

Suicide and Firearm Access among Legal System Involved Perpetrators of Domestic Violence

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Abstract

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Individuals incarcerated for DV-related offenses or subject to domestic violence protection orders (DVPOs; i.e., respondents) have threatened or engaged in one form of violence perpetration and may be at increased risk for experiencing others forms of violence, including suicide death. Several risk factors for perpetration of DV overlap with suicide; however, few studies have examined suicide-related behaviors among individuals who perpetrate DV. Quantifying the risk of suicide and firearm suicide among perpetrators of DV involved in the legal system will provide knowledge to inform current policies and practice to prevent suicide and protect victim-survivors of DV.

We used two populations of legal system involved perpetrators of DV to examine suicide-related behaviors. The first was a sample of granted DVPOs in King County, WA from 2014-2020 (n=3,543) to compare prevalence ratios (PR) of respondent firearm possession and use of firearms or weapons to threaten or harm by suicide-related behavior and to examine

standardized mortality ratios (SMRs) for violent death, including suicide, comparing DVPO respondents to King County residents. The second population used records from 282,246 individuals released from King County Adult Detention Facilities (i.e., jail) from 1999-2018 to compare suicide death and firearm suicide death of individuals released from jail with a history of DV-related offenses to those without a history of DV-related offenses, and King County and WA state.

Overall, we found that both civil and criminal legal system involved perpetrators of DV had a greater risk of suicide compared to the general population of King County, WA. DVPO respondent suicide-related behavior was commonly reported, and almost one-third of DVPO respondents with a history of suicide-related behavior possessed firearms. Perpetrating DV may have unique risk factors for suicide in addition to those associated with legal system involvement in general. In addition to the risk of suicide death, we found that respondents with a history of suicide-related behavior were more likely to have used firearms or weapons to threaten/harm compared to respondents without a history of suicide-related behavior. Future research should evaluate how suicide interventions such as screening and brief safety planning interventions (including lethal means access) can be used among perpetrators of DV in the DVPO process, jail, and after release to reduce the risk of suicide, including homicide-suicides.

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Chapter 1: Introduction

Suicide & Domestic Violence (DV)

Suicide and domestic violence (DV) are major public health and public safety concerns. Intimate partner violence (IPV) affects an estimated 43 million adults in the United States (US).¹ Suicide is the 10th leading cause of death for all ages in the US, the second leading cause of death for ages 10–34, and the fourth leading cause for ages 35–54.² Suicidality is considered a continuum of thoughts and behaviors.³ In 2020, 12.2 million adults experienced suicidal ideation, 3.2 million had made a plan for suicide, 1.2 million attempted suicide, and 45,979 died by suicide in the US.⁴ Past suicide attempt is considered the strongest predictor of suicide; though 90% of people who have attempted suicide do not go on to die by suicide.⁵ Suicide affects the family, friends, and community of the deceased. It is estimated that 7% of the US adult population know someone who has died by suicide in the past year⁶ and 7,000-12,000 children experience the death of a parent by suicide each year.⁷

Several risk factors for perpetration of DV overlap with suicide risk factors including alcohol and substance use, previous suicide attempts, and family history of child abuse.⁸ Despite knowledge of these shared risk factors, few studies have examined suicide-related behaviors among individuals who perpetrate DV. Early work in this area found high rates of suicide among protection order respondents in central Florida⁹ and high prevalence of DV among men with alcoholism who died by suicide in St. Louis County, Missouri¹⁰; however, these studies have small samples and may not be generalizable to other legal systems involved DV perpetrators.

More recent studies have used Violent Death Reporting System (VDRS) data to assess suicide among larger populations. VDRS allows for examining circumstances preceding suicide death among statewide populations or multiple states that contribute to the National Violent

Death Reporting System (NVDRS). Though NVDRS abstracts intimate partner problems as a circumstance preceding death, NVDRS does not abstract for IPV perpetration or victimization specifically. Intimate partner problems could include IPV perpetration, IPV victimization, divorce, break-up, jealousy, or an argument. Using Kentucky's VDRS from 2005-2015, 26% of suicide decedents had identified intimate partner problems, with 43% of those cases including IPV.¹¹ In a latent class analysis of suicide decedents using the NVDRS from 2003-2008, one class that accounted for 6.5% of individuals demonstrated criminal legal problems, relationship problems, and perpetrating interpersonal violence, including DV, and another class, accounting for 10.5%, had intimate partner problems and suspected alcohol use.¹² In North Carolina, after reviewing the narratives for IPV, it was estimated that at least 4.5% of suicides were associated with IPV and that 72% of these deaths were men who perpetrated non-fatal IPV.¹³ When comparing IPV-related suicide to other suicides, suicides with IPV circumstances were more likely to have the decedent recently disclose suicidal intent, use a firearm, and have involvement with the criminal legal system.¹³ History of perpetrating DV and court involvement may not be known and may be underreported as VDRS relies on information from medical examiner/coroner reports and family and friends after suicide death. Therefore, alternative data sources that capture history of perpetrating DV would expand our understanding of suicide death among this group.

An area of suicide research among DV perpetrators that provides additional evidence for the link between DV and suicide death is homicide-suicides. Homicide-suicides are when a person kills one or more victims and then dies by suicide. Using NVDRS from 2003-2015, a prior investigation found that 5% male suicide decedents with known intimate partner problems had killed a current or former partner.¹⁴ When comparing these cases to male suicide decedents who did not kill their partner, a firearm was used in 55.2% of deaths where a partner was not

killed compared to 89.1% of intimate partner homicide-suicides. Intimate partner homicide-suicides were also noted to be associated with legal problems. Homicide-suicides are a small subset of suicide deaths and have notable differences in motivation and characteristics compared to single suicides (i.e., those that do not include homicide).^{14,15} Research examining suicide overall among DV perpetrators is needed.

DV & Legal System Involvement

Involvement in the legal system is also a risk factor for suicide, particularly after recent release from incarceration.¹⁶⁻²³ Incarceration has demonstrated elevated risk of mortality and suicide, in particular.²⁴ Among persons released from prison in WA, the leading causes of death were drug overdose, followed by cardiovascular disease, homicide, and suicide.¹⁶ Additional legal system involved populations have also shown elevated risk for suicide including persons who were recently arrested²⁵⁻²⁷ and persons under community supervision (i.e. probation and parole).^{28,29} Persons who perpetrate DV can have various legal system involvement as an individual can be arrested and charged with a DV-related offense, processed in criminal court, and possibly be incarcerated in jail or prison.³⁰

In addition to criminal legal system involvement, perpetrators of DV can be involved in the civil legal system. A domestic violence protection order (DVPO) is an order from the court granting a survivor of DV (the petitioner) protections from their abuser (the respondent). In WA, DVPOs can be filed when experiencing physical violence and stalking or threats from a current or former spouse, person with children in common, person in a current or former dating relationship (i.e. intimate partner), person who currently or formerly lived together, person related by blood or marriage, and biological or legal parent-child.³¹ The petitioner will file the civil order with the court, providing evidence of recent threats or violence, and a temporary order

will be issued. This order typically lasts 14 days before the final hearing. If granted, the final order is in effect for one year. DVPOs are issued through the civil legal system and can include civil actions to allow for the survivor to pursue civil contempt or compliance, but service and enforcement can occur in the criminal legal system.³² DVPOs have shown evidence of reducing subsequent DV.³³⁻³⁵ However, suicide is often not considered as a potential outcome when evaluating the effect of DVPOs. In WA, 19% of men aged 18-60 who died by suicide in 2003 had a DVPO or DV criminal charge before their death.³⁶ Therefore, legal system involved perpetrators of DV may be a potentially large group at risk of suicide.

Interpersonal Theory of Suicide

The interpersonal theory of suicide (IPTS) is one model that can inform our understanding of how legal system involved perpetrators of DV may have elevated risk for suicide.³⁷ IPTS posits the intersection of thwarted belongingness, perceived burdensomeness, and capability are necessary for suicide death to occur.³⁸⁻⁴⁰ The combination of thwarted belongingness and perceived burdensomeness can lead to suicidal desire. When these components feel unchangeable, this leads to a feeling of hopelessness which transitions suicidal desire from passive to active. Capability for suicide includes acquired capability from repeated exposure to events such as physical abuse and past suicidal behavior that lower the fear of death and increase a physical pain tolerance. The interaction between active desire for suicide and capability for suicide leads to non-fatal and fatal suicidal behavior.

Perceived burdensomeness is an unmet need for social competence.^{38,40,41} It is the mental state where someone believes statements such as “The people in my life would be better off if I were gone”, “I think my death would be a relief to the people in my life”, and “I think I make things worse for the people in my life”. Family discord, unemployment, and functional

impairment are proposed to be associated with an elevated risk of suicide due to the impact on perceived burdensomeness. The collateral consequences of legal system involvement can impact someone's perceived burdensomeness. Collateral consequences are the disadvantages and penalties faced by a person with legal system involvement. These can include direct penalties from the offense such as fines, community service, and jail and prison sentences. It also includes the restrictions on housing, employment, education, public benefits, and civic participation that can occur after having an arrest, conviction, or incarceration record. These invisible punishments⁴² continue long after the offense, increase the risk of subsequent legal system involvement, and have spillover effects to family, friends, and community. The systemic racism of the legal system extends to these collateral consequences.⁴³

Another construct of IPTS is thwarted belongingness which is the unmet need for social connectedness. Living alone, loneliness, and low social support are proposed to be associated with suicide due to this factor. In an exploratory study, thwarted belongingness was associated with past suicidal behavior among people in jail.⁴⁴ The psychological stigma of being labeled a "criminal" or "felon" could affect someone's sense of belongingness.

For perpetrators of DV specifically, regulations such as firearm dispossession and restrictions in custody of children are important in reducing future violence to DV victim-survivors and their families. For perpetrators of DV, their involvement in their child's life may not be in the best interest of the child.⁴² In families where the person was incarcerated for DV-related offenses, incarceration may be felt as a relief or a period of peace.⁴⁵ These realities may have implications for perceived burdensomeness where "The people in my life would be better off if I were gone", "I think my death would be a relief to the people in my life", and "I think I make things worse for the people in my life" may feel particularly true. Among people arrested

for DV and mandated to a batterer intervention program, perceived burdensomeness was associated with suicidal ideation and suicide attempt, but not thwarted belongingness nor the interaction between belongingness and burdensomeness.⁴⁶

The next component of theory, acquired capability of suicide, is considered as a necessary component to distinguish between ideation and near-lethal or lethal suicide. The “ideation to action framework” is an important distinction in the research and practice.⁴⁷⁻⁴⁹ The majority of people who experience suicidal ideation or have made a suicide attempt do not die by suicide and not all those who die by suicide have known suicidal ideation or made a previous attempt including people who are experiencing depression or other mental health disorders. Mental health conditions such as depression are strongly associated with suicidal ideation but are only weakly associated with suicide attempts.⁴⁷ In IPTS, depression and other mental health conditions are considered upstream from these constructs. Depressive symptoms are associated with higher thwarted belongingness and perceived burdensomeness.⁵⁰ Some research has demonstrated that IPTS variables explain more of the variance in suicidal ideation than depressive symptoms.⁵¹ Among people arrested for DV and mandated to a batterer intervention program, past suicide attempt, perceived burdensomeness, and symptoms of depression was associated with suicidal ideation.⁴⁶ In this same study, participant who attempted suicide had greater perceived burdensomeness, drug use, Borderline Personality Disorder (BPD) symptoms, depressive symptoms, and suicidal ideation compared to those that did not attempt suicide.⁴⁶

Suicide & Coercive Control

Perpetrators of DV may threaten suicide as a form of coercive control over the person they use violence against; therefore, minimizing the assumed risk of suicide-related behaviors. Coercive control is a pattern of behavior to reduce the autonomy of another person and consists

of isolation, intimidation, and regulation behaviors to maintain power and control in a relationship.^{52,53} The abuser's demands are connected to credible threats if the survivor does not comply.^{54,55} The term suicidal threat is discouraged by CDC uniform definitions of self-directed violence as it assumes intent.⁵⁶ In one study of DVPO petitioners, almost half of respondents had a history of threatening suicide, and of those, one-quarter had attempted suicide.⁵⁷ Threats of suicide among perpetrators of DV can be an emotional response or coping strategy to crises.^{58,59} The person threatening suicide may be both experiencing a want and need for power and control over another person and a desire to die.⁶⁰ Viewing suicide threats or attempts by perpetrators of DV as superficial or manipulative may diminish perceived risk for both the respondent and the petitioner and result in a lack of intervention for appropriate treatment.³⁶ Considering non-fatal suicide related behaviors, including examining threats separately as a type of suicidal ideation, would add to our knowledge on the continuum of suicide-related behavior in this population.

Threats of suicide are a risk factor for lethal domestic violence, including intimate partner homicide-suicide (IPHS). When evaluating the Danger Assessment⁶¹, threatening to die by suicide was the least correlated item with lethality.⁶² Though this item had the lowest correlation overall, there was an increased risk of intimate partner homicide (IPH) when the abuser was suicidal and there was no history of physical abuse. Thus, there is a complex relationship between suicide-related behavior and coercive control, particularly in relationships where physical violence is not present. It may be that other risk factors in conjunction with suicidal ideation are important for understanding risk for IPH and IPHS. Another risk factor in this assessment is access to firearms. In this same study, firearm related items were found to have the highest correlation with lethality. Victims who were threatened or assaulted with a firearm or other weapon were 20 times more likely to be murdered and when a firearm was in the home, a

victim was 6 times more likely to be killed.⁶² Therefore, examining suicide-related behaviors by firearm possession and weapon use will provide much needed information on the intersection of these risk factors.

Suicide & Firearm Access

Firearm dispossession may be one avenue to prevent suicide. Firearms are used in approximately 70% of homicides and 50% of suicides in the US.⁶³ Reducing access to lethal means is one strategy to reduce suicide, and firearms have the highest case fatality ratio compared to other methods of suicide.⁶⁴ Removal of firearms may also reduce intimate partner homicides.⁶⁵ Federal law prohibits the purchase and possession of firearms by anyone convicted of a domestic violence misdemeanor (Lautenberg Amendment of the Gun Control Act of 1968 §922. 218 U.S.C. §922(g)(1)-(9)). Additionally, DVPOs could provide opportunities for suicide prevention and intervention for perpetrators of DV as well as firearm dispossession as DVPOs can include the removal of firearms from the respondent. Qualifying DVPOs are included in the federal law though it is not explicit to surrender firearms already in possession. States may also have additional legislation. In WA, anyone who has been convicted of a domestic violence related crime is ineligible to possess a firearm. In 2014, an order to surrender firearms was made mandatory for DVPOs in intimate partner relationships (e.g., current or former spouses, relationships with a child in common, intimate partners who resided together; Wash. Rev. Code Ann. § 9.41.040(2)(a)).

Though there are legislative mechanisms in place, implementation may vary and enforcement can be limited.⁶⁶ Firearm suicide may be lower among perpetrators of DV due to firearm restriction laws; however, firearms may still be accessible to the prohibited person. This

knowledge is crucial to informing current policies and practice to both prevent suicide and protect victim-survivors of DV.

Dissertation Aims

The objective of this dissertation was to estimate the prevalence of suicidal ideation/communication and suicide attempt as well as incidence of suicide death among perpetrators of DV involved in the legal system, a large population at potentially elevated risk of suicide. This project sought to address gaps in the literature by understanding suicide risk, including suicidal ideation/communication, attempt, and death, among perpetrators of DV involved in the legal system. Specifically, we used two populations of legal system involved perpetrators of DV to examine suicide-related behaviors. The first study population for Aim 1 was DVPO respondents in King County, WA from January 1, 2014-December 31, 2020. History of suicidal ideation/communication, including threats of suicide, and suicide attempt were measured using the DVPO petition and violent death, including suicide death, was measured by linking to death records from WA Department of Health (WA-DOH). For Aim 2, the study population was individuals released from incarceration in jail in King County, WA from 1999-2018. These records were also linked to WA-DOH death records to ascertain suicide death and firearm suicide death.

Aim 1: Occurrence of suicide-related behavior among civil legal system involved DV perpetrators

Aim 1a: Quantify the prevalence of history of suicidal ideation/communication, suicidal communication expressed as threats, and suicide attempt among civil legal system involved perpetrators of domestic violence by firearm possession status and weapon use.

Aim 1b: Investigate the risk of violent death, including suicide death, among civil legal system involved perpetrators of domestic violence compared to an age, sex, and race and ethnicity-matched population of King County, WA.

Aim 2: Risk of suicide death among criminal legal system involved DV perpetrators

Aim 2a: Compare the risk of suicide death (and firearm suicide death) between persons released from jail with a history of DV-related offenses, without a history of DV-related offenses, and an age, sex, and race and ethnicity-matched population of WA State and King County, WA.

Aim 2b: Assess suicide death (and firearm suicide death) after release from jail between persons released from jail with a history of DV-related offenses and without a history of DV-related offenses.

Significance

Overall, our knowledge of the risk of suicide-related outcomes among perpetrators of DV is strikingly limited. As DV is often unreported to law enforcement⁶⁷ and may not result in legal system involvement, this project will not be able to generalize to all individuals who engage in DV but will expound upon a population that has potential for prevention and intervention efforts. There is research regarding shared risk factors and evidence of suicidal ideation, attempt, and death among perpetrators of DV; however, there are challenges to the existing literature that limits a clear understanding and quantification of this elevated risk. Quantifying the risk of suicide among perpetrators of DV involved in the legal system will provide deeper knowledge of a potentially large population at risk of suicide to inform opportunities for intervention, particularly around access to firearms. This understanding may also reduce the risk of violence for the victim-survivor of DV.

Suicide can have profound impacts on family, friends, and the community. Survivors of suicide can experience depression, anxiety, post-traumatic stress disorder, and suicidal ideation.^{7,68,69} The suicide death of a perpetrator of DV may have a complex grieving process for surviving family including the victim-survivor of DV and their families. The public health impact of reducing suicide, therefore, extends from the perpetrator of DV to their family, including victim-survivors, children, and their communities.

Chapter 2. Suicide-related behavior and firearm access among individuals subject to Domestic Violence Protection Orders

Introduction

Suicide and domestic violence (DV) are major public health and public safety concerns. Intimate partner violence (IPV) affects an estimated 43 million adults in the United States.¹ Suicide is the 10th leading cause of death for all ages in the United States, the second leading cause of death for ages 10–34, and the fourth leading cause for ages 35–54.² Several risk factors for perpetration of DV overlap with suicide risk factors including alcohol and substance use, previous suicide attempts, and family history of child abuse.⁸ Prior research has shown high rates of suicide death among people with a history of DV perpetration.^{9,10,36}

A domestic violence protection order petition (DVPO) is a court document completed by the petitioner (usually the victim-survivor) seeking a protection order from the court against the abuser, referred to as the respondent. In one study of DVPO petitioners, almost half of respondents had a history of communicating suicidal ideation, and of those, one-quarter had attempted suicide.⁵⁷ Suicidal behaviors among DV perpetrators may be an emotional response or coping strategy to crises.^{58,59} Perpetrators of DV may also threaten suicide as a form of coercive control over the person against whom they use violence. Coercive control is a pattern of behavior that reduces the autonomy of another person through isolation, intimidation, and regulation of behaviors to maintain power and control in a relationship.⁵² The abuser's demands are connected to credible threats (e.g., suicide) if the victim-survivor does not comply.⁵⁴ The person threatening suicide may be experiencing both a desire to die and a desire for control over another person.⁶⁰

Abuser threats of suicide also signal elevated risk of violence to victim-survivors and are considered a risk factor for lethal DV, including intimate partner homicide-suicide.^{61,62} Another

risk factor in lethality assessment is access to firearms. Firearms are used in half of intimate partner homicides⁷⁰ and over 80% of intimate partner homicide-suicides.¹⁴ Abusers who threaten or assault their victim with a firearm or other weapon are 20 times more likely to subsequently murder them. When a firearm is in the home, an abuser is six times more like to kill their DV victim.⁶² Abusers also use firearms in non-lethal violence by shooting at or hitting the victim-survivor with the firearm (e.g., pistol-whipping), brandishing the firearm, and threatening the victim-survivor.^{71,72} Victim-survivors who experience firearm abuse are more likely to experience other forms of abuse including physical abuse, sexual abuse, financial abuse, and controlling behaviors.⁷³

Firearm dispossession may be one avenue to reduce intimate partner homicides⁶⁵ and to prevent suicide.⁶⁴ Removal of firearms can occur in the civil legal system through DVPOs. In Washington (WA) in 2014, an order to surrender firearms was made mandatory for DVPOs in intimate partner relationships (e.g., current or former spouses, relationships with a child in common, intimate partners who resided together; Wash. Rev. Code Ann. § 9.41.040(2)(a)). Therefore, DVPOs and specifically, order to surrender firearms, may provide an actionable intervention point to reduce firearm-related injury, including suicide and homicide.

We sought to examine the association of suicide-related behaviors with firearm possession and use of firearms or weapons to threaten or harm among DVPO respondents in King County, WA. To add to our knowledge on the continuum of suicide-related behavior among this population, we examined suicide-related behaviors overall and subtypes of suicide-related behavior, including suicidal ideation/communication, suicidal communication expressed as a threat, and history of suicide attempts.

Methods

This cross-sectional study used data from a sample of civil legal system-involved perpetrators of DV. In King County, WA, a population-based cohort of DVPOs was established from January 1, 2014-December 31, 2020 to evaluate implementation of WA's DV-related firearm prohibitions (RCW9.41.800) by the courts and the Regional Domestic Violence Firearms Enforcement Unit (RDVFEU).⁷⁴ A random sample of 55% of all granted DVPO petitions was collected (n=3,543) for all years from 2014 to 2020 except for 2017. The RDVFEU officially began on January 1, 2018 with a pilot program beginning in mid-2017. Thus, 2017 was not collected for the evaluation project. As the evaluation study did not collect information from 2017, this year was not available in the current study. Petitioner narratives and data were abstracted from the records about the respondent, including age, sex, relationship to petitioner, substance use, and history of firearm use. Firearm possession status was not reported or coded as unknown for 28.4% of cases resulting in a sample size of n=2,537 petitions for the analysis ([Appendix A](#)). This study was approved by the University of Washington Institutional Review Board.

Measures

Suicide-related behaviors: Suicide-related behaviors were abstracted from a question on the petition that asks petitioners to “Describe threats of suicide or suicidal behavior by respondent”. A summary of the responses was abstracted for this study. First, a binary variable was coded as 1 if the petitioner described any suicide-related behavior by the respondent, and 0 if they did not describe suicide-related behavior.

Second, to describe the range of suicide-related behaviors, we classified subtypes of suicide-related behavior by the respondent as described in the petition. We created a nominal

variable with five categories: 1) No suicide-related behavior; 2) Suicidal ideation/communication (not expressed as a threat and no history of suicide attempt); 3) Suicidal communication expressed as a threat; 4) History of suicide attempt; and 5) Suicidal communication expressed as a threat *and* a history of suicide attempt. These categories were created by coding the summary text for presence of suicidal ideation/communication, suicidal communication expressed as a threat, and history of suicide attempt.

Suicidal ideation/communication included narratives that described the respondent as having contemplations, wishes, and preoccupations with death and suicide. Suicidal ideation/communication was defined as passive thoughts about wanting to be dead or imagining being dead or active thoughts considering ways to die or forming a plan. This communication included specific or non-specific suicidal thoughts or plans with or without an intent to act on these thoughts or plans.³ As the petitioner reported this behavior in the petition, the respondent would have had to communicate this ideation to the petitioner themselves or the petitioner would have been informed by someone else.

Suicidal communication expressed as a threat was coded as present for narratives where communication about suicide included an emphasis to coerce or control the victim-survivor.³ For example, suicidal communication in which the respondent expressed a desire or a plan to kill themselves if the petitioner leaves the relationship or blamed the petitioner if the respondent were to kill themselves was coded as a threat. Equally, if the suicide communication also included threats of homicide to the petitioner or others, the statement was coded as a threat.

History of suicide attempt was coded as present when the petitioner described the respondent having had a history of suicide attempts or initiating an attempt (i.e., taking steps to engage in lethal action, such as putting a firearm to their head but not pulling the trigger). If

intention was unclear for a potentially lethal action, such as an overdose, it was included as an attempt if the description also included other suicidal ideation/communication but not included if it was specifically described as accidental.

To determine whether suicidal communication was expressed as a threat and/or if there was a history of suicide attempts, a rules-based system was used to perform text classification from the unstructured text. Natural Language Processing (NLP) uses computer science to understand human language and has been used in prior research examining suicide and suicide risk factors in clinical notes in Electronic Health Records (EHR).⁷⁵ Text classification is the process of organizing unstructured text into predefined categories to reduce the burden of manual review and coding which can require significant time, training, and expertise. Key phrases from these narratives were used as the inputs for rules-based text classification system. For more details on suicide-related behavior definitions, coding instructions, and example text see [Appendix B](#).

Firearm Possession & Weapon Use: Firearm possession status was measured by the following question in the petition, “Does the respondent own or possess firearms?” The response options include “Yes” and “No”. If neither option was selected the question was coded as “Unknown” by the research team. Petitioners were also asked the following open-ended question: “Does the respondent use firearms, weapons or objects to threaten or harm you? Please describe.” These petitioner responses were coded as “Yes” if a petitioner explicitly mentioned the use of a weapon in incidents of DV or “No” if a petitioner did not explicitly mention the use of a weapon in incidents of DV.

Covariates: Covariates included age of the respondent (i.e., 17 or under; 18-24; 25-34; 35-44; 45-54; 55-64, and Over 65), respondent gender (i.e., Male, Female), and case year (i.e.,

2014, 2015, 2016, 2018, 2019, 2020). Age was calculated by subtracting the age of the respondent using the respondent's date of birth from the date the order was granted. Respondent gender was entered on the granted order by a judicial officer, an attorney, or an advocate working with the petitioner. Therefore, this measure was not self-reported by the respondent and does not include other gender identities. Case year (e.g., 2014, 2015) was the year the petition was filed with the court. These covariates were selected to account for firearm ownership patterns and yearly trends in suicide-related behavior, firearm ownership, or documentation of these behaviors in DVPO petitions over time. Situational factors included relationship type (i.e., intimate partner or family/household member), incidence of stalking or similar behavior, and substance use (i.e., none or any reported substance use, including alcohol and drugs).

Statistical Analysis

First, we calculated descriptive statistics including counts and proportions of demographic and situational factors comparing DVPO respondents with a reported history of any suicide-related behavior to DVPO respondents without a history of suicide-related behavior.

Prevalence of firearm possession and prevalence of weapon use to threaten or harm was compared by respondents with a history of suicidal-related behavior to respondents that did not have a history of suicide-related behavior using modified Poisson regression models to estimate prevalence ratios.⁷⁶ Additionally, we considered subtypes of suicide-related behavior as an alternative form of our exposure.³ Models adjusted for age of the respondent, respondent gender, and case year. Additionally, a sensitivity analysis was conducted adjusting for situational factors as use of a firearm is more common among perpetrators of DV with a history of substance use⁷⁷ and stalking.⁷⁸ Analyses were conducted using R version 4.2.2 and R package tidytext version 0.4.1 (R Foundation for Statistical Computing, Vienna, Austria).

Results

Overall, 46.0% (n=1168) of DVPO respondents had a history of suicide-related behavior. Compared to respondents without a history of suicide-related behavior, DVPO respondents with a history of suicide-related behavior were more likely to be a current or former intimate partner rather than being a family member or cohabitant (86.7% vs. 76.8%), more likely involved in stalking or similar behavior (77.0% vs. 61.9%), and more likely engaged in substance use (70.4% vs. 58.9%) (Table 2.1). Of the DVPO respondents with a history of suicide-related behavior, 43.7% of petitions described suicidal communication expressed as a threat (n=510); 9.2% had a history of suicide attempt (n=107); 6.6% had both communication expressed as a threat and a history of suicide attempt (n=77); and 40.6% (n=474) had suicidal ideation/communication that did not include threats nor a history of suicide attempt.

Firearm possession was similar between respondents with (30.0%) and without (29.7%) a history of suicide-related behavior (Table 2.2). We did not find a statistically significant difference in the prevalence of firearm possession (PR: 1.01; 95% CI: 0.89-1.14) between those two groups (Table 3). This finding did not materially change after adjustment for case year, respondent age, and respondent gender (PR: 1.03; 95% CI: 0.91-1.17). When examining by subtypes of suicide-related behavior, firearm possession was similar between the groups; there was no association observed between subtype of suicide-related behaviors and firearm possession status.

Overall, 43.9% of respondents with a history of suicide-related behavior had petitioner reported use of firearms, weapons, or objects to threaten or harm compared to 33.6% of respondents without a history of suicide-related behavior. Respondents with a history of suicide-related behavior were 1.31 (95% CI: 1.18-1.44) times as likely to have reported use of firearms,

weapons, or objects to threaten or harm than respondents without a history of suicide-related behavior (Table 2.3). This finding did not materially change after adjustment for case year, respondent age, and respondent gender (PR: 1.33; 95% CI: 1.20-1.47).

When examining by subtypes of suicide-related behavior, respondents with suicidal communication expressed as a threat were 1.42 (95% CI: 1.25-1.60) times as likely to have reported use of firearms, weapons, or objects to threaten or harm than respondents without a history of any suicide-related behavior after adjustment. Respondents with suicidal communication expressed as a threat *and* a history of suicide attempt were 1.55 (95% CI: 1.19-1.99) times as likely to use firearms, weapons, or objects to threaten or harm than respondents without a history of suicide-related behavior after adjustment. Respondents with suicidal ideation/communication (not expressed as a threat and no history of suicide attempt) were 1.24 (95% CI: 1.08-1.41) times as likely to use firearms, weapons, or objects to threaten or harm than respondents without a history of suicide-related behavior after adjustment. Respondents with a history of suicide attempt were 1.16 (95% CI: 0.89-1.47) times as likely to use firearms, weapons, or objects to threaten or harm than respondents without a history of suicide-related behavior after adjustment, though this finding was not statistically significant.

In sensitivity analyses adjusting for case year, respondent age, respondent gender as well as situational factors (i.e., IPV relationship type, stalking, and any substance use) our results were similar ([Appendix C](#)).

Discussion

We sought to examine the association of respondent history of suicide-related behaviors with firearm possession and weapon use to threaten or harm. We found that almost half of DVPO respondents in King County, WA had a history of suicide-related behavior (including

ideation, communication expressed as threats, and history of suicide attempts) and 30% of these respondents had access to firearms. Firearm possession was just as likely among respondents with a history of suicide-related behavior as those without a history of suicide-related behavior. Though respondents with a history of suicide-related behavior were just as likely to own or possess firearms, these respondents were more likely to use firearms or other weapons to threaten or harm compared to respondents without a history of suicide-related behavior. This finding was most pronounced for respondents with a history of suicide-related communication expressed as threats.

Abuse using firearms, including threats and displays, impacts a victim-survivor's feeling of safety and has the potential to quickly escalate the lethality of abuse.^{73,77} Our study suggests suicide-related behaviors, especially communication expressed as threats, may be a marker for abuse using firearms; therefore, reducing access to firearms through DVPOs may prevent firearm-related injury to both the victim-survivor and the respondent. Though there are legislative mechanisms in place for orders to surrender firearms in DVPO cases, implementation varies by jurisdiction and improvements in enforcement would be needed to realize potential reductions in harm.^{66,79}

Our main analysis sought to understand the overall prevalence of firearm possession and use and threats of use with a weapon by suicide-related behaviors. We found that respondents with a history of suicide-related behavior were more often a current or former intimate partner, involved in stalking or similar behavior, and engaged in substance use. Prior work has found the use of a firearm to be more common among perpetrators of DV with a history of substance use⁷⁷ and stalking.⁷⁸ Even after adjusting for these factors in sensitivity analyses, our findings

remained similar. Future research could further explore these risk factors and their association with suicide-related behavior and firearm possession/use.

Prior research in a DV intervention court found that 45.5% of respondents were reported by petitioners to have ever told someone or implied they were going to die by suicide and 12.9% had a history of suicide attempt.⁵⁷ Though our study relied on the petitioner narratives from the DVPO petitions, our findings were similar. Other studies using DVPO petition data have found a range of prevalence for reported threats of suicide, from 41.5% in North Carolina⁷² to a much lower 6% in Arizona.⁸⁰ This may be due to differences in how suicide-related behavior is documented such as whether DVPO petitions explicitly ask about respondent suicide-related behaviors or whether legal advocates are trained to ask DVPO petitioners to describe these behaviors. Jurisdictions should consider including questions of suicide-related behaviors of the respondent on the DVPO petition form in order to assess this risk of violence to the respondent and the victim-survivor. Similar to prior research on firearm possession and other risk factors for suicide among WA residents⁸¹, adolescents⁸², and older adults⁸³, we found no differences in firearm possession by history of suicide-related behaviors among DVPO respondents.

Limitations

We used a unique source of data to measure the association between suicide-related behaviors, firearm ownership, and weapon threats. This unstructured data from granted DVPO petitions has both advantages and limitations. Subtypes of suicide-related behavior were assessed through a rule-based text classification system. This allowed for efficient classification of the narratives. However, nuances in petitioner descriptions of respondent suicidal behavior may have been missed resulting in misclassification of suicidal communication expressed as a threat or suicide attempt.

Problems with recall or selection bias may occur, although every petitioner was asked to describe threats of suicide or suicidal behavior by the respondent which may help recall and reduce selection bias. Petitioners are often current or former intimate partners and therefore may have great knowledge of the respondent. Respondents who may not disclose suicidal ideation in a research or clinical setting may have communicated their thoughts to the petitioner during the course of the relationship. On the other hand, the use of proxies may have limitations as suicidal ideation may be underreported compared to behaviors such as threats or suicide attempts because it is unobservable unless communicated. Additionally, victim-survivors may underreport to protect the respondent⁸⁴ or due their own perceptions and beliefs regarding suicide.⁸⁵ Therefore, the use of proxies is a limitation in the current study. The direction of bias is unknown and self-reported information from the respondent would also be impacted by similar disclosure biases.⁵⁷ Petitioners may be more likely to disclose both suicide-related behaviors and weapon use/threats if they have the support of a DV advocate, legal counsel, or other knowledge that these are dangerous indicators and important to obtaining a DVPO.

This study was cross-sectional. We cannot determine if suicide-related behaviors occurred before or after weapon use/threats, or if these behaviors co-occurred. Firearm possession information was missing for 28.4% of petitions and thus, excluded from the current study. Petitioners may be unaware if the respondent owns a firearm or be reluctant to disclose firearm possession for fear of retaliation. We were not able to isolate the use of firearms specifically to threaten or harm as the question on the petition includes other weapons or objects. However, understanding weapon use is important for considering prohibiting future firearm purchases or access as firearms increase the risk of lethality.

Public Health Implications

Using data from granted DVPO petitions in King County, WA, we found that 3 in 10 DVPO respondents with a history of suicidal-related behavior were reported by the petitioner to possess firearms. Firearm possession was just as likely among respondents with a history of suicide-related behavior as those without a history of suicide-related behavior. Respondents with a history of suicide-related behavior were more likely to have petitions that reported use of firearms or other weapons to threaten or harm, especially if the suicide-related behavior was communication expressed as threats. Suicide-related behaviors of the respondent should be included on DVPO petition forms in order to assess this risk of violence to the respondent and the victim-survivor. Reducing access to firearms through DVPOs may prevent firearm-related injury to both the victim-survivor and the respondent.

Table 2.1. Granted Domestic Violence Protection Order (DVPO) case and respondent characteristics by reported history of suicide-related behavior in King County, WA, 2014-2020

Case and respondent characteristics	Type of Reported History of Suicide-related behavior (N=1168)						
	Overall (N=2537)	No suicide related behavior (N=1369)	Any Reported History of Suicide-related behavior (N=1168)	Suicidal ideation/communication (N=474)	Suicidal communication expressed as a threat (N=510)	History of suicide attempt or initiated attempt (N=107)	Suicidal communication expressed as a threat and a history of suicide attempt/initiated attempt (N=77)
Year							
2014	468 (18.4%)	259 (18.9%)	209 (17.9%)	89 (18.8%)	94 (18.4%)	20 (18.7%)	6 (7.8%)
2015	411 (16.2%)	221 (16.1%)	190 (16.3%)	85 (17.9%)	81 (15.9%)	15 (14.0%)	9 (11.7%)
2016	435 (17.1%)	236 (17.2%)	199 (17.0%)	81 (17.1%)	85 (16.7%)	18 (16.8%)	15 (19.5%)
2018	452 (17.8%)	226 (16.5%)	226 (19.3%)	94 (19.8%)	95 (18.6%)	22 (20.6%)	15 (19.5%)
2019	425 (16.8%)	228 (16.7%)	197 (16.9%)	77 (16.2%)	86 (16.9%)	16 (15.0%)	18 (23.4%)
2020	346 (13.6%)	199 (14.5%)	147 (12.6%)	48 (10.1%)	69 (13.5%)	16 (15.0%)	14 (18.2%)
Respondent age							
17 or under	27 (1.1%)	16 (1.2%)	11 (0.9%)	1 (0.2%)	8 (1.6%)	1 (0.9%)	1 (1.3%)
18-24	272 (10.7%)	134 (9.8%)	138 (11.8%)	47 (9.9%)	65 (12.7%)	14 (13.1%)	12 (15.6%)
25-34	818 (32.2%)	413 (30.2%)	405 (34.7%)	176 (37.1%)	164 (32.2%)	40 (37.4%)	25 (32.5%)
35-44	720 (28.4%)	375 (27.4%)	345 (29.5%)	127 (26.8%)	161 (31.6%)	27 (25.2%)	30 (39.0%)
45-54	418 (16.5%)	240 (17.5%)	178 (15.2%)	78 (16.5%)	76 (14.9%)	17 (15.9%)	7 (9.1%)
55-64	166 (6.5%)	107 (7.8%)	59 (5.1%)	25 (5.3%)	27 (5.3%)	6 (5.6%)	1 (1.3%)
Over 65	35 (1.4%)	24 (1.8%)	11 (0.9%)	4 (0.8%)	6 (1.2%)	1 (0.9%)	0 (0%)
Missing	81 (3.2%)	60 (4.4%)	21 (1.8%)	16 (3.4%)	3 (0.6%)	1 (0.9%)	1 (1.3%)
Respondent gender			1015				
Male	2210 (87.1%)	1195 (87.3%)	(86.9%)	411 (86.7%)	456 (89.4%)	83 (77.6%)	65 (84.4%)
Female	314 (12.4%)	168 (12.3%)	146 (12.5%)	60 (12.7%)	51 (10.0%)	24 (22.4%)	11 (14.3%)
Missing	13 (0.5%)	6 (0.4%)	7 (0.6%)	3 (0.6%)	3 (0.6%)	0 (0%)	1 (1.3%)
Domestic violence type			1013				
Intimate partner violence	2065 (81.4%)	1052 (76.8%)	(86.7%)	399 (84.2%)	452 (88.6%)	93 (86.9%)	69 (89.6%)
Family or household member violence	472 (18.6%)	317 (23.2%)	155 (13.3%)	75 (15.8%)	58 (11.4%)	14 (13.1%)	8 (10.4%)
Incidents of stalking or similar behavior	1747 (68.9%)	848 (61.9%)	899 (77.0%)	352 (74.3%)	402 (78.8%)	82 (76.6%)	63 (81.8%)
Substance use*							
Alcohol	1240 (48.9%)	626 (45.7%)	614 (52.6%)	260 (54.9%)	252 (49.4%)	58 (54.2%)	44 (57.1%)
Drugs	1080 (42.6%)	492 (35.9%)	588 (50.3%)	231 (48.7%)	251 (49.2%)	58 (54.2%)	48 (62.3%)
Other	112 (4.4%)	52 (3.8%)	60 (5.1%)	26 (5.5%)	24 (4.7%)	7 (6.5%)	3 (3.9%)
None	908 (35.8%)	562 (41.1%)	346 (29.6%)	139 (29.3%)	160 (31.4%)	29 (27.1%)	18 (23.4%)

*Could select multiple

Table 2.2. Prevalence of firearm possession and weapon use by suicide-related behavior among granted Domestic Violence Protection Orders (DVPOs) in King County, WA, 2014-2020

	Overall (N=2537)	No suicide related behavior (N=1369)	Any Reported History of Suicide- related behavior (N=1168)	Type of Reported History of Suicide-related Behavior (N=1168)			
				<i>Suicidal ideation/commu nication</i> (N=474)	<i>Suicidal communication expressed as a threat</i> (N=510)	<i>History of suicide attempt or initiated attempt</i> (N=107)	<i>Suicidal communicati on expressed as a threat and a history of suicide attempt/initi ated attempt</i> (N=77)
Owens or possess firearms							
No	1780 (70.2%)	962 (70.3%)	818 (70.0%)	332 (70.0%)	353 (69.2%)	77 (72.0%)	56 (72.7%)
Yes	757 (29.8%)	407 (29.7%)	350 (30.0%)	142 (30.0%)	157 (30.8%)	30 (28.0%)	21 (27.3%)
Used firearms, weapons, or objects to threaten or harm							
No	1550 (61.1%)	901 (65.8%)	649 (55.6%)	278 (58.6%)	269 (52.7%)	66 (61.7%)	36 (46.8%)
Yes	973 (38.4%)	460 (33.6%)	513 (43.9%)	192 (40.5%)	239 (46.9%)	41 (38.3%)	41 (53.2%)
Missing	14 (0.6%)	8 (0.6%)	6 (0.5%)	4 (0.8%)	2 (0.4%)	0 (0%)	0 (0%)

Table 2.3. Association of history of suicide-related behavior with firearm possession status and weapon use among granted Domestic Violence Protection Orders (DVPOs) in King County, WA, 2014-2020

	Owns or possess firearms				Used firearms, weapons, or objects to threaten or harm			
	Crude		Adjusted*		Crude		Adjusted*	
	PR	95% CI	PR	95% CI	PR	95% CI	PR	95% CI
Model 1: No/Any suicide-related behavior								
No reported history of suicide-related behavior	<i>Reference</i>				<i>Reference</i>			
Any reported history of suicide-related behavior	1.01	(0.89-1.14)	1.03	(0.91-1.17)	1.31	(1.18-1.44)	1.33	(1.20-1.47)
Model 2: Type of suicide-related behavior								
No suicide related behavior	<i>Reference</i>				<i>Reference</i>			
Suicidal ideation/communication	1.01	(0.86-1.18)	1.02	(0.86-1.20)	1.21	(1.06-1.38)	1.24	(1.08-1.41)
Suicidal communication expressed as a threat	1.04	(0.89-1.21)	1.07	(0.91-1.24)	1.39	(1.23-1.57)	1.42	(1.25-1.60)
History of suicide attempt or initiated attempt	0.94	(0.68-1.27)	1.01	(0.72-1.37)	1.13	(0.87-1.44)	1.16	(0.89-1.47)
Suicidal communication expressed as a threat and a history of suicide attempt/initiated attempt	0.92	(0.62-1.30)	0.95	(0.63-1.35)	1.58	(1.21-2.01)	1.55	(1.19-1.99)

*Adjusted for case year, respondent age, respondent gender

Chapter 3. Violent death among individuals subject to Domestic Violence Protection Orders in King County, WA, 2014-2020

Introduction

Multiple forms of violence are interconnected. Experiencing or perpetrating one form of violence increases the risk for future violence. A domestic violence protection order (DVPO) is a court document completed by the petitioner (usually the victim-survivor) seeking a protection order from the court against the abuser, referred to as the respondent. Respondents in DVPOs have engaged in one form of violence perpetration, domestic violence (DV), and therefore, may be at increased risk for other types of violence, such as suicide or homicide, due to shared risk factors including substance use, lack of non-violent social problem-solving skills, family conflict, and social norms that support aggression toward others.⁸⁶

Early work has found high rates of suicide among perpetrators of DV. In Washington State (WA) in 2003, 19% of men aged 18-60 who died by suicide had a DVPO or DV criminal charge before their death.³⁶ The connection between suicide and DV was also noted among protection order respondents in central Florida⁹ and among men with alcoholism who died by suicide in St. Louis County, Missouri.¹⁰

Involvement in the criminal legal system is also a risk factor for violent death.²⁴ Among persons released from prison in WA, the leading causes of death were drug overdose, followed by cardiovascular disease, homicide, and suicide.¹⁶ Additional criminal legal system involved populations have also shown elevated risk for suicide including persons who were recently arrested²⁵⁻²⁷ and persons under community supervision (i.e. probation and parole).^{28,29} Therefore, it is possible that civil legal system involved DVPO respondents may also have a similar risk for suicide, homicide, and other forms of violent death.

Legal intervention deaths occur when police or other law enforcement agencies kill someone when responding to disturbances or attempting arrests. One study found that 13.9% of legal intervention deaths were DV-related.⁸⁷ Similarly, from 2015-2019 in WA, 13.5% of fatal police shootings were related to DV.⁸⁸

The current study examined violent death and firearm-related violent death, including suicide, homicide, legal intervention, and undetermined intent deaths among a cohort of DVPO respondents compared to the population of King County, WA.

Methods

In King County, WA, a random sample of 55% of all granted DVPO petitions was collected (n=3,543) from January 1, 2014-December 31, 2020, except for 2017 to evaluate before and after implementation of WA's DV-related firearm prohibitions (RCW9.41.800) by the courts and the Regional Domestic Violence Firearms Enforcement Unit (RDVFEU).⁷⁴ The evaluation study did not collect information from 2017; therefore, cases from this year were not available in the current study.

Records from 3,430 individual DVPO respondents were linked to death records from Washington State Department of Health from January 1, 2014- October 31, 2020. Deterministic and probabilistic linkages based on first name, last name, date of birth, and sex were conducted using The Link King software, a SAS plug-in developed by Washington State's Division of Alcohol and Substance Abuse.⁸⁹ Death certificates include demographic information about the individual, causes of death (ICD-10 code), and date of death recorded by medical examiners and coroners across the state and then filed with state vital statistics. We examined the outcomes of suicide (X60-X84, Y87.0, U03); homicide (X85-Y09, Y87.1, U01); undetermined intent (Y10-Y34, Y87.2); and legal intervention (Y35-36, excluding Y35.5 legal executions). Additionally,

firearm-related violent deaths were examined. Deaths of undetermined intent were included in violent deaths consistent with the Centers for Disease Control and Prevention (CDC)'s National Violent Death Reporting System.⁹⁰

Statistical Analysis

We calculated mortality rates, standardized mortality ratios (SMRs), and 95% confidence intervals comparing DVPO respondents to King County residents adjusting for year (i.e., 2014-2018; 2019-2020), age (i.e., 18-24; 25-34; 35-44; 45-54; 55-64; 65 and older), sex (i.e., male; female), and race and ethnicity (i.e., White, Non-Hispanic; White, Hispanic; Black or African American; American Indian or Alaskan Native; Asian or Pacific Islander) through indirect standardization. Data for county residents was from CDC's Wide-ranging ONLine Data for Epidemiologic Research (CDC WONDER).⁹¹ Analysis was performed in R (version 4.2.2) using the package PHEindicatorMethods (version 2.0.0) and exact confidence intervals to account for small sample sizes (R Foundation for Statistical Computing, Vienna, Austria). This study was approved by the University of Washington Institutional Review Board.

Results

There were 66 deaths among DVPO respondents during the study period. One-quarter (25.8%) were violent deaths, including 8 suicide deaths, 4 homicides, 3 deaths of undetermined intent, and 2 legal interventions. Half (52.9%) of violent deaths involved firearms (2 suicide deaths, 4 homicides, 1 undetermined intent, and 2 legal interventions). Another one-quarter (27.2%) of deaths were accidental poisonings.

Over the study period, the rate of violent death in King County, WA was 21.2 per 100,000. The year-age-sex-race and ethnicity adjusted rate of suicide for DVPO respondents was 79.3 per 100,000 (95% CI: 46.2-127.0; Table 3.1). The standardized mortality ratio for violent

death was 3.74 (95% CI: 2.18-5.98) as high among DVPO respondents compared to King County residents (Table 3.1). A similar ratio was observed for firearm-related violent death (3.73; 95% CI: 1.70-7.07) and non-firearm related violent death (3.75; 95% CI: 1.62-7.39)(Figure 3.1). Suicide death was 3.18 (95% CI: 1.37-6.26) times as high among DVPO respondents compared to King County residents. Though there were few cases of death of undetermined intent and legal intervention deaths, the SMRs for these causes of death were significantly higher among DVPO respondents compared to King County residents. For homicide deaths, there was a similar trend; however, this finding was not statistically significant (SMR: 2.62; 95% CI: 0.71-6.71).

Discussion

We found that DVPO respondents had an elevated risk for violent death compared to the population of King County, WA after indirectly standardizing for year, age, sex, and race and ethnicity. Those involved in the civil legal system may have similar risk factors for violent death as other legal system involved populations.

Perpetrators of DV may have additional risk for suicide death, specifically. Our study found that DVPO respondents had over three times the rate of suicide death compared to the general King County, WA population. Perpetrators of DV may threaten suicide as a form of coercive control over the person against whom they use violence. However, threats of suicide should not be dismissed and may indicate risk of suicide by the respondent in addition to risk of harm to the victim-survivor. Additionally, some undetermined or legal intervention deaths may be suicide such as “suicide by cop”.⁸⁷

Half of all violent deaths involved firearms. In WA in 2014, an order to surrender firearms was made mandatory for DVPOs in intimate partner relationships (e.g., current or former spouses, relationships with a child in common, intimate partners who resided together;

Wash. Rev. Code Ann. § 9.41.040(2)(a)). Some DVPO respondents may not fall into this category, or firearms may still be accessible even though prohibited.

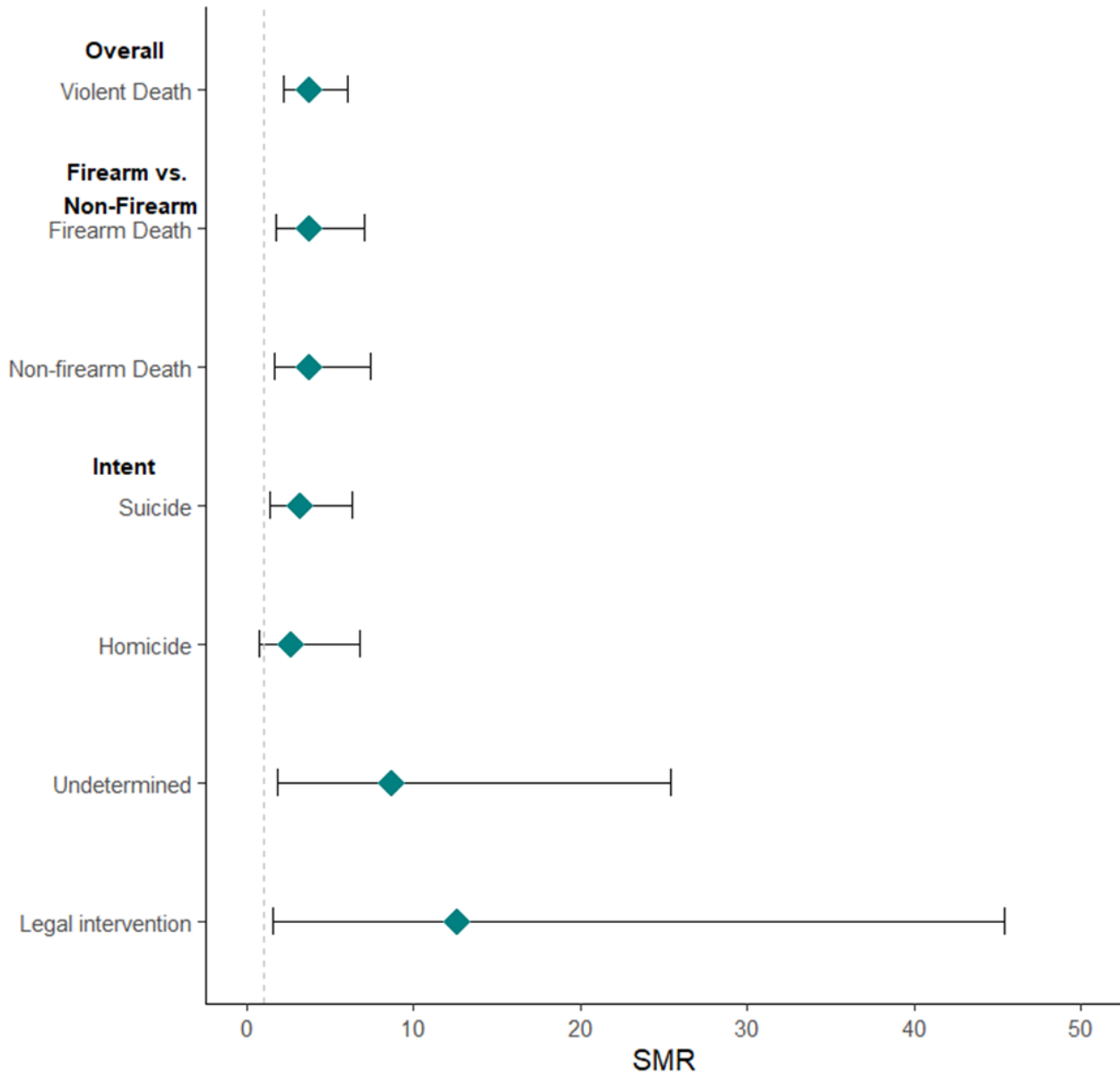
The DVPO process may provide an opportunity for referrals to services such as mental health and substance use treatment. Examining the circumstances surrounding deaths of civil legal system involved perpetrators of DV may provide further understanding for violent injury and death prevention. Washington State proposed to modify the definition of DV to include coercive control in House Bill 1901, and this bill passed in February 2022 to allow survivors to have access to services, such as protection orders, before physical violence or threats of physical violence occur. Future research should examine violent death among DVPO respondents after this change in legal finding. Coercive control could be a moderator for violent death risk among perpetrators of DV or be salient for specific types of violent death.

This study has several limitations. Violent death is a rare event. Though we observed higher ratios compared to King County, WA, there were few cases of violent death, and thus, estimates of rates are unstable, particularly when examining by intent types of violent death. We have included deaths of undetermined intent as violent deaths and as a separate category; however, these deaths may be misclassified suicides or unintentional (i.e., accidental) injuries.⁹² Finally, though all DVPOs were issued in King County, respondents may have moved outside of the county or state and died.

Table 3.1. Year-age-sex-race and ethnicity adjusted rates and standardized mortality ratios (SMR) of violent death and firearm-related violent death among DVPO respondents compared to all King County residents, 2014-2020.

	Observed	Expected	King County Rate per 100,000	Crude Rate per 100,000	Adjusted Rate per 100,000	95% CI	SMR	95% CI
Violent Death	17	4.6	21.22	130.97	79.31	46.17-126.99	3.74	2.18-5.98
Firearm vs. Non-Firearm Violent Death								
Firearm Death	9	2.4	9.44	69.34	35.17	16.08-66.77	3.73	1.70-7.07
Non-firearm Death	8	2.1	11.78	61.60	44.18	19.08-87.06	3.75	1.62-7.39
Intent of Violent Death								
Suicide	8	2.5	15.40	61.60	48.79	21.10-96.10	3.18	1.37-6.26
Homicide	4	1.5	3.79	30.80	9.94	2.71-25.44	2.62	0.71-6.71
Undetermined	3	0.34	1.58	23.10	13.7	2.82-40.05	8.70	1.79-25.43
Legal intervention	2	0.16	0.49	15.40	6.19	0.75-22.37	12.58	1.52-45.46

Figure 3.1. Year-age-sex-race and ethnicity adjusted standardized mortality ratios (SMRs) of violent death and firearm-related violent death among DVPO respondents compared to all King County residents, 2014-2020.



Chapter 4. Domestic violence and suicide death among individuals released from jail

Introduction

Incarceration has demonstrated elevated risk of mortality and suicide, in particular.²⁴ Among persons released from prison in WA, the leading causes of death were drug overdose, cardiovascular disease, homicide, and suicide.¹⁶ Additional legal system involved populations have also shown elevated risk for suicide including persons who were recently arrested²⁵⁻²⁷ and persons under community supervision (i.e. probation and parole).^{28,29} Research among jail populations is more limited compared to prison populations, though persons released from jail may have an elevated risk for suicide as jail populations have higher prevalence of mental health distress and disorders⁹³, higher suicides within facilities⁹⁴, and less resources for mental and behavioral health treatment and reentry due to the short-term duration of stays compared to the prison population.

The intersection of domestic violence (DV) and legal system involvement may have greater implications for suicide risk. Experiencing or perpetrating one form of violence can increase the risk for future violence. Among persons released from prison in WA, persons incarcerated for a violent crime had an elevated suicide risk.²³ However, history of DV-related offenses have not been separately examined despite shared risk factors for perpetration of DV and suicide including alcohol and substance use, previous suicide attempts, and family history of child abuse.⁸

Prior research has shown an association between suicide and domestic violence. Early work in this area found high rates of suicide among protection order respondents in central Florida⁹ and high prevalence of DV among men with alcoholism who died by suicide in St. Louis County, Missouri.¹⁰ More recent studies have used Violent Death Reporting System

(VDRS) data to assess suicide among larger populations. VDRS allows for examining circumstances preceding suicide death among statewide populations or multiple states that contribute to the National Violent Death Reporting System (NVDRS). In a latent class analysis of suicide decedents using the NVDRS from 2003-2008, one class that accounted for 6.5% of individuals demonstrated criminal legal problems, relationship problems, and perpetrating interpersonal violence, including DV, and another class, accounting for 10.5%, had intimate partner problems and suspected alcohol use.¹² In Kentucky, 26% of suicide decedents had identified intimate partner problems, with 43% of those cases including IPV.¹¹ In North Carolina, after reviewing the narratives for IPV it was estimated that at least 4.5% of suicides were associated with IPV and that 72% of these deaths were men who perpetrated non-fatal IPV.¹³ When comparing IPV-related suicide to other suicides, suicides with IPV circumstances were more likely to have the decedent recently disclose suicidal intent, use a firearm, and have involvement with the criminal legal system.¹³ One limitation of VDRS is the reliance on information from medical examiner/coroner reports and family and friends after suicide death. History of perpetration of DV and court involvement may be unknown or underreported.

An area of suicide research among DV perpetrators that may have less misclassification is homicide-suicides. Homicide-suicides are when a person kills one or more victims and then dies by suicide. Homicide-suicides are a small subset of suicide deaths and have notable differences in motivation and characteristics compared to single suicides (i.e., those that do not include homicide).^{14,15} Using NVDRS from 2003-2015, a prior investigation found that 5% male suicide decedents with known intimate partner problems had killed a current or former partner.¹⁴ Intimate partner homicide-suicides were also noted to be associated with legal problems. This

research provides additional evidence for the link between DV and suicide death. However, research examining suicide overall among DV perpetrators is needed.

We examined suicide risk and firearm suicide risk among criminal legal system involved perpetrators of DV by linking King County Adult Detention Facilities (i.e., jail) records to death records from Washington State (WA) Department of Health. We compared suicide mortality among individuals released from jail with a history of DV-related offenses, without a history of DV-related offenses, and the general population of King County and WA.

Methods

Records from 282,246 individuals released from King County Adult Detention Facilities from January 1, 1999-December 31, 2018 were linked to death records from Washington State Department of Health from January 1, 1999-October 31, 2020. Using a retrospective cohort design, we compared suicide death and firearm suicide death between individuals released from jail with a history of DV-related offenses, those without a history of DV-related offenses, and an age, sex, race and ethnicity matched population of WA and King County. Additionally, we used survival analysis to compare individuals released from jail with a history of DV-related offenses to individuals released from jail without a history of DV-related offenses.

Measures

Exposure (History of DV-related offenses). King County Adult Detention facilities' records are maintained for administrative purposes and included demographic information (i.e., DOB, sex, race, ethnicity), entry date and release date, and violation charge/code. Violation charge was included if any charge was DV-related. If the charge indicated "DV" the incarceration was coded as DV-related. This included all degrees of assault, criminal trespass, violation of no contact order/protection order, stalking, cyber stalking, malicious mischief, unlawful imprisonment, burglary, property damage, theft, harassment, threats, interfering with

reporting, rape, and robbery. An individual was coded as having a history of DV-related offenses if any of their charges for any of their incarcerations included such offense, and no history of DV-related offenses if they did not have at least one DV-related charge.

In survival analyses, a history of DV-related offenses was indicated at incarceration for a DV-related offense. For example, a participant could be released with a non-DV-related offense but have a subsequent reincarceration for a DV-related offense. For such individual, time since the first release was coded as non-DV (unexposed) while all time since the second incarceration was coded as history of DV-related offense (exposed).

Outcome (Suicide Death). Death certificates included demographic information about the individual, causes of death, and date of death recorded by medical examiners and coroners and filed with state vital statistics. ICD-10 codes were available for all deaths. We examined the outcomes of suicide by any means (X60-X84, Y87.0, U03) and firearm suicide (X72-X74). The Link King software was used to conduct deterministic and probabilistic linkages based on first name, last name, middle name, date of birth, and sex.⁸⁹ The Link King is a SAS plug-in developed by Washington State's Division of Alcohol and Substance Abuse and the probabilistic algorithm was adapted from MEDSTAT for the Substance Abuse and Mental Health Services Administration's (SAMHSA) Integrated Database Project. The Link King generates scores for each record pair to identify "definite", "possible", and "non" matches. Record links at defined cut-points are manually reviewed to confirm or remove the record pair match. The Link King considers name rarity, common nicknames, alternative spellings, and phonetic similarities.

Covariates. Comparisons to King County and WA residents adjusted for year (i.e., 1999-2003; 2004-2008; 2009-2013; 2014-2018; 2019-2020), age (i.e., 18-24; 25-34; 35-44; 45-54; 55-64; 65 and older), sex assigned at birth (i.e., male; female), and race and ethnicity (i.e., White,

Non-Hispanic; White, Hispanic; Black or African American; American Indian or Alaskan Native; Asian or Pacific Islander) through indirect standardization.

Survival analyses adjusted for demographic and criminal history factors. Demographic variables included sex (i.e., male; female), race and ethnicity (i.e., White, Non-Hispanic; White, Hispanic; Black or African American; American Indian or Alaskan Native; Asian or Pacific Islander), age at first release, and year of first release.

Criminal history variables included binary indicators for offense categories including violent (per the FBI's Uniform Crime Reporting (UCR) Program⁹⁵), other violent (i.e., crimes against a person but do not meet FBI's UCR criteria), substance-related, property, weapon-related, firearm-specific weapon-related, and public order/other. Violent offense category included murder, homicide by abuse & manslaughter (in first or second degree); assault (in first or second degree), including assault of child (in first or second degree); rape (in first and second degree); and robbery (in first and second degree). Other violent included offenses that included harm (e.g., physical violence, intimidation) to a person and maliciousness or knowingly negligent intent but do not meet FBI's criteria. This included offenses such as kidnapping (in first or second degree); arson (in first and second degree); extortion (in first degree); assault (in third and fourth degree); human trafficking; sex offenses (forcible and non-forcible); and violation of protection order or no contact order. Substance-related include possession and/or trafficking of a controlled substance. Property included burglary, larceny, motor vehicle theft, vehicle prowling, fraud/forgery, unlawful issuance of a bank check (UIBC), and possession of stolen property. Weapon-related included illegal possession or use of weapons such as knives, explosives, and firearms. A separate category was created for firearms specifically for offenses such as Violation of the Uniform Firearms Act (VUFA). Public order/other included traffic (e.g.,

driving without a license, driving with a suspended license), driving under the influence (DUI), disorderly conduct, court order violations (not including no contact or restraining orders (see other violent)), fishing/hunting regulations, alcohol (e.g., in public/park/bus; minors in possession; licenses/regulations). For additional description and key terms, see [Appendix D](#). Similar to measurement for history of DV-related offense, criminal history variables were calculated for each interval at risk. Once someone had an incarceration with an offense category, they were then coded for having this history at each subsequent interval. We also adjusted for total number of stays in jail which updated at each interval.

Statistical Analysis

We calculated mortality rates, standardized mortality ratios (SMRs), and 95% confidence intervals comparing individuals released from jail in King County with a history of DV-related offenses and without a history of DV-related offenses to King County residents and WA residents adjusting for year, age, sex, and race and ethnicity through indirect standardization. Data for county and state residents was from CDC's Wide-ranging ONLine Data for Epidemiologic Research (CDC WONDER).⁹¹ Analysis was performed in R (version 4.2.2) using the package PHEindicatorMethods (version 2.0.0) and Byar's method confidence intervals (R Foundation for Statistical Computing, Vienna, Austria).

Using time-to-event from release from incarceration to suicide death, we conducted Cox proportional hazards regression to estimate the hazard ratio of suicide death and firearm suicide death after release from jail comparing a history of DV-related offenses to no history of DV-related offenses. In a sensitivity analysis, we used Fine and Gray competing risk specifications as individuals with a history of incarceration are at a higher risk of all-cause mortality; however, it may be difficult to interpret subdistribution hazards with the inclusion of time-varying

variables.^{96,97} Time-varying variables in this analysis included the exposure of interest, DV-related offense history, as well as criminal history indicators and number of stays in jail. Data was structured with each interval starting at release from jail and ending at subsequent entry to jail, death, or study end. In an additional sensitivity analysis, for persons with multiple incarcerations, we censored time in jail and resumed time-at-risk upon release. This approach has been used when examining mortality upon release from prison.^{16,23} However, the length of stay in jail is shorter than in prison (the average length of stay in King County in 2019 was 24.5 days)⁹⁸ and the leading cause of death in jail is suicide.⁹⁴ A final sensitivity analysis examined multiple times frames (i.e., 6 months; 1 year; 5 year; 10 year) as a single average hazard ratio (HR) is dependent on the study's follow-up time and the relationship may be time-varying.⁹⁹ Survival analysis was performed in R (version 4.2.2) using the package survival (version 3.5-5). Fine and Gray competing risk analysis was performed in SAS (version 9.4) using procedure phreg (SAS Institute, Inc., Cary, NC, USA). This study was approved by the University of Washington Institutional Review Board.

Results

Almost one-quarter (22.2%) of individuals released from jail in King County had been charged with at least one DV-related offense. Individuals with a history of DV-related offenses had more total stays in jail (6.0 vs 2.5) and had earlier years of first release compared to individuals without a history of DV-related offenses (Table 4.1). Individuals with a history of DV-related offenses more often had a criminal history of violent (21.5% vs 11.3%), violent-other (48.1% vs. 25.4%) and weapons offenses (7.3% vs 2.6%) compared to individuals without a history of DV-related offenses. Individuals released from jail were followed for an average of 13.6 years. There were 20,958 deaths during the study period. Over one-third (36.7%) of deaths

were external causes of mortality (e.g., accidents or violence) including 1,319 suicide deaths. Almost one-third (31.6%) of suicide deaths were firearm suicide deaths (n=417).

Over the study period, the rate of suicide in WA was 18.4 per 100,000. The year-age-sex-race and ethnicity adjusted rate of suicide for individuals released from King County jails with a history of DV-related offenses was 27.7 per 100,000 (Table 4.2). The standardized mortality ratio for suicide death was 1.51 (95% CI: 1.35-1.68) times as high among individuals released from jail with a history of DV-related offenses compared to WA residents. Firearm suicide rate was not statistically different between either group of individuals released from jail and the general population of WA state. Non-firearm suicide death was 2.03 (95% CI: 1.78-2.32) times as high among individuals released from jail with a history of DV-related offenses compared to WA residents.

The rate of suicide in King County, WA was 15.0 per 100,000. The year-age-sex-race and ethnicity adjusted rate of suicide for individuals released from King County jails with a history of DV-related offenses was 26.9 per 100,000 (Table 4.3). Suicide death was 1.80 (95% CI: 1.61-2.01) times as high among individuals released from jail with a history of DV-related offenses compared to King County residents. When compared to King County residents, both firearm suicide death (SMR: 1.30; 95% CI: 1.05-1.58) and non-firearm suicide death (SMR: 2.17; 95% CI: 1.90-2.48) was higher among individuals released from jail with a history of DV-related offenses.

In survival analysis among individuals released from jail, having a history of DV-related offenses was associated with 1.29 (95% CI: 1.14-1.47) times greater risk of suicide death compared to individuals released from jail without a history of DV-related offenses (Figure 4.1). After adjusting for demographic and criminal history factors, this risk was 31% higher (95% CI:

1.14-1.49) when having a history of DV-related offenses compared to not having a history of DV-related offenses (Table 4.4). Having a history of DV-related offenses was associated with 1.21 (95% CI: 0.96-1.52) times greater risk of firearm suicide death compared to individuals released from jail without a history of DV (Figure 4.2). After adjusting for demographic and other criminal history factors, this risk was 40% higher (95% CI: 1.10-1.79) when having a history of DV-related offenses. In sensitivity analysis that removed time incarcerated ([Appendix E](#)) and in analyses with Fine and Gray competing risks ([Appendix F](#)), these estimates did not materially change. Finally, when examining multiple times frames, we found similar results ([Appendix G](#)).

Discussion

We found that individuals released from jail with a history of DV-related offenses were at elevated risk for suicide death compared to the population of King County, WA as well as compared to others released from jail without a history of DV-related offenses. Perpetrating DV may have unique risk factors for suicide in addition to those associated with legal system involvement in general, even when adjusting for other criminal history factors including history of violent offense and history of substance-related offenses.

Among individuals released from jail, before adjusting for criminal history variables firearm suicide was not significantly different by history of DV-related offenses. Federal law prohibits the purchase and possession of firearms by anyone convicted of a DV misdemeanor (Lautenberg Amendment of the Gun Control Act of 1968 §922. 218 U.S.C. §922(g)(1)-(9)), and in WA, anyone who has been convicted of a DV-related crime is ineligible to possess a firearm. Firearm suicide may be lower due to firearm restriction laws; however, firearms may still be accessible to the prohibited person.

Perpetrators of DV are a heterogeneous group.^{100,101} It may be certain types of DV are at increased risk or sub-groups of perpetrators of DV may be more likely to have other risk factors such as mental health disorders. The current study was limited by the available administrative data and covariates such as mental health diagnoses and treatment and prior suicidal ideation and attempt is unavailable. Adaptation and evaluation of suicide interventions such as screening and brief safety planning interventions (including lethal means access) should be considered for perpetrators of DV to use in jail and after release to reduce the risk of suicide, including homicide-suicides.

Limitations

DV is often unreported to law enforcement and may not result in legal system involvement.⁶⁷ DV can include emotional abuse or coercive control and may not include physical violence. Survivors may not know when the civil or criminal legal system can be accessed. In the current study, perpetrators of DV had to have exhibited physical violence or other DV that has criminal charges such as stalking, harassment, and violating a protection order to be observed in the incarceration records. This may also result in misclassification among people incarcerated by offense type. The no history of DV-related offense group could include people who are perpetrators of DV but may not have been arrested or in jail for a DV-related offense.¹⁰¹ For example, someone can have a history of perpetration of DV but only have incarcerated offenses for non DV-related offenses. This is an important limitation and future research should use other definitions for DV in order to capture perpetrators who do not come in contact with the legal system or who do come in contact but for non-DV-related offenses.

In the survival analysis, this misclassification may also occur over time. DV can escalate and coercive control could precede physical violence. DV may begin in relationships after

incarceration for a non-DV offense; however, the current study will only capture this change if the person is re-arrested and in jail for a DV-related offense. Future research could examine the change in behavior through qualitative or structured interviews.¹⁰²

If a person from the study population moved to a state other than WA and died by suicide, we would not have this information. Additionally, if an individual in jail is transferred to another facility or transferred to prison, we did not know when they are released from custody, and therefore, they may have had time counted as at risk in our survival analysis. Following individuals as they move through different systems of incarceration would be important next steps in examining suicide risk and for improved ascertainment of time at risk.

Conclusion

Individuals released from jail with a history of DV-related offenses were at elevated risk for suicide death compared to the general population as well as compared to people released from jail without a history of DV-related offenses in King County, WA. History of DV-related offenses may be an important risk factor for suicide to consider in addition to incarceration. Future research should evaluate how suicide interventions such as screening and brief safety planning interventions (including lethal means access) can be adapted for those with a history of DV-related offenses in jail and after release to reduce the risk of suicide, including homicide-suicides.

Table 4.1. Demographics and criminal history among individuals released from King County jails by history of DV-related offenses, 1999-2018

	No History of DV-related Offenses	History of DV-related Offenses	Overall
<i>Number of Individuals</i>	N=219697	N=62549	N=282246
<i>Number of Intervals</i>	N=639609	N=272823	N=912432
Male Sex	169438 (77.1%)	48639 (77.8%)	218077 (77.3%)
Race & Ethnicity			
White, Non-Hispanic	154632 (70.4%)	38698 (61.9%)	193330 (68.5%)
White, Hispanic	9028 (4.1%)	2435 (3.9%)	11463 (4.1%)
Black or African American	36496 (16.6%)	15489 (24.8%)	51985 (18.4%)
American Indian or Alaskan Native	3935 (1.8%)	1407 (2.2%)	5342 (1.9%)
Asian or Pacific Islander	13863 (6.3%)	4092 (6.5%)	17955 (6.4%)
Other/Unknown	1743 (0.8%)	428 (0.7%)	2171 (0.8%)
Age at first release			
Mean (SD)	33.0 (11.3)	32.3 (11.0)	32.9 (11.3)
Median [Min, Max]	30.6 [13.6, 92.7]	30.6 [15.1, 93.7]	30.6 [13.6, 93.7]
Year of first release			
1999	28725 (13.1%)	12446 (19.9%)	41171 (14.6%)
2000	20257 (9.2%)	6667 (10.7%)	26924 (9.5%)
2001	15324 (7.0%)	4859 (7.8%)	20183 (7.2%)
2002	13255 (6.0%)	4102 (6.6%)	17357 (6.1%)
2003	11927 (5.4%)	3681 (5.9%)	15608 (5.5%)
2004	9999 (4.6%)	3210 (5.1%)	13209 (4.7%)
2005	9494 (4.3%)	3055 (4.9%)	12549 (4.4%)
2006	10357 (4.7%)	2931 (4.7%)	13288 (4.7%)
2007	10371 (4.7%)	2741 (4.4%)	13112 (4.6%)
2008	9597 (4.4%)	2360 (3.8%)	11957 (4.2%)
2009	9335 (4.2%)	2255 (3.6%)	11590 (4.1%)
2010	9008 (4.1%)	2203 (3.5%)	11211 (4.0%)
2011	8632 (3.9%)	1902 (3.0%)	10534 (3.7%)
2012	7253 (3.3%)	1581 (2.5%)	8834 (3.1%)
2013	7056 (3.2%)	1502 (2.4%)	8558 (3.0%)
2014	7388 (3.4%)	1654 (2.6%)	9042 (3.2%)
2015	7375 (3.4%)	1491 (2.4%)	8866 (3.1%)
2016	7661 (3.5%)	1440 (2.3%)	9101 (3.2%)
2017	8417 (3.8%)	1345 (2.2%)	9762 (3.5%)
2018	8266 (3.8%)	1124 (1.8%)	9390 (3.3%)
Total stays in jail			
Mean (SD)	2.46 (3.63)	5.96 (8.44)	3.23 (5.31)
Median [Min, Max]	1.00 [1.00, 109]	3.00 [1.00, 118]	1.00 [1.00, 118]
Criminal History			
Violent	11.3%	21.5%	13.6%
Violent-Other	25.4%	48.1%	30.5%
Substance-related	40.9%	46.9%	39.0%
Property	36.9%	46.6%	39.1%
Weapons	3.4%	7.3%	4.3%
Firearm-specific weapons	2.6%	5.1%	3.1%
Public Order or Other	42.9%	41.4%	42.5%
Total Follow-up time			
Mean (SD)	4850 (2250)	5420 (2120)	4980 (2240)
Median [Min, Max]	5100 [0, 7970]	5920 [1.00, 7970]	5280 [0, 7970]

Table 4.2. Year-age-sex-race and ethnicity adjusted rates and relative risk of suicide and firearm suicide among individuals released from King County jails by history of DV-related offense compared to WA residents, 1999-2020

	History of DV offense	Observed	Expected	WA Rate per 100,000	Crude Rate per 100,000	Adjusted Rate per 100,000	95% CI	SMR	95% CI
Total Suicide Deaths	No	985	708	18.4	32.3	25.6	24.0-27.2	1.39	1.31-1.48
	Yes	323	214	18.4	33.5	27.7	24.8-30.9	1.51	1.35-1.68
Firearm Suicide Deaths	No	316	346	9.24	10.4	8.43	7.52-9.41	0.91	0.82-1.02
	Yes	99	104	9.24	10.3	8.78	7.13-10.7	0.95	0.77-1.16
Other Suicide Deaths	No	669	362	9.17	21.8	16.9	15.7-18.3	1.85	1.71-1.99
	Yes	224	110	9.17	23.2	18.6	16.3-21.2	2.03	1.78-2.32

Table 4.3. Year-age-sex-race and ethnicity adjusted rates and relative risk of suicide and firearm suicide among individuals released from King County jails by history of DV-related offense compared to King County residents, 1999-2020

	History of DV offense	Observed	Expected	King County Rate per 100,000	Crude Rate per 100,000	Adjusted Rate per 100,000	95% CI	SMR	95% CI
Total Suicide Deaths	No	985	587	15.0	32.3	25.1	23.6-26.7	1.68	1.58-1.79
	Yes	323	180	15.0	33.5	26.9	24.1-30.0	1.80	1.61-2.01
Firearm Suicide Deaths	No	316	251	6.31	10.4	7.96	7.11-8.89	1.26	1.13-1.41
	Yes	99	76	6.31	10.3	8.18	6.65-9.96	1.30	1.05-1.58
Other Suicide Deaths	No	669	336	8.64	21.8	17.2	15.9-18.6	1.99	1.84-2.15
	Yes	224	103	8.64	23.2	18.8	16.4-21.4	2.17	1.90-2.48

Table 4.4. Hazard ratios (HR) of suicide death and firearm suicide death comparing history of DV-related offenses to no history of DV-related offenses, 1999-2020

	Crude		Adjusted*		Adjusted**	
	HR	95% CI	HR	95% CI	HR	95% CI
Suicide	1.29	1.14, 1.47	1.38	1.22, 1.57	1.31	1.14, 1.49
Firearm Suicide	1.21	0.96, 1.52	1.30	1.03, 1.63	1.40	1.10, 1.79

*Adjusted for sex, race & ethnicity, age at first release

**Adjusted for sex, race & ethnicity, age at first release, year of first release, total stays in jail, criminal history indicators (i.e., violent, violent other, substance-related, property, weapons, firearm, public order/other)

Figure 4.1. Cumulative events of suicide death comparing history of DV-related offenses to no history of DV-related offenses, 1999-2020

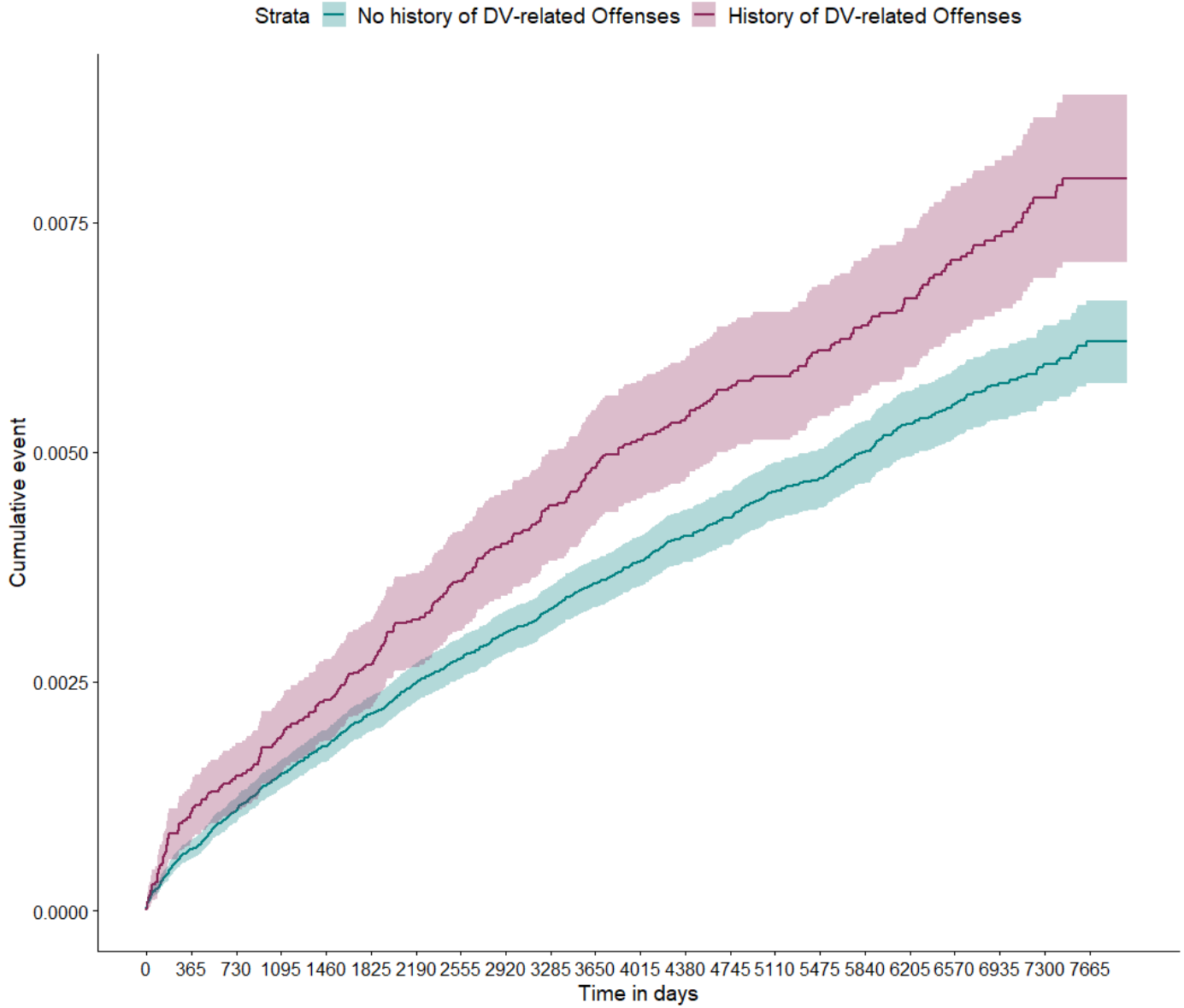
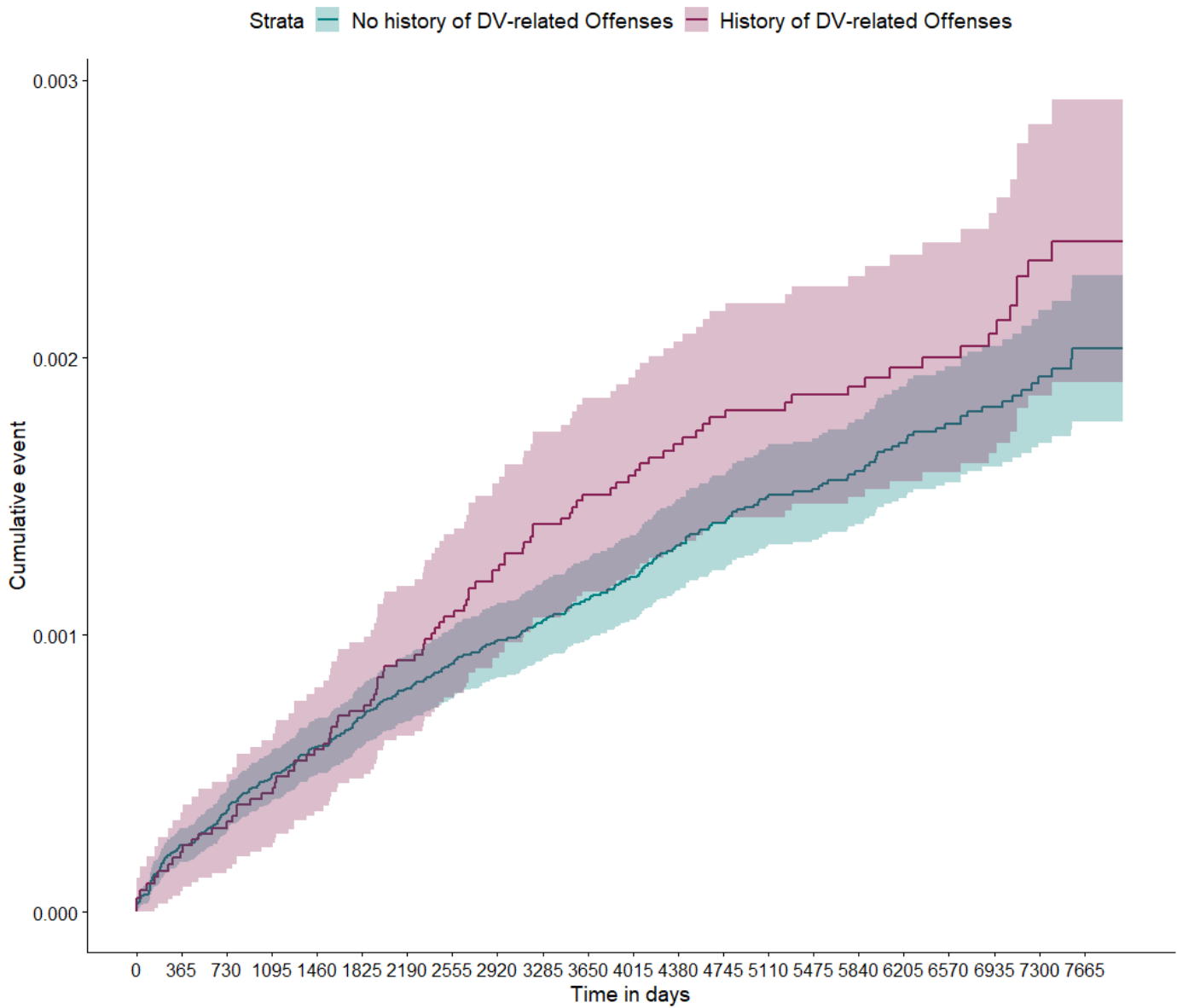


Figure 4.2. Cumulative events of firearm suicide death comparing history of DV-related offenses to no history of DV-related offenses, 1999-2020



Chapter 5. Conclusion

Discussion of Findings

Overall, we found that both civil and criminal legal system involved perpetrators of DV had an elevated risk of suicide compared to the general population. For criminal legal system involved perpetrators of DV, we also found the risk of suicide death to be greater than those involved in the criminal legal system without a history of DV-related offenses. Perpetrating DV may have unique risk factors for suicide in addition to those associated with legal system involvement in general.¹⁶⁻²³ These risk factors may have preceded involvement in the civil or criminal system or may have also been compounded by legal system involvement. Components of IPTS may be particularly salient for perpetrators of DV as belongingness, burdensomeness, and the capability of suicide may be impacted by the exposure and use of violence in family and intimate relationships. This overlap of using and experiencing multiple forms of violence was also observed in our analysis of violent death among DVPO respondents.

The association between DV and firearm suicide death had mixed findings. When compared to the general population of WA, persons released from jail with a history of DV-related offenses were not observed to have an elevated risk for firearm suicide death. When compared to King County, the risk was greater but not as strong as for suicide overall and non-firearm suicide. Additionally, among people released from jail, crude models comparing history of DV-related offenses and no history of DV-related offenses were not statistically significant. However, after adjustment for demographic and criminal history factors, a greater risk for firearm suicide among history of DV-related offenses was observed. It could be that firearm prohibitions for DV offenders are reducing this risk to be more comparable to the general population or others released from jail without a history of DV-related offenses. Among DVPO

respondents, we found no difference in firearm access between those with a history of suicide related behaviors including ideation/communication, communication expressed as threats, and suicide attempts. It may be certain sub-groups of perpetrators of DV may be more likely to have access to firearms despite prohibitions or have other risk factors for firearm suicide in particular.

In addition to the risk of suicide death for the respondent, we found that suicide-related behavior was associated with increased use of a weapon or firearm to threaten or harm. Threats of suicide as a form of coercive control is known among DV advocates and scholars.^{54,60,103} We believe our research shows that a history of suicide-related behaviors is a risk to both the victim-survivor as well as to the respondent, and suicidal communication even those expressed as threats should not be minimized. Several legislative initiatives have been put forth to add coercive control as a form of DV in order for survivors to have access to services, such as protection orders, before physical violence or threats of physical violence occur.¹⁰⁴ Washington State, specifically, proposed to modify the definition of domestic violence to include coercive control in House Bill 1901, and this bill passed in February 2022. Understanding the risks to both the petitioner and the respondent is crucial in responding appropriately when victim-survivors seek protection when coercive control includes suicidal communication expressed as a threat. Coercive control could be a moderator for suicide risk among perpetrators of DV or be salient for specific types of suicide such as intimate partner homicide-suicide.⁶²

Limitations

In addition to limitations discussed in the previous individual chapters, there are important overarching limitations such as selection bias and misclassification of DV. As DV is often unreported to law enforcement⁶⁷ and may not result in either civil or criminal legal system

involvement, these findings will not be able to generalize to all individuals who perpetrate DV but will expound upon a population that has potential for prevention and intervention efforts.

Using granted DVPOs and DV-related offenses that resulted in jail may reduce misclassifying people who are not perpetrators of DV. However, this does not eliminate this entirely as hearings, arrest, bail, conviction, and sentencing have other influences outside of evidence including access to adequate legal representation and institutional racism. False allegations of DV are uncommon; though, some studies suggest that in certain situations such as custody disputes this may be more of a concern.¹⁰⁵ Coercive control could also impact false allegations of DV such as a coercive controlling partner using the legal system to accuse the survivor of DV.³²

Though we examined both civil and criminal legal system involved populations, we analyzed these populations separately. Future research should link between these systems for deeper understanding of the risk for suicide and firearm suicide death. There may be increased risk for perpetrators of DV who have both civil and criminal legal system involvement such as those that have violated DVPOs.

Public Health Interventions

A first prevention point for reducing suicide among perpetrators of DV would be expansion of screening practices. Though DVPOs are a civil procedure, DVPO respondents may have contact with jail and booking systems through 911 calls or if the respondent violates a DVPO. After finding that 19% of men aged 18-60 who died by suicide had a DVPO or DV criminal charge before their death in WA, the Washington State Coalition Against Domestic Violence recommended that probation officers or defense attorneys whom DV perpetrators may come into contact with should screen for suicide and refer to mental health providers.³⁶

There is significant variation in jail intake processes, and people who are experiencing suicidal ideation may be missed. In King County, WA, one-quarter of people in jail who attempted suicide did not have a mental health evaluation, despite 40% having a psychiatric history.¹⁰⁶ One concern among people who are incarcerated is that disclosing suicidal ideation or a history of self-harm may result in segregated housing or increased monitoring.¹⁰⁷ Solitary confinement may increase risk of suicide.^{108,109} In a study across five prisons in a midwestern state, 40% of suicide attempts among men and 35% of suicide attempts among women resulted in placement in segregation, and less than one-quarter of suicide attempts resulted in provision of health care.¹¹⁰ Black men and Black women were significantly less likely to have staff request medical care for the suicide attempt.¹¹⁰ Without changes in these practices, people will be reluctant to self-report.

Brief interventions for acute settings have been developed to reduce acute risk and increase the likelihood the person will follow-up with care for longer-term treatment.¹¹¹ Safety Planning Intervention (SPI) is a brief intervention that has clinician and patient collaboratively create a written list of several components including: recognize warning signs preceding a suicidal crisis; generate and use internal coping strategies; socialize with contacts to distract from suicidal thoughts; identify trusted family members or friends for resolving a suicidal crisis; contact mental health professionals or agencies; and reduce/restrict access of lethal means.¹¹¹ In a meta-analysis, SPI and brief therapeutic interventions had greater linkage to follow-up care, and lower subsequent suicide attempts among participants receiving intervention compared to controls.¹¹² Though none of the included studies (largely set in the Emergency Department) were in a criminal justice setting, the authors mention other settings where these interventions may have applications, specifically jail.¹¹² Currently, a randomized control trial (RCT) for SPI among

people in jail pre-trial, known as the SPIRIT (Suicide Prevention Intervention for at-Risk Individuals in Transition) trial, is underway.¹¹³

The goal of assessment/screening and brief interventions in acute settings are to identify those at-risk, reduce acute risk, and promote linkage to follow-up care. Therefore, it is important to understand what types of follow-up psychological interventions have shown effectiveness with people involved in the legal system. There are potentially promising therapy approaches for people with legal system involvement including Cognitive Behavioral Therapy (CBT)^{17,114–116} specifically, Cognitive Behavioral Suicide Prevention (CBSP).¹¹⁷ Interpersonal Psychotherapy (IPT).¹¹⁸ and Dialectical Behavior Therapy (DBT)^{108,119–123}

Programs not specific to suicide may also have beneficial effects such as housing, employment, education, cash assistance, and other mental health programs. Critical Time Intervention (CTI) is a time-limited intervention developed to increase continuity of support for people released from institutions, such as homeless shelters or psychiatric facilities. CTI could be adapted for people released from incarceration¹²⁴ and this may have implications for suicide prevention.¹²⁵ Further research should examine these approaches among people released from incarceration and with broader legal system involvement and specifically for individuals who have perpetrated DV.¹²⁶

Policy Implications

Policy guidelines and support will be needed to implement the previously described suicide prevention and mental health treatment for legal system involved perpetrators of DV. Additionally, reducing lethal means access can reduce suicide even if mental health factors do not change.¹²⁷ Firearm dispossession may also reduce injury to victim-survivors. In WA, suicide-related behaviors are asked on the DVPO petition. In order to assess risk of violence to

the respondent and the victim-survivor, other jurisdictions should consider including questions regarding history of suicide-related behaviors of the respondent on the DVPO petition form as well as other questions regarding coercive control.

Finally, community services and resources should be expanded to prevent DV and engage with communities that may be unable, reluctant, or opposed to engaging with traditional legal systems.¹²⁸ Criminalization of DV can have unintended consequences by exposing survivors to legal systems that can lead to their arrest, removal of their children, or other state harms.¹²⁸⁻¹³¹

Appendix A. Granted Domestic Violence Protection Order (DVPO) case and respondent characteristics by firearm possession status in King County, WA, 2014-2020

Case and respondent characteristics	Overall (N=3543)	Firearm Possession Status: Yes (N=757)	Firearm Possession Status: No (N=1780)	Firearm Possession Status: Unknown (N=1006)
Year				
2014	640 (18.1%)	127 (16.8%)	341 (19.2%)	172 (17.1%)
2015	558 (15.7%)	127 (16.8%)	284 (16.0%)	147 (14.6%)
2016	588 (16.6%)	123 (16.2%)	312 (17.5%)	153 (15.2%)
2018	631 (17.8%)	133 (17.6%)	319 (17.9%)	179 (17.8%)
2019	621 (17.5%)	133 (17.6%)	292 (16.4%)	196 (19.5%)
2020	505 (14.3%)	114 (15.1%)	232 (13.0%)	159 (15.8%)
Age of respondent				
17 or under	39 (1.1%)	8 (1.1%)	19 (1.1%)	12 (1.2%)
18-24	384 (10.8%)	59 (7.8%)	213 (12.0%)	112 (11.1%)
25-34	1098 (31.0%)	215 (28.4%)	603 (33.9%)	280 (27.8%)
35-44	1016 (28.7%)	236 (31.2%)	484 (27.2%)	296 (29.4%)
45-54	598 (16.9%)	132 (17.4%)	286 (16.1%)	180 (17.9%)
55-64	229 (6.5%)	58 (7.7%)	108 (6.1%)	63 (6.3%)
Over 65	49 (1.4%)	18 (2.4%)	17 (1.0%)	14 (1.4%)
Missing	130 (3.7%)	31 (4.1%)	50 (2.8%)	49 (4.9%)
Respondent gender				
Male	3084 (87.0%)	702 (92.7%)	1508 (84.7%)	874 (86.9%)
Female	440 (12.4%)	51 (6.7%)	263 (14.8%)	126 (12.5%)
Missing	19 (0.5%)	4 (0.5%)	9 (0.5%)	6 (0.6%)
Domestic violence type				
Intimate partner violence	2800 (79.0%)	639 (84.4%)	1426 (80.1%)	735 (73.1%)
Family or household member violence	743 (21.0%)	118 (15.6%)	354 (19.9%)	271 (26.9%)
Incidents of stalking or similar behavior	2412 (68.1%)	574 (75.8%)	1173 (65.9%)	665 (66.1%)
Substance use*				
Alcohol	1647 (46.5%)	415 (54.8%)	825 (46.3%)	407 (40.5%)
Drugs	1494 (42.2%)	339 (44.8%)	741 (41.6%)	414 (41.2%)
Other	142 (4.0%)	40 (5.3%)	72 (4.0%)	30 (3.0%)
None	1358 (38.3%)	240 (31.7%)	668 (37.5%)	450 (44.7%)
Suicide-related behavior				
No	2018 (57.0%)	407 (53.8%)	962 (54.0%)	649 (64.5%)
Yes	1525 (43.0%)	350 (46.2%)	818 (46.0%)	357 (35.5%)
Suicide-related behavior subtypes				
No suicide related behavior	2018 (57.0%)	407 (53.8%)	962 (54.0%)	649 (64.5%)
Suicidal ideation/communication	616 (17.4%)	142 (18.8%)	332 (18.7%)	142 (14.1%)
Suicidal communication expressed as a threat	675 (19.1%)	157 (20.7%)	353 (19.8%)	165 (16.4%)
History of suicide attempt or initiated attempt	135 (3.8%)	30 (4.0%)	77 (4.3%)	28 (2.8%)
Suicidal communication expressed as a threat and a history of suicide attempt/initiated attempt	99 (2.8%)	21 (2.8%)	56 (3.1%)	22 (2.2%)

*Could select multiple

Appendix B. Suicide-Related Behavior Codebook

Suicidality is a continuum of thoughts and behaviors. For each suicide death, there are approximately 9 people treated in hospital emergency departments, 27 who report making a suicide attempt, and over 227 who report seriously considering suicide.⁴ Therefore, measuring additional suicide-related outcomes such as ideation/communication may be helpful for research to led to preventing self-harm injuries and death.

In this study, we measured suicidal ideation/communication from narrative data collected routinely during the administrative process of filing for a domestic violence protection order (DVPO). The DVPO asks petitioners to “Describe any threats of suicide or suicidal behavior by the respondent.” A rules-based system was used to perform text classification from the unstructured text to ultimately result in five categories of suicide-related behavior:

- 1) No suicide-related behavior;
- 2) Suicidal ideation/communication (not expressed as a threat and no history of suicide attempt or initiated attempt);
- 3) Suicidal communication expressed as a threat;
- 4) History of suicide attempt or initiated attempt; and
- 5) Suicidal communication expressed as a threat and a history of suicide attempt/initiated attempt.

To determine *suicidal communication expressed as a threat* and *history of suicide attempt*, a rules-based system was used to perform text classification from the unstructured text. Natural Language Processing (NLP) uses computer science to understand human language. NLP can be used for text classification to reduce the burden of manual review and coding which can require significant time, training, and expertise. Data preprocessing includes tasks such as tokenization (i.e., breaking a string of words into units), removing stop words (e.g., “a”, “the”,

“is”, “in”), and stemming (i.e., removing suffixes such as -ed, -ing). Text classification is the process of organizing unstructured text into predefined categories. NLP has been used in prior research examining suicide and suicide risk factors in clinical notes in Electronic Health Records (EHR).⁷⁵

First, a 10% random sample (n=149) stratified by the relationship type between the victim-survivor and the respondent (e.g., intimate partners: current or former spouses or domestic partners; family or household members: current or former adult cohabitants as roommates; family or household members: parent and child; Table 1) was used to create this codebook. As petitioners may be unaware of the respondent’s experience of suicidal ideation or history of suicide attempt, petitions were stratified by relationship between respondent and victim-survivor. Petitioners are predominately the victim-survivor themselves but could also be petitioning on behalf of a family member, household member, or minor for whom they are a guardian or guardian ad litem. Closer relationships may have more knowledge⁸⁵; and therefore, descriptions of suicidal threats or behavior may be described differently depending on the relationship. Key phrases from these narratives were used as the rules for rules-based text classification system.

Next, a 30% random sample (n=455) stratified by the relationship type with replacement from the codebook was used for manual review. The lead author (KD) reviewed the narratives using the codebook to classify if the narrative included *suicidal communication expressed as a threat* and *history of suicide attempt* as well as narratives that did not include suicide-related information or the intent was unclear (e.g., accidental overdose, homicidal threats only). This manually reviewed sample was compared to the rules-based text classification system. For suicidal communication expressed as a threat, the sensitivity was 87.2% and the specificity was

93.7%, and for history of suicide attempt/initiated attempt, the sensitivity was 80.2% and the specificity was 95.7%.

Table 1. Relationship category and type between the respondent and victim-survivor.

Relationship Category	Relationship Type	Total Granted DVPO (n=3,543)	Suicide threat/behavior Present (n=1,532)	Sampled for manual review for codebook (n=149)
Intimate partners	current or former spouses or domestic partners	1262	632	63
Intimate partners	parents of a child-in-common	665	295	29
Intimate partners	youth or adults and are/were in a dating relationship and are currently residing together or resided together in the past	517	246	24
Intimate partners	youth or adults and are/were in a dating relationship, but have Never resided together	356	137	13
Family or household members	current or former adult cohabitants as roommates	234	44	4
Family or household members	adult in-laws	38	8	0
Family or household members	youth or adults related by blood	136	42	4
Family or household members	parent and child	292	113	11
Family or household members	stepparent and stepchild	40	14	1
Family or household members	grandparent and grandchild	3	1	0

Suicidal Ideation/Communication

Definition:

Suicidal ideation is a range of contemplations, wishes, and preoccupations with death and suicide. Suicidal ideation can include passive thoughts about wanting to be dead or imagining being dead or active thoughts considering ways to die or forming a plan. This can include specific or non-specific suicidal thoughts or plans with or without an intent to act on these thoughts or plans.^{3,132} Plans can include saying goodbye, arranging care for one's pet or children, or purchasing or acquiring lethal means.

Coding Description:

Present (1): Code the text as suicidal ideation/communication (1) when the petitioner describes the respondent stating, making or mentioning suicidal ideation or thoughts; describes a plan for how to die by suicide (presence of plans or how to do act); wishes to die or wants to die (no wish to live, wishes to die by suicide or be dead); makes statements such as 'life is meaningless'

Absent (0): Code text as suicidal ideation/communication (0) when the petitioner describes self-injury without intention or petitioner's report is not clear. If plans are described with an attempt or initiated attempt, do not include as ideation code as attempt/initiated attempt.

Example Phrases:

- Suicidal ideation
- Stated he was suicidal
- Multiple comments centering around suicide
- Made comments about wanting to kill himself
- He feels like he wants to commit suicide
- Said in his email 'I wish I am not even alive anymore'
- Mentioned suicide several times
- Made suicidal statements
- He'd like to die in a car accident
- Wishes to be dead
- It doesn't matter what happens to him
- Planned on breaking into for medicine to end his life
- Showed songs he wanted people to listen to at his funeral
- Stated in the past that 'life is meaningless'
- I don't want to be here
- Frequently talks about wanting to die
- Everyone will be better off without me
- I have nothing to live for

Suicidal Communication Expressed as a Threat

Definition:

Communication about suicide can include an emphasis to coerce or a behavior meant to influence others.³ It can be unclear whether such communication and behavior has no or low intent to die. Therefore, the term suicidal threat is discouraged by CDC uniform definitions of self-directed violence as it assumes intent.⁵⁶ Threatening to die by suicide is a form of coercive control. Coercive control is a pattern of behavior to reduce the autonomy of another person and consists of isolation, intimidation, and regulation behaviors to maintain power and control in a relationship.^{52,53} The abuser's demands are connected to credible threats (e.g. suicide) if the survivor does not comply.^{54,55} For this study, we consider threats as an expression of suicidal communication to remove the presumption of intent while acknowledging that suicidal ideation expressed as threats may be a distinct type of suicidal expression. The person threatening suicide may be experiencing both a desire to die and a desire for power and control over another person.⁶⁰

Coding Description:

Present: Code the text as suicidal ideation/communication expressed as a threat (1) when the petitioner describes the respondent threatening to kill themselves or made a threat to kill themselves or the petitioner describes the respondent stating, making or mentioning suicidal ideation or thoughts; describes a plan for how to die by suicide (presence of plans or how to do act); wishes to die or wants to die (no wish to live, wishes to die by suicide or be dead); makes statements such as 'life is meaningless', 'everyone will be better off without me', 'there is nothing to live for' (passive suicidal ideation) that is **in response to a petitioner's action such as if the petitioner leaves the relationship, when in an argument with the petitioner, or since they can't be with the petitioner, or because of a current or future action of the petitioner or that is described as the fault of the petitioner or the respondent blames the petitioner.** If suicide communication also includes homicide of the petitioner or others the statement should be coded as a threat.

Absent: Code text as suicidal communication expressed as a threat (0) when the petitioner describes only a past suicide attempt, if the suicidal ideation/communication is not in response the petitioner's action as described above, if the narrative only describes homicidal threats, or if petitioner's report is not clear.

Example Phrases:

- Made a threat to kill herself
- Threatened suicide multiple times
- Said that he is going to kill himself in a car accident and it will be P's fault
- Sent the P a picture of a noose after the P told him she didn't want to be with him
- Threatened to slice his wrist/crash car/kill himself with gun
- Threatened suicide over the petitioner leaving him/if the petitioner leaves

- When the petitioner is mad at the respondent that 'he might as well go kill himself'
- Respondent has threatened many times to kill himself if petitioner was not in his life
- He would rather be dead than to not have them
- Made suicidal comments about the petitioner leaving him
- Respondent would frequently threaten murder-suicide if petitioner was to leave him
- Since he can't be with her he doesn't want to live anymore
- Threaten suicide if respondent didn't get their way
- Threatened to kill himself if petitioner ever left him because he couldn't deal or live with another divorce and additional child support
- The respondent said, 'I will kill the 5 of you, then I will kill myself.'

Suicide Attempt

Definition:

A suicide attempt is a non-fatal self-directed behavior with an intent to die as a result of the behavior.⁵⁶ At least some intent to die is necessary to distinguish between a suicide attempt and self-injurious behavior. The knowledge of risk of death from a behavior can be accurate or inaccurate.³ An initiated attempt includes the respondent taking steps to engage in lethal action, such as putting a firearm to their head but not pulling the trigger.

Coding Description:

Present: Code the text as suicide attempt (1) when the petitioner describes the respondent having had a history of suicide attempts, describes a past suicide attempt such as hanging, or taking steps to engage in lethal action, such as putting a firearm to their head but not pulling the trigger. If intention is unclear for a potentially lethal action, such as an overdose, mark it as an attempt if the description also includes other suicidal ideation/communication.

Absent: Code text as suicide attempt (0) when the petitioner describes only suicidal ideation/communication described above or self-injury without intent to die (e.g., accidental overdose) or petitioner's report is not clear.

Example Phrases:

- Attempted suicide
- Attempted to hang himself
- Attempted to commit suicide in the past
- Drank anti-freeze once in a suicide attempt
- Put a gun to his head
- Held knife to throat

Appendix C. Association of history of suicide-related behavior with firearm possession status and weapon use adjusting for additional situational factors in King County, WA, 2014-2020.

	Owns or possess firearms						Used firearms, weapons, or objects to threaten or harm					
	Crude		Adjusted*		Adjusted**		Crude		Adjusted*		Adjusted**	
	PR	95% CI	PR	95% CI	PR	95% CI	PR	95% CI	PR	95% CI	PR	95% CI
Model 1: No/Any suicide-related behavior												
No reported history of suicide-related behavior	<i>Reference</i>						<i>Reference</i>					
Any reported history of suicide-related behavior	1.01	(0.89-1.14)	1.03	(0.91-1.17)	0.97	(0.85-1.10)	1.31	(1.18-1.44)	1.33	(1.20-1.47)	1.26	(1.13-1.39)
Model 2: Type of suicide-related behavior												
No suicide related behavior	<i>Reference</i>						<i>Reference</i>					
Suicidal ideation/communication	1.01	(0.86-1.18)	1.02	(0.86-1.20)	0.96	(0.81-1.13)	1.21	(1.06-1.38)	1.24	(1.08-1.41)	1.18	(1.03-1.35)
Suicidal communication expressed as a threat	1.04	(0.89-1.21)	1.07	(0.91-1.24)	0.99	(0.85-1.16)	1.39	(1.23-1.57)	1.42	(1.25-1.60)	1.34	(1.18-1.52)
History of suicide attempt or initiated attempt	0.94	(0.68-1.27)	1.01	(0.72-1.37)	0.94	(0.67-1.27)	1.13	(0.87-1.44)	1.16	(0.89-1.47)	1.09	(0.84-1.39)
Suicidal communication expressed as a threat and a history of suicide attempt/initiated attempt	0.92	(0.62-1.30)	0.95	(0.63-1.35)	0.86	(0.58-1.24)	1.58	(1.21-2.01)	1.55	(1.19-1.99)	1.44	(1.10-1.85)

*Adjusted for case year, respondent age, respondent gender

**Adjusted for case year, respondent age, respondent gender, IPV relationship type, stalking, any substance use

Appendix D. Criminal History Charge Definitions
Charge Classification

King County Adult Detention facilities' records are maintained for administrative purposes and include demographic information (i.e., DOB, sex, race, ethnicity), entry date and release date, violation charge/code, and facility. Violation charge/code was used to categorize offenses as 1) Domestic Violence, 2) Violent, 3) Other Violent, 4) Property, 5) Substance Related, 6) Weapons, 7) Firearm-specific weapons, and 7) Public Order/Other.

Domestic Violence King County Adult Detention facilities' records included if any charge was domestic violence related. If the charge indicated "DV" the incarceration was coded as domestic violence related (e.g., DV, D/V, DOMESTIC VIOLENCE, VNCO DV). This includes all degrees of assault, criminal trespass, violation of no contact order/protection order, stalking, cyber stalking, malicious mischief, unlawful imprisonment, burglary, property damage, theft, harassment, threats, interfering with reporting, rape, and robbery.

Key Words: DV, D/V, DOMESTIC VIOLENCE, VNCO DV,

Violent offense category was based on FBI UCR coding of violent crime this includes Murder, homicide by abuse & manslaughter (in first or second degree); Assault (in first or second degree), including assault of child (in first or second degree); Rape (in first and second degree); and Robbery (in first and second degree).

Key Words: MURDER, ROBBERY 1, RAPE, ASLT 1, ASLT 2, ROB 2, MANSL 1,

Other Violent included offenses that include harm (e.g., physical violence, intimidation) to a person and maliciousness or knowingly negligent intent but do not meet FBI's criteria. This includes offenses such as kidnapping (in first or second degree); Arson (in first and second degree); Extortion (in first degree); Drive-by shooting; Vehicular assault or homicide (if under the influence or b/c of reckless driving); Assault (in third and fourth degree); Human trafficking; Sex offenses (forcible and non-forcible), including incest; Violation of protection order or no contact order; Harassment, intimidation, threats, blackmail, stalking; and Hit and run with injury.

Key Words: "HIT AND RUN - INJURY", "HIT AND RUN - DEATH", "THREATS TO KILL", "(DEADLY THREAT)", "DRIVEBY SHOOTING", "TRAFFICKING PERSONS", "ANIMAL CRUELTY", "SEXUAL EXPLOITATION", "SEXUAL MISCONDUCT", "SEXUALLY VIOLAT", "SEX OFFENSE" ARSON, ASLT 3, ASLT 4, VNCO, SIMP ASSLT, INTIM

Property includes burglary, larceny, motor vehicle theft, vehicle prowling, fraud/forgery, unlawful issuance of a bank check (UIBC), possession of stolen property.

Key Words: THEFT, FORGERY, PROP, STLN, TRESPASS, PSP, BURG, UIBC, LARCENY, RES BURG, SHOPLIFTING, STOL PROP, TRAFFICKING STOL PROP, VEHICLE PROWL, BURG TOOLS, MONEY LAUNDERING, FRAUD, PROP DAM, PROP DESTR, PSV

Substance-related include possession and trafficking of a controlled substance.

Key Words: VUCSA, DRUG, NARCOTIC, MARIJUANA, AMPHETAMINE, METH, DRUG POSSESSION, DRUGS MANUFACTURE, PARAPHERNALIA, HEROIN, DRUG PARA, CNTL SUB/DRUG

Weapon includes weapons and firearms. A separate category was created for firearms specifically including RCW 9A.41, 12A.14, 9A.56.300, 9A.56.310,

Key Words: WEAP, WPN, KNIVES, EXPLOSIVE

Key Words: FIREA, CCW, VUFA, GUN, PIST, RIFLE, SHOT, BULLET, F/ARM

Public Order/Other includes traffic (e.g., driving without a license, driving with a suspended license), DUI, disorderly conduct, court order violations (e.g., SOAP; not including no contact or restraining orders (see Other violent)), fishing/hunting regulations, alcohol (e.g., in public/park/bus; minors in possession; licenses/regulations)

Key Words: DWU, DUI, DRIVING, DISORDERLY CONDUCT, NVOL, DWLS, MINOR IN POSS, MIP, LOIT, PROST, SOAP

Appendix E. Hazard ratios (HR) of suicide death and firearm suicide death removing time incarcerated comparing history of DV-related offenses to no history of DV-related offenses, 1999-2020

	Crude		Adjusted*		Adjusted**	
	HR	95% CI	HR	95% CI	HR	95% CI
Suicide	1.29	1.14, 1.47	1.38	1.22, 1.57	1.32	1.15, 1.51
Firearm Suicide	1.22	0.98, 1.54	1.31	1.04, 1.64	1.41	1.10, 1.80

*Adjusted for sex, race & ethnicity, age at first release

**Adjusted for sex, race & ethnicity, age at first release, year of first release, total stays in jail, criminal history indicators (i.e., violent, violent other, substance-related, property, weapons, firearm, public order/other)

Appendix F. Fine and Gray Competing Risk Subdistribution hazard ratios (HR) of suicide death and firearm suicide death comparing history of DV-related offenses to no history of DV-related offenses, 1999-2020

	Crude		Adjusted*		Adjusted**	
	HR	95% CI	HR	95% CI	HR	95% CI
Suicide	1.30	1.15, 1.47	1.39	1.23, 1.58	1.31	1.14, 1.50
Firearm Suicide	1.22	0.97, 1.53	1.30	1.04, 1.63	1.40	1.11, 1.78

*Adjusted for sex, race & ethnicity, age at first release

**Adjusted for sex, race & ethnicity, age at first release, year of first release, total stays in jail, criminal history indicators (i.e., violent, violent other, substance-related, property, weapons, firearm, public order/other)

Appendix G. Hazard ratios (HR) of suicide death and firearm suicide death for multiple time frames comparing history of DV-related offenses to no history of DV-related offenses, 1999-2020

	Crude		Adjusted*		Adjusted**	
	HR	95% CI	HR	95% CI	HR	95% CI
<i>Entire Study period</i>						
Suicide	1.29	1.14, 1.47	1.38	1.22, 1.57	1.31	1.14, 1.49
Firearm Suicide	1.21	0.96, 1.52	1.30	1.03, 1.63	1.40	1.10, 1.79
<i>6 months</i>						
Suicide	1.28	1.06, 1.54	1.32	1.10, 1.59	1.33	1.08, 1.64
Firearm Suicide	1.19	0.86, 1.64	1.24	0.90, 1.71	1.47	1.03, 2.10
<i>1 year</i>						
Suicide	1.31	1.10, 1.55	1.36	1.14, 1.61	1.41	1.16, 1.70
Firearm Suicide	1.21	0.90, 1.63	1.28	0.95, 1.72	1.48	1.06, 2.05
<i>5 year</i>						
Suicide	1.23	1.07, 1.42	1.31	1.14, 1.51	1.35	1.15, 1.57
Firearm Suicide	1.15	0.89, 1.48	1.23	0.95, 1.58	1.41	1.07, 1.85
<i>10 year</i>						
Suicide	1.24	1.09, 1.42	1.33	1.16, 1.52	1.30	1.13, 1.50
Firearm Suicide	1.23	0.98, 1.55	1.32	1.05, 1.66	1.52	1.18, 1.95

*Adjusted for sex, race & ethnicity, age at first release

**Adjusted for sex, race & ethnicity, age at first release, year of first release, total stays in jail, criminal history indicators (i.e., violent, violent other, substance-related, property, weapons, firearm, public order/other)

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