

LETHAL AND NON-LETHAL OUTCOMES FOR MALE AND FEMALE
OFFENDERS: UTILIZING THE NIBRS DATA SOURCE

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LETHAL AND NON-LETHAL OUTCOMES FOR MALE AND FEMALE
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THESIS ABSTRACT

LETHAL AND NON-LETHAL OUTCOMES FOR MALE AND FEMALE
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The focus of this paper is to determine if the victim and the offender characteristics, along with the contextual factors, influence the lethality of a violent encounter. Data from the National Incident-Based Reporting System (NIBRS) for the years 1998-2000 is used to create a data subset to analyze victim and offender sex, age, race, and relationship, along with the weapon used, the location, and circumstance of the incident. What this study hopes to accomplish is the ability to predict the lethal versus non-lethal outcomes for male and female perpetrated offenses when the extraneous variables are taken into account.

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INTRODUCTION

The public perception of crime and the actuality of crime are two very different fields. In general, the public perceives strangers to be more of a threat than those one knows. Recently, however, with the awareness of domestic and child abuse, intimate partner and familial violence perceptions have began to change. Violent victimization has been an area of examination by both academia and the media. What the literature finds is that when the victim and offender relationship is known, the majority of violent victimization occurs between people that know each other. These findings have been repeatedly confirmed since the first major study on violent victimization was done by Marcus Wolfgang in 1958. Wolfgang's (1958) study focused not only on victim offender relationship but also other demographic and contextual factors that surround violent victimization.

This paper focuses on lethal vs. non-lethal outcomes of violent encounters; therefore the injuries sustained by the victim have to be severe enough to be considered an aggravated assault. Felson and Messner (1996) noted that in cases where examining lethal versus non-lethal outcomes in crime incidents the offenders might intend to cause death, rather than injury, for a number of reasons. One instrumental reason for this is the inability for the victim to identify the offender and to therefore evade prosecution. The other motives can be expressive in nature. What Felson and Messner (1996) call the

‘resolving of grievous issues’, refers to the resolution of an argument or ‘issues’ through violent measures. Felson and Messner (1996) found it to be highly correlated with homicides between family members. However, it should be noted that in Felson and Messner (1996) there is no separate intimate partner category. Unlike expressive circumstances, instrumental circumstances were found to be correlated highly with homicides that occurred within the victim-offender relationship categories of acquaintance and stranger relationships.

Male and female offenders vary in their relationship to the victim, their mode of assault, and the frequency with which they resort to violence. When looking at all crimes males, in general, make up the majority of offenders. Female offenders constitute only a small percentage of overall offending and an even smaller percentage of violent offending. In the past the role of female offender had been ignored by society. Often this is because where violent crime was involved females, in general, made up only a small percent of the offending population. Hirschinger et al. (2003) found that female offenders made up about 14 percent of the total offending population. However, in past years the rate of female offending has risen more rapidly than male offenders (Riedel & Welsh, 2002; Zahn & McCall, 1999). When women do venture into the arena of violent crime they predominantly victimize those around them: family, friends, and lovers. (Mann, 1993; Wolfgang, 1958)

Past literature (Riedel & Welsh, 2002; Zahn & McCall, 1999) shows that female offending is on the rise, and there is now a pressing need to look at the factors that influence the crimes of assault and homicide. In past years female perpetrated violent

offending has gone up 52.9 percent, whereas male perpetrated violent offending has declined 1.9 percent. However, it should be noted that male offending still accounts for the majority of all offending (Mann, 1993).

Male offenders tend to target acquaintances over strangers. However, acquaintances, in some studies, can mean anyone from the offender's neighbor to their spouse. Those who are at the highest risk of victimization are the intimate partners of males. Tjaden and Thoennes' (2000) study using The National Violence Against Women Survey data found that, of the 8,000 women surveyed, two-thirds of them had been assaulted by their partner multiple times, 6.9 being the average. Campbell et al. (2003) found that femicide is the leading cause death for African-American women in the 15-45 age range, and between 40-50 percent of these homicides were committed by male intimate partners.

Violent offending patterns for both male and female offenders are often disaggregated and viewed within the context of the relationship that the offender has or had with the victim. In the past 30 years the types of relationships examined have changed. Until the mid-1970's, many studies disaggregated the victim-offender relationships into general categories: family, acquaintance, and stranger. Unfortunately, these broad categories tended to mask sex and relationship differences within the offenses. Wolfgang (1958) found that the relationship between the victim and offender was such that 51 percent of female victims of homicide are victimized by 'family members', while only 20.9 percent were victimized by 'paramours', or lovers. This is a perfect example of how the definitions of 'family' mask relationship differences. The

lack of an intimate partner category which would have included spouse or common-law spouse as well the paramour category could have changed the findings of that and other studies that did not disaggregate these relationships.

Since the mid-1970's, researchers concerned with domestic abuse began to break down relationships further into more specific categories that allowed them to analyze the different contexts of the incidents. Consequently, the contemporary domestic abuse literature disaggregates family into intimate partner incidents (current or former spouse, common-law spouse, dating, or co-habiting heterosexual relationship) and family incidents (Browne, Williams, & Dutton, 1999; Riedel, 1987).

When analyzing the sex differences between the offenders the victim-offender relationship is of great importance. As much of the previous literature has shown, male offenders victimize strangers more often than female offenders. Female offenders are more likely to victimize people they know, i.e. intimate partners, family members, friends, or acquaintances, rather than strangers. This often means that the people who a female offender has a familial, intimate partner or other close relationship with are often the victims of their violence. In Hirschinger et al's (2003) study, which utilized the National Crime Victims Survey (NCVS), 88 percent of adult female victims of a female offender knew the offender.

Past literature on violent victimization has focused on topics such as domestic abuse between heterosexual partners, familial victimization in general, and victimization outside the family. However, the wealth of literature deals with intimate partner assault/homicide, most of which looks at females as victims and males as the

offenders. To a lesser extent, the literature has dealt with male partner abuse, family member, and acquaintance violence. Even less attention has been paid to female inflicted familial victimization when the victim is not an intimate partner or child (Alder & Polk, 2001; Englander, 1997; Pearson, 1998; Websdale, 1999).

This paper's focus is single victim-single offender violent encounters, in particular homicides and aggravated assault. The data used in this paper comes from the National Incident-Based Reporting System (NIBRS) for the years of 1998, 1999, and 2000. Within the area of violent encounters this paper will look at the victim, offender, and offense characteristics to attempt to determine the factors that contribute to a lethal versus non-lethal outcome. This paper endeavors to find the difference in chances of a lethal versus non-lethal outcome when there is a difference in weapon, relationship, and circumstance. The expectation is that when males are the offenders in a violent encounter the outcome will be lethal, especially in cases that involve intimate partners and other family members. This paper also expects to find that when females offend the outcome is non-lethal. In respect to weapon, since the firearm is the great equalizer when it comes to size (Felson, 1998; Felson 2002; Wolfgang, 1958), it is expected that when females do kill their intimate partners, they will often do so with firearms.

LITERATURE REVIEW

Violent Crime Trends

The fear of being a victim of a violent crime is ever present in the American society. Violent crimes or the images of them permeate the evening news. The category 'violent crime' has many types of crime within it, homicide, sexual assault, robbery, aggravated and simple assault, are some examples. If a crime involves a person directly as a victim, it is considered a violent crime. The majority of crimes committed, however, are not violent. Instead, it is property crime and other non-violent crimes that are much more pervasive.

The overall rates for violent crime have declined in the past ten years. Since the mid-1990's, there has been a marked decline in overall homicide rates (Zahn & McCall, 1999; Riedel & Welsh, 2002). According to the 2002 Uniform Crime Report (UCR), the violent crime that shows the largest drop is homicide. Both the five- and ten- year trend tables show a significant drop in the percentages of homicides being committed in the United States. The 5-year trend shows a 10.7 percent drop and the 10-year trend shows a 40.9 percent drop, demonstrating that both in short- and long- term comparisons, the overall amount of homicides has declined.

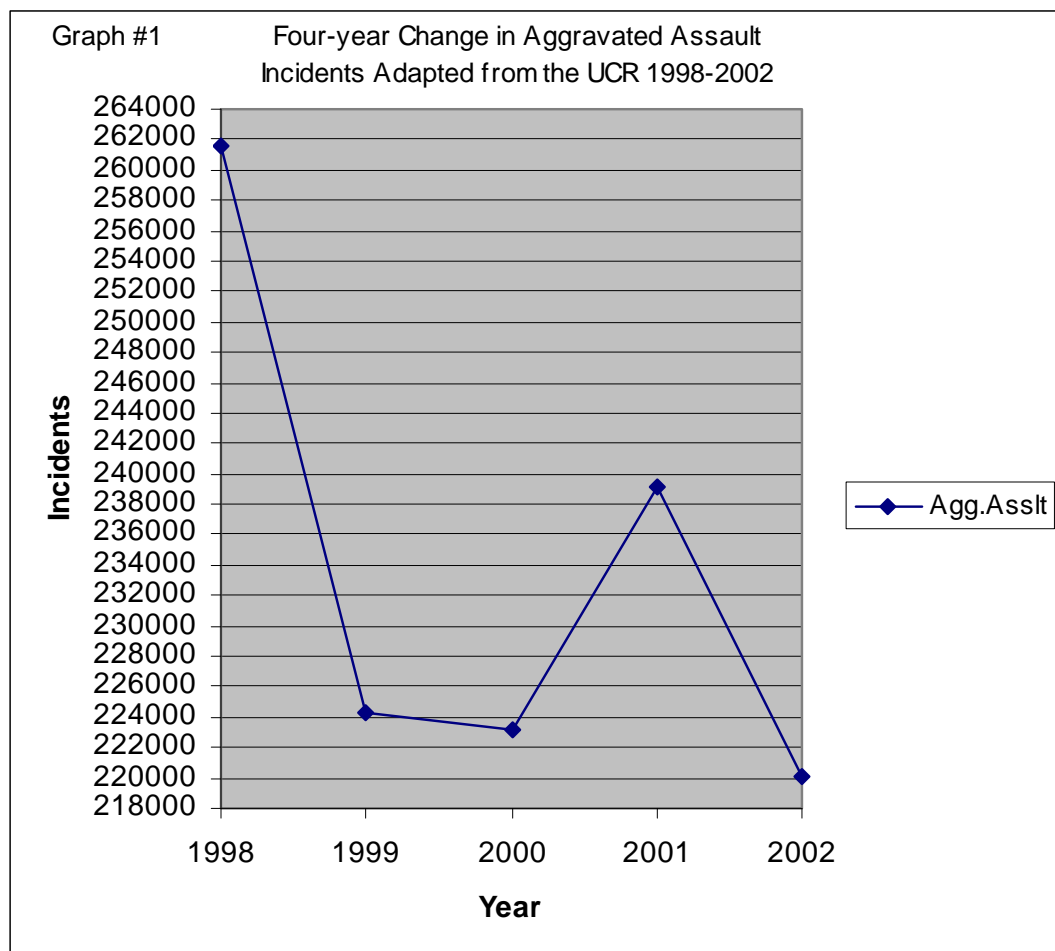
When looking at the UCR's 2002 data, the total male offending had declined 5.9 percent since 1989, whereas the total female offending had risen 14.1 percent. When one looks specifically at homicide offending rates for male and female offenders, offenses are down in the 1998, 2000, and 2002 data. However, aggravated assaults increased substantially in 1998. The total for males increased 4.5 percent whereas females increased 67.3 percent.

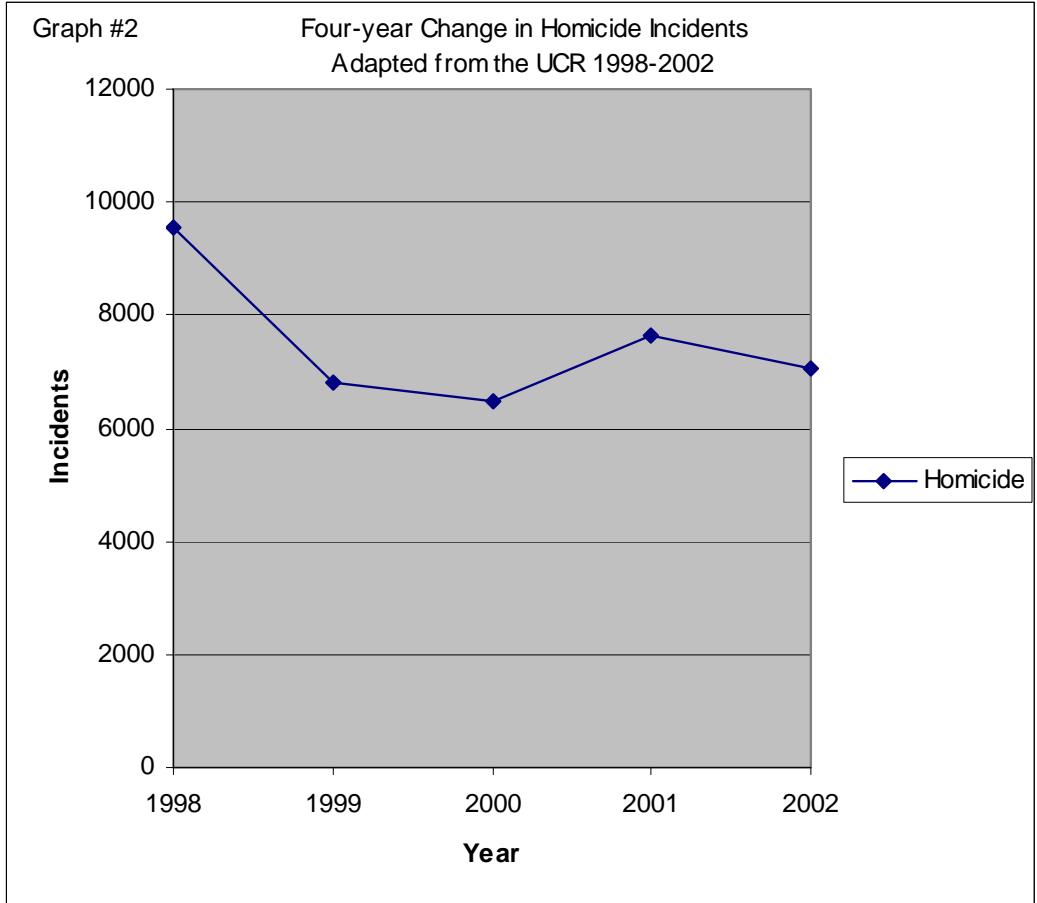
Female offending like male offending has shown a change in the past few years. The incidence of female offending, in non-lethal crimes, has increased greatly since the early 1990's. For female offenders, the 2000 and 2002 UCR data also show a percent change in rates over the previous decade. The 2000 UCR shows a 5.7 percent increase in aggravated assaults, and 2002 shows an increase of 24.9 percent. This trend is again reflected in Mann (1993). Furthermore, while female-inflicted homicide has remained at the rate of 2 per 100,000 the rate of aggravated assault incidents has been on the rise from 16 per 100,000 in 1960-61 to 28 per 100,000 in 1975-76, and to 50 per 100,000 in 1989-90. This data shows the progression of violent aggravated assaults over time. This marked rise in female offending has increased the interest in female offending in general as well as in the area of violent offending.

Trends in Male Perpetrated Violence

While male violent offending has declined overall, homicide rates have shown the most dramatic reduction. For example, the UCR 2002 data shows that between 1993 and 2002, male-perpetrated homicide declined 41.5 percent, and between 1998 and

2002 the UCR 5 year trend shows homicide down 10.6 percent. Assault, though declining, does not show the rapid change that the homicide rates do, with a reduction of only 12.3 percent between the years 1993 and 2002 and a 7.9 percent reduction between the years 1998 and 2002 (Federal Bureau of Investigation, 2002). Overall aggravated assault and homicide trends from the UCR for the years 1998-2002 can be seen in graph 1 and 2. These graphs better illustrate the marked decline in male-perpetrated violent crime.





Male offenders tend to commit more criminal offenses against acquaintances rather than family or intimate partners; however, it is Intimate Partner Violence that tends to be most under-reported. Intimate Partner Violence with a male offender can range from intimidation to homicide. Most literature that deals with Intimate Partner Violence specifies the male as the perpetrator of most, if not all, of the violence.

Trends in Female Perpetrated Violence

While crime in general has been on the decline for the past few years, female-perpetrated crime has been steadily rising (Riedel & Welsh, 2002; Zahn & McCall,

1999). Female-perpetrated violent crimes are up 52.9 percent in the 1998 UCR. All types of female-perpetrated crime are on the rise. However, with respect to the victim-offender relationship, it is those with the close relationship to the offender that are more at risk for violent victimization. The 1998 UCR shows that a majority, 72 percent, of family-related violent encounters are simple assaults; rather than more severe encounters, such as aggravated assaults and homicides, which respectively make up 14.6 percent and 0.2 percent of the violent encounters. When looking at the victim sex distribution it is found to be almost equal between males and females (Federal Bureau of Investigation, 1998).

Females are less likely than males to commit violent crimes. The UCR and previous literature has shown that consistently it is males that commit the majority of crimes not females. However, when examining the literature on female offenders, it is found that they often victimize those closest to them. Often this will mean children (either their own child or a child under their care), their intimate partner, a family member, or a close acquaintance will be the victim (Alder & Polk, 2001; Chesney-Lind, 2004; Englander, 1997; Oberman, 2002; Paulsen & Brewer, 1999; Pearson, 1998; Websdale, 1999; Wolfgang, 1958).

In Hirschinger et al.'s (2003) study, the National Crime Victims Survey was used to measure female offenders of violent crimes against adult victims. They found that for the years 1993-1997, 14 percent of all violent offenders were female. Further, 75 percent of their victims were other females, and 88 percent of those victims had some type of relationship with the victim whether it is family, friend, or acquaintance.

When looking at female violence in relation to race, we see similar trends to that of male violence. Mann's (1993) study of female-female homicide showed that it is the blacks that commit the majority (73.7 percent) of the homicides. Mann (1993) also found that most homicides are intraracial and a majority of both the offenders and victims were over thirty and had violent histories.

Victim & Offender Relationship

Intimate Partner Violence

In the past ten years, 1990-2000, overall homicide rates have been on the decline. However, Zahn and McCall (1999) have found that the rates for stranger and unknown homicides have increased, while it is the homicides of those with more intimate relationships that have declined the most. However, these statistics generally refer to male offenders rather than female offenders. Actually, female offenders are more likely to attack people with whom they have a relationship rather than a stranger (Hirschinger et. al., 2003; Mann, 1993). When examining intimate and family homicides, Fox and Levin (2001) found that it is the intimate partner, current/former spouse, and dating relationship homicides that make up 59.3 percent of the 'familial' homicides.

Male-female violent offending within the intimate partner context is known in the literature as Intimate Partner Violence. As previously discussed, most of the literature defines an intimate partner as being within the context of a heterosexual

relationship. Intimate partner violence is viewed by the feminist literature as occurring almost exclusively between a male and a female with the male as the offender and a female as the victim.

Intimate partner homicide and assault is mainly considered a male-perpetrated offense. However, there is evidence that almost equal numbers of males and females are involved as offenders (Lawson, 2003; Mercy & Saltzman, 1989; Sarantakos, 1999). Much of the domestic abuse literature states the feminist idea that domestic homicide and assault are forms of patriarchal terrorism used to keep women subjugated and fearful (Lawson, 2003; Sarantakos, 1999). How then are we supposed to categorize females abusing their male and/or female partners? One of the more popular rationales is the male-abuser retaliation; this is where the female starts a fight with her male partner in an attempt to provoke an anger response from him sooner rather than later. This rationale, however, assumes that there will inevitably be violence perpetrated from the male to the female. In much of the literature, the female offender will have reported what the victim said or how the victim acted prior to the incident that finally made them think that they, their children, or another was in imminent danger of death (Lawson, 2003; Mercy & Saltzman, 1989; Sarantakos, 1999; Rosenfeld, 1997).

Culturally, male victim of assault and/or homicide perpetrated by a female offender are often emasculated. For example, men who are victimized by women often say that they feel like 'less of a man' or say they are unable to cope because of their victimization experience. The victimization was not only an attack on their bodies but also an attack on their self-image as strong and vital men. The unwillingness of male

victims to report domestic violence victimization to law enforcement agencies may result in under-reporting for data sources such as the UCR and NIBRS. Both, data sources utilize incident-level data received from policing agencies. Therefore, if the crime is not reported to a policing agency, it will not be included in the reported data. Complicating things further these men often do not fight back, and those who do maybe labeled as the abuser. Consequently, male victims of heterosexual abuse are less likely to report the violence to police, friends, or family, and are less likely to go to shelters. Because of the lack of reporting to police, much of the information on male victims of assault comes from the National Crime Victims Survey or other self-reporting measures. (Harris & Cook, 1994; Migliacco, 2001; Stanko & Hobdell, 1993; Websdale, 1999)

When female offenders commit homicides where men are the victims, the offender tends to be under the age of thirty, non-white, and has a history of violent behavior, while her victim tends to be over thirty, also non-white, and have a similar history of violence. They usually have a prior relationship, whether it is familial or romantic. Much like other types of female-perpetrated homicide, the incident occurs within the residence. However, unlike female-female homicides, when a female kills a male, guns (52.1 percent) are more often used than knives (42.5 percent) (Mann, 1993).

Farmer and Tiefenthaler (2003) found that in the past 15 years (1988-2003) there has been a marked decline in Intimate Partner Violence. One of the occurrences that they attribute the decline is the increase in the legal services offered to female victims. Such as police response, shelters, court response. Another occurrence is the

improved economic and social status of females in society, such as more women in the workforce and in positions that are higher paying. As well as change in demographic trend for women, such as the overall the aging out of the population, this refers to the reduction in offending and victimization rates as a person ages.

In the past twenty years, however, there has been a reduction in the rate of intimate partner homicide where the female is the victim. Both Browne et al. (1999) and Rosenfeld (1997) contend that the domestic abuse arrest laws and policy changes facilitated by the Sherman and Berk (1984) study, along with the institution of shelters for domestic abuse, were part of the reason that the homicide rate decreased. This is because females now had a safe way out, in the form of increased police protection and societal support.

Paulsen and Brewer's (2000) study also found that the intimate partner relationship was the most lethal. Using the Spousal-sex Ratio of Killings (SROK) to examine incidents in Chicago and Houston, they found that 30 percent of female homicide victims were victims of male perpetrated intimate partner homicides. Paulsen and Brewer (2000) also found that for 30 percent of females killed, 80 percent of the offenders were the current or former husband of the victim. This point concurs with Wilson, Johnson and Daly (1995), who found that married females are at a higher risk for both lethal and non-lethal violence at the hands of their partners than are females in other types of intimate partner relationships.

Family

Levels of intimacy between family members can vary from highly intimate with a great deal of contact to non-intimate with virtually no contact. These two extremes should be differentiated since familial relationships with daily contact may provide more opportunities for violence than those with little or no contact. In the past studies like Wolfgang (1958) have used spouses, children, siblings, parents, and other relatives to refer to the category family. More currently studies such as Browne et al. (1999) and Felson & Messner (1996) separate out spouses from the family category and have family refer to parents, children, siblings, and other relatives. Like the more recent studies this particular paper categorized family as any relation/relative that is not a current or former spouse. This includes parents, siblings, children, aunts, uncles, cousins, grandparents, in laws, and 'other relatives'. However, the varying dynamic between these relationships will not be individually analyzed; instead the category of family will be one of the five relationship categories that will be examined.

Felson and Messner (1996) found that the majority of lethal victimization was most likely to happen between family members. For female offenders the family is one of the three categories (intimate partner, family, and friend) from which they generally take their victims. Thirty-eight-point-one percent of all female homicide victims die at the hands of a family member while only 6.4 percent of males are victims of a family member according to Messner and Tardiff (1985).

Within the spectrum of family violence, 23 percent of the crimes reported in the 1998 UCR were offenses where the victim and offender are related to each other.

Family violence itself or the reporting of it has increased greatly in past years. However, the majority of family related crimes are simple assaults (72 percent), not aggravated assaults (14.6 percent) or homicides (0.2 percent).

According to the 1998 UCR data, when a homicide is committed within the familial setting the victims are most often white and over the age of 18. However the sex distribution is close, with 43.9 percent of the victims being male and 55.6 percent of the victims being female. The other anomaly is that when one looks at the overall percentage of the death of children versus the percentage of the death of children when the offender is a family member the percent goes from 7 percent to 20.5 percent. This is data warrants further investigation into child homicide by family members.

Acquaintance/Friend

Previous research on female offending has often used the labels friend, acquaintance, or otherwise known (any person the offender or victim would come into contact with that is not previously specified), as residual categories to refer to any female-female relationship that is not sexual in nature. This can be a co-worker, someone or a neighbor down the street, or a clerk who they buy their morning coffee from. These people do not have limitless access. However, they do have minimal access. One can refer back to Hirschinger et al. (2003) where they found that 88% of female victims of crimes perpetrated by female offenders had a prior relationship with the offender.

Wolfgang (1958) found that for black male victims of homicide 16 percent of murders were committed by an acquaintance, whereas when the offender is a friend the offending rises to 35.9 percent. White males were found to share similar numbers with their black counterparts, with acquaintance homicides making up 14.6 percent and friend homicides making up 28.1 percent of the cases. Homicides in that study, for males, were found to be intrasexual, unless the victim was the spouse of the offender. However, the majority of acquaintance and friend homicides with male offenders had male victims.

There is limited data dealing strictly with the acquaintance or friend relationships. These are areas that are used as contrast categories rather than the specific area of study (see Browne et al., 1999; Paulsen & Brewer, 2000; and Websdale, 1999). This leads to data that often refers to these incidents as occurring more often or less often in reference to another relationship with limited analysis of the acquaintance/friend relationship itself.

Contrary to the Hirschinger et al. (2003) study, the Mann (1993) study found that the majority (67.6 percent) of the victims were non-family, however this could be due to the setting or the years in which the data was gathered. Mann's study (1993) looked at urban areas, whereas Hirschinger et al. (2003) used national data. Messner and Tardiff (1985) also looked at urban areas, however they found that 68.2 percent of homicide victims were killed by friends or acquaintances, which coincides more with Hirschinger et al. (2003).

Stranger

When one protects themselves from violent victimization, they believe that the offender most likely to attack them will be a stranger. (Giddens & Duneier, 2000). Violent victimization by a stranger is more likely to be a rape, simple or aggravated assault, or robbery rather than a homicide. When looking at stranger homicides, Riedel and Welsh (2002) identified two main categories (1) felony homicide and (2) non-felony homicide. The first, felony homicide, is most often a crime such as robbery-homicide, where the victim is killed in the commission of a robbery. Most often the victim is older, male, and a clerk, whereas the offender is often young and male. The second type of stranger homicide, non-felony homicide, is often found to have occurred at a bar, or some recreational event. In this type of stranger homicide the victim and offender often share similar demographic traits such as age and sex. (Riedel & Welsh, 2002; Reidel, 1987)

In actuality, the likelihood of being violently victimized by a stranger is very low, and being the female victim of a stranger is even less likely. If one was to be the victim of a stranger, is more likely that the offender would be male (Riedel & Welsh, 2002; Wolfgang, 1958). This is further supported in Messner and Tardiff's (1985) findings where 23.5 percent of males were the victims of stranger homicide, but only 6.3 percent of females were the victims of stranger homicide.

Offense Characteristics

Weapon

Sex differences for both the offenders and victims were found in the following studies. Wolfgang (1958) found that when the offender was black and male the weapon used was almost equally divided between knives (37.7 percent) and firearms (38.2 percent). However when the male offender was white the most used weapon was a personal weapon (46.4 percent). A personal weapon is using ones own body to inflict injury on a victim, in Wolfgang's (1958) study it was referred to as beating.

When looking at weapon use and victim characteristics Wolfgang (1958) found that there are differences in weapon use when examining victim and offender race and sex. Victims that were black were found to be more often stabbed than shot or beaten, this was found to be consistent across the sexes. Black males were found to be stabbed 48.3 percent of the time, while black females were found to have been stabbed 41.7 percent of the time. When the victim is white and male the most often method of death was beatings, use of a personal weapon. If the victim is white and female Wolfgang (1958) found that they were almost equally as likely to be beaten to death as they were to be shot, 30.2 percent and 32.6 percent respectively.

Mann (1993) also found that the weapon used by the offender varies for female victims versus male victims. Male victims were more likely to be killed with a firearm (52.1 percent) rather than a knife (42.5 percent). Female victims, however, are more likely to be killed with a knife (48.6 percent) rather than a firearm (45.7 percent).

Weapon and victim-offender relationship was also found to be significant by Wolfgang (1958). In his Philadelphia study it was found that 29.9 percent of all violent relationships occurred within the family relationship, which in his study included

spousal relationship. Family relationships were found to be the relationship within which females were most often killed. Black females were found to have been victims of familial homicide 46.7 percent of the time, and white females were found to have been victims 64.9 percent of the time. Wolfgang (1958) looked specifically at homicide, spousal relationships, and weapon use; it was found that when women are the victims of homicide at the hands of a male spouse, they are almost equally as likely to stab, shoot, or beat their wives to death. Of the 47 females who killed their husbands 30 stabbed their husbands to death, 15 shot their husbands to death, none beat their husband to death, and 2 used an 'other' method of homicide.

Location

Messner and Tardiff (1985) found that females are more likely to be victimized in the home. Bailey, Kellerman, Somes, Banton, Rivara, and Rushforth (1997) also found that, for female victims, the home is the location where the highest percentage of victimization occurs. Forty-one percent of the victimizations occurred between intimate partners within the home.

Mann (1993) found that when females victimized other females 71.4 percent of the incidents happened at a residence. Of the incidents occurring at a residence 74.1 percent occurred within the residence while 25.9 occurred outside. Mann (1993) also found that when females victimized males 75.2 percent of incidents occurred within a

residence. Of those occurring in a residence 84.6 percent occurred within the residence, while only 15.4 percent occurred outside the residence.

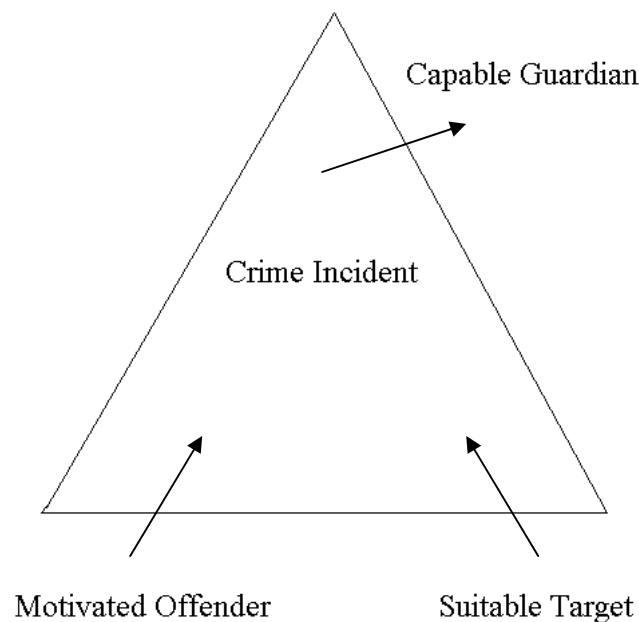
Wolfgang (1958) looked at sex, victim-offender relationship, and location of incident and found that both males and females were most often victimized in the home if the spouse is the offender. The home location, in general, was found to be the place where most homicides occurred regardless of sex, or race. Home was the number one location with 50 percent of all the homicides happening within a residence, the location that was the next highest was the highway with 30.1 percent of the victimizations occurring in that category. This literature shows that the home is conclusively the single place where most homicides have and will occur.

Theoretical Perspective: Routine Activities Theory

This paper utilized routine activities theory to investigate the impact of motive, location, weapon, and various demographic characteristics on the lethality of a violent assault. First proposed by Cohen and Felson in 1979, routine activities theory explains crime victimization as a function of the everyday patterns or routines of people's lives. In particular, Routine activities theory identifies three necessary conditions for a crime to occur: (1) that a suitable target is available, (2) that there is the lack of a capable guardian to prevent the crime from happening, and (3) a likely and motivated offender

is present (Cohen & Felson, 1979; Felson, 1998). Marcus Felson, who further develops the theory in his later work, refers to these three elements as the chemistry of crime (see Figure 1.).

Figure 1.
Chemistry of Crime



Adapted from Felson, 1998:53.

Felson (1998) identifies four elements of a suitable target: Value, Inertia, Visibility, and Access (VIVA). The first element, value, refers to the value of the target to the likely offender. This is an economic value, not sexual, i.e. the value of the target's possessions such as cash, credit cards, or jewelry. The second element, inertia, refers to

the energy needed to commit the crime against the target in relation to the likely offender. This can refer to the size of victim versus the size of the offender, as well as the distance or obstacles between the target and likely offender and the energy it would take to reach and over-power the target. The third element is the visibility of the target, or as Felson (1998) refers to it out-of-site, out-of-mind. In other terms a target that is absent or able to blend-in with its surroundings is less likely to be targeted. The final element, access, refers to the likelihood of contact between the offender and the target. This is often based on the regular day-to-day routes taken by the offender and the potential target. Often these routes include traveling to and from home, work, a shopping area, and a recreations area. When one overlaps the victim's 'regular routes' and the offender's 'regular routes' often the place or places they overlap will be near the area where the offender targeted or victimized the victim.

In general Felson's addition of VIVA to routine activities theory can be adapted for aggravated assault and homicides. Felson typically uses value to refer to economic values, i.e. money or property, which is used when examining many of the cases of stranger or acquaintance violence. However when dealing with family or intimate partner homicides it becomes more problematic due to its primary focus on the target's economic suitability. The value of the victim to the offender in cases of family and intimate partner violence is not that of an economic nature, but one of a need to exert control over others (Felson, 2002).

Some aspects of VIVA however remain useful when explaining violent crimes. For example, the target's inertia can easily translate into the effort required by the

offender to overpower a potential target. Felson (1998) himself suggests that this kind of interpretation when he states “If they are too bulky or strong for potential offenders to overcome, a violent crime probably will not occur. Violent offenders usually pick human targets who are weak...” Furthermore, one can also apply Richard Felson’s (1996) work in his article “Big people hit little people...” dealing with sex differences in target selection. The selection of a target might be based on the offender’s belief that they can overcome the inertia of a particular victim. Therefore, males often select smaller men, women, or children as victims. While female’s select smaller females, invalids, or children as their victims. (Felson, 1996)

Visibility is also useful for better understanding assault and homicide. In stranger violent crime, such as mugging, if the potential victim is off the street or with a group they then might not come to the potential offender’s attention. The same could be said for crimes where the victim and offender know each other, if the potential victim has moved or avoids areas where the potential offender frequents then they are less likely to become their victim. However in cases of intimate partner violence often the only way to decrease the visibility to the offender is for the victim to leave the relationship, and often vacate the area, which many may not have the social support or economic means to do.

Access can also be adapted to address the aggravated assault and homicide. Victim access is also closely linked with visibility especially in cases where the victim and offender know each other. It is the known relationship that the victims are the most vulnerable. Since, by its very nature stranger violence can only happen when offender

does not know their victim then access to these victims will most likely be limited to settings outside the home (Messner & Tardiff, 1985). On the other hand known offender violence is possible in a multitude of settings both private and public. Strangers do not have access to a victim at anytime without drawing some attention to them, however, those that are known to the victim often are not perceived as a threat until the violence occurs. If the victim is an intimate partner, family member, or acquaintance of the offender, they will then more likely be available to the offender as a suitable target. Availability increases the closer the relationship is, therefore intimate partners, family members, and acquaintances of the offender are more likely to be the targets of violence than strangers. Intimate partner violence often occurs behind closed doors when the victim and offender are alone or with those who cannot prevent the violence (i.e. children). Often it is the absence of a capable guardian which aids in the lack of deterrence of violence.

In the case of all types of violent offending size and sex of potential targets can act as a proxy to the physical presence of a capable guardian(s). Richard Felson (2002) discusses the selection of targets based not only on their availability but also their size, most males being larger than females, and females being larger than most children, and he also discusses their ability to defend themselves based on the victim's size as compared to that of the offender. This can be linked to the lack of a capable guardian, as discussed earlier Marcus Felson (1998) discusses that the size of the target can be a deterrent to the offender. The target themselves may be their own capable guardian due to their appearance.

The third requirement is the presence of a motivated offender. Cohen and Felson (1979) do not specifically address what makes a motivated offender, rather they assume that there will always be a motivated offender present, and it is the lack of a capable guardian coupled with the availability of a suitable target that will cause the incident to occur. If the offender lives or resides closely to the intended victim, the other two requirements need only to be filled for a crime to occur. In the case of intimate partner, family, or acquaintance violence the 'motivated offender' is someone who will be close to the victim, with access to them at anytime. In particular, times when the victim might be alone or unable to defend him or herself, makes them a more attractive target.

Cohen and Felson (1979) stated in their original article on routine activities theory that...

Without denying the importance of motivating offenders to engage in crime, we have focused specific attention upon violations themselves and the prerequisites for their occurrence. However, the routine activities approach might in the future be applied to the analysis of offenders and their inclinations as well.

In his later research Felson (1998) states that motivation (other than economic) is not taken into account in routine activities theory, instead the assumption is made that there will always be a motivated offender present for a crime to occur. It does not speak of the specific motivations for each offender.

In the early conception of routine activities theory by Cohen and Felson (1979) there is no mention of the difference in the motivation of the offender. There is however a distinct difference in the motivation of offenders. We can see it clearly that the

offender of a purse snatching differs from that of a burglar, which differs from that of a murderer. Within the spectrum of homicide there is often a great difference in the motivation of offenders.

Motivation to commit an act is essential when looking at aggravated assault and homicide. Assault legally falls into three categories (1) aggravated assault, (2) simple assault, and (3) intimidation. The latter involves no physical harm, while simple assault involves some physical injury however nothing that would cause permanent damage. Aggravated assault on the other hand often involves serious injury to the victim, and often the difference in the lethality of a situation can depend on the motivation of the offender (Garner, 2000; Weinstein, 1988). Often the offender's motivation can contribute to the lethality of the event. For example, when the motivation is economic in nature, the goal is to acquire money or property, not to cause injury for injury's sake. Violence in these situations is a means to an end, which may be mitigated by the victim's compliance. However, when the motivation is argument-based the goal in-itself can be to inflict an injury on the victim. The injury itself can range from minor to major when other variables such as weapon, offender sex, and relationship, and circumstance are taken into account. Richard Felson (2002) combines motivation with aggression to explain the motives that move offenders to act. He identifies four 'motives for aggression', three of which are his own the fourth is adapted from Katz (1988).

The first is to control the behavior of the target. This can be used for felony related homicides as well as intimate partner, familial, or acquaintance homicides. The

need to control a person can stem from the offenders need for power; however it can also be to control the situation to minimize exposure or harm.

The second is to gain retribution or justice. This is also applicable to family as well as intimate partner, stranger, and acquaintance. Verbal or non-verbal insults can spark aggression whether it is from a stranger or some one the offender knows, even if the remark was taken the wrong way.

The third is to promote or defend one's self image. This refers to saving face or creating the image that one wants presented. This motivation for aggression is best applied to non-felony related stranger aggravated assault and homicide. As discussed by Riedel and Welsh (2002) a number of the non-felony related aggravated assaults stemmed from bar fights. Many of these may have included people who were trying to preserve their self image or to gain a better self image through aggressive behaviors toward another person.

The fourth is the desire for excitement. This particular motivation is best used in explaining less common forms of, homicide, specifically that of serial offenders of both murder and rape. The nature of serial offenses itself indicates that the offender has some motivation that drives them to repeatedly commit violent crime. The need to acquire excitement is one such motivation. Therefore this particular 'motivation for aggression' will not be included in this paper.

Richard Felson also includes the possibility that more than one motive for aggression can be applied to the same incident.

A particular violent incident may involve all of these motives. For example, people often retaliate when they believe they have been attacked. First, retaliation deters the aggressor and others from engaging in future attacks. Second, targets are likely to perceive an attack as wrongdoing and therefore deserving of punishment. Finally, by retaliating, targets save face by making their adversaries look weak. (Felson, 2002: 25)

Therefore in a situation such as intimate partner violence, both the motive to control as well as the motive for retribution can be utilized. An offender seeks to control the victim's behavior through force. When the victim does something that the offender perceives as an attack, such as a refusal to comply, the offender feels justified in using more force to compel the victim to comply. A cycle such as this could be quite common in a domestic abuse situation. Also, due to the previous attacks on the victim in the prior example the victim would have a motive of aggression for retribution or justice, as well as that of saving face if the abuse happened in the presence of others.

Family is another place where multiple 'motivations for aggression' can be applied to. Family dynamics share traits with both the acquaintance and the intimate partner relationship when using the routine activities theory. Family in general is going to have more contact with and access to a potential victim than those who possess an acquaintance relationship. However, family members do not have as much access to a potential victim as an intimate partner might especially if that intimate partner is a spouse. The offender if a family member can be extremely close to the victim or in the position of authority or power over the victim, in particular the infirm or children, giving them both access and the opportunity to victimize. However, motive does still need to exist for a crime to occur. In the family setting two of Richard Felson's

‘motives for aggravation’ can be applied (1) to control the behavior of the victim and (2) to gain retribution. (Felson, 2002)

The first to control the behavior of the target can be easily applied to the parent-child relationship, where in the parent tries to control the child’s actions though abusive means. Similarly the reverse could be true for an adult son or daughter who tries to control the parent’s actions through abusive means. In both cases the offenders feel justified in their aggression as a way to gain retribution for the disobedience.

The second ‘motive for aggression’ can also be applied singularly, in particular in cases where there has been some perceived wrong. One particular case mentioned in Mann (1993) refers to a love triangle between two sisters that resulted in the death of the younger sister. This is not to say that all retribution cases within families’ center around the ‘love’ aspect, other cases reported family disputes in general were the cause of much of the violence.

Although, the acquaintance relationship is not considered as intimate as the family or intimate partner relationship, many of same ‘motives for aggression’ are found in these three categories, and can be can utilized when dealing with multiple motives. In an acquaintance relationship, whether it be friendship or and employer/employee relationship the offender may have felt slighted or somehow wronged (or attacked) by the other party. They then retaliate to the attack to both save face and punish the offender. This can be something as simple as confronting the boss after being passed over for a promotion or as severe as assaulting and acquaintance after the victim made derogatory remarks or threats.

In a stranger relationship Riedel and Welsh's (2002) two categories can be used to look at the motivation in different areas. First the felony related assault and homicide both have the motive to control along with the motive to preserve self-image and retribution. Since robbery is the most common felony related stranger violence offense that will be used. The offender wishes the victim to comply with their control; to do this violence or the threat thereof is used. Then if, the offender perceives the victim as non-compliant or insubordinate he or she may escalate their use of violent behavior. This could be to both punish the victim and also to give the offender a way to save face or to let others know that they must comply.

HYPOTHESIS

The focus of this paper is to determine if the victim and the offender characteristics, along with the contextual factors are significant in predicting the likelihood of a lethal versus non-lethal outcome of a violent encounter. Some factors that may be significant include victim and offender sex, age, race, and victim-offender relationship, along with the weapon used and the location and circumstance of the incident. When these variables are analyzed using logistic regression, the following hypotheses are tested.

Hypothesis one relates both male and female offenders, therefore the Logistic Regression Male and Female Offender Model will be used.

Hypothesis (1)- Violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome.

Hypotheses two relates to male offenders only, and therefore only uses the Logistic Regression Male Offender Model.

Hypothesis (2a)- Violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome when the victim-offender relationship is 'stranger'.

Hypothesis (2b)- Violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome when the encounter involves a 'personal weapon' or a 'knife'.

Hypothesis (2c)- Violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome when the encounter occurs in the location 'home'.

Hypothesis (2d)- Violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome when the encounter involves the circumstance 'argument'.

Hypotheses three relates to encounters when only females are the offenders, therefore the Logistic Regression Female Offender Model will be used.

Hypothesis (3a)- Violent encounters that are perpetrated by a female offender are more likely to result in a non-lethal outcome than a lethal outcome when the victim-offender relationship is 'stranger'.

Hypothesis (3b)- Violent encounters that are perpetrated by a female offender are more likely to result in a non-lethal outcome than a lethal outcome when the incident involves a 'personal weapon'.

Hypothesis (3c)- Violent encounters that are perpetrated by a female offender are more likely to result in a non-lethal outcome than a lethal outcome when the incident involves the circumstance 'argument'.

METHODOLOGY

This paper uses data from the National Incident-Based Reporting System (NIBRS) dating from the years 1998-2000. A data subset has been developed using the 1998-2000 NIBRS dataset that looks at homicide and aggravated assault victimization by females and males using the variables sex, age, race, victim-offender relationship, circumstance, weapon, and location.

National Incident-Based Reporting System (NIBRS)

The National Incident-Based Reporting System was developed by the Federal Bureau of Investigation. NIBRS is relatively new as compared to sources such as the National Center for Health Statistics (NCHS) or the Uniform Crime Reports (UCR), and though it provides a wealth of highly detailed information, it suffers from a lack of consistent reporting across jurisdictions (Maxfield, 1999; Maxfield & Maltz, 1999).

The data that is gathered in NIBRS consists of a data which is similar to that of the Uniform Crime Reports and Supplemental Homicide Reports (SHR), as well as other useful information, such as circumstance, multiple offense, location, weapon, and victim-offender relationship, which makes it a much richer source of crime information. While the UCR and the SHR both use a hierarchy of reporting (i.e. only the most severe crime is reported), the NIBRS system reports multiple crimes for each offense. This

gives those who use this data source a much clearer picture of the crime incident.

(Maxfield, 1999; Maxfield & Maltz, 1999)

Though the NIBRS data source is not contributed to by law enforcement agencies throughout the nation, as of 2004 21 states that do contribute. Those states are: Arkansas, Colorado, Connecticut, Delaware, Idaho, Iowa, Kansas, Massachusetts, Michigan, Nebraska, North Dakota, Ohio, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, and Wisconsin. Though the states do not contribute consistently though the areas. U.S. territories also contribute, but will not be included in this study. The areas that are reporting are mostly rural rather than urban. The areas that do employ this method of reporting have increased, which is why this study is using the three most recent years of data: 1998, 1999, and 2000.

This paper focuses on the single victim-single offender incidents where there is a female or male offender and the acts of either homicide or aggravated assault have been inflicted upon the victim. Within that area this paper will look at the victim, offender, and offense characteristics to attempt to determine the factors that contribute to lethal versus non-lethal outcomes.

The data used in this paper comes from the NIBRS data source via the ICPSR website. Nine segment files were downloaded and merged to create a data subset of 1998-2000 incident level data. This paper focuses on non-lethal and lethal violence. It includes an examination of homicides or aggravated assaults. The data subset was further narrowed by the removal of incidents that were not single victim-single

offender. From this new data subset the variables were recoded, and the analysis was completed.

Variables & Coding

Dependent Variable

Offense

The category murder/non-negligent manslaughter will be recoded as Outcome1=0. The category aggravated assault will be recoded into the variable Outcome1=1. To measure lethality, the murder/non-negligent manslaughter and aggravated assault cases were used from the NIBRS data source. To use other types of homicide or assault would have potentially skewed the findings. This paper's focus is the lethal versus non-lethal outcome to a violent encounter. Therefore, the injuries sustained by the victim had to be severe enough to consider it an aggravated assault, versus a simple assault or intimidation.

Independent Variables

Victim Characteristics

Sex

The victim's sex was recoded into the dummy variable 'female victim', with male=0 and female=1.

Age

The 'victim age' variable was created, victims under the age of 1, which includes NN (age= less than 24 hours), NB (age= 1-6 days), and BB (age= 7-364 days), was recoded as 00. Victim age is further recoded: 1=1, 2=2, 3=3, etc. up to age 98. Any victim over the age of 98 was assigned code of 99. Any victim, whose age is unknown, is coded 999 and is recoded as system missing.

Race

In the data subset, race was converted into the dummy variable 'black victim' which is coded recoded, White=0, Black=1. If the race is unknown it is recoded as 99=system missing in the data subset. NIBRS data source has the option for splitting up the category of White into three ethnic categories, Hispanic Origin, Not of Hispanic Origin, Unknown. This will not be done with this data subset because the inclusion of a white-Hispanic, non-white-Hispanic, and unknown categories would serve only to exclude the unknown cases that could be used otherwise.

Offender Characteristics

Sex

All offenders where sex is recorded are recoded as the dummy variable male=0, and female=1, if sex is U=unknown the incident is recoded as 99=system missing in the data subset.

Age

Age will be coded from 1-98 as 1=1, 2=2, etc. any offender over the age of 98 will be assigned code of 99. Any incident where the offender age is unknown is recoded as 99=system missing in the data subset.

Race

The variable will be recoded, White=0, Black=1, if the race is unknown it is recoded as 99=system missing in the data subset.

The NIBRS data source has the option for splitting up the category of White into three categories, Hispanic Origin, Not of Hispanic origin, Unknown. This will not be done with this data subset because the inclusion of a white-Hispanic, non-white-Hispanic, and unknown categories would serve only to exclude the unknown cases that could be used otherwise.

Offense Characteristics

Victim-Offender Relationship

The relationship codes from NIBRS were grouped and recoded into five categories. 1= 'intimate partner' victimization, which includes the following variables from NIBRS: current or former spouse, boyfriend or girlfriend, common-law spouse. The second group consists of 2= 'other family' excluding intimate partner, which includes the following variables from NIBRS: parent, sibling, grandparent, in-laws, stepparent, stepsibling, other family member. The third, which will be coded as 3= 'acquaintance' includes the following variables from NIBRS: acquaintance, friend,

neighbor, and employee, employer, otherwise known. The fourth category is 4= 'stranger' includes the following variable from NIBRS: stranger. The fifth and final category is 5= 'unknown', which in NIBRS is also coded as unknown. The category for a homosexual relationship will not be included because the number of cases in the data where such a small percentage that they were inconsequential in terms of the analysis. However, it should be noted that homosexual intimate partner violence does share many traits with heterosexual intimate partner violence.

Circumstance

The data for this variable is recoded into a dummy variable called 'circumstance': 0=drug related, gang related, other felony related, other, and unknown, and 1=argument related or lovers quarrel.

Weapon Use

Weapon use is another variable set that is included in the independent variables for this study. The NIBRS weapon variables were recoded into three sets of dummy variables. The first, firearms, includes the following variables from NIBRS: firearm, handgun, rifle, shotgun, other firearm, and all of the automatic versions of those weapons. This is recoded to 0=no firearm, 1= firearm. The second set is knife, which is the variable from NIBRS: knife/ cutting implement. This is recodes into 0=no knife, 1=knife The third is personal weapon, which indicated punching, biting, hitting, or

kicking, which is the variable from NIBRS coded as personal weapon. This is recoded as 0=no personal weapon, 1=personal weapon.

Location

Location is divided into five categories. The first is home which is given the value of 1=home which is in NIBRS as home/residence. The second is codes as 2= street/parking lot which is in NIBRS as highway/road/alley or parking lot/garage. The third category 3=commercial businesses which includes from NIBRS: bank/savings and loan, bar/nightclub, commercial/ office building, department/discount store, , grocery/supermarket, hotel/motel/etc., rental storage facility, convenience store, liquor store, service/gas station, restaurant, or specialty store. The fourth category is other=4 which include from NIBRS: air/bus/train terminal, church/synagogue/temple, construction site, drug store/doctor's office/hospital, field/woods, government/ public building, lake/waterway, school/college, or other.

Logistic regression is utilized in the examination of the data. This type of analysis is being employed to account for the dichotomous nature of the dependant variable. Furthermore, by using logistic regression there need not be a violation of the assumption of a normal distribution. This analysis, like any that looks at homicide and aggravated assault, will find that the distribution is skewed. The majority of the cases in the data subset are aggravated assaults.

Three models were created for this analysis. All three models have a dependent variable of 'Outcome1', which will predict a lethal vs. non-lethal outcome. To test for

lethality the variables for homicide and aggravated assault are coded as 0 and 1 respectively. The other variable such as victim and offender age, race, and sex; as well as the victim-offender relationship, location, motivating circumstance, and weapon become predictors an in the three models.

FINDINGS

This paper uses logistic regression as the method by which the data is analyzed. A series of three logistic regressions equations are presented to examine the lethality of violent encounters. The first model includes both male and female offenders, and is referred to as the 'Logistic Regression Male and Female Offender Model'. The second model controls for the offender sex, and only includes incidents where a male was the offender; this model is referred to as the 'Logistic Regression Male Offender Model'. The third model also controls for offender sex, however, the offenders in this model are exclusively female; this model is known as the 'Logistic Regression Female Offender Model'.

This analysis uses a significance level of <0.05 to determine if the variable is significant. If the variable did not meet this criterion, it was not included in this results section of this study. If the variable is found to be significant, the direction of the relationship will be determined using the un-standardized regression coefficient. If the un-standardized regression coefficient is positive then it will have a positive relationship; whereas, if it is negative it will have a negative relationship. The odds ratio will be examined to determine the increase in risk associated with an increase in the predictor value by one unit. Odds ratios above one indicate an increase risk of a lethal outcome and those below one indicate a decreased risk for a lethal outcome. The results of these analyses are reported forthwith.

Table1.

Logistic Regression Male and Female Offender Model (N=174,942)

Variable	(b)	S.E.	Wald	β
Victim Age	-.023	.003	67.481	.978**
Offender Age	-.008	.003	8.458	.992**
Female Offender	-.935	.127	54.379	.392**
Female Victim	-.884	.104	71.642	.413**
Black Victim	.052	.125	.176	1.054
Black Offender	.006	.124	.002	1.006
Argument	-2.521	.129	382.710	.080**
Home	.413	.388	1.136	1.512
Street / Parking lot	.249	.394	.399	1.282
Commercial Business	.494	.403	1.498	1.638
Other	.711	.402	3.132	1.036
Firearm	2.577	.106	587.006	13.158**
Knife	.982	.122	65.163	2.670**
Personal Weapon	-.360	.156	5.309	.697*
Intimate Partner	.522	.240	4.720	1.685*
Other Family	-.123	.253	.238	.884
Acquaintance	-.076	.232	.108	.927
Stranger	-.536	.269	3.979	.585*
Unknown	.114	.262	.191	1.121
Constant	3.662	1.526	5.759	38.957*

Note. (b) = Un-standardized Regression Coefficient; S.E. = Standard Error; β = Odds Ratio

* $p < .05$

** $p < .01$

The 'Logistic Regression Male and Female Offender Model' has a sample of N=174,942. In this model the non-lethal incidents totaled 173,016, while the lethal

incidents totaled 1,926. With regard to the 'victim age' variable, the model showed a significant negative relationship. The odds ratio of 0.978; indicates that the older a victim is the greater the probability that the incident will result in a lethal outcome rather than a non-lethal outcome.

The 'offender age' variable, in the model shows a significant negative relationship. The odds ratio of 0.992; indicates that the older an offender is the greater the probability that the incident will result in a lethal outcome rather than a non-lethal outcome.

The 'female offender' variable was found to have a significant negative relationship. With an odds ratio of 0.392, the analysis of the data indicates that a non-lethal outcome would likely be the result of an incident where there was a female offender.

The 'female victim' variable was found to have a significant negative relationship. With an odds ratio of 0.413, the analysis of the data indicates that a non-lethal outcome would likely be the result of an incident where there was a female victim.

The 'argue'/argument motive variable was found to have a significant negative relationship. The odds ratio has a value of 0.080 these findings indicate that incidents involving an argument motive will more likely result in a non-lethal outcome.

The 'firearm' variable was found to have a significant positive relationship. The odds ratio has a value of 13.158, the analysis indicates that incidents involving firearm will more likely result in a lethal outcome.

The 'knife' variable was found to have a significant positive relationship. The odds ratio has a value of 2.670, the analysis indicates that incidents involving knife will more likely result in a lethal outcome.

The 'personal weapon' variable was found to have a significant negative relationship. The odds ratio has a value of 0.697, the analysis indicates that incidents involving personal weapon will more likely result in a non-lethal outcome.

The 'intimate partner' variable was found to have a significant positive relationship. The odds ratio has a value of 13.158; the analysis indicates that incidents involving an intimate partner will more likely result in a lethal outcome.

The 'stranger' variable was found to have a significant negative relationship. The odds ratio has a value of 0.585; the analysis indicates that incidents involving a stranger will more likely result in a non-lethal outcome.

The 'constant' variable was found to have a significant positive relationship; with an odds ratio of 38.957.

Table 2.

Logistic Regression Male Offender Model (N=136,995)

Variable	(b)	S.E.	Wald	β
Victim Age	-.021	.003	49.863	.366**
Offender Age	-.008	.003	7.101	.992**
Female Victim	-1.006	.140	51.566	.366**
Black Victim	.138	.131	1.111	1.148
Black Offender	-.045	.131	.117	.956
Argument	-2.542	.131	376.276	.079**
Home	.544	.419	1.688	1.722
Street / Parking lot	.340	.424	.642	1.405
Commercial Business	.569	.434	1.890	1.815
Other	.727	.434	2.809	1.069
Firearm	.2489	.113	488.527	12.045**
Knife	.970	.132	53.805	2.637**
Personal Weapon	-.358	.163	4.855	.699*
Intimate Partner	.691	.275	6.293	1.995*
Other Family	-.085	.270	.099	.918
Acquaintance	-.016	.248	.004	.984
Stranger	-.491	.284	2.978	.612
Unknown	.203	.277	.539	1.225
Constant	2.208	1.633	1.828	9.094

Note. (b) = Un-standardized Regression Coefficient; S.E. = Standard Error; β = Odds Ratio;

* $p < .05$

** $p < .01$

The 'Logistic Regression Male Offender Model' has a sample of N=136,995. In this model the non-lethal incidents totaled 135,332, while the lethal incidents totaled

1663. With regard to the 'victim age' variable, the model showed a significant negative relationship. The odds ratio of 0.366; indicates that the older a victim is the greater the probability that the incident will result in a lethal outcome rather than a non-lethal outcome.

The 'offender age' variable, in the model shows a significant negative relationship. The odds ratio of 0.992; indicates that the older a male offender is the greater the probability that the incident will result in a lethal outcome rather than a non-lethal outcome.

The 'female victim' variable was found to have a significant negative relationship. With an odds ratio of 0.366, the analysis of the data indicates that a non-lethal outcome would likely be the result of an incident where there was male offender and a female victim.

The 'argue'/argument motive variable was found to have a significant negative relationship. The odds ratio has a value of 0.079 these findings indicate that incidents involving an argument motive will more likely result in a non-lethal outcome.

The 'firearm' variable was found to have a significant positive relationship. The odds ratio has a value of 12.045, the analysis indicates that incidents involving firearm will more likely result in a lethal outcome.

The 'knife' variable was found to have a significant positive relationship. The odds ratio has a value of 2.637, the analysis indicates that incidents involving knife will more likely result in a lethal outcome.

The 'personal weapon' variable was found to have a significant negative relationship. The odds ratio has a value of 0.699, the analysis indicates that incidents involving personal weapon will more likely result in a non-lethal outcome.

The 'intimate partner' variable was found to have a significant positive relationship. The odds ratio has a value of 1.995; the analysis indicates that incidents involving an intimate partner will more likely result in a lethal outcome.

Table 3.

Logistic Regression Female Offender Model (N=37,947)

Variable	(b)	S.E.	Wald	β
Victim Age	.037	.008	18.741	.964**
Offender Age	.007	.009	.574	.993
Female Victim	-.547	.358	2.339	.579
Black Victim	-.728	.405	3.240	.483
Black Offender	.628	.406	2.387	1.873
Argument	-2.127	.791	7.234	.119**
Home	-.411	1.036	.157	.663
Street / Parking lot	-.283	1.076	.069	.753
Commercial Business	-.273	1.127	.059	.761
Other	.641	1.072	.358	1.899
Firearm	3.246	.318	103.901	25.686**
Knife	1.254	.324	12.935	3.504**
Personal Weapon	-.793	.644	1.516	.453
Intimate Partner	.205	.646	.101	1.228
Other Family	-.276	.726	.145	.759
Acquaintance	-.514	.656	.613	.598
Stranger	-.308	.886	.121	.735
Unknown	-1.247	1.187	1.105	.287
Constant	7.006	4.356	2.587	1103.233

Note. (b) = Un-standardized Regression Coefficient; S.E. = Standard Error; β = Odds Ratio

* $p < .05$

** $p < .01$

The 'Logistic Regression Female Offender Model' has a sample of N=37,947. In this model the non-lethal incidents totaled 37,684, while the lethal incidents totaled 263.

With regard to the 'victim age' variable, the model showed significant positive relationship. The odds ratio of 0.964; indicates that the younger a victim is the greater the probability that the incident will result in a lethal outcome rather than a non-lethal outcome.

The 'argue'/argument motive variable was found to have a significant negative relationship. The odds ratio has a value of 0.119 these findings indicate that incidents involving an argument motive will more likely result in a non-lethal outcome.

The 'firearm' variable was found to have a significant positive relationship. The odds ratio has a value of 25.686, the analysis indicates that incidents involving firearm will more likely result in a lethal outcome.

The 'knife' variable was found to have a significant positive relationship. The odds ratio has a value of 3.504, the analysis indicates that incidents involving knife will more likely result in a lethal outcome.

CONCLUSION

Analyses of these three models indicates significant relationships between: victim age, offender age, female victim, argument, type of weapon, and intimate partner relationship and the lethality of an incident's outcome was found to be significant will also be discussed. First, victim and offender characteristics will be interpreted and discussed followed by the offense characteristics. Each of these variables will be considered individually. If the significance level of a variable is less than 0.05, the relationship is found to be significant and is included in the discussion.

Victim Characteristics

The first variable, victim age, was found in models one and two to have a negative relationship, and in model three to have a positive relationship. The findings of models one and two indicate that as the victim age increased the probability for a lethal outcome increased as well. Therefore, the older a victim is at the time of attack the more likely that the incident will result in a lethal outcome. This supports the findings of Culliver (1993) and Wolfgang (1958), who both had high age averages (most victims of homicides falling between the ages of 25-40) in their studies. Model number three, the female offender model, indicates that as victim age decreases the probability of a lethal outcome increases. This is consistent with the literature on female offenders where it is shown that women more often victimize those that are closest to them, in particular

their children or children under their care (Alder & Polk, 2001; Chesney-Lind, 2004; Englander, 1997; Oberman, 2002; Paulsen & Brewer, 1999; Pearson, 1998; Websdale, 1999; Wolfgang, 1958). Further, the literature of Felson (1996) finds that women are more likely to attack other women or children rather than men because they are of a similar stature or smaller.

The next variable, female victim was found to have similar outcomes across the models. Unlike the first variable, female victim was found to have a negative relationship across all models. The analysis indicated that in incidents where the victim was female, the outcome was more likely to be non-lethal in nature. These findings run concurs with domestic abuse literature that shows the majority of violent victimizations are non-lethal, and many of the victims now have a way out of an abusive situation (Browne et al., 1999, Rosenfeld, 1997, Farmer & Tiefenthaler, 2003). Conversely, when the victim is male the findings indicate that the incident will more likely result in a lethal outcome. This concurs with the past literature, on both the general trends of violence (see Zahn & McCall, 1999), as well as the literature pertaining to male-male violence. This literature finds that lethal violence is both predominantly committed by males and inflicted upon males (see Riedel & Welsh, 2002, Mann, 1993, & Wolfgang, 1958).

Offender Characteristics

The variable, offender age, was found to have a significant negative relationship in models one and two; it was not found to be significant in model three. In the Male and Female Offender model and the Male Offender model, analysis found that when as

the offender age increased the likelihood of a lethal outcome decreased. This is consistent with the literature of Sampson & Laub (2005) and Laub & Sampson (2006) that found that most offenders age out of violent crimes in general, and that the majority of homicides are committed by younger offenders, those in their late teens through their twenties, not older offenders.

The variable female offender was found have a significant negative relationship in model one. The analysis found that if the offender was female the outcome was likely to be non-lethal. This runs congruent with the literature, which finds that males commit the majority of the homicides in the U.S. (Zahn & McCall, 1999; Riedel & Welsh, 2002; Mann, 1993; and Wolfgang, 1958).

Offense Characteristics

The offense characteristic variable, 'argument' circumstance, the analysis found that when there was an argument reported the offense was more likely to result in a non-lethal outcome across the models. This is contrary to literature looking at homicides, such as Riedel and Welsh (2002) and Mann (1993). However, when looking at the relationship literature it shows that many of the encounters involve some dispute; most however do not escalate into lethal violence (Hirschinger et al. 2003, Websdale, 1999).

The offense characteristic variables that are associated with weapon use were found to be significant in all models. The use of a firearm, knife, or personal weapon was found to be significant in models one and two. In those models firearms and knives were found to have a positive relationship and indicated a lethal outcome. This concurs

with the literature of Wolfgang (1958) and Mann (1993), both of which found that firearms or knives were often used in the commission of homicides.

The use of a personal weapon was found to have a significant negative relationship in models one and two, and was not found to be significant in model three, the Female Offender model. The relationship found in models one and two are congruent with the domestic violence literature that reports that incidents of spousal violence often used personal weapons in the abuse along with verbal assaults. This physical abuse, which consists of slapping, punching, and/or biting, is used much more than other weapons, and is more often associated with non-lethal outcomes (Lawson, 2003; Migliacco, 2001; Sarantakos, 1999; Rosenfeld, 1997, Harris & Cook, 1994; Stanko & Hobdell, 1993; Mercy & Saltzman, 1989).

The relationship variable includes intimate partner, other family, acquaintance, stranger and unknown as categories and was run as a contrast variable in all three models. The intimate partner variable was found to be found significant in the analyses of across all of the models. The importance of the intimate partner relationship is seen in the literature. The studies that have created the intimate partner category for analyzing the victim-offender relationship have found that this relationship is the most lethal for females (Paulsen & Brewer, 2000, Websdale, 1999, & Wilson, Johnson, & Daly, 1995).

The stranger relationship is found to be significant only in model one; where it predicted a non-lethal outcome. This runs concurrent to the literature, which shows that a violent encounter with a stranger often doesn't result in a lethal outcome; most often

the violent encounter between strangers is felony related or non-felony related (Wolfgang, 1958; Messner & Tardiff, 1985; Reidel, 1987; and Riedel & Welsh, 2002).

The Logistic Regression Male and Female Offender Model is used to analyze the first hypothesis. Hypothesis (1) previously states that violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome. The analysis of the Logistic Regression Male and Female Offender Model found that sex of the offender was significant when predicting lethality. If the offender is female the outcome is predicted to be non-lethal and, conversely if the offender is male the outcome is predicted to be lethal. This supports the hypothesis and concurs with the literature, which finds that males commit the majority of the homicides in the U.S. (Zahn & McCall, 1999; Riedel & Welsh, 2002; Mann, 1993; and Wolfgang, 1958).

The Logistic Regression Male Offender model is used in the discussions for hypothesis (2a) through hypothesis (2d). Hypothesis (2a) states that incidents involving the victim-offender relationship of 'stranger' are more likely to be lethal if the offender is male; this hypothesis is not supported by the findings. It was found that the victim-offender relationship is significant when determining the lethality of a violent encounter. However, the Logistic Regression Male Offender model showed that incidents that involved both strangers and male offenders will most likely result in a non-lethal outcome. This runs contrary to the literature by Wolfgang (1958) of which show that it is the male offender that commits stranger homicide. However, Riedel and Welsh (2002), say that though males do commit the majority of stranger homicides,

they also commit the majority of stranger non-lethal offenses as well, which runs congruent with the findings of the analysis.

Hypothesis (2b) stated that violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome when the encounter involves a 'personal weapon' or a 'knife'. The analysis indicates that both 'personal weapons' and 'knives' are both significant factors when determining the lethality of a violent encounter. The use of a knife was found to predict a lethal outcome throughout all three models; while the use of a personal weapon was found to predict a non-lethal outcome. These findings are both congruent and contrary to the studies done by Wolfgang (1958) and Mann (1993), both of which found that both knives and personal weapons were used in great number in the commission of homicides. However, neither of these studies looked at non-lethal offending, which would have indicated that though both weapons are used a great deal in homicides, they are also utilized in non-lethal violent encounters.

Hypothesis (2c) states that violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome when the encounter occurs in the location 'home'. The analysis did not find that the 'home' was significant in predicting a lethal versus non-lethal outcome in any of the models run. 'Home', however, was found to be significant when looking at the existing literature on homicide. Wolfgang (1958), Mann (1993), and Messner and Tardiff (1985) all found that the home was the location where most homicides occurred. However, much of the domestic abuse literature finds that most domestic abuse occurs within the

home/residence location. As can be seen in the previous analysis of both familial and intimate relationships, most of the violence while repetitive, is not necessarily lethal in nature (Hirschinger et. al., 2003; Alder & Polk, 2001; Englander, 1997; Pearson, 1998; and Websdale, 1999).

Hypothesis (2d) states that violent encounters that are perpetrated by a male offender are more likely to result in a lethal outcome than a non-lethal outcome when the encounter involves the circumstance ‘argument’. ‘Argument’ was found to be significant when determining the likelihood of a lethal versus non-lethal outcome across all models including the Logistic Regression Male Offender model. However, the model predicted that the outcome would more likely be non-lethal. Therefore, the hypothesis is rejected.

The Logistic Regression Female Offender model is used in the discussions for hypothesis (3a) though hypothesis (3c). Hypothesis (3a) states that violent encounters that are perpetrated by a female offender are more likely to result in a non-lethal outcome than a lethal outcome when the victim-offender relationship is ‘stranger’. This is not supported by the analysis, as the relationship variable ‘stranger’ was not found to be significant in the Female Offender model. However in Male and Female Offender model found that overall when females are the offenders the predicted result was a non-lethal outcome. Women, as stated previously in the literature, are least likely to be the offender in incidents where there is no preexisting relationship. Instead, when reviewing the past literature it is those that they have an already existing relationship with, such as

intimate partner, family, friends, and acquaintances that they are more likely to victimize (Hirschinger et al., 2003; Pearson, 1998; Mann, 1993; Wolfgang, 1958).

Hypothesis (3b) previously states violent encounters that are perpetrated by a female offender are more likely to result in a non-lethal outcome than a lethal outcome when the incident involves a ‘personal weapon’. This hypothesis is not supported. The weapon variable ‘personal weapon’ was found not to be significant in the Female Offender model. These findings are contrary to the literature, as seen in Mann (1993) and Wolfgang (1958) which found that when females are the offenders of lethal violence the weapons used are firearms or knives. Much of the domestic violence literature that discusses female violence found that verbal and physical abuse, such as slapping, punching, and/or biting, is used much more than weapons, and is more often associated with non-lethal outcomes (Lawson, 2003; Migliacco, 2001; Sarantakos, 1999; Rosenfeld, 1997, Harris & Cook, 1994; Stanko & Hobdell, 1993; Mercy & Saltzman, 1989).

Hypothesis (3c) states that violent encounters that are perpetrated by a female offender are more likely to result in a non-lethal outcome than a lethal outcome when the incident involves the circumstance ‘argument’. This hypothesis is supported. ‘Argument’ was found to be significant when determining the likelihood of a lethal versus non-lethal outcome across all models including the Logistic Regression Female Offender model. ‘Argument’, while an aggravating factor in many situations, is shown to be less likely to result in a lethal outcome rather than a non-lethal outcome.

Marcus Felson (1998) states that the goal of routine activities theory is to predict property crime. This paper expands that goal to predict the likelihood of lethal vs. non-lethal outcomes in violent encounters. The motivation model proposed by Richard Felson can be used in conjunction with routine activities theory to explain the incidents of lethal and non-lethal violence when looked at in relation to the variables in this study. The variables included in this study, race, sex, age, relationship, location, circumstance and weapons, have been examined for their ability to predict lethality. To do this may sound like profiling the victim, the offender, or an area; however it is the predictability of lethal outcomes that can be useful in the future.

NIBRS is still a relatively new data source and is not reported on nationwide. For the years examined only 20 states reported incident data to NIBRS, and the reporting is not state-wide. Furthermore, the areas that are reporting are usually rural rather than urban areas. Reporting has risen in past years; however, much like with the creation of the UCR, it will take time for more law enforcement agencies to make NIBRS the standard procedure when reporting crimes. Through the use of NIBRS in studies such as this one, the usefulness of NIBRS is validated. Later other law enforcement agencies might begin to recognize NIBRS as the successor to the UCR data source. The lack of reporting can be problematic when trying to generalize data to all areas of violent offending, in particular when comparing NIBRS data to that gathered in urban areas. By re-examining this data at a later date, after NIBRS has become more utilized by law enforcement agencies as a reporting system, the data that is collected will more likely yield additional generalize-able results.

The focus of this paper is to determine if the victim and the offender characteristics, along with the situational factors, influence the lethality of a violent encounter. Though some hypotheses were rejected or found not to be significant, this study did find several significant relationships in areas that prove this data subset concurs with previous research. Though not all of the variables were proven to be significant for predicting lethality, this study is tackling a new source of data. This study is a valuable tool to use when examining lethality. Furthermore, though lethal outcomes are rare, as the models and previous research show, the occurrence of the violent encounters, both lethal and non-lethal, indicates the need to continue to examine the factors related to lethality.

Future research can focus on the motivation aspects of lethal versus non-lethal outcomes. While NIBRS does not provide data on motivation, a survey of prisoners could. By tracking incidents from NIBRS through media sources, the offenders could be found and later interviewed to gather additional information on an incident. This would yield a motivation variable that would be available to be tested at a later date. Also, lethality, demographic and contextual variables can be further examined in later studies by using independent variables such as victim-offender relationship and location, and running them as dummy variables rather than contrast variables to analyze if the modification would significantly change the predicted outcome.

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