09	6	4.9	0.26
Total	104	100	0.66	19	100	0.10	123	100	0.32
Ethnicity									
Hispanic	2	1.9	0.16	0	0.0	0.00	2	1.6	0.07

- Of the 109 suicide decedents, the vast majority were male. Whites made up the highest percentage of suicide decedents, followed by Blacks and Asians. Black males had the highest likelihood of committing a homicide followed by their completed suicide.

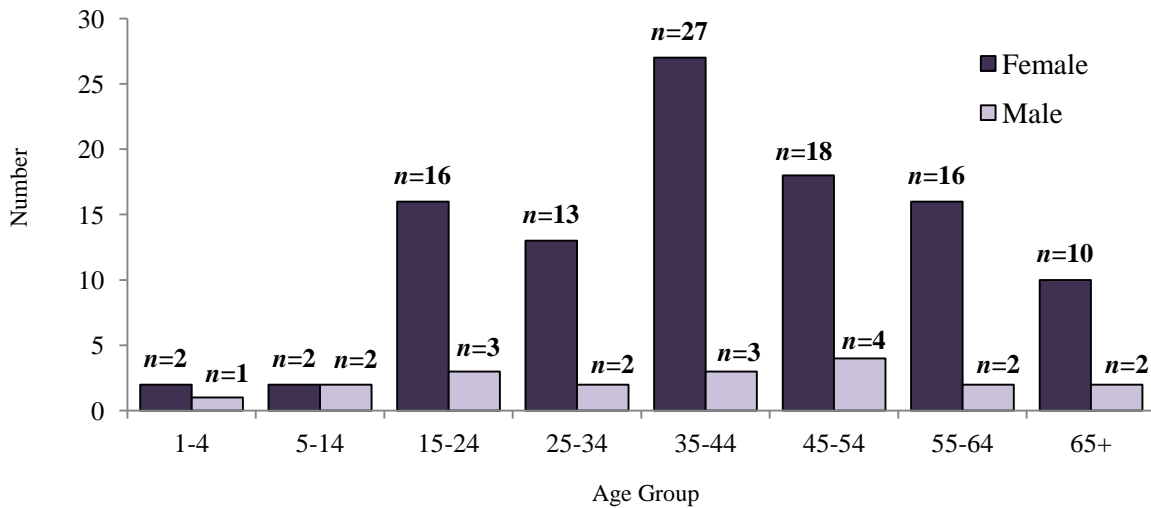
Table 3: Suicide Decedents by Race, Ethnicity, and Sex in Virginia between 2006 and 2010: (N=109)

	Female			Male			Total		
Race	No.	%	Rate	No.	%	Rate	No.	%	Rate
White	3	75.0	0.02	61	58.1	0.43	64	58.7	0.22
Black	1	25.0	0.02	38	36.2	0.99	39	35.8	0.49
Other	0	0.0	0.00	6	5.7	0.54	6	5.5	0.26
Total	4	100	0.02	105	100	0.55	109	100	0.28
Ethnicity									
Hispanic	0	0.0	0.00	2	1.9	0.14	2	1.8	0.07

Age

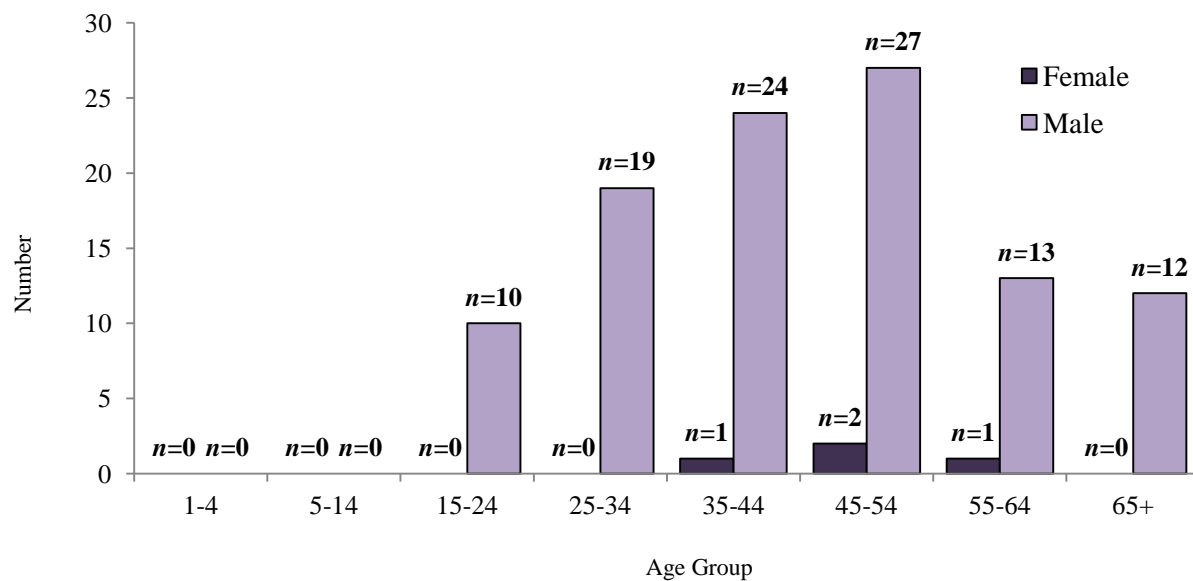
- Homicide victims were most often between 35 to 44 years old with the average age of 42. Middle aged women were most at risk; particularly females aged 35 to 44 with a rate of 0.94. Males had a far lower risk than females. Men aged 45 to 54 years old had the highest risk among males with a rate of 0.14.

Figure 3: Homicide Victims by Age and Sex in Virginia between 2006 and 2010: (N=123)



- Suicide decedents were on average 45 years of age. Males aged 45 to 54 years old had the highest risk of suicide with a rate of 0.95. Males aged 35 to 44 years old also had a high risk with a rate at 0.85. At any age females had a much lower risk for completing a suicide after a homicide, with rates less than 0.10.

Figure 4: Suicide Decedents by Age and Sex in Virginia between 2006 and 2010: (N=109)



Event Characteristics

Fatal Agency

- Firearms played a significant role in the commission of homicide-suicide, as almost 90% of homicide victims were killed with a firearm. While seen far less often than firearms, sharp instruments were the next most common fatal agency, and were used only in killing women.

Table 4: Homicide Victims by Fatal Agency and Sex in Virginia between 2006 and 2010: (N=123)

Fatal Agency	Female		Male		Total	
	No.	%	No.	%	No.	%
Firearm	92	88.5	17	89.5	109	88.6
Sharp Instrument	8	7.7	0	0.0	8	6.5
Strangle	4	3.8	0	0.0	4	3.3
Blunt Instrument	2	1.9	0	0.0	2	1.6
Fire/Smoke Inhalation	1	1.0	1	5.3	2	1.6
Motor Vehicle	0	0.0	1	5.3	1	0.8
Other/Unknown	0	0.0	0	0.0	0	0.0

- As with homicide, firearms were also the major method used in suicide. Almost 90% of suicide decedents killed themselves with a firearm.

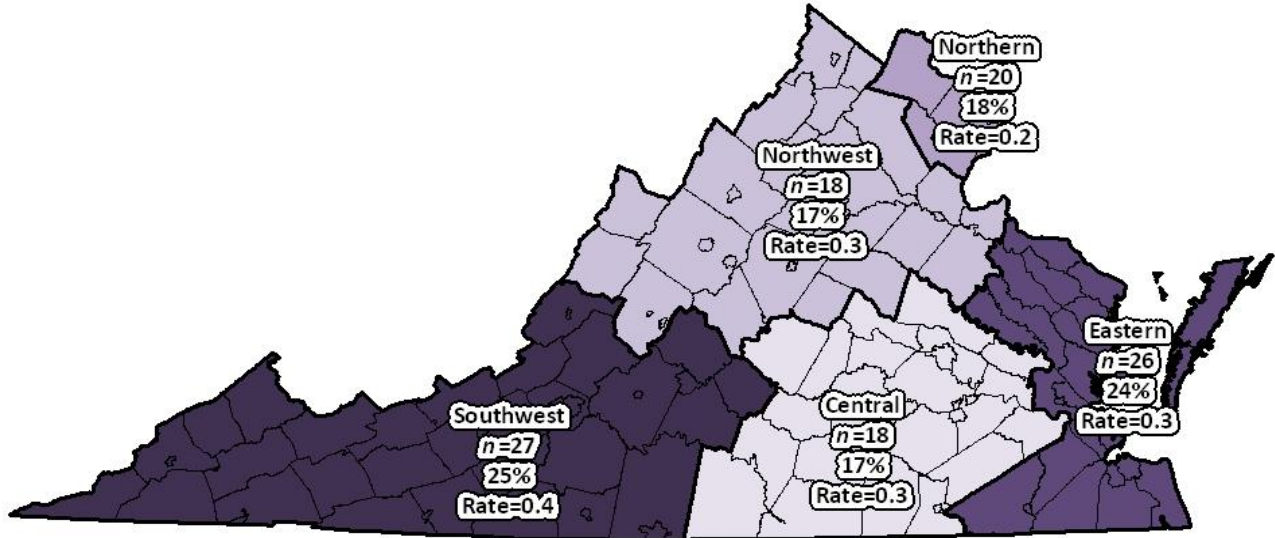
Table 5: Suicide Decedents by Fatal Agency in Virginia between 2006 and 2010: (N=109)

Fatal Agency	Female		Male		Total	
	No.	%	No.	%	No.	%
Firearm	4	100.0	92	87.6	96	88.1
Strangle/Hang	0	0.0	4	3.8	4	3.7
Fire/Smoke Inhalation	0	0.0	2	1.9	2	1.8
Motor Vehicle	0	0.0	2	1.9	2	1.8
Poison/Carbon Monoxide	0	0.0	1	1.0	1	0.9
Sharp Instrument	0	0.0	1	1.0	1	0.9
Drown	0	0.0	1	1.0	1	0.9
Fall from Height	0	0.0	1	1.0	1	0.9
Unknown	0	0.0	1	1.0	1	0.9

Locality of Homicide-Suicide Event

- The following map represents homicide-suicide in Virginia by Health Planning Regions. Southwest Virginia has the highest number and the highest rate of homicide-suicide events. Therefore, people in the Southwestern area of Virginia were most vulnerable to this type of violence as compared to other areas of the state.

Figure 6: Homicide-Suicide Events by Health Planning Region in Virginia 2006-2010: (N=109)



Relationship Types

- Homicide victims and suicide decedents were most likely to be in a relationship; however a fifth of victims were bystanders caught in the crossfire of intimate partner violence. Bystanders included biological children, new intimate partners, family members, and friends. Females were more often the intimate partner of their killer, while males were more likely caught in the crossfire of intimate partner violence.

Table 6: Homicide Victims by Relationship to Suicide Decedent in Virginia between 2006 and 2010: (N=123)

Relationship (Intimate Partners)	Female (n=104)		Male (n=19)		Total	
	No.	%	No.	%	No.	%
Spouse	50	48.1	4	21.1	54	43.9
Ex-Boyfriend/Girlfriend	19	18.3	2	10.5	21	17.1
Boyfriend/Girlfriend	18	17.3	0	0.0	18	14.6
Ex-Spouse	3	2.9	0	0.0	3	2.4
Target of Pursuer	2	1.9	0	0.0	2	1.6
Relationship (Non-Intimate Partners)						
Biological Child	6	5.8	3	15.8	9	7.3
Family/Friend of Intimate Partner	5	4.8	1	5.3	6	4.9
Current and/or Past Intimate Partners of a Third Party	0	0.0	5	26.3	5	4.1
Other/Unknown	1	1.0	4	21.1	5	4.1

Alcohol and Substance Use

- In a significant portion of events, toxicological studies revealed alcohol use in homicide victims and suicide decedents. Alcohol was found in 20 victims (16.3%) and 32 suicide decedents (29.4%). Of those with a positive Blood Alcohol Content (BAC), 9 victims and 17 suicide decedents had a BAC higher than 0.08 (In Virginia, a person with a BAC of 0.08 is considered legally impaired).
- While not found as often as alcohol, other substances played a role in intimate partner related homicide-suicide. Eleven homicide victims and 15 suicide decedents were found with other substances in their system at the time of death. These substances were both legal and illegal drugs, including: antihistamines, anticonvulsants, antitussives, opiates and opioids, benzodiazepines, amphetamines, Difluoroethane (gas dusters), and Phencyclidine (PCP). Besides alcohol, cocaine was the most common substance found in suicide decedents ($n=7$).

Precipitating Characteristics

Precipitating characteristics are the factors occurring right before or during the homicide-suicide event, and can be considered a trigger to the final act of violence. Events could have multiple characteristics, or, for some events, surveillance was unable to detect any characteristics. The characteristics are analyzed by the sex of the primary homicide victim. While there could be multiple homicide victims in an event, the primary victim was the main target of the violent act.

- The most common precipitating factor, regardless of the sex of the primary victim, was the end or ending of the intimate partner relationship.
- When comparing the sex of the primary homicide victim, females have a greater likelihood than males of being killed while alcohol or other drugs were present. Alternatively males were likely to be killed than females when a new intimate partner relationship was involved.

Table 7: Homicide-Suicide Events by Precipitating Factors and Sex in Virginia 2006-2010: (N=109)

Precipitating Factors	Female		Male		Total	
	No.	%	No.	%	No.	%
End of Relationship	50	52.1	4	30.8	54	49.5
Substance Use	31	32.3	2	15.4	33	30.3
New Partner/Perception of New Partner	22	22.9	4	30.8	26	23.9
Financial Issues	12	12.5	3	23.1	15	13.8
Unspecified/Other Argument	10	10.4	1	7.7	11	10.1
Mercy Killing	9	9.4	1	7.7	10	9.2
Child Custody	6	6.3	1	7.7	7	6.4
Unknown	7	7.3	0	0.0	7	6.4
Other	2	2.1	2	15.4	4	3.7

Risk Factors

Risk factors are defined for this project as problems or issues occurring during the relationship that increase the chance for lethality and are applied to the intimate partner relationship that was the catalyst for lethal violence. In 12 homicide-suicide events surveillance did not identify any risk factors. Therefore, while this information is important, it is likely a conservative perspective of the issues involved in these relationships.

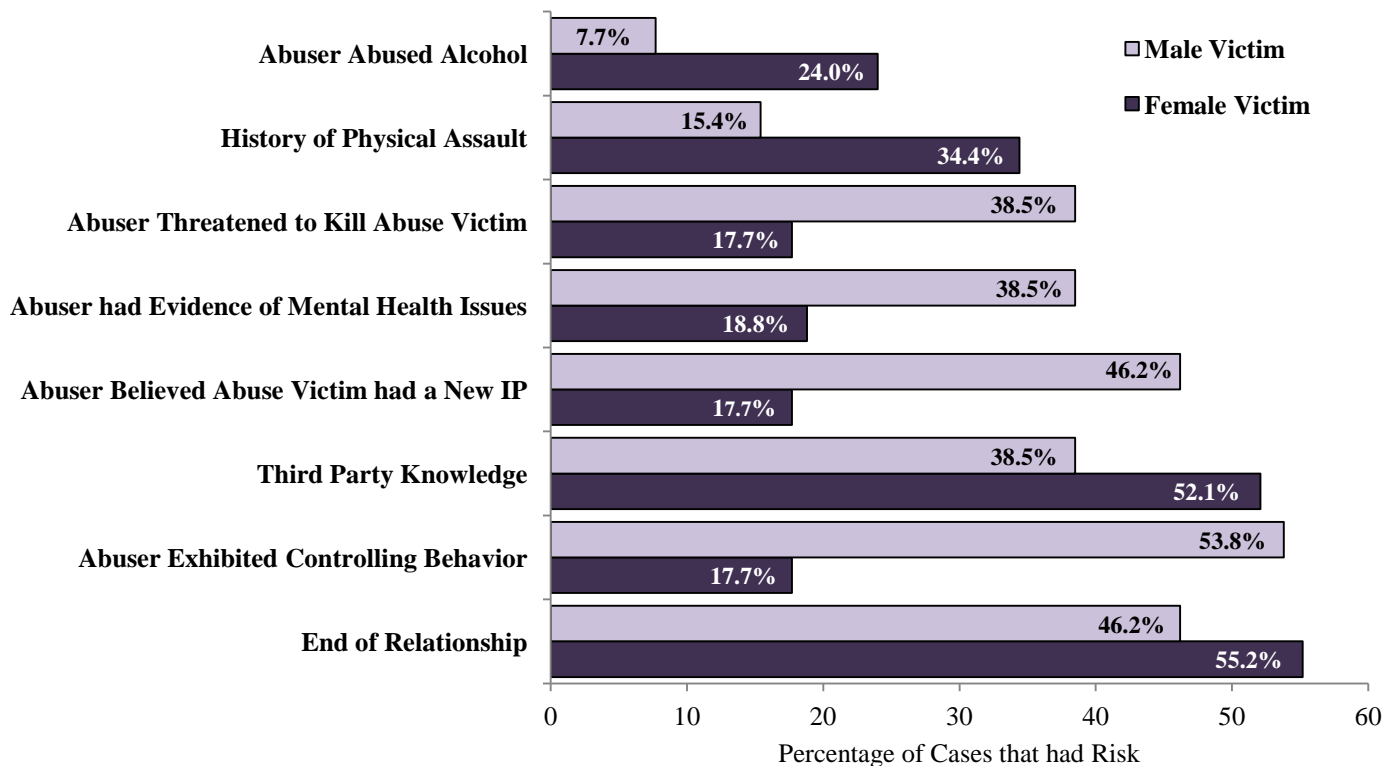
The figures on the following pages illustrate the variation of risks found between the sex, race, and age of the primary homicide victim. There were also several risk factors that were often seen regardless of these demographics.

- The most common risk factor found regardless of the age, sex, or race of the primary homicide victim was the end or ending of the intimate partner relationship. This risk surfaced in over half of these homicide-suicide events.
- This surveillance project also identified that someone outside the relationship knew about the violence or risk for physical violence in over half of these cases.

Risk Factors by Sex

- There were some large differences in risk seen between male and female homicide victims. Males were at a significant risk of becoming a victim of homicide-suicide when an abuser was controlling, made threats to kill, or believed their partner was in a new relationship. Females were more at risk when the abuser had a history of physical violence or abused alcohol.

Figure 7: Top Risk Factors by Sex of Primary Homicide Victim in Virginia (N=109): 2006-2010

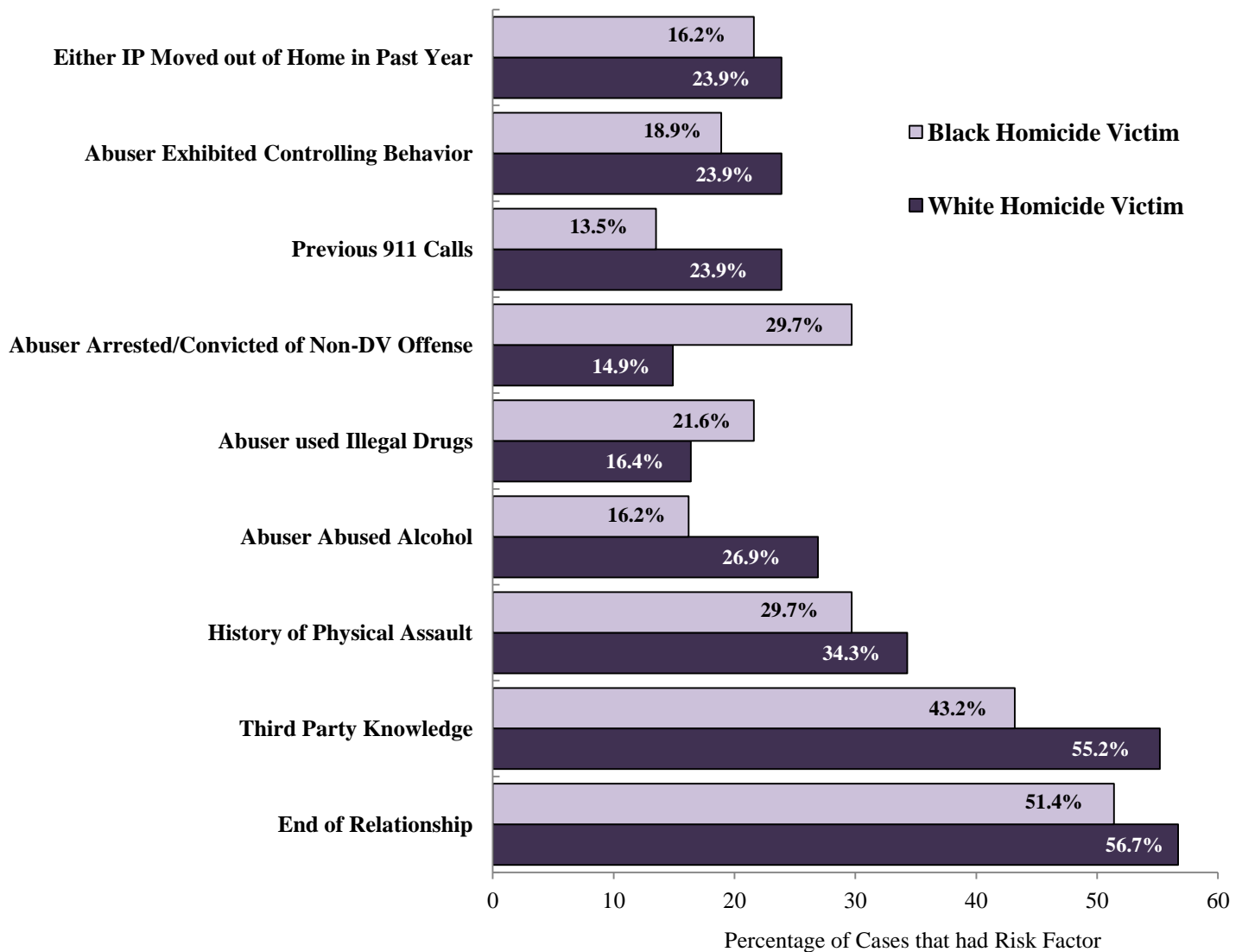


Risk Factors by Race

In general, risk factors did not vary by race, with some exceptions. The differences that were seen between Blacks and Whites were smaller than those found in the other analyses.

- Blacks were more likely to be killed when the abuser had been previously arrested or convicted for non-domestic violence related offenses.
- Whites were more likely to be killed in relationships when there were previous 911 calls or police response and when the abuser had abused alcohol. Further, White victims more often had a third party aware of the abusive relationship prior to the homicide.

*Figure 8: Top Risk Factors by Race of Primary Homicide Victim in Virginia (N=109): 2006-2010**



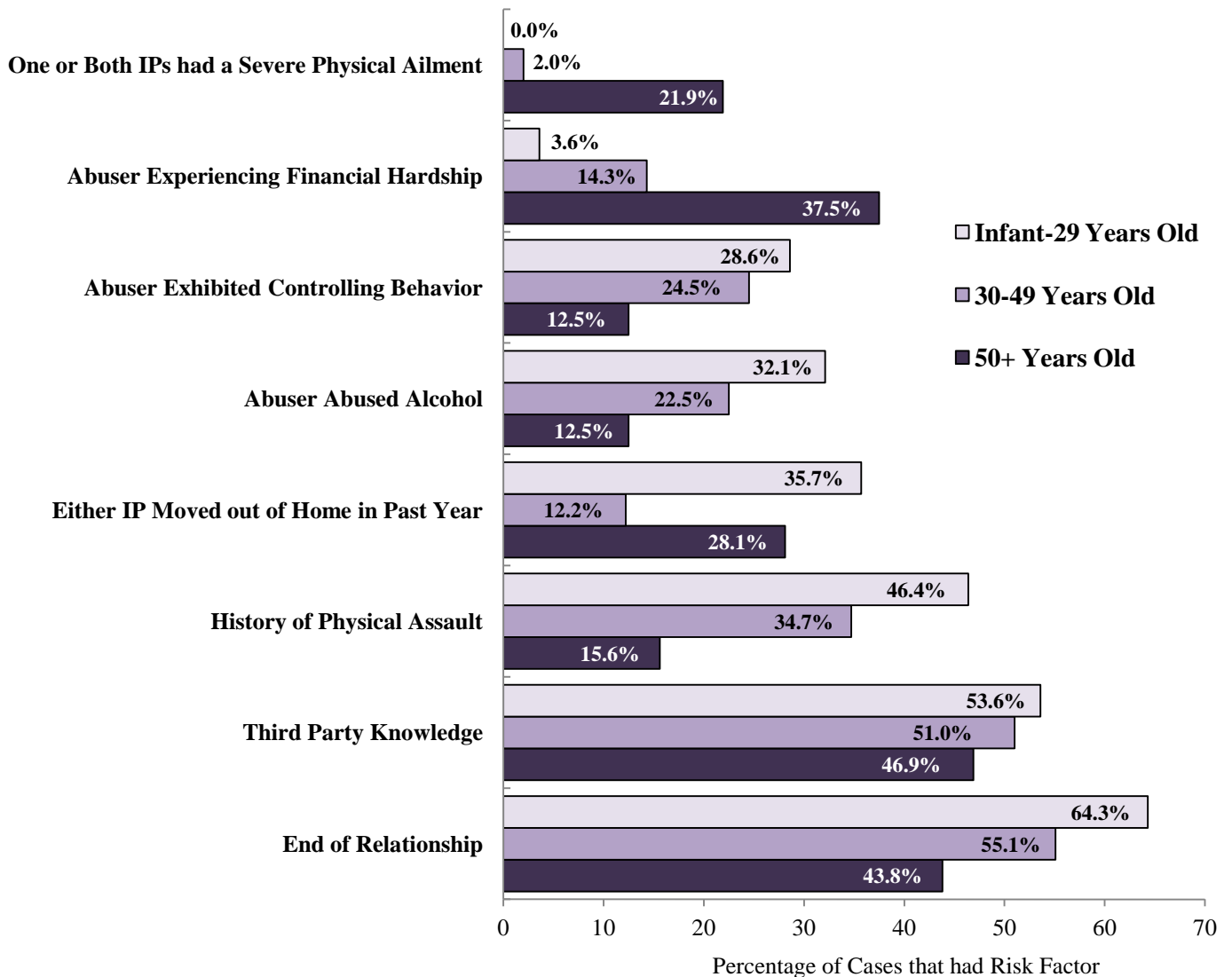
* Victims of Hispanic ethnicity or ‘Other’ races were not included for this analysis due to the small number of cases.

Risk Factors by Age Group

Large differences were seen in risk factors when homicide decedents were divided by age. Younger homicide victims, those aged 49 or younger, had more risk factors overall than victims aged 50 years or older.

- Younger homicide victims were more likely to be killed when the relationship was ending or had ended and when there had been a history of physical abuse. Further, these homicide victims more often had an abuser abuse alcohol and exhibit controlling behavior towards the abuse victim. These risks were identified less often as the homicide victim’s ages increased.
- Older homicide victims were much more likely to be killed when the abuser was experiencing a financial hardship or when one or both intimate partners had a severe physical ailment.

Figure 9: Top Risk Factors by Age of Primary Homicide Victim in Virginia (N=109): 2006-2010



Discussion

Homicide-suicide events are tragedies for an entire community, particularly for the families and friends of the dead. To truly make an impact in the prevention of homicide-suicide, we must focus on intimate partner violence and recognize the lethal characteristics before it is too late to intervene.

While no social grouping is immune to becoming a victim, there are several disparities involved within the realm of intimate partner violence and homicide-suicide. Women are more likely than men to become a homicide victim. Relatedly, men are far more likely to be the person committing the homicide before killing themselves. This discrepancy, while large, is not surprising when given the trend seen in other forms of violent death.

There are also racial disparities regarding intimate partner violence and homicide-suicide. Black women have a rate of homicide victimization that is almost twice that of women of other races, four times the rate for Black men, and eight times the rate for men of other races. Blacks live at a much higher risk than other races, and this trend persists regardless of year of death or region of Virginia. There is also a surprising finding when looking at the race of the suicide decedent. Black men had the highest rate of committing a homicide followed a suicide. This is unexpected, because White males have historically had a much higher rate of suicide (without a prior homicide) than Black males.⁶

This report revealed an added burden in intimate partner homicide-suicide. Not only are intimate partners at risk, but so too are people outside of the intimate partner relationship. People who are present during the violence, are a target of jealousy, or attempt to intervene, are also at jeopardy of being a victim of homicide-suicide. Children of the intimate partners who are in conflict seem to be the most vulnerable, and often are killed as bystanders. Family members, friends, and new intimate partners are also vulnerable. Awareness of this aspect of intimate partner violence is especially necessary when considering the safety of male victims. While there were more female homicide victims than male, over 68% of male victims were not an intimate partner of their killer.

There is one facet of intimate partner related homicide-suicide that shows almost no disparities, which is the use of firearms. Almost 89% of homicide victims and 88% of suicide decedents died by firearm. Access to firearms continues to be a major issue within the field of intimate partner violence due to the frequency of their use during these horrific events.

In order to prevent homicide-suicide, we need to identify existing relationship characteristics that indicate a risk for lethality. Across the demographics of sex, race, and age, the ending of the intimate partner relationship was the most common risk factor for homicide-suicide. We also know that in a significant portion of events, a third party was aware of the intimate partner

⁶Virginia Violent Death Reporting System (VVDRS), Office of the Chief Medical Examiner, Virginia Department of Health. *Suicide Trends in Virginia: 2003-2010*. May, 2012. Retrieved April 15, 2013, from <http://www.vdh.virginia.gov/medExam/NVDRS.htm>

violence. This finding is particularly unsettling, because it means that there were instances where intervention could have been possible.

There were some risk factors that varied among demographic groups. Females were more likely to be killed when the abuser had problems with alcohol and when there was a history of physical abuse between the intimate partners. Alternatively, males were more likely to be killed when the abuser was controlling, jealous, or had previously made threats to kill the abuse victim. This difference in risk between males and females is most likely attributed to the different circumstances in which victims are killed. As previously mentioned, males are more often caught in the crossfire of intimate partner violence, so the characteristics that put a bystander at risk are somewhat different than those for the intimate partner.

The differences in risk factors were smaller when compared by race. White Virginians were more likely than Black Virginians to have an abuser who dealt with alcoholism. Whites were also more likely to have a history of 911 or police response to a domestic violence call. Black Virginians were more likely to have been killed when the abuser had a criminal background or a history of using illegal drugs.

The largest variations in risk were seen across age groups. As homicide victims got older, there were fewer risk factors identified by surveillance. Older Virginians (50 years and older) were more likely than younger Virginians to be killed when one or both intimate partners had a serious illness (cancer, dementia, etc.), or when there was a financial hardship. Meanwhile, younger victims more often had an abuser who was controlling, was an alcoholic, or had a history of physical assault. Younger Virginians were also more at risk during the ending of the relationship. With this information we know that there are crucial differences in the circumstances that create risk between older victims and younger victims.

When all of this information is taken into consideration, it becomes easier to predict when a homicide-suicide might occur. If a relationship has the particular risks that show high lethality, eventually there may be a breaking point. Combine the impact of alcohol or other drugs, the end of a relationship, or access to a firearm onto an already strained situation and the environment becomes much more dangerous. Timely and appropriate intervention into relationships afflicted with violence is vital. The importance of timely intervention is particularly relevant to those who are most often aware of the abuse: family and friends. However, during this time they must also be cautious and vigilant to ensure their own safety. Everyone else in the community, including law enforcement, clinicians, and advocates, should also be aware of the circumstances and characteristics of dangerous relationships in order for another tragedy to be prevented.

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