

Risk Factors for Intimate Partner Homicide

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Dedications

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Abstract

Risk Factors for Intimate Partner Homicide

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The current study examined the following risk factors identified by Campbell et al. (2003) as the factors most informative in identifying victims of intimate partner violence at the greatest risk for homicide in the health care and other systems: suspect unemployed; victim having a child in the home from a previous sexual partner; separation after living together; prior threats with a weapon; abuser access to a gun; and prior threats to kill. A total of 32 intimate partner homicide cases and 77 intimate partner violence aggravated assault cases from the years of 1985 through 2005 were reviewed. Results of a logistic regression analysis revealed support for discrimination between groups based upon a final model consisting of the following two risk factors: separation after living together and abuser access to gun. This finding confirmed previous findings that these two factors are among the three risk factors with the strongest empirical support in the literature (Campbell, Sharps, & Glass, 2001).

CHAPTER 1: INTRODUCTION

Domestic violence represents a serious social problem and public health concern in this country (Centers for Disease Control and Prevention, 2003; Koop & Lundberg, 1992) and in the world (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). This issue is not recent; domestic violence has been a longstanding part of our society. Although not exclusively experienced by women as victims according to data from at least two national surveys (Straus & Gelles, 1980; 1986), official statistics reflect that the majority of domestic violence filings are initiated by women. For example, records from New Jersey indicated that approximately 79% of all domestic violence filings from the year 2000 were initiated by women (Williams, 2001). Also, other national surveys have found that women experience substantially more domestic violence than men (Tjaden and Thoennes, 1998). Irrefutably, women are killed more often than men by their partners in domestic violence situations (Bureau of Justice Statistics, 2004), and when women are the perpetrators of homicide, it is quite often in defense of violence initiated against them (Wolfgang, 1958; Wilson & Daly, 1992). Reasons for these gender-based differences in domestic violence and domestic homicide have some historical roots.

One aspect of domestic violence is the patriarchal domination of women, a common element of many societies worldwide (Lemon, 1996). For the most part, the subordination of women in this country went uncontested until the Women's Liberation Movement in 1849, which eventually successfully lobbied for the right to vote in 1920 (Martin, 1976). While the Women's Liberation Movement fought for many privileges and rights of women in this country over the next several decades, it was not until the

1960s and 1970s that the topic of domestic violence was being more openly discussed (Schechter, 1982).

During the 1970s and continuing to present times, affected women united to form a battered women's movement to end domestic violence. Scientific and popular writing on topics of domestic violence proliferated, public awareness of the problem of domestic violence rose extensively, shelters and social service systems were established nationwide to deal with the issue, and legal reform was initiated (Lemon, 1996). The cumulative result of these efforts has at least contributed to a slight reduction in rates of domestic violence. According to the most recent data in New Jersey, between 1994 and 2000, the numbers of domestic violence complaints have reflected a small decline over the years (Williams, 2001). Likewise, nationwide, the estimated rate of nonfatal intimate partner violence dropped by almost 50% between 1993 and 2000 (Rennison, 2003). Despite these relative reductions in domestic violence, this form of violence remains the most common experienced by women in the United States.

The National Violence against Women (NVAW) survey, sponsored by the National Institute of Justice and the Centers for Disease Control and Prevention, reported that approximately 25% of surveyed women indicated they were raped and/or physically assaulted by a current or former spouse, cohabiting partner, or date at some time in their lifetime (Tjaden & Thoennes, 1998). The survey also found that women were substantially more likely than men to report being victims of rape, physical assault, or stalking than men. Further, the NVAW survey found that women are more frequently victims of long-term and severe physical abuse at the hands of their male intimate partners than vice versa (Tjaden & Thoennes, 1998). The survey also found a strong

relationship between physical abuse against women and emotional abuse or excessive control. Surveyed women who reported having partners that were verbally abusive, controlling, or jealous, were significantly more likely to report being raped, physically assaulted, and/or stalked by their partners, even when controlling for sociodemographic factors and relationship characteristics (Tjaden & Thoennes, 1998). Further, many of these incidents were apparently not reported to police. The NVAW Survey found that a mere 20% of all rapes, 25% of all physical assaults, and 50% of all stalkings experienced by surveyed women were reported to the police (Tjaden & Thoennes, 1998).

The overwhelming majority of violence against women is perpetrated in the context of an intimate relationship. The NVAW Survey found that 76% of surveyed women who reported being raped and/or physically assaulted since the age of 18 were assaulted by a current or former husband, live-in partner, date, or boyfriend (Tjaden & Thoennes, 1998). Moreover, the home—and intimate partners—are a high risk combination for violence toward women. According to a recent report of the Bureau of Justice Statistics on family violence between 1998 and 2002, 78% of non-fatal violent incidents committed by a spouse and 64% committed by a boyfriend or girlfriend occurred at or near the home, while only 16.9% of assaults by strangers occurred in or near the home (Durose et al., 2005).

The problem of domestic violence also causes a significant strain on service resources, such as police and medical personnel. With respect to law enforcement, domestic violence incidents make up the large majority of calls to which police respond. Ohlin and Tonry (1989) reported that family disturbance calls are more frequent than all other calls concerning violent incidents. Further, police are often responding to the same

homes repeatedly for domestic violence (John & Moose, 1997). Likewise, a large proportion of emergency medical patients are victims of domestic violence. A recent study found that more than 35% of all visits to the emergency room by women are related to domestic violence (Guth & Pachter, 2000).

1.1: Definition of Intimate Partner Violence

A major problem in conducting research on violence in general, and more specifically on intimate partner violence, is the lack of uniformity on how violence is operationally defined. In an effort to promote consistency in how intimate partner violence is researched and documented, the National Center for Injury Prevention and Control of the Centers for Disease Control promulgated some uniform definitions and data elements for the study of intimate partner violence (Saltzman, Fanslow, McMahon, & Shelley, 2002). The current study utilized these definitions and data elements, which are described in this section.

First, the term intimate partner needs to be defined. These authors state that intimate partners include “current spouses (including common-law spouses); current non-marital partners; dating partners, including first date (heterosexual or same-sex); boyfriends/girlfriends; (heterosexual or same-sex); former marital partners; divorced spouses; former common-law spouses; separated spouses; former non-marital partners; former dates (heterosexual or same-sex); former boyfriends/girlfriends (heterosexual or same-sex). Intimate partners may be cohabiting, but need not be. The relationship need not involve sexual activities. If the victim and the perpetrator have a child in common but no current relationship, then by definition they fit in the category of former marital partners or former non-marital partners. States differ as to what constitutes a common-

law marriage. Users of the “Recommended Data Elements” will need to know what qualifies as a common-law marriage in their state” (Saltzman et al., 2002, p.11).

These authors define intimate partner violence as follows: “Violence is divided into four categories: physical violence; sexual violence; threat of physical or sexual violence; and psychological/emotional abuse (including coercive tactics) when there has also been prior physical or sexual violence, or prior threat of physical or sexual violence” (Saltzman et al., 2002, p.11).

Physical violence is defined as the “intentional use of physical force with the potential for causing death, disability, injury, or harm. Physical violence includes, but is not limited to: scratching, pushing, shoving, throwing, grabbing, biting, choking, shaking, poking, hair-pulling, slapping, punching, hitting, burning, use of a weapon (gun, knife, or other object), and use of restraints or one’s body, size, or strength against another person. Physical violence also includes coercing other people to commit any of the above acts” (Saltzman et al., 2002, p.11-12).

Under the category of sexual violence, a sex act (or sexual act) is defined as “Contact between the penis and the vulva or the penis and the anus involving penetration, however slight; contact between the mouth and the penis, vulva, or anus; or penetration of the anal or genital opening of another person by a hand, finger, or other object” (Saltzman et al., 2002, p.12).

Abusive sexual contact is defined as the “intentional touching directly, or through the clothing, of the genitalia, anus, groin, breast, inner thigh, or buttocks of any person against his or her will, or of any person who is unable to understand the nature or condition of the act, to decline participation, or to communicate unwillingness to be

touched (e.g., because of illness, disability, or the influence of alcohol or other drugs, or due to intimidation or pressure)” (Saltzman et al., 2002, p.12).

Sexual violence is divided into three categories: (1) “Use of physical force to compel a person to engage in a sexual act against his or her will, whether or not the act is completed”; (2) “An attempted or completed sex act involving a person who is unable to understand the nature or condition of the act, to decline participation, or to communicate unwillingness to engage in the sexual act (e.g., because of illness, disability, or the influence of alcohol or other drugs, or due to intimidation or pressure)”; (3) “Abusive sexual contact” (Saltzman et al., 2002, p.12).

Threat of physical or sexual violence is defined as “the use of words, gestures, or weapons to communicate the intent to cause death, disability, injury, or physical harm. Also the use of words, gestures, or weapons to communicate the intent to compel a person to engage in sex acts or abusive sexual contact when the person is either unwilling or unable to consent. Examples: "I'll kill you"; "I'll beat you up if you don't have sex with me"; brandishing a weapon; firing a gun into the air; making hand gestures; reaching toward a person's breasts or genitalia” (Saltzman et al., 2002, p.12).

Psychological/emotional abuse is defined as “trauma to the victim caused by acts, threats of acts, or coercive tactics, such as those on the following list. This list is not exhaustive. Other behaviors may be considered emotionally abusive if they are perceived as such by the victim. Some of the behaviors on the list may not be perceived as psychologically or emotionally abusive by all victims. Operationalization of data elements related to psychological/emotional abuse will need to incorporate victim perception or a proxy for it. Although any psychological/emotional *abuse* can be

measured by the IPV (Intimate Partner Violence) surveillance system, the expert panel recommended that it only be considered a type of violence when there has also been prior physical or sexual violence, or the prior threat of physical or sexual violence. Thus, by this criterion, the number of women experiencing acts, threats of acts, or coercive tactics that constitute psychological/emotional abuse may be greater than the number of women experiencing psychological/emotional abuse that can also be considered psychological/emotional violence” (Saltzman et al., 2002, p.12-13).

Psychological/emotional abuse, under this definition, can include a number of elements. These are as follows: (a) humiliating the victim; (b) controlling what the victim can and cannot do; (c) withholding information from the victim; (d) getting annoyed if the victim disagrees; (e) deliberately doing something to make the victim feel diminished (e.g., less smart, less attractive); (f) deliberately doing something that makes the victim feel embarrassed; (g) using money that is the victim’s; (h) taking advantage of the victim; (i) disregarding what the victim wants; (j) isolating the victim from friends or family; (k) prohibiting access to transportation or telephone; (l) getting the victim to engage in illegal activities; (m) using the victim’s children to control victim’s behavior; (n) threatening loss of custody of children; (o) smashing objects or destroying property; (p) denying the victim access to money or other basic resources; and (q) disclosing information that would tarnish the victim’s reputation” (Saltzman et al., 2002, p.13).

A violent episode is defined as “A single act or series of acts of violence that are perceived to be connected to each other and that may persist over a period of minutes, hours, or days. A violent episode may involve single or multiple types of violence (e.g.,

physical violence, sexual violence, threat of physical or sexual violence, psychological/emotional abuse)” (Saltzman et al., 2002, p.13).

A pattern of violence is defined as “The way that violence is distributed over time in terms of frequency, severity, or type of violent episode (i.e., physical violence, sexual violence, threat of physical or sexual violence, psychological/emotional abuse)” (Saltzman et al., 2002, p.13).

It is important to note that although this was the definitional scheme used in the current study, not all studies reviewed in this section used the standard definitions proposed by Saltzman et al. (2002). In fact, the terms used by researchers in the area of domestic violence and domestic homicide are as varied as the definitions. Such terms, used somewhat arbitrarily, include abuse, violence, assault, domestic violence, domestic abuse, intimate partner violence, spousal assault, intimate partner homicide, spousal homicide, and intimate partner femicide. It is exactly this arbitrary use of terms and varied definitional schemes that prompted Saltzman et al. (2002) to address this problem. These inconsistencies obviously cannot be reconciled in the context of this paper, but there are substantial difficulties in interpreting the existing research that uses different operational definitions. As such, the review of the literature presented here used the Saltzman et al. (2002) definitional scheme whenever possible.

For the current study, this definitional scheme (Saltzman et al., 2002) was used. It is also noteworthy that the general topics of domestic violence and domestic homicide cover more than intimate partners. However, the topics of intimate partner violence and intimate partner homicide were the focus of the current study. More specifically, it concentrated on male perpetrators and female victims of intimate partner violence and

homicide. As such, the current study utilized the term “intimate partner homicide” interchangeably with the term “intimate partner femicide,” which is defined as the killing of a woman by an intimate partner (Campbell et al., 2003), to refer to this specific aspect of intimate partner violence. The current study excluded other aspects of intimate violence, including male on male, female on female, or female on male.

1.2: Prevalence and Characteristics of Intimate Partner Violence

Results from a U.S. national survey (Straus, Gelles, and Steinmetz, 1980), found that 6.1% of all married couples are abusive to each other. Reporting on prevalence rates based on a 1985 national survey, Straus and Gelles (1990) described an annual rate of 11.6% of male to female partner violence. Fleming (1979) found that as many as 60% of married women experience some form of physical violence at least once during their marriage, and as many as 20% are the victims of continual abuse. Flitcraft (1992) reported that domestic violence is the leading cause of injury to women. In its most tragic form, domestic homicide can be considered one of the most pressing societal issues facing the members of our society today. The Bureau of Justice Statistics (2002) indicate that 1,202 females were murdered by intimate partners. Although this number has steadily declined during the last 15 years--1990 (1,501 female intimate partner homicide victims), 1995 (1,317 victims), and 2000 (1,252 victims)--there are still more than three females killed by an intimate partner in the United States every day (Fox and Zawitz, 2004).

In 2002, the World Health Organization published its first ever report on violence and health (Krug et al., 2002), having declared violence a major public health issue in 1996. In the report, it is noted that intimate partner abuse is one of the most common

forms of violence directed toward women. Significantly, the report emphasized that this type of violence can be found world-wide, regardless of the country's socioeconomic standing, religious practices, or cultural groups within the country (Krug et al., 2002).

Annual costs of intimate partner violence have been estimated to be in excess of \$5.8 billion each year (Centers for Disease Control and Prevention, 2003). This figure includes costs for medical and mental health treatment, estimated at over \$4 billion each year, and costs for loss of wages, and lost productivity. Excluded from this figure are the costs associated with social services and law enforcement (Centers for Disease Control and Prevention, 2003). Other researchers have estimated the annual costs of domestic violence at around 67 billion dollars (Miller, Cohen, & Wiersema, 1996).

Results from The National Violence Against Women Survey (Tjaden & Thoennes, 2000), indicated that 7.7% of the responding females reported being sexually assaulted by an intimate partner during their lifetime, and .2% had been sexually assaulted during the past year. Extrapolating using U.S. Census Data, Tjaden and Thoennes (2000) concluded that approximately 7.7 million women have been sexually assaulted by an intimate partner during their lifetime, and approximately 200,000 women were sexually assaulted by an intimate partner during the past year. With respect to physical assault, the survey indicated that 22.1% of women (approximately 22.2 million) reported having been physically assaulted at least once in their lifetime by an intimate partner. Further, 1.3% of women surveyed indicated they had been physically assaulted by an intimate partner in the past year, estimated at about 1.3 million women (Tjaden & Thoennes, 2000).

Combining rape and physical assault, the survey indicated that 24.8% of women (about 24.9 million) reported having been raped and/or physically assaulted at least once in their lifetime by an intimate partner. During the year prior to the survey, 1.5% of women (about 1.5 million) reported being raped and/or physically assaulted (Tjaden & Thoennes, 2000). Stalking was reported by 4.8% of responding women (about 4.8 million), who described being stalked at least once in their lifetime by an intimate partner. Tjaden and Thoennes (2000) further reported that the survey indicated .5% of women surveyed were stalked by an intimate partner during the year preceding the survey.

The National Violence Against Women Survey indicated that a total of 25.5% of responding women reported that they had been victimized by an intimate partner at some time in their lives by rape, physical assault, and/or stalking, accounting for an estimated 25.6 million women in the United States (Tjaden & Thoennes, 2000). During the 12 months prior to the survey, 1.8% of responding women reported being victimized in one of these ways (Tjaden & Thoennes, 2000). These researchers reported an annual victimization rate of 44.2 domestic violence assaults per 1,000 adult women, and 31.5 domestic violence assaults per 1,000 men over the age of 18. Tjaden and Thoennes (2000) further reported that the majority of physical assaults against women and men were relatively minor, involving behavior such as slapping, pushing, and hitting, with fewer reports of more serious violence (i.e., kicking or beating, or threatening with a knife or gun), and very few reporting actual use of a knife or gun.

There have been numerous other studies that have reported on the prevalence of domestic violence. Dearwater et al. (1998) collected survey data on domestic abuse from

1995 through 1997 at 11 hospital emergency rooms in Pennsylvania and California; over 3000 women completed the surveys. The prevalence rates reported by responding women were 14.4% for sexual or physical abuse during the past year, and 36.9% for emotional or physical abuse at least once during their lifetime. These rates are much higher than those reported by the National Violence Against Women Survey. However, the difference in these rates could be the result of differing definitional schemes between the two studies. Whereas the National Violence Against Women Survey reported on the lifetime prevalence of rape, physical assault, and/or stalking, the Dearwater et al. (1998) study combined emotional and physical abuse.

Some research on prevalence rates of domestic violence indicates that a large proportion of survey respondents described a relatively calm approach to handling family and relationship problems (Sorenson, Upchurch, & Shen, 1996). Using data from the National Survey of Families and Households, Sorenson et al. (1996) found that the majority of survey participants reported having intense arguments occasionally. The majority of respondents also reported that they never physically assaulted their partner. The investigators also reported that women were slightly more likely to report being physically violent than men (Sorenson et al., 1996).

Correspondingly, one of the more surprising findings of both the 1975 and 1985 National Family Violence Surveys (Straus et al, 1980; Straus & Gelles, 1986) was that women within the family were slightly more frequently violent than men. The annual rate of intimate partner violence reported by Straus and Gelles (1990) was 12.4% for female perpetrated violence and 11.6% for male perpetrated violence. Moreover, a recent meta-analysis of 82 studies comparing male and female intimate violence found that

females were as likely as or somewhat more likely than males to engage in physical violence against their partner (Archer, 2000). Several explanations of this finding have been offered, primarily centering around the use of the Conflict Tactics Scale (Straus, 1990) to measure intimate partner violence.

For example, the introductory material provided to respondents completing the Conflict Tactics Scale has been criticized for normalizing fighting among couples and asking how often acts have occurred rather than if they had occurred (Saunders, 2002). Tjaden and Thoennes (2000) noted that this may lead females to overreport the frequency of their physical violence within this context. As mentioned earlier, often, intimate violence perpetrated by women is in defense of violence initiated against them (Wolfgang, 1958; Saunders, 1986). However, because the Conflict Tactics Scale asks respondents about both victimization and perpetration of violence, this may compel respondents to compare their own violent acts with those of their partner, instead of just focusing on their victimization (James, 1999; 2005).

Saunders (2002) stated that aggressive acts that occur in the context of “normal conflict” could be less severe in nature than those that occur in the context of severe male domination, a less frequent, but more serious situation. This could explain why data from research with criminal and clinical samples reveal higher prevalence rates for male-perpetrated intimate violence than research with family and community samples showing more equivalent levels of intimate violence between genders (Archer, 2000). Other researchers have argued that this could be due to the tendency of males to underreport their violence against their partners (Currie, 1998).

Sorenson et al. (1996) identified several sociodemographic variables associated with a greater risk of physical violence in domestic situations. For example, married women from urban areas were 40% more likely to indicate being physically victimized by their husbands in the past year than suburban wives. Sorenson et al. (1996) also found that survey participants with less than a high school education reported having a higher prevalence of domestic assault, while participants with college degrees reported less physical violence. Likewise, respondents with low income reported more physical violence than higher income respondents. With regard to race, both Blacks and Hispanics reported less physical violence than Whites. Respondents under the age of 30 were more likely to report physical violence, while those over 50 years of age were less likely to report physical violence (Sorenson et al., 1996).

There is also evidence about the nature and prevalence of intimate partner violence outside of North America. Krug et al. (2002) reported between 10% and 69% of women from around the world reported being the victim of physical violence at the hands of an intimate partner at some time in their lives. These percentages were based on a review of 48 population-based studies conducted in different parts of the world between 1982 and 1999. Prevalence rates of women who had been assaulted by a partner in the previous 12 months ranged from 3% or fewer women in Australia, Canada, and the U.S., to 52% of Palestinian wives in the West Bank and Gaza Strip. The actual percentage of women reported in US study was 1.3%, but this study looked at a sample that included women who had never been in a relationship, and hence, obviously never experienced intimate partner violence. Further, it is important to note that differences in definitions of physical violence among the studies, as well as those surveyed (e.g., victim versus

perpetrator) may account for varying levels of reported violence. As mentioned earlier, this problem is commonplace in the literature on this topic, and one of the reasons the CDC (Saltzman et al., 2002) published its definitional scheme in an attempt to improve research in this area.

Krug et al. (2002) reported that the violence reported by many women was not unique, but one of many violent assaults they had endured from men who have engaged in repeated and various types of abuse. For example, these researchers reported that among 613 abused Japanese women, over half of them had endured a combination of psychological, physical, and sexual abuse. Another significant finding was that women who are abused seem to be victimized repeatedly. Krug et al. (2002) reported that 60% of women in León, Nicaragua who reported being assaulted during the previous year had been assaulted more than once, and 20% reported significantly violent attacks occurring more than six times.

1.3: Societal Attitudes Toward Intimate Violence: Historical and Current

The history of the subordination of women has been formed by four basic concepts that have been fundamental aspects of human existence (Zahm, 1999). The first of these concepts is that of hierarchy, which refers to a system of authority whereby a small group of individuals or sub-groups rule the hierarchy and have power over others by controlling life's essentials such as food, property, shelter, medicine, transportation, education, money, and jobs. Historically, the majority of people become part of the hierarchy only by being born into the ruling social class (Zahm, 1999).

The second of these concepts is that of patriarchy, a system of authority that incorporates gender into the hierarchy by establishing a rule that only males born of the

ruling class are capable of controlling the basic resources. Under this system, women are denied access to the control of any essential resources, and have no rights or civil liberties (Zahm, 1999).

According to Zahm (1999) the second two concepts that formed the subordination of women are ideologies of gender. One such ideology--misogyny--is the view that gender characteristics require the subordination of women, based on perceived negative personality traits such as being untrustworthy, illogical, or childlike. The second ideology is that of polarity, which is the view that men and women are opposites. Therefore, if men are fair and powerful, women must be wicked and frail (Zahm, 1999).

In America, early English settlers based their laws on the existing common-law of England, which was strongly influenced by patriarchal concepts. For example, during the early 1500s in Great Britain, Lord Hale, an English Jurist, established the edict that raping one's wife was not considered a crime (Lemon, 1996). Schechter (1982) observed that English common-law unequivocally allowed husbands to beat their wives in order to correct them, but that early American colonies tended to criminalize such behavior.

Pleck (1979) offered a similar observation, reporting that despite a common assertion that wife-beating was legal in early American times, several early states enacted laws criminalizing assault against a wife by her husband. In fact, the Massachusetts Bay Colony enacted a statute forbidding wife-beating in the year of 1655. It has been continuously reported in the scientific and popular literature that the "rule of thumb" originated from William Blackstone's codification of the laws of England in 1768 (Blackstone, 1979), specifically the common law right of a husband to chastise his wife with a stick no thicker than his thumb. For example, Straus and Gelles (1986) referred to

this rule in the beginning of their article to draw attention to the early codification of the common law right of men to physically discipline their wives, and the acceptance of this rule in U.S. courts through 1867 in North Carolina. Melvin and Rhyne (1998) reported that common law in this country adopted from Great Britain established the authorized use of certain objects, of a thickness not greater than the man's thumb, to discipline a wife. However, this rule is not found anywhere in Blackstone's writings, and seems to be an example of folklore perpetuated over the years (Sommers, 1994). According to Sommers (1994), folklorists believe the truer origin of the phrase "rule of thumb" came from woodworkers who, knowing their trade, used their thumbs at times to measure. Blackstone's commentaries do refer to ancient law that allowed a husband to "chastise" his wife, but he was forbidden from using any violence (Blackstone, 1979).

Although most states enacted laws prohibiting wife abuse in this country, there are some legal references establishing an acceptance of physical violence by a husband against his wife. For example, common law and dated local town ordinances of some areas reflected a general acceptance in our culture regarding the use of physical force by a husband to maintain control over his family. In a local town in Pennsylvania, an ordinance still in effect in 1976 allowed a husband to engage in physical violence against his wife any time before 10:00 P.M. everyday except Sunday (Margolin, 1981).

One of the major differences between intimate partner violence and other types of violence is highlighted by our societal values concerning how family members should behave toward each other; historically, inter-familial violence has been overlooked, disregarded, and left to be handled within the family itself, particularly by the man of the house (Gallup-Black, 2005). Over the years, this view has changed drastically as is

reflected by the social and legal history concerning this topic in our society. The highlights of the changing societal attitudes concerning domestic abuse are discussed next.

The early 1900s marked a period of paradoxical concepts concerning the role of women in our society at the time. On the one side of the paradox was the legal recognition of women's rights as citizens of this country by attaining the right to vote in 1920. On the other side was the continual subordination of women within the family and American culture. Within this context, members of our society struggled to understand family violence and how to deal with it. During this time, legal and mental health professionals offered recommendations that family courts provide a better way of handling domestic problems, through open discussion and resolution with linkage to social services (Dobash & Dobash, 1992). Then, in 1911, the first family court was established in Buffalo, NY, providing the precedent for diverting domestic violence offenders from the criminal justice system (Dobash & Dobash, 1992). This diversion of mostly male family violence offenders underscored the view that violence was a normative aspect of family life in America, and that the right of women to be free of violence within the home was not as important as the rights of men. This problem was reflected in the 1920s and 1930s with the writings of Sigmund Freud, who incorporated the concept of female masochism into his theories on human behavior and personality. Freud believed that women derived sexual pleasure from their experiences of violence (Dobash & Dobash, 1992).

During the next several decades, there was a continued struggle in our society with how to most effectively deal with domestic violence. Legal reforms were attempted,

but largely undermined. For example, in 1945, a California statute noted that "Any husband who willfully inflicts upon his wife corporal injury resulting in a traumatic condition, and any person who willfully inflicts upon any child any cruel and inhumane corporal punishments or injury resulting in a traumatic condition, is guilty of a felony, and upon conviction thereof shall be punished by imprisonment in the state prison for not more than 10 years or in the county jail for not more than 1 year" (Martin, 1976). That same year, a Superior Court Judge in San Jose, California, dismissed a murder charge against a husband, citing the California law as unconstitutional because it discriminated on the basis of gender by only concerning male offenders (Martin, 1976).

During the 1950s and 1960s, the civil rights movement arranged much of the foundation for the feminist movement (Schechter, 1982). Still, members of our society held the belief that issues of family violence were best resolved within the family and off-limits to stranger intervention. As an example of this view, in the infamous murder of Kitty Genovese in New York City in 1964, a group of witnesses watched as she was beaten to death and cried for help. Jolin (1983) noted that when some of these witnesses were later questioned about their lack of response, they reported that they thought the attacker was her husband, underscoring the societal view in the 1960s that violence between intimate partners was not something for which outside interference was appropriate.

In the 1970s, the feminist and women's rights movements gained tremendous momentum, marking the beginning of three decades of reform. Through the collective efforts of these women, our society finally began to recognize the severity of the problem of violence against women in the home, and how this problem had been ignored by our

society (Schechter, 1982). Another major move forward occurred in 1975, when the National Organization of Women established a National Task Force on Battered Women and Household Violence (Martin, 1976).

Straus (1974) emphasized that the women's movement of the 1970s brought about increased public recognition of rape and domestic violence as serious social problems. As a result of increased awareness of these problems, rape crisis centers and battered women's shelters were born. These institutions provided much-needed assistance to women in crisis, focusing on problems that had long been disregarded (Straus, 1974).

For the next fifteen years, the battered women's movement was bolstered by scholarly publications (Lemon, 1996), which led to increased awareness and the establishment of shelters and other services (Schechter, 1982). During the 1970s, there was increased research concerning the prevalence of wife battering and the ineffectiveness of the legal system in protecting women (e.g., Gelles, 1974; Straus, 1976). As a result of this research, legislation addressing spousal abuse began to be passed in the 1980s (Straus, 1992).

Straus et al. (1980) conducted the first large-scale study of family violence with the 1975 National Family Violence Survey. Straus (1992) stated that one of the main findings to come out of the survey was empirical support for a theory of family violence as originating from the cultural and social composition of our family structure. Mainly, these factors included patriarchal societal and family systems (Straus 1973, 1976) and implied cultural acceptance of marriage as a license to strike one's partner (Straus, 1976).

Straus (1992) also mentioned societal factors creating stress within families, such as poverty and racial discrimination, as contributors to family violence.

A decade later in 1985, another National Family Violence Survey was conducted (Straus & Gelles, 1986). Somewhat to their surprise, these researchers found large reductions in the frequency of child abuse and wife battering. Straus and Gelles (1986) suggested that changes in American society between 1975 and 1985 were at least partly responsible for this reduction. Two major changes they cited involved the increased economical independence of women and nationwide campaigns against child abuse and wife battering.

Although laws were enacted and/or revised to further criminalize domestic violence, prosecutors remained reluctant to charge, and juries to convict, such offenders. Studying murders in Houston, Texas, Lundsgaarde (1977) found that fewer than half of those who had killed an intimate or other close relative were prosecuted for their crimes. Eventually, however, legal advances culminated in the early 1990s when prosecutors began to charge domestically violent offenders even without the cooperation of the victim (Dobash & Dobash, 1992).

In 1994, Congress passed the Violence Against Women Act, the first of its kind, which established a source of funding for services for domestic violence victims, and training to law enforcement and court personnel. It also provided legal authority for civil litigation brought by a victim of domestic violence against her attacker (Lemon, 1996). Around this time, many states passed similar laws more specifically addressing domestic violence. For example, in 1991, New Jersey passed the Prevention of Domestic Violence Act, which provided both civil remedies (e.g., restraining orders) and criminal remedies

(e.g., criminal complaints) for domestic violence (New Jersey Judiciary Family Division, 2005).

1.4: Prevalence and General Characteristics of Intimate Partner Homicide

Some of the earliest investigations of homicide trends have found significant differences between intimate partner homicides and stranger homicides. For example, a classic study of homicides over a 20 year time period in the late 19th and early 20th centuries by male perpetrators in England and Wales revealed that approximately 50% of the victims were female intimate partners (Wolfgang, 1958). Almost a century later, Websdale (1999) found that approximately 1/3 of all homicides in the state of Florida in 1994 were related to domestic violence. Although domestic violence is not unique to the United States, the rate of intimate partner homicide in this country has been found to be five times higher than in other countries and even higher for African-Americans compared to Caucasians (Bixenstine, 1996). As noted earlier, the United States has a rate of intimate partner violence comparable to that of other industrialized countries such as Australia and Canada (Krug et al., 2002). However, the U.S. homicide rate is greater than 40 out of 55 other countries (Lim, Bond, & Bond, 2005). Regarding intimate partner homicide, there were 1,202 women and 388 men killed by an intimate partner in the U.S. in 2002 (Fox & Zawitz, 2004), while in Canada, there were only 67 women and 16 men killed by an intimate partner in this year (Statistics Canada, 2002). One important reason for the higher rate of intimate partner homicide in the United States could involve greater availability of firearms in the home (Hepburn & Hemnway, 2004). Comparing intimate partner homicide rates in the United States to those in England and Wales in 1999, Aldridge and Browne (2003) found the use of guns in intimate partner

homicide to be much more common in the United States. There were 92 women and 27 men killed in England and Wales in 1999 by a current or former partner, with only 6% of all victims being killed by a gun (Home Office Statistics, 2000). Conversely, in the United States in 1999, there were 1,218 women and 426 men killed by a current or former partner, with 59% of all victims being killed by a gun (Bureau of Justice Statistics, 2004).

According to the Bureau of Justice Statistics (2004), the murder rate for women killed by an intimate partner had remained relatively steady between 1976 and 1993, at an average of 1512 murders a year (Bureau of Justice Statistics, 2004; Fox & Zawitz, 2004). After 1993, the number of intimate femicides declined, reaching a low point in 2001 and 2002 at 1202 murders. Between 1976 and 2002, there were 544,909 homicides in the United States (Bureau of Justice Statistics, 2004). Of these, approximately 11% of those involved intimate relationships. Moreover, around one-third of all female murder victims are killed by an intimate partner, while only 3 to 4% of male murder victims are killed by their partners (Fox & Zawitz, 2004).

Over the years, the majority of intimate murder victims have been killed by their spouses, although this trend has declined substantially in recent years (Durose et al., 2005). For example, in 1976, 2174 intimates were killed by their spouses, compared to 804 in 2002. However, 662 intimates were killed by a boyfriend or girlfriend in 1976, compared to 731 in 2002 (Fox & Zawitz, 2004). Furthermore, the number of homicides of black intimates has declined in every gender and relationship category. That is not the case for whites, with the killing of white girlfriends being slightly more frequent in 2002 than in 1976 (Bureau of Justice Statistics, 2004). Of the 468,931 non-stranger homicides

recorded between 1976 and 2002, 6.9% of the total victims were murdered by their spouse (Bureau of Justice Statistics, 2004). Other family members were responsible for 7.8% of the non-stranger homicides, while boyfriends/girlfriends represented 4.4%. The remaining non-stranger homicide categories were for other acquaintances and relationship undetermined (Fox & Zawitz, 2004).

Regarding weapon type, the number of female intimates killed by guns has declined from 1120 in 1976 to 700 in 2002, while females killed by intimate partners with weapons other than a gun has slightly increased during that same time period. In general, guns seem to be the weapon of choice of intimate murderers, with over 2/3 of spouse and ex-spouse victims being killed using guns between 1990 and 2002 (Bureau of Justice Statistics, 2004). However the type of weapon used seems to depend upon the relationship, with girlfriends being more likely to be murdered by force than any other group, followed by wife and ex-wife (Fox & Zawitz, 2004).

In addition, the number of intimates killed in each racial and gender group declined as well. Between 1976 and 2002, the number of white females murdered by their partners peaked in the mid-1980s, then generally decreased after 1993. The lowest number of white female victims was recorded in 2002 at 775 victims (Bureau of Justice Statistics, 2004). The decrease in black female intimate victims was more substantial; it dropped by 49% over this same time period (Fox & Zawitz, 2004). Although the reasons for the differences in rate reductions between white and black victims of intimate partner homicide are unclear, reasons for the overall decline have been associated with efforts at increasing public awareness of the problem of domestic violence (Lemon, 1996; Straus & Gelles, 1986) and stricter domestic violence laws and enforcement of those laws (Buzawa

& Buzawa, 2003). A recent study addressing these differences found that the presence of shelters in urban counties was related to a decrease in Hispanic female victimization, but not for white or black victimization (Wells & DeLeon-Granados, 2005). Further, these researchers found no differences associated with the response of law enforcement and decreases among these three groups of women. Other researchers suggest that while shelters, domestic violence assistance programs, and an improved response by law enforcement may be chronologically associated with general rate reductions in homicide among all groups, more studies are needed to examine causal relations (Paulozzi et al., 2001). This is particularly true in regards to the differences in rates among divergent racial and ethnic groups.

The Bureau of Justice Statistics provides additional information on the characteristics of the domestically violent offender. For example, approximately 40% of all inmates who are in jail for domestic violence offenses were on probation, parole, or under a restraining order at the time of their offense (Fox & Zawitz, 2004).

Approximately 25% of all inmates serving time in local jails and 7% of all inmates serving time in state prison for violent offenses had an intimate victim. About half of all inmates serving time in local jails for violent crimes against intimates were under the influence of alcohol, with a reported average consumption of 10 drinks (Fox & Zawitz, 2004).

Greenfeld, Rand, and Craven (1998) compiled a report on intimate partner violence evaluating data gathered by the U.S. Bureau of Justice Statistics and the Federal Bureau of Investigation between 1976 and 1996. Homicide was ranked seventh as a cause of early death among all women in the United States, and ranked first among

African American females between the ages of 15 and 45. It has been estimated that only about half of all domestically violent acts were reported to law enforcement, with approximately 20% of those producing an arrest (Greenfeld et al., 1998).

1.4.1: Differences Between Stranger Homicides and Intimate Partner

Homicides. There are a number of differences between stranger homicides and intimate partner homicides. One involves how intimate partner murders differ from other murders in their preceding circumstances. In intimate murders, there has often been an established history of domestic violence and abuse that eventually ends in homicide (Websdale, 1999). This finding has been continually supported by the literature, and remains one of the strongest risk factors for intimate partner homicide (Campbell et al., 2003). An interesting corollary to this issue is the question of how often offenders who engage in intimate partner violence end up killing their partners, and whether the severity of the violence history affects whether there is an eventual murder. Unfortunately, these are difficult questions. There is apparently no research addressing this issue, nor any empirical support on the predictive validity of intimate partner homicide risk assessment tools.

Another way in which intimate partner homicide differs from other homicide is that some of the empirically supported risk factors for stranger and acquaintance murder are not risk factors for intimate partner homicide (Gallup-Black, 2005). For example, research has shown that living in a racially segregated neighborhood is a significant predictor of stranger and acquaintance murder among urban African-Americans, but is not a strong predictor of intimate partner murder among urban African-Americans (Peterson & Krivo, 1993).

Another distinction between intimate partner homicide versus other homicide concerns the gender of homicide offenders and their victims. Males are most often killed by strangers or acquaintances, whereas females are more likely than males to be killed by an intimate partner (Bureau of Justice Statistics, 2004; Durose et al., 2005).

Another factor that distinguishes intimate partner homicide from stranger and acquaintance homicide, which has received minimal attention in the literature, is urban versus rural locale. Until recently, this factor has largely been overlooked in the literature because most of the murders in this country, intimate and stranger alike, are committed in urban areas. Recent research, however, suggests that there is a greater risk for intimate partner homicide in rural areas, specifically associated with decreased population size and increased distance from a major city (Websdale, 1999). In his review of the FBI Supplemental Homicide Report Data File, Gallup-Black (2005) found that the average rate for intimate partner murder in rural areas (8.3 per 100,000) was significantly higher than the rate in urban areas (2.0 per 100,000). Reasons for this may include limited access to social programs, differential enforcement by police, availability of law enforcement response, and differences in beliefs and perceptions of domestic violence between urban and rural communities (Fishwick, 1993; Websdale, 1995; Websdale, 1999).

1.4.2: Age. Data from the FBI Supplemental Homicide Reports suggest that as the age difference increased between the victim and the offender, so did the murder rate (Mercy & Saltzman, 1989). Likewise, Daly and Wilson (1988) found that the prevalence of intimate partner homicide was four times as great in marital relationships with large

age differences. Younger individuals are more likely to be both victims and offenders in domestic homicide (Websdale, 1999).

1.4.3: Race and Ethnicity. Block and Christakos (1995) reported that African American women between the ages of 30 and 34 are the most frequent victims among all women, at the rate of 11 per 100,000 per year--far greater than white and Latina women. Homicide is the number one cause of death for black women under the age of 44 (Stark & Flitcraft, 1996). In particular, the spousal homicide rate has been estimated as 8.4 times higher for blacks than for whites (Mercy & Saltzman, 1989). Researchers have suggested that the higher rates of black domestic homicide may be more influenced by low socioeconomic class than by race, however (Centerwall, 1995).

Another explanation for higher rates of homicide among African-Americans may have to do with the response of police and health care workers to such events in those communities. Some researchers (e.g., Stark & Flitcraft, 1996) have argued that the law enforcement response to crime in black neighborhoods receives less attention until it spreads to more affluent white neighborhoods. As a result, violence within the family may receive a limited police response and consequently rise in lethality. However, studies on reporting practices have suggested that black women more readily report incidents of domestic violence than women of other races. Between 1993 and 1998, approximately two-thirds of victimized black women reported to police, as contrasted with about half of white women victims (Rennison & Welchens, 2000). But the limitation on available public services and response to domestic assault may account for such higher rates of domestic homicide among African American women, despite their greater willingness to report such offenses (Mann, 1988).

Some researchers have found a relationship between race and type of relationship in domestic homicides (Block & Christakos, 1995). For non-Latino African-Americans, murders were more often committed by a girlfriend or boyfriend. For non-Latino whites, spouses committed most of the murders. These researchers also observed that black female victims are more likely to have been killed by a separated partner.

1.4.4: Gender. Block and Christakos (1995) reported that among whites, between the years of 1965 to 1993, 220 men murdered women, compared with only 69 women who murdered men. Conversely, for non-Latino African-Americans, the risk of being killed by a partner was higher for men than for women, with 871 black men killing women, compared with 1077 black women killing men.

Marvin Wolfgang (1958) was one of the earliest researchers on homicide. He analyzed almost 600 murders from Philadelphia and found a striking difference between the murder of men and the murder of women in cases of domestic homicide. He identified 47 instances of female-perpetrated homicide against their husbands. In those cases, 28 of them involved some form of precipitation by the male victim. According to Wolfgang (1958), victim-precipitated offenses were those in which the victim was a “direct, positive precipitator in the crime. The role of the victim is characterized by his having been the first in the homicide drama to use physical force directed against his subsequent slayer” (p. 252). For example, Wolfgang (1958) found that in many deaths occurring as a result of a bar fight, it was the original aggressor who often died. Wolfgang (1958) also made reference to the battered wife who eventually killed her husband during a domestic altercation. However of the 100 instances of male perpetrated homicide against wives he identified, only 9 of them involved some form of precipitation

by the female victim. This early finding was consistent with later research addressing this same issue (Barnard et al., 1982).

Wilson and Daly (1992) used the term “Sex Ratio of Killing” (SROK) as a measure of the rate of female to male homicide per 100 committed by men against women. They reported the SROK to be 75 in United States, which is much greater than other Western countries including Canada (31), Australia (31), and Great Britain (23). One explanation for this has been the disproportionate amount of African-American females killing their partners in this country (Moore & Tennenbaum, 1994). These researchers found that the SROK in the United States would be 48 if African-Americans female killings were excluded.

1.5: Risk Factors for Homicide

Over the past few decades, researchers and clinicians have attempted to develop risk assessment approaches in domestic violence. Risk assessment in domestic violence has focused on identifying factors concerned with risk for re-offending and lethality risk factors. Some of these factors are significant for assessing risk of both of these behaviors, while others are more specific to one or the other. Extensive reviews on the research of both areas have concluded that there are some risk factors that overlap (Aldridge & Browne, 2003), while others are more specifically related to further abuse (Cattaneo & Goodman, 2005) or homicide (Campbell et al., 2003).

A number of researchers have described risk factors for homicide. These variables seem to be based on clinical experience and qualitative data, however, as there is relatively little research that has attempted to empirically validate several of these sets of risk factors. Sonkin, Martin, and Walker (1985) proposed one of the earliest such lists,

followed by Hart (1988). Sonkin et al. (1985) identified the following homicide risk factors: weapons in the home; use of weapons in prior abusive incidents; threats with weapons; threats to kill; and serious life-threatening injury in prior abusive incidents. These researchers also identified “Other Lethality Factors to be Assessed,” including suicide risk; frequency/cycle of violence; history of violence; substance use/abuse; assaults on other family members; previous criminal history; violence outside the home; isolation; proximity of victim and offender; attitudes toward violence; life stress; general mental functioning; physical health; and the therapist’s evaluation. Hart (1988) developed the following list of homicide risk factors: threats of homicide or suicide (primary); fantasies of homicide or suicide (primary); presence of weapons; obsessiveness about partner; centrality of battered women (batterer is isolated from other support systems); rage; depression; drug or alcohol consumption; access to the battered woman.

One of the first studies to rely upon official survey data to compile a list of risk factors was completed by Straus (1991). Relying on data from the 1975 and 1985 National Family Violence Survey, Straus (1991, 1996) listed out a number of risk factors for life threatening violence perpetrated by men in families. These included: three or more instances of violence in the previous year; two or more instances of violence in the previous year initiated by the man with three or more of the following: wife needed medical treatment for assault; police called during previous 12 months; man was drunk more than three times a year; man abused drugs in past year; man threatened to kill; man threatened his partner with a weapon in his hand; man owns a gun and threatens to use it; extreme male dominance or attempts to use it; physical abuse of a child; attitudinal

acceptance of violence; physically forces sex; extensive destruction of property; threats or actually killing a pet; history of psychological problems; assault on a non-family person or other violence crime; severe violence between partners; and verbal aggression toward partner.

Sonkin (1997) later modified his list of domestic homicide risk factors. The modified list included the following: frequency of violence, severity of violence, frequency of intoxication, drug use, threats to kill, forced or threatened sexual acts, and the woman's suicide attempts. On the latter risk factor, one study (Starke & Flitcraft) indicates that 30% of women who attempt suicide were abused by their partners.

Websdale (1999) identified the following risk factors for domestic homicide in his review of homicides in Florida: lengthy history of domestic violence; obsessively possessive beliefs and jealousy; victim attempting to leave the relationship; prior police involvement; prior criminal histories (usually involving violence); threats to kill; restraining orders issued; and alcohol or drug use (usually escalating). In another review of current domestic homicide risk factors (Campbell, Sharps, & Glass, 2001), the three main risk factors cited were a history of prior domestic violence, availability of handguns, and estrangement. Other risk factors that have received some support, although less consistent or strong, include violence outside the home, alcohol abuse, minority ethnicity, and unemployment (Campbell et al., 2001). For murder suicide, they cited guns, estrangement, and depression as specific risk factors. They also reported that abuse during pregnancy has been recently studied and found to be a potential risk factor (Campbell et al., 2001).

In their empirical study of intimate partner violence and intimate partner femicide in 11 cities, Campbell et al. (2003) identified several risk factors for homicide in the context of intimate partner relationships. Risk factors identified included the perpetrator's access to a firearm, prior threats with a weapon and threats to kill, stalking, forced sex, abuse during pregnancy, and estrangement, particularly when it was from a dominating perpetrator. These researchers also identified some factors associated with a lower risk of homicide, including never having lived together and having a previous arrest for domestic violence. Findings by Campbell et al. (2003) also revealed some key incident risk factors, which included situations in which the victim had ended the relationship to pursue a relationship with someone else and the use of a firearm by the perpetrator.

These researchers also looked at sociodemographic risk factors in an attempt to distinguish between homicide victims and abused women. Campbell et al. (2003) reported that being unemployed was the best sociodemographic predictor of homicide. Perpetrators who had a college education, as well as those with college degrees who were unemployed but actively seeking employment, were less likely to commit homicide. Interestingly, illegal drug use but not alcohol abuse was correlated with domestic homicide of women. Having a stepchild (non-biological child of the perpetrator) living in the home more than doubled the risk for homicide (Campbell et al., 2003). An even stronger risk factor, accounting for a nine-fold increase, was the combination of an extremely manipulative or dominating perpetrator and an estrangement after having resided in the same home.

When the perpetrator used a gun in an episode of domestic violence, the risk for homicide increased by forty-one times. In regard to prior domestic violence, Campbell et al. (2003) reported that seventy percent of all female homicide victims were abused by the partners who killed them prior to the homicide. These researchers identified this factor as the most important risk factor for homicide, and this was supported by their empirical findings.

In contrast to other studies comparing batterers and non-batterers, Campbell et al. (2003) found no difference between domestic abusers and domestic homicide offenders in their history of arrests for other crimes. Also inconsistent with much previous research, they found that a history of arrest for domestic violence actually reduced risk of femicide, while controlling for other risk factors. Campbell et al. (2003) suggested that perhaps a prior arrest for a domestic violence incident serves as a protective factor against homicide risk. Drug abuse by the male abuser had a significant effect on increased risk for femicide. However, this effect did not hold when previous threats and abuse were added to the iterative model (Campbell et al., 2003). The authors stated that drug abuse was correlated with a pattern of domestic violence that increased the risk for homicide.

Based on their iterative model, the following variables were identified as posing the greatest risk for femicide: prior history of domestic violence, perpetrator unemployed and not seeking a job, abuser access to gun, victim had child of previous partner in home, high control over victim with separation after living together, threatened victim with a weapon, and threats to kill victim (Campbell et al., 2003). These risk factors were the focus of the current study.

While many of the “lists” of risk factors described by those writing in this area have not been tested empirically, most of the individual risk variables included in those lists have been empirically researched. These factors are presented here with a discussion of the empirical research, turning first to a discussion of the factors presented by Campbell et al. (2003).

1.5.1: History of Domestic Violence. A number of empirical studies have suggested that a history of domestic violence is a risk factor for homicide (Arbuckle et al., 1996; Moracco et al., 1998; Mercy & Saltzman, 1989) as well as murder-suicide (Currens, 1991). Arbuckle et al. (1996) conducted a retrospective analysis of reports of the state office of the medical investigator from all femicides in New Mexico from 1990 to 1993. They reported significantly greater rates of previous injury in cases of intimate partner femicide than in non-intimate femicides. In their review of 586 femicides in North Carolina between 1991 and 1993, Moracco et al. (1998) found that almost 70% of the cases were preceded by a history of domestic violence. Moracco, Runyan, and Butts (2003) conducted a more recent study with similar findings. Reviewing medical examiner files of intimate partner femicides in North Carolina between 1991-1993, these researchers supplemented their data collection with phone interviews with the investigative officers. They found that a history of intimate partner violence was characteristic of approximately 70% of spousal murders and 64% of non-spousal intimate murders (Moracco et al., 2003). Further, Moracco et al. (2003) reported that prior history of domestic violence was associated with 78% of non-spousal homicides by former partners. Campbell (1981, 1992, Campbell et al. 2003) found that in approximately two thirds of intimate homicide cases, there has been a history of abuse prior to the murder.

Stark and Flitcraft (1996) reported that battering within the home is commonly observed to play an important part in the large majority of domestic homicides. These researchers argue that as the sense of feeling trapped in the relationship increases, so does the risk for abuse and homicide. Signs of entrapment included physical and sexual abuse, coupled with severe controlling behavior on the part of the abuser over all areas of the victim's life (Stark & Flitcraft, 1996).

Other researchers have found that for abusers in post-incident treatment, those who had inflicted serious injury on their victims during the most recent violence prior to treatment were more likely to recidivate post-treatment (Goodman, Dutton, & Bennett, 2000). Others have consistently found that most intimate partner homicides have involved abuse of the female partner at the hands of the male partner prior to her murder (Mercy & Saltzman, 1989; Moracco et al., 1998). Dobash, Dobash, and Cavanaugh (2004) reported that compared to homicides not involving an intimate partner, such intimate partner homicide offenders more often have a history of prior assaults on past female partners as well as on the partner they killed, tending to focus their violence against women.

Although there seems to be support in the literature for the relationship between prior domestic violence and intimate partner homicide, this information cannot be obtained easily from existing databases. Brown, Williams, and Dutton (1999) argued that it is difficult to obtain national estimates on the number of intimate partner homicides that were preceded by assault within the family, because this information is not gathered as part of official homicide data (such as the Supplementary Homicide Reports). Often this information comes from retrospective studies and may rely upon police reported

incidents. For example, Browne (1987) reported that in 85-90% of all intimate partner homicides in her study, police had responded to a report of domestic violence in the home at least once in the past 2 years. In 54% of these homicides, police had responded to the house at least 5 times. Research to date provides strong support for prior domestic violence as a risk factor for domestic homicide, and is regarded as the strongest predictor of such (Campbell et al., 2003).

1.5.2: *Unemployment and Poverty.* Unemployment has been shown to be a factor in domestic violence in general as well as recidivism of domestic violence. In their study of factors related to domestic violence recidivism in Dade County, Florida, Pate and Hamilton (1992) found that arrest for domestic violence increased recidivism for unemployed abusers, but decreased recidivism for employed abusers. A related issue is that men who are in batterer treatment programs who are unemployed, undereducated, and have lower incomes seemed to drop out of treatment more often than those who are not unemployed and have higher education levels (Daly & Pelowski, 2000; Daly, Power, & Gondolf, 2001). These men also tended to re-offend more often (DeMaris & Jackson, 1987).

Research has established an increased risk for intimate partner violence by both male and female perpetrators in areas of extremely low income (Cunradi, Caetano, Clark, & Schafer, 2000). Specifically, for African-Americans living in financially deprived areas, there was a greater risk for male perpetrated intimate partner violence. However, no racial differences were observed for female perpetrated intimate partner violence for African-Americans and Caucasians living in extremely low income areas (Cunradi et al., 2000).

A number of studies have linked unemployment to increased levels of partner violence. In their study of violence against women in Canada, investigators found that unemployment played an important role in the frequency of violence against women living with their partners (Brownridge, & Haii, 2001). Another study indicated that federally sentenced male abusers in Canada tended to be unemployed, undereducated, and in unskilled occupational positions (Johnson & Grant, 1999). Considering sociodemographic factors associated with domestic violence in Minnesota, Tauchen and Witte (1994) found lower levels of violence among men who were employed. When the man became unemployed, however, the risk of violence increased dramatically and abruptly. Unemployment and low socioeconomic status also seemed to be characteristic of females who become victims of domestic violence (Heise and Garcia-Moreno, 2002; Tolman, 1999).

Some researchers have argued that racial differences in homicide rates in this country can be attributed to sociodemographic differences. For example, Hampton and Gelles (1994) found that unemployment or part-time employment was related to increased levels of physical violence experienced by black women. Examining sociodemographic differences between non-Latino White, non-Latino Black, and Latino populations, Phillips (2002) argued that these differences may account for the varying levels of homicides among those groups in this country. She contended that controlling for socioeconomic variance eliminated the difference between homicide rates of intimate partners seen in White and Latino groups. Indeed, the homicide rate among Latinos would be lower than that of Whites. Similarly, increasing the sociodemographic characteristics levels for Blacks to those reported by Whites resulted in a 50% reduction

in the difference in homicide rates between Whites and Blacks. Phillips (2002) concluded that reducing poverty and unemployment, and increasing education among minority groups, could result in lower rates of homicide among these groups. Such a conclusion may be oversimplified, given the complex relationship between race and access to economic power in this country.

A study of unemployment and violent death (homicides, suicides, and accidents) in Chicago between 1970 and 1990 revealed that high rates of unemployment and family discord were associated with high rates of homicide and accidental death (Almgren, Guest & Imerwahr, 1998). In her review of spousal homicide in Detroit, Michigan between 1982 and 1983, Goetting (1989) found that the modal offender was a black man or woman, in his or her middle 30s, who was unemployed and had a lower level of education.

International studies of domestic violence have also found an association between unemployment and domestic homicide rates in Australia (Esteal, 1993), and unemployment and severe physical assaults in New Zealand (Magdol, Moffit, & Caspri, 1997). In research attempting to classify homicide offenders in Finland, researchers found the prototypical killer was an unemployed male with a history of alcohol abuse, not in a long-term relationship, killing someone he knew in a familiar setting (Santtila, Hakkanen, & Canter, 2003). A number of international studies have found that women living in economically deprived areas are disproportionately affected by domestic violence (see Krug et al., 2002 for a review).

Despite the presence of studies reflecting a correlation between unemployment and domestic violence, not all research has demonstrated this relationship (Yang and

Lester, 1994). These researchers analyzed data from official crime and socioeconomic statistics in the United States between 1940 and 1984, and found no association between homicide and unemployment after correcting for autocorrelation. However, Yang and Lester (1994) did find a significant association between unemployment and suicide.

1.5.3: Gun Access. Zawitz (1994) found that 66% of all intimate partner female murder victims in 1992 were shot to death. Research has suggested that the proliferation of and easy access to guns in this country has a direct influence on the homicide rate (Kellerman et al., 1993). One study found a strong association between access to a firearm in the home and past domestic violence for risk for femicide (Bailey, 1997). Studies have shown that firearms are used twice as often in intimate partner homicides as in homicides that do not involve intimate partners (Arbuckle et al., 1996). In a study of homicides from the Kansas City, Missouri area, fatal injuries caused by firearms were the leading cause of death for females killed by intimate partners (Wadman & Muelleman, 1999).

A recent review of over thirty empirical studies examining the relationship between access to guns in the home and homicide reported that overwhelming research evidence suggests that having access to a firearm in the home significantly increases the risk of homicide (Hepburn & Hemenway, 2004). Further, these researchers reported no positive or deterrent effects related to having a gun in the home.

Reviewing state laws prohibiting domestic violence offenders from owning guns, Vigdor and Mercy (2003) found lower rates of intimate partner homicides in areas where there were laws prohibiting individuals under restraining orders from owning or buying a handgun. These researchers noted that the key factor, however, was the ability of the

state to check whether someone applying to purchase a firearm was subject to a restraining order. Some (Paulozzi, Saltzman, & Thompson, 2001) have argued that legally eliminating domestic violence offenders' access to firearms should be an integral part of prevention efforts, since the majority of intimate partner homicides are committed with a firearm.

Wiebe (2003) found that having a gun in the house increased the risk of both homicide and suicide. In fact, when there was a gun in the home, there was a greater likelihood of using a gun to commit suicide. Wiebe (2003) argued that this could result because when there is access to a gun, it is likely to be chosen over a less lethal weapon. This is particularly relevant in the context of intimate partner murder followed by suicide.

In a study of 25 high income countries, investigators found that the United States had the highest rate of femicide as well as the highest level of gun ownership (Hemenway, Shinoda, Miller et al., 2002). While the United States represented only 32% of the total female population across all countries studied, it accounted for 84% of all femicides committed with a gun.

In a qualitative study involving interviews with female victims of attempted domestic homicide, it was reported that the majority of perpetrators owned a gun (Farr, 2002). Moracco et al. (2003) found that 66% of female victims of intimate partner homicide in North Carolina between 1991 and 1993 were killed by a gun. Studying intimate partner homicide in Chicago over a 29 year period, researchers reported that having a firearm in the home was a significant risk factor for female victims, and that semi or fully automatic pistols were the most likely choice of weapon for men (Block & Christakos, 1995).

Further research has addressed the risk of intimate partner violence for pregnant women associated with access to a gun by the perpetrator. Investigators reported that for pregnant women reporting that the perpetrator had access to a gun experienced significantly greater levels of violence (McFarlane et al., 1998).

1.5.4: *Having a Non-Biological Child to the Perpetrator in the Home.* Child abuse is often present in cases of intimate partner abuse. Some of the earliest research on domestic violence cited such a connection. For example, one study reported that over 77% of children in domestically violent families have been victims of abuse at one time in their life (Straus et al., 1980). Bowker et al. (1988) reported that 70% of abused women with children stated that their children were also abused. These researchers also found that the more serious spousal violence was associated with more severe acts of child abuse. Likewise, recent research has revealed similar findings. Shepard and Raschick (1999) found that in 32% of child welfare cases in a section of Duluth, Minnesota, social workers reported they believed domestic violence had occurred or was at risk of occurring.

There have been a number of studies indicating differences in the types of violence experienced by families in which there are stepchildren present. For example, an early study of homicides in Houston, Texas (Lundsgaarde, 1977) found that in 33% of the cases of domestic homicide, there were stepchildren in the home. Research has suggested that increased risk is associated with the presence of a child who is the biological child of the mother but not the father (Campbell et al., 2003).

In their review of the Canadian and British national archives on homicide, Daly and Wilson (1994) found that step-fathers were more likely to physically beat

stepchildren to death, while biological fathers were more likely to use a gun or asphyxiate their children. These researchers also found that infanticide followed by suicide or uxoricide (wife murder) was much more common among biological fathers, and almost never associated with step-fathers. A later study by these researchers (Daly & Wilson, 1996) found higher levels of abuse and murder in families consisting of stepchildren. Weekes-Shackelford and Shackelford (2004) later replicated the Daly and Wilson study in the United States, and reached similar findings.

Several investigators have reported that having a child in the home who is not biologically related to the male perpetrator is a risk factor for homicide for the mother. Campbell et al. (2003) found that the presence of this factor doubled the risk of intimate partner femicide. Daly, Wiseman, and Wilson (1997), found that although only 7% of all women in Hamilton, Ontario with male partners had children residing in the home who were not the offspring of the current partner, that group accounted for half of the total femicides in that area. Brewer and Paulsen (1999) found that almost half of the total women murdered between 1985 and 1994 had stepchildren residing in the home with a current male partner who was not their father. Yet this group only accounted for approximately 20% of all cohabiting partners with children in Houston, Texas. Potential explanations for this phenomenon have been offered from the perspective of evolutionary psychology; such perspectives emphasize the proprietariness and jealousy of the male offender, and the greater adaptiveness (from the standpoint of promoting one's own genes) of harming offspring who are not biologically related as contrasted with those who are (e.g., Daly & Wilson, 1996).

1.5.5: Control and Jealousy. Jealousy and the need for control have been consistently cited in the research literature as risk factors for intimate partner homicide (Belfrage & Rying, 2004; Dawson & Gartner, 1998; Gelles, 1972). Jealousy has been identified as a major risk factor for homicide in cases of domestic murder (Polk, 1994; Wilson & Daly, 1985). Further, other researchers have found jealousy to be a significant risk factor for murder-suicide (Marzuk, Tardiff, & Hirsch, 1992). From an evolutionary perspective, Daly and Wilson (1988) suggested that marital violence can be traced to the man's attempt to dominate and control the woman. This is seen acutely in the context of sexual proprietariness and control over a woman's ability to produce offspring, they argued.

This view of proprietariness suggests that when taken to an extreme, it manifests itself as acute jealousy. Esteal (1993) argued that in these cases, the abuser's identity is enmeshed with that of the victim, so that any real or potential ending of the relationship is a challenge to his identity. In many cases, this morbid type of jealousy has resulted in false beliefs that one's partner has been unfaithful (Stack, 1997).

The research in this area is consistent with accounts of female victims of attempted homicide, who describe an angry, controlling perpetrator who had threatened to kill her (Farr, 2002). Likewise, qualitative research by Nicolaidis et al. (2003) found that 28 of 30 female survivors of attempted murder by an intimate partner reported a history of controlling behavior on the part of the perpetrator. Jealousy also seems to be fairly common in situations of murder followed by suicide. For example, Marzuk, Tardiff, and Hirsch (1992) reviewed the literature and reported that young males with extreme sexual jealousy are among the typical perpetrators of murder-suicide.

Kerry (2002) proposed that not all male perpetrators of intimate partner homicide are characterized by extreme jealousy and control, or at least in the same ways. He proposed a Binary Model, consisting of Alpha Murderers and Beta Murderers. Alpha Murderers are more controlling and abusive, with the homicide often preceded by extreme anger. Beta Murderers are more reserved and less controlling, with no apparent history of domestic violence, and are characterized by suicidal thoughts and plans for murder-suicide prior to the act. Kerry's (2002) model received empirical support for the differentiation of these two groups.

The association of extreme jealousy and control with domestic homicide could explain why stalking behaviors are often seen in violence involving intimate partner violence. For example, McFarlane et al. (1999) found that 76% of femicide victims and 85% of attempted femicide victims in their samples experienced being stalked by the offender.

1.5.6: *Estrangement.* Wilson and Daly (1996) explained domestic homicide through an evolutionary perspective, using the concept of male sexual proprietariness. From this perspective, the female partner is the sole possession of the male, and he has exclusive sexual privileges within that relationship. These researchers described intimate partner violence as occurring in a context in which the male partner reacts to the female's attempt to end the relationship or becomes jealous when the female partner becomes involved with other males. Both of these situations are threatening to the male, who uses physical violence to regain control. Studying femicides in Canada, the researchers found that in 56% of the cases, the homicide was preceded by an attempt by the woman to leave her partner (Daly, Wiseman, & Wilson, 1997).

In an attempt to replicate the study in the United States, Brewer and Paulson (1999) found that domestic homicide victims (86% of women with adult children, but only 41% of women with minor children) were killed while living with the perpetrator at the time of the offense. Further, 48% of the women in the overall sample were not living with the perpetrator at the time of the murder. Separation or jealousy were precipitating factors in over 36% of the total femicides; among 46 couples with minor children, almost half of the homicides in this group were preceded by a female initiated effort to leave her partner (Brewer & Paulson, 1999).

Stack (1997) found that when the victim was previously the intimate partner of the offender, the risk of suicide following the killing increased almost thirteen-fold. He described this finding in terms of the depth of commitment and intimacy in a relationship, with higher levels of intimacy resulting in greater risk for suicide following a murder. For many intimates, the murder of one's partner is associated with lack of control over an impending loss of intimacy and the end of a relationship. The homicidal act is an attempt to regain control, but actually triggers a true sense of loss and depressive guilt that result in suicide (Stack, 1997).

Studies have demonstrated that there is a heightened risk for the murder of a woman in an intimate relationship when she leaves or attempts to leave her partner (Belfrage & Rying, 2004; Wilson & Daly, 1993). In their study of married couples in Canada, Wilson and Daly (1993) found a significant difference in risk of homicide for the male versus the female, depending on the status of the relationship. Among married couples still residing together, males were four times as likely to murder the female than vice versa. However, if the couple had broken up and were living separately, the risk of

the female being murdered by the male increased to nine times that of intact couples. They also found that the first two months post-separation were the most dangerous in terms of risk for homicide (Wilson & Daly, 1993). Further, they found that risk increased most when there was an actual separation combined with the initialization of legal proceedings to end the relationship. Belfrage and Rying (2004) found that separation between the victim and actor was present in 40% of the non-spousal homicide cases from Sweden in which the motive was known. However, not all research has found an increased risk for homicide when separated or estranged (Dawson & Gartner, 1998).

1.5.7: *Prior Threats with a Weapon.* Straus et al. (1980) found that 1 out of every 25 partners threatened the other partner with a knife or a gun. Campbell et al. (2003) reported that in 55.3% of the homicide cases, the perpetrator had threatened the victim with a weapon in the past, compared to only 4.7% of those in the abused women control group. Further, this factor was among the variables that were most significant in identifying abused women at risk for homicide.

Additionally, threats with a weapon and threats to kill were identified by Campbell (1995) as two factors that have been found to be associated with risk for homicide among a number of experts in the field. Also, two of the risk factors described earlier - threats with a weapon and threats to kill - appear to be key factors in assessing risk for homicide (Hart, 1988; Sonkin et al, 1985).

Campbell (1986) reported that a prior threat with a weapon was a risk factor for femicide, as did Stuart and Campbell (1989). Specifically, verbal threats to kill and the use of weapons to threaten the victim were key factors for 33% of the women in their study to assist them in determining their own risk for homicide (Stuart & Campbell,

1989). Examining the risk for homicide among pregnant women, Decker et al. (2004) found that in 25% of the cases, the victim's partner had threatened her with a weapon during the year just before she became pregnant.

1.5.8: Prior Threats to Kill. Research on this issue as a potential risk factor is equivocal. While some researchers have found that in cases of domestic homicide, there is often a warning from the abuser that he intends to murder the victim should she decide to leave the relationship (Wilson & Daly, 1993), others have reported threats to kill as a common element of abusive relationships that do not end in homicide (Websdale, 1999). Among perpetrators of spousal homicide in Sweden, Belfrage and Rying (2004) found that in 42% of the cases, the victims had been threatened prior to the murder. Further, in 36% of the cases, the victims had been physically assaulted prior to the homicide.

Campbell et al. (2003) reported that in 73.6% of the homicide cases, there were prior threats to kill by the male partner, compared to only 14.6% of the abused women control group. In her original investigation of homicide risk assessment for battered women, Campbell (1986) reported that in 57% of the homicide cases she analyzed, prior threats had been made by the perpetrator that he would kill the victim. Likewise, in a replication study, Stuart and Campbell (1989) found that 80% of femicide cases in their study involved prior threats to kill on the part of the male perpetrator.

In his review of domestic homicides from Florida during 1994, Websdale (1999) identified 47 cases in which men were the perpetrators of multiple domestic killings. Among those cases, almost 30% of them involved a prior threat to kill the victim. Websdale (1999) reported that some of these threats were made directly to the victim, while others were conveyed to third parties. He argued that threats to kill the victim are

commonly seen in situations of escalating domestic violence, coupled with a history of abusive behavior and severe jealousy toward the victim. Websdale (1999) cautioned investigators doing archival research to not assume the absence of threats just because they are not mentioned in the case files, as many times such information was not available at the time of the investigation.

Also in his review, Websdale (1999) identified 67 cases of intimate partner homicide with female victims. Among those cases, almost half involved prior threats to kill the victim by the male perpetrator. Websdale (1999) emphasized that there are many abusers who threaten to kill their victims, but only some who follow through on those threats. He suggested an important area of research would involve distinguishing between these two groups.

In a study comparing women who left their relationship during pregnancy to those who stayed in their relationship during pregnancy, 57% of the pregnant women who left their relationship reported a history of prior threats to kill by their partner (Decker et al., 2004). This factor approached significance ($p=.0522$) in distinguishing between the two groups. In the year before pregnancy for all women in the study, 42% of the women reported that their partner threatened to kill them. Studying homicides in North Carolina between 1991 and 1993, Moracco, Runyan, and Butts (1998) found that more than 83% of the intimate partner femicide victims were threatened by their killers prior to the murder. Tjaden (2000) reported that prior threats to harm or kill as a factor was part of the best model of variables for risk of injury for female victims of intimate partner physical assault.

Qualitative studies also shed some light on this issue, with one such study reporting that 25 of 30 women (83%) stated that their partners who attempted to kill them had used some form of control over them or threatened them with violence in the past (Nicolaidis et al., 2003).

Some studies are not supportive of prior threats to kill as a strong predictor of homicide. For example, in a retrospective follow-up study of the predictive validity of the Spousal Assault Risk Assessment Guide (SARA; Kropp et al., 1995), Grann and Wedin (2002) found that approximately 60% of the 88 offenders convicted of spousal assault or spousal homicide neither threatened to kill the victim nor used a weapon against them. Data from their study were obtained from record reviews and scoring of the SARA, a structured professional judgment risk assessment tool. In their recent review of the existing literature on risk factors for recidivism of intimate partner violence, Cattaneo and Goodman (2005) reported only two studies that found prior threats to have a significant relationship to reabuse. These studies (Harrell & Smith, 1996; Tolman, Edleson, & Fendrich, 1996) both found a positive correlation with risk for reabuse.

1.5.9: Abuse During Pregnancy. The domestic abuse of females during pregnancy has been recognized by many as a significant social problem with severe consequences to women's health (Plichta, 1996). Campbell et al. (2003) reported that females who are abused while pregnant are at increased risk for becoming homicide victims. In addition, Horan and Cheng (2001) noted that homicide is the number one cause of death to women giving birth in numerous cities in this country. Other researchers determined that males who engage in abuse toward their pregnant partners are

generally more dangerous and more brutal abusers (Campbell, Pugh, Campbell, & Visscher, 1995).

Prevalence rates of abuse during pregnancy have ranged from .9% to 60%, depending upon research methodology (Campbell, Garcia-Moreno, & Sharps, 2004). According to a relatively recent review of prevalence studies reported by these researchers, most of the studies have found a prevalence rate between 3.9% and 8.3% (Gazmararian et al., 1996).

Dannenberg et al. (1995) reviewed 293 cases of death involving women who were currently or recently pregnant in New York City between 1987 and 1991. Of that total, 115 (39%) of the deaths were caused by some form of injury. Of those 115 injurious incidents resulting in death, 63% of them were homicides. These researchers also found a higher risk of murder among pregnant African American women compared to other racial groups.

Numerous studies have revealed a correlation between abuse during pregnancy and intimate partner homicide (McFarlane et al., 1998; McFarlane, Campbell, Sharps, & Watson, 2002). McFarlane et al. (1998) found that approximately 12% of the pregnant women in their study reported that a knife or gun had been used against them in the preceding year. Of those who reported weapon use, they also reported more physical abuse and scored higher on a risk measure for homicide.

1.5.10: Drug and Alcohol Use. A recent study found that individuals with a history of drinking problems are at greater risk of intimate partner violence (Schafer et al., 2004). Specifically, for African-Americans, higher levels of alcohol problems were associated with higher reported levels of male and female perpetration and victimization

of intimate partner violence. For White men, reported alcohol problems were associated with higher reported levels of perpetration of intimate partner violence.

Several studies have reported alcohol use prior to or during the homicidal act, identifying it as a potential risk factor (e.g., Block & Christakos, 1995). Many studies have identified substance use history as a risk factor for recidivism (Fals-Stewart, 2003; Gondolf et al., 2002; Hamberger & Hastings, 1990) as well as for homicide (Campbell et al., 2003).

Substance abuse among perpetrators and victims of domestic homicide is common. In Sweden, for example, 44% of the murderers and 37% of the victims had been drinking at the time of the homicide. However, other large scale studies have specifically found there to be less drug abuse in intimate partner homicide cases than other forms of homicide (Block & Christakos, 1995).

Campbell, Sharps, & Glass (2001) argued that the precise role that alcohol and/or drug abuse plays in intimate partner femicide is difficult to determine. Most of the time, this information is only available if the offense ends in suicide and toxicology can be performed. Research is not clear on the risk of different types of substances used. It is also difficult to establish whether the perpetrator and/or victim were using substances at the time versus intoxicated by substances at the time, and how that affects overall risk.

1.5.11: *History of Being Assaulted as a Child.* A recent study found that children who were physically assaulted by their parents were at greater risk of intimate partner violence (Schafer, Caetano, & Cunradi, 2004). Specifically, these researchers found that for African-American and Hispanic men, the experience of being the victim of assault as a child increased the likelihood of being a victim and perpetrator of intimate

partner violence. These individuals also had higher levels of impulsive behavior and alcohol problems. A comprehensive review of the risk factor literature identified a history of abuse as a child as a consistently-cited risk factor for domestic violence among checklists of such factors (Dutton & Kropp, 2000). However, this factor has not been shown to be associated with an increased risk for intimate partner homicide (Campbell et al., 2003).

1.5.12: *Impulsivity.* A recent study found that individuals with a history of impulsive behavior are at greater risk of intimate partner violence (Schafer et al., 2004). Specifically, for African-American females, higher levels of impulsivity were associated with more alcohol problems and higher rates of being the victim of and engaging in intimate partner violence. For African-American males and White males, higher levels of impulsivity were associated with higher reported levels of alcohol problems. Also, for White males higher reported levels of impulsivity were associated with higher reports of intimate partner violence perpetration and victimization.

1.5.13: *Prior Criminal Histories.* Research has shown that more than half of all domestic violence offenders have had a prior history of non-domestic violence offenses, and 80% had been arrested at least once for a domestic assault (Fagan, Stewart, & Hansen, 1983). Klein (1993) reported that 43% of a sample of 644 domestic violence offenders had a prior criminal history, and had an average of 4.5 crimes against persons. According to Roehl et al. (2005), research on domestic violence recidivism for offenders in treatment programs has revealed rates between 30% to 50% from victim reports. Dunford (2000) cautions, however, that such results be critically analyzed when the researchers attribute the results to the treatment intervention. In his study, 83% of

domestic violence offenders in treatment groups did not re-offend over a 12 month period. However, when compared with the control group, it becomes apparent that the treatment intervention was not responsible for the large percentage of offenders who did not recidivate. Instead, it seems that a small sub-group of domestic violence offenders repetitively abuse their victims (Maxwell, Garner, & Fagan, 2001).

1.5.14: Suicide and Murder-Suicide. Suicidal thoughts have been associated with a risk for intimate partner homicide. Comparing 164 perpetrators of spousal homicide in Sweden between 1990 and 1999 with 690 perpetrators of non-spousal homicide during the same time period, Belfrage and Rying (2004) found a much higher suicide rate in the spousal group. Twenty-four percent of the spousal-homicide perpetrators committed suicide compared to only 6% of the non-spousal perpetrators. A history of physical abuse in intimate relationships ending in homicide/suicide is most common (Wallace, 1986).

Several studies have found a moderate percentage of intimate partner homicides to be murder-suicides. Moracco et al. (1998) found that 26% of all intimate partner femicides were murder suicides, while Block & Christakos (1995) found that 15% of the intimate partner femicides in their study were murder-suicides. A number of risk factors have been found to be associated with murder-suicide in intimate partner relationships, including male gender, extreme jealousy, current or history of depression, long-term relationship with the victim, history of physical violence, separation/reunion periods, presence of a personality disorder, and alcohol abuse (Morton et al., 1998; Buteau et al., 1993).

1.5.15: *Mental Illness and Personality Disorders.* The research on mental illness and personality disorders among offenders of intimate partner violence and intimate partner homicide is equivocal. Swedish researchers Belfrage and Rying (2004) found that 80% of all spouse murderers could be characterized as suffering from some form of mental illness. However, despite previous research linking psychopathy and borderline personality disorder with spousal violence (Kropp et al., 1995), Belfrage and Rying (2004) found that psychopathy was not common among individuals (from Sweden) who murdered their spouses.

There is other research that is somewhat contradictory on this issue as well. Several studies have found that psychopathy, antisocial, or borderline personality measures did not predict partner violence recidivism after treatment (Hamberger & Hastings, 1990; Kropp & Hart, 2000; Remington & Murphy, 2001), but narcissistic traits did predict recidivism (Hamberger & Hastings, 1990). A different study found that antisocial and borderline characteristics did predict recidivism (Dutton, Bonarchuk, Kropp, Hart, & Ogloff, 1987).

1.6: *Domestic Violence Risk Assessment*

Dutton and Kropp (2000) discussed how prediction of intimate partner violence can be done much more accurately than prediction of intimate partner homicide due to the fact that base rates for domestic violence are extremely high compared to base rates of domestic homicide. According to these authors, some risk assessment tools that have been found to be relatively accurate in predicting future domestic assault include the Danger Assessment Scale, the Spousal Assault Risk Scale, the Propensity for Abusiveness Scale, and the Psychopathy-Checklist-Revised. Dutton and Kropp (2000)

conducted an in-depth review of domestic violence risk instruments. In their review, they identified three categories of risk assessment instruments (See Table 1). The first category they identified includes those instruments which have not been validated by the authors in the past, and for which there were no recent attempts to validate. The second category of risk assessment instruments they identified were those that were undergoing evaluation and validity testing at the time of their review, but not yet reported. Finally, the third category of assessment instruments they identified were those that had existing, published data concerning their validity.

One of the important reasons offered by experts regarding the need for risk assessment tools in domestic violence is the empirical evidence identifying past domestic assault as the strongest risk factor for homicide (Campbell, Sharps, & Glass, 2001). Following the more general field of risk assessment, the state of the science of risk assessment in domestic violence has moved from clinical assessment to include and rely more heavily upon actuarial methods (Campbell, Sharps, & Glass, 2001).

Campbell (2004) indicated that there has been much dispute concerning risk for future assault and homicide following the first domestic assault. She pointed out the importance of distinguishing between the outcomes of continued assault versus homicide, and the additional importance of identifying protective factors that lower the risk for future assault

Campbell (1995) argued that there are important differences between clinical and legal prediction. While several lists of risk factors have been published in the clinical literature, none have been empirically validated. For clinical and risk management purposes, making a single prediction is much less important than identifying relevant risk

factors and using them to develop an intervention plan. Campbell (1995) further argued that clinicians and other professionals need to be aware of the legal considerations involved in predicting future violence in domestic abuse situations, in terms of duty to warn potential victims. The Danger Assessment instrument has been tested psychometrically in the published literature and has established test-retest and internal consistency reliability (Campbell, 1995; Goodman, Dutton, & Bennett, 2000). Predictive validity of the instrument has yet to be fully established; however, preliminary pilot data have demonstrated some evidence of predictive validity of the Danger Assessment scale over a 12-week follow up period for short term abuse by batterers in the criminal justice system (Goodman, Dutton, & Bennett, 2000).

Campbell (1995) suggested that one of the major problems with prediction tools is determining appropriate cut-off scores that correctly predict whether homicide will occur. To do this is quite difficult because of the large sample, time, and money such research requires. To date, no predictive validity studies had been published in the literature for any instruments (see Roehl & Guertin, 2000 for a review of psychometric and validation data for major domestic violence assessment instruments). Because of the low base-rate of homicide, making predictions of such behavior is quite difficult. It should be added that the prospective validation of a homicide prediction tool has obvious ethical problems as well; high risk individuals who might otherwise commit a homicide should undergo intervention to prevent such a tragedy (Roehl et al., 2005). While this is appropriate from a societal perspective, it means that the research goal must be to identify those at higher risk rather than predict who specifically will commit a homicide (Roehl et al., 2005).

Despite the general lack of empirical data on the validity of domestic violence risk assessment instruments, risk assessment instruments for this purpose are being used by professionals in various systems dealing with domestic violence (see Campbell, 1995; Roehl & Guertin, 2000). Dutton and Kropp (2000) stated, “Clinicians, correctional personnel, police, and victim service workers have for many years been asked to make judgments about risk and dangerousness in spousal assaulters” (p.178). A number of researchers have described published lists of risk factors for homicide. These lists of variables seem to be based on clinical experience and qualitative data, however, as there is relatively little research that has attempted to empirically validate several of these sets of risk factors.

Recently, in recognition of the lack of empirically validated risk assessment tools, researchers in the field of domestic violence assault have begun to address this area. In their empirical study of intimate partner violence and intimate partner femicide in 11 cities, Campbell et al. (2003) identified several risk factors for homicide in the context of intimate partner relationships. Based on their iterative model, the following variables were identified as posing the greatest risk for femicide: prior history of domestic violence, perpetrator unemployed and not seeking a job, abuser access to gun, victim had child of previous partner in home, high control over victim with separation after living together, threatened victim with a weapon, and threats to kill victim (Campbell et al., 2003).

The current study attempts to empirically study several of the risk factors identified by Campbell et al. (2003). Their study represents the most recent, comprehensive study on risk factors for continued domestic violence and domestic

violence homicide. The goal of the current study was to examine several of these risk factors in the context of a sample of cases drawn from one specific suburban location in the United States.

The current study examined the following risk factors identified by Campbell et al. (2003) as the factors most informative in identifying victims of intimate partner violence at the greatest risk for homicide in the health care and other systems: suspect unemployed; victim having a child in the home from a previous sexual partner; separation after living together; prior threats with a weapon; abuser access to a gun; and prior threats to kill.

1.7: Hypotheses

Hypothesis 1: Men will be more likely to kill women with a child in the home from a previous sexual partner, while men will be more likely to abuse but not kill women without a child in the home from a previous sexual partner.

Hypothesis 2: Men who kill their domestic partners will be higher on abuser control than men who abuse but do not kill their partners.

Hypothesis 3: Men who kill their domestic partners will be more likely to have separated from their partners after living together than will men who abuse but do not kill their partners.

Hypothesis 4: Men who kill their domestic partners will be more likely to have threatened their partners with a weapon than will men who abuse but do not kill their partners.

Hypothesis 5: Men who kill their domestic partners will be more likely to have access to guns than men who abuse but do not kill their partners.

Hypothesis 6: Men who kill their domestic partners will be more likely to have previously threatened to kill these partners than will men who abuse but do not kill their partners.

CHAPTER 2: METHOD

2.1: Definitions

The current study relied on the uniform definitions for the study of domestic violence as proposed by Saltzman et al. (2002).

Perpetrator - Person who inflicts the violence or abuse or causes the violence or abuse to be inflicted on the victim.

Intimate Partners – Relationships involving the following situations: current spouses (including common-law spouses); current non-marital partners; dating partners, including first date; boyfriends/girlfriends; former marital partners; divorced spouses; former common-law spouses; separated spouses; former non-marital partners; former dates (heterosexual or same-sex); former boyfriends/girlfriends (heterosexual or same-sex).

Violence – Divided into four categories: Physical Violence; Sexual Violence; Threat of Physical or Sexual Violence; Psychological/Emotional Abuse (including coercive tactics) when there has also been prior physical or sexual violence, or prior threat of physical or sexual violence.

Physical Violence - The intentional use of physical force with the potential for causing death, disability, injury, or harm. Physical violence includes, but is not limited to: scratching, pushing, shoving, throwing, grabbing, biting, choking, shaking, poking, hair-pulling, slapping, punching, hitting, burning, use of a weapon (gun, knife, or other object), and use of restraints or one's body, size, or strength against another person. Physical violence also includes coercing other people to commit any of the above acts.

Sex Act (or Sexual Act) - Contact between the penis and the vulva or the penis and the anus involving penetration, however slight; contact between the mouth and the penis, vulva, or anus; or penetration of the anal or genital opening of another person by a hand, finger, or other object.

Abusive Sexual Contact - Intentional touching directly, or through the clothing, of the genitalia, anus, groin, breast, inner thigh, or buttocks of any person against his or her will, or of any person who is unable to understand the nature or condition of

the act, to decline participation, or to communicate unwillingness to be touched (e.g., because of illness, disability, or the influence of alcohol or other drugs, or due to intimidation or pressure).

Sexual Violence – Sexual violence is divided into three categories:

- (1) Use of physical force to compel a person to engage in a sexual act against his or her will, whether or not the act is completed.
- (2) An attempted or completed sex act involving a person who is unable to understand the nature or condition of the act, to decline participation, or to communicate unwillingness to engage in the sexual act (e.g., because of illness, disability, or the influence of alcohol or other drugs, or due to intimidation or pressure).
- (3) Abusive sexual contact.

Threat of Physical or Sexual Violence - The use of words, gestures, or weapons to communicate the intent to cause death, disability, injury, or physical harm. Also the use of words, gestures, or weapons to communicate the intent to compel a person to engage in sex acts or abusive sexual contact when the person is either unwilling or unable to consent. Examples: "I'll kill you"; "I'll beat you up if you don't have sex with me"; brandishing a weapon; firing a gun into the air; making hand gestures; reaching toward a person's breasts or genitalia.

Psychological/Emotional Abuse -Trauma to the victim caused by acts, threats of acts, or coercive tactics, such as those on the following list. This list is not exhaustive. Other behaviors may be considered emotionally abusive if they are perceived as such by the victim. Some of the behaviors on the list may not be perceived as psychologically or emotionally abusive by all victims. Operationalization of data elements related to psychological/emotional abuse will need to incorporate victim perception or a proxy for it. Psychological/emotional abuse can include, but is not limited to: Humiliating the victim; Controlling what the victim can and cannot do; Withholding information from the victim; Getting annoyed if the victim disagrees; Deliberately doing something to make the victim feel diminished (e.g., less smart, less attractive); Deliberately doing something that makes the victim feel embarrassed; Using money that is the victim's; Taking advantage of the victim; Disregarding what the victim wants; Isolating the victim from friends or family; Prohibiting access to transportation or telephone; Getting the victim to engage in illegal activities; Using the victim's children to control victim's behavior; Threatening loss of custody of children; Smashing objects or destroying property; Denying the victim access to money or other basic resources; Disclosing information that would tarnish the victim's reputation.

2.2: Participants

Data for this study were drawn from official records of the Burlington County Prosecutor's Office, NJ. All cases involved a male perpetrator against a female victim, when the two were in an intimate relationship. Demographic characteristics of offenders and victims will be affected to some extent by those of the larger pool, although there may be particular aspects of demographic characteristics of offenders and victims that are related to their respective statuses. To examine this, demographic characteristics of the study group were compared to the recent demographic information for Burlington County, NJ, from the 2000 Census (New Jersey Quick Facts: Burlington, 2000; See Table 2).

To ensure confidentiality, all identifying information, including the names of the victim and defendant, as well as the investigative case number was eliminated from the database containing the data collected from each file. Data were kept in a locked file cabinet in a locked office in the offices of the Burlington County Prosecutor's Office, NJ. After data were collected, and the study was completed, the information was stored in a locked file cabinet at Drexel University. Data will be destroyed in accordance with the federal law, Drexel University policies, American Psychological Association standards, as well as the policies of the Burlington County Prosecutor's Office, NJ.

2.3: Procedures

Official records of the Burlington County Prosecutor's Office on domestic homicide cases and domestic violence related aggravated assault cases between 1985 and 2005 were reviewed. Sources of information contained in the legal case files included police reports, autopsy reports, statements from witnesses, pre-sentence investigation

reports, information on past criminal history, and other sources of information. A total of 32 intimate partner homicide cases, in which a male perpetrator killed a female victim, were drawn from the years of 1985 through 2005. This was the maximum amount of homicide cases that fit the criteria of the study. A group of 77 domestic violence related aggravated assaults involving a male perpetrator against a female victim were used as a comparison group.

In order to identify cases to be included in data collection, lists of homicide cases and aggravated assault cases were generated from electronic and paper records management systems. A handwritten log of all homicide cases that have occurred in Burlington County is maintained by the Prosecutor's Office. This list was consulted, and cases that involved male perpetrators and female victims were identified. Those case files were reviewed to determine if the victim and offender were involved in an intimate relationship, resulting in 32 such cases being identified and included in the study. Aggravated Assault cases related to Domestic Violence were identified in several ways. First, a list of over 4000 cases involving male perpetrators and female victims was generated from an electronic case management system. It quickly became clear that it was not possible to determine whether these cases involved domestic violence. An attempt was made to use a random selection process to identify cases to be included as aggravated assaults. However, when cases were reviewed, the information revealed that the cases did not meet the criteria for the study (i.e., male victims, non-intimate relationships, etc.). This strategy was unsuccessful and therefore abandoned. Next, lists of aggravated assault cases from handwritten case logs of attorneys handling domestic violence cases were reviewed. Each of these cases was reviewed. Those involving a

female victim and male perpetrator involved in an intimate relationship were included in the study, resulting in 77 such cases being identified.

2.4: Variables

Data were collected from multiple sources within the file for the following independent variables:

- *Perpetrator unemployed* (not seeking a job) was defined by information contained in the file indicating that at the time of the offense, the offender was not working a full or part time job. If information was available in the file that the individual was not seeking a job, this was rated as a separate variable, but did not affect the rating on the unemployment variable. This variable was not included in any hypotheses, but has been found to be a significant sociodemographic predictor of homicide (Campbell et al., 2003).
- *Victim having a child in the home from a previous sexual partner* was defined by information in the file indicating that the victim had at least one child, fathered by a partner other than her current partner, living in the same home as the victim.
- *High abuser control* was defined by information in the file indicating that there was a high level of control exerted over the victim by the offender. Factors that were considered as high abuser control included any of the psychological/emotional abuse factors outlined by Saltzman et al. (2002) as described above. A four point Likert scale was planned to be used for degree of control: not controlling; somewhat controlling; moderately

controlling; and extremely controlling. However, after an initial review by the author of the investigative case files, it was decided that this variable was to be excluded from data collection due to incomplete information in the files. This issue is discussed further in the results and discussion sections.

- *Separation after living together* was defined by information contained in the file that indicates that at some time the intimate partners were sharing the same residence, but were no longer living together at the time of the offense. It did not matter who initiated the separation.
- *Previous threats to victim with a weapon* was defined as information contained in the file that indicated that at some time in the past (not including the present offense) the offender had threatened the victim with a weapon. Weapon was defined as an item held in the hand that could cause injury to the victim.
- *Abuser access to a gun* was defined by information contained in the file that indicated that the offender had access to a firearm, regardless of where the firearm was physically kept.
- *Previous threats to kill the victim* was defined by information contained in the file that indicated that at some time in the past (not including the present offense) the offender threatened to kill the victim. The threat could have been verbal, written, or demonstrative.
- *Previous history of domestic violence* was defined by information contained in the file of one or more prior acts of domestic violence that

had been documented officially by law enforcement, or unofficially by report of family or friends. This variable was not included in any hypotheses, but it has consistently been found to be a significant predictor of homicide (Campbell et al., 2003).

- *Previous arrests for domestic violence* was defined by information contained in the file of at least one prior arrest for a domestic violence related offense. This variable is not included in any hypotheses, but it has recently been shown to be a suppressor variable in predicting homicide (Campbell et al., 2003).

Missing information was coded as indicating that the factor was not present. This is a potentially problematic assumption that is discussed further in the limitations section of this dissertation.

The dependent variable was the outcome of the abuse: non-fatal injury vs. death.

2.5: Design

The design used in this study was a retrospective case-control design (Kazdin, 2003), which is an appropriate means of studying events that uncommonly occur in the general population. As such, it is appropriate for the study of the relatively rare event of domestic homicide. A case-control design compares cases with a particular attribute (i.e., the outcome of homicide) with controls (i.e., the outcome of non-fatal injury). The design is retrospective because we are looking at factors in the past that may have influenced whether the outcome of the case would have been homicide or non-fatal injury. Further, this design allowed for the interpretation of the level of influence of specific factors and relationships between factors (Kazdin, 2003). Two major problems

with this design are the inability to show direct causal relations and sampling bias. In regard to sampling bias, this study was concerned with an already extremely low-base rate phenomenon. For the current study, it was expected that a maximum of 40 homicides over a 20 year period would meet the criteria for the study. However, only 32 homicides met the criteria. Because of the outcome of interest (homicide) cases needed to be selected based upon this variable.

2.6: Analyses

All hypotheses were examined using a logistic regression analysis. Logistic regression is ideal when a researcher is attempting to determine which variables predict group membership for pre-existing groups, particularly when the dependent variable is dichotomous (Pampel, 2000). Further, logistic regression reveals the percent of the variance in the dependent variable accounted for by the independent variables. In addition, logistic regression can establish an hierarchy of significance for individual independent variables in the overall model, as well as explain interaction effects (Garson, 2001).

There are several advantages to using logistic regression as the planned statistical analysis in the current study. First, the rigid assumptions of other forms of regression do not apply to logistic regression. For example, there is no assumption of a linear relationship between the dependent variable and the independent variables. Also, there is no assumption that the dependent variable is normally distributed in the population. In addition, there is no assumption of homogeneity of variance. Accordingly, it is not required that the dependent variable be homoscedastic for each level of the independent variables. Moreover, logistic regression does not assume that the error terms are

normally distributed. Lastly, there is no requirement that independent variables be interval or unbounded (Garson, 2001).

The non-parametric version of logistic regression analysis was used in this study since all independent variables were categorical, and parametric tests require interval data. The dependent variable, which measured the outcome of homicide versus assault, was a discrete variable. As such, ordinary least squares regression could have been used to fit a linear probability model. However, because the linear probability model is heteroskedastic and could predict probabilities less than 1 or greater than 0, logistic regression was more appropriate to estimate the factors that predict homicide (Pampel, 2000).

All of the independent variables were entered into a regression equation and analyzed using logistic regression. To examine the overall fit of the model, the model chi-square was used. To examine the proportion of the variance in the dependent variable explained by the variance in the independent variables, the Cox and Snell *R*-squared and the Nagelkerke *R*-squared statistic were used. The regression analysis revealed which factors should be included in the model to predict the outcome of homicide versus assault. Post-hoc testing was completed to test each individual hypothesis concerning each specific predictor variable.

The first hypothesis stated that men will be more likely to kill women with a child in the home from a previous sexual partner, while men will be more likely to abuse but not kill women without a child in the home from a previous sexual partner. This hypothesis was tested by using the Wald statistic, which is the square of the asymptotic t-

statistic from the logistic regression analysis. In addition, a chi-square test for independence was used to test this hypothesis.

The second hypothesis stated that men who kill their domestic partners will be higher on abuser control than men who abuse but do not kill their partners. This hypothesis was tested by using the Wald statistic, which is the square of the asymptotic t-statistic from the logistic regression analysis. In addition, a chi-square test for independence was used to test this hypothesis.

The third hypothesis stated that men who kill their domestic partners will be more likely to have separated from their partners after living together than will men who abuse but do not kill their partners. This hypothesis was tested by using the Wald statistic, which is the square of the asymptotic t-statistic from the logistic regression analysis. In addition, a chi-square test for independence was used to test this hypothesis.

The fourth hypothesis stated that men who kill their domestic partners will be more likely to have threatened their partners with a weapon than will men who abuse but do not kill their partners. This hypothesis was tested by using the Wald statistic, which is the square of the asymptotic t-statistic from the logistic regression analysis. In addition, a chi-square test for independence was used to test this hypothesis.

The fifth hypothesis stated that men who kill their domestic partners will be more likely to have access to guns than men who abuse but do not kill their partners. This hypothesis was tested by using the Wald statistic, which is the square of the asymptotic t-statistic from the logistic regression analysis. In addition, a chi-square test for independence was used to test this hypothesis.

The sixth hypothesis stated that men who kill their domestic partners will be more likely to have previously threatened to kill these partners than will men who abuse but do not kill their partners. This hypothesis was tested by using the Wald statistic, which is the square of the asymptotic t-statistic from the logistic regression analysis. In addition, a chi-square test for independence was used to test this hypothesis.

CHAPTER 3: RESULTS

Total cases ($n=109$) included 77 (70.6%) aggravated assault cases and 32 (29.4%) homicide cases. Victim age ranged from 15 to 57, with a mean age of 32.60 and a standard deviation of 9.77. The age of the suspect ranged from 18 to 65, with a mean age of 35.49 and a standard deviation of 9.99 (see Table 3). As may be seen in Table 4, the majority (62.4%) of victims were Caucasian ($n=68$) and most of the remainder (32.1%) were African-American ($n=35$). The racial breakdown of suspects reflected a majority (51.4%) Caucasian ($n=56$) and most of the remaining suspects (43.1%) African-American ($n=47$). Compared with the population of Burlington County, NJ, according to the 2000 census, Caucasian victims ($\chi^2(1, N=444,490) = 112,710.76, p < .00005$) and suspects ($\chi^2(1, N=444,490) = 82943.497, p < .00005$) were underrepresented and African-American victims ($\chi^2(1, N=444,490) = 88990.356, p < .00005$) and suspects ($\chi^2(1, N=444,490) = 130119.613, p < .00005$) overrepresented (see Table 4).

Of the 109 cases reviewed, 68.8% ($n=75$) of the suspects were employed at the time of the offense. In 22.9% ($n = 25$) of the cases, the victim had a child living in the home from a previous sexual partner. In 33.9% ($n = 37$) of the cases, there had been a separation in the relationship after living together. The suspect had made a prior threat to kill the victim in 29.4% ($n = 32$) of the cases. Only 9.3% ($n = 9$) of the suspects had

threatened their victims with a weapon in the past. A total of 26.6% ($n = 29$) of the suspects were determined to have access to a gun.

Table 5 presents a comparison of the descriptive statistics, except for age, for both the aggravated assault and homicide groups. The following demographic variables were tested for relationships to the likelihood that an incident of intimate partner violence would have the outcome of homicide: victim age, victim race, suspect age, suspect race, and suspect employment status. Bivariate logistic regression analyses were conducted on each of these variables and the outcome variable of offense type. Results indicated no significant relationships among the demographic variables (see Table 6). Chi-square analyses were conducted on each of these demographic variables and all were non-significant (see Table 7).

Finally, the demographic variables of victim age, victim race, and suspect employment status, together with the other hypothesized predictor variables, were entered into a stepwise binary logistic regression model. Victim age and victim race were chosen because each was highly correlated with the variables of suspect age ($r = .65, p < .01$) and suspect race (Spearman's $Rho = .59, p < .01$), respectively. Results of the logistic regression model revealed that these variables were not significant predictors of homicide (see Table 8). Therefore, they were removed from the model building process.

3.1: Logistic Regression Analyses

All hypothesized predictor variables were entered into a stepwise binary logistic regression model. In the initial analysis, a five-predictor logistic model was fitted to the data to test the research hypothesis regarding the relationship between the likelihood that an incident of intimate partner violence would be associated with homicide. The

following five predictor variables were used: victim with child in home from previous sexual partner; separation after living together; prior threats to kill the victim; prior threats with a weapon against the victim; and abuser access to gun. The results showed that

$$\text{Predicted logit of (Type of Crime)} = -2.11 + (1.15)^* (\text{Separation After Living Together}) + 2.37^* (\text{Abuser Access to Gun}).$$

According to the model, the log of the odds of an incident of intimate partner violence being a homicide was positively related to a couple separating after having lived together ($p < .05$) and positively related to an abusive male partner having access to a gun ($p < .005$) (See Table 9).

3.2: Overall Model Evaluation

A test of the full model with all five predictors against a constant-only model revealed a good model fit (discrimination between groups) on the basis of two predictors: separation after living together and the abuser having access to a gun, $\chi^2(2, N = 109) = 28.80, p < .0005$. Evidence from the likelihood ratio test supports the conclusion that a model consisting of these two predictors was more effective than the null model in distinguishing these two outcomes (see Table 9).

Based on the score test, it was predicted that the following variables would be significant in the model: separation after living together, prior threats with a weapon, and abuser access to gun. After testing the full model, prior threats with a weapon was removed from the final model. Possible explanations will be discussed, along with the statistical tests of individual predictors, later in this dissertation.

3.3: Variance

To examine the proportion of the variance in the dependent variable explained by the variance in the independent variables, the Cox and Snell R -squared and Nagelkerke R -squared statistics were used. The Cox and Snell $R^2 = .232$ and the Nagelkerke $R^2 = .331$, indicating that the model explained between 23.2% and 33.1% of the variance.

3.4: Goodness of Fit Statistics

The Hosmer-Lemeshow (H-L) test is an inferential goodness of fit statistic used to assess the fit of a logistic model against actual outcomes - in this case, type of crime. The test yielded a significant value [$\chi^2(2, N = 109) = 1.61, p > .05$], indicating that the final model was a good fit of the data.

3.5: Statistical Tests of Individual Predictors in Overall Model

The Wald Chi-square statistic was used to evaluate the statistical significance of the individual regression coefficients. According to Table 9, both variables of separation after living together and abuser access to a gun were significant predictors of the outcome of an incident of intimate partner violence ($p < .05$).

Based on the chi-square statistics for the two predictors in the final model, the b s (coefficients) of those predictors are significantly different than 0, so the null hypothesis (model) is rejected. Table 9 shows regression coefficients, Wald statistics, odds ratios and 95% confidence intervals for odds ratios for each of the significant predictors.

3.6: Odds Ratios

The odds ratio, as shown in Table 9, for the predictor of separation after living together ($OR = 3.1$) revealed that intimate partner violence situations in which couples have separated after living together were three times as likely to result in homicide. This

means that 1 unit increase in separation after living together increases the odds of being a homicide by a multiple of 3.14.

The odds ratio, as shown in Table 9, for the predictor of abuser access to gun ($OR = 10.7$) revealed that when the abuser has access to a gun, it was almost eleven times more likely that an incident of intimate partner violence resulted in a homicide. This means that a 1 unit increase in abuser access to gun increases the odds of being a homicide by a multiple of 10.72.

3.7: Validations of Predicted Probabilities

Overall, the model's percentage accuracy in classification (PAC) was 78.9%, which is an improvement over the null model's percentage accuracy in classification (PAC) of 70.6%. As may be seen in Table 10, the prediction of cases that were homicides was less accurate than the prediction of cases that were not homicides. The sensitivity level for accurately predicting homicide was 59.4% with 19 of 32 cases accurately predicted. The specificity level was 87%, with 67 of 77 cases accurately predicted. The false positive rate, or the proportion of observations erroneously predicted to be homicides ($n = 10$) over all cases predicted to be homicide ($n = 29$), was 34.5%. Therefore, the positive predictive value (PPV) of the model was 65.5%, which is the proportion of observations correctly predicted to be homicides ($n = 19$) over all observations predicted to be homicides ($n = 29$). The false negative rate - the proportion of observations erroneously predicted to be aggravated assaults ($n = 13$) over all cases predicted to be aggravated assaults ($n = 80$)—was 16.3%. The negative predictive value (NPV) of the model was 83.7%, which is the proportion of observations correctly

predicted to be an aggravated assault ($n = 67$) over all observations predicted to be aggravated assault ($n = 80$).

3.8: Examination for Outliers

Of the total of 109 cases, there were 7 misclassified cases with Z -residual values of 2.87, indicating these cases were outliers beyond +2.5 standard deviations above the mean. Each of these cases was predicted to be aggravated assault, but was actually homicide. In each of these cases, there was no separation after living together and no abuser access to a gun. In all other homicide cases (25 out of 32), at least one of these factors was present; in 10 of the 32 total homicides, both factors were present.

3.9: Examination for Multicollinearity

Strong correlations between independent variables can result in multicollinearity in logistic regression models, which can inflate the variances of the parameter estimates. When there are small or moderate sample sizes, multicollinearity can result in lack of statistical significance of individual independent variables even when the overall model has achieved significance. To test for multicollinearity, the diagnostic statistics of Tolerance and Variance Inflation Factor (VIF) in linear regression were used. Tolerance and VIF values indicated no multicollinearity among the independent variables.

3.10: Post-Hoc Testing of Individual Predictors

All individual predictors were also used to test each hypothesis using chi-square. The first hypothesis stated that men will be more likely to kill women with a child in the home from a previous sexual partner, while men will be more likely to abuse but not kill women without a child in the home from a previous sexual partner.

Results of chi-square analysis revealed no relationship between this variable and the outcome of homicide, $\chi^2(1, N=109) = .69, p > .05$.

The second hypothesis stated that men who kill their domestic partners will be higher on abuser control than men who abuse but do not kill their partners. The second hypothesis could not be tested, as the abuser control variable was redacted as an independent variable due to the virtual absence of information regarding this factor in the investigative case files.

The third hypothesis stated that men who kill their domestic partners will be more likely to have separated from their partners after living together than will men who abuse but do not kill their partners. Chi-square analysis revealed a significant relationship between this variable and the outcome of homicide, $\chi^2(1, N=109) = 5.21, p < .05$. Results of the Goodman and Kruskal tau test revealed a reduction in the error rate of 4.8% over chance. As shown in Figure 1, in 16 out of 32 homicide cases (50%), there was a separation after living together. In contrast, 21 out of 77 (27%) of the aggravated assault cases, was there a separation after living together.

The fourth hypothesis stated that men who kill their domestic partners will be more likely to have threatened their partners with a weapon than will men who abuse but do not kill their partners. Results of the chi-square analysis revealed a significant relationship between this variable and the outcome of homicide in the hypothesized direction ($\chi^2(1, N=109) = 6.58, p < .05$). Results of the Goodman and Kruskal tau test revealed a reduction in the error rate of 6.0% over what you could expect by chance. However, this result should be interpreted with caution, since 1 cell (25% of all cells) had an expected count less than 5.

In only 3 (3.89%) of the aggravated assault cases was there a prior threat with a weapon. This can be contrasted with 6 (18.75%) of the homicide cases in which there was a prior threat with a weapon (see Figure 2). When this variable was considered with “abuser access to gun” in the multivariate analysis, it was dropped from the final model, as these two variables are highly correlated. Prior threat with a weapon is highly correlated with both abuser access to a gun (Spearman's rho = .272, $p < .001$), and prior threats to kill (Spearman's rho = .465, $p < .001$). In the final model, abuser access to gun accounts for a higher proportion of the variance. In a logistic regression model with abuser access to gun removed, prior threats with a weapon becomes a significant predictor of homicide along with separation after living together.

The fifth hypothesis stated that men who kill their domestic partners will be more likely to have access to guns than will men who abuse but do not kill their partners. Results of the chi-square analysis revealed a significant relationship between this variable and the outcome of homicide, $\chi^2(1, N = 109) = 24.91, p < .05$. Results of the Goodman and Kruskal tau test revealed a reduction in the error rate of 22.9% over chance. In only 10 out of 77 (13%) cases of aggravated assault did the abuser have access to a gun. By contrast, in 19 of 32 homicide cases (59%), the abuser had access to a gun (see Figure 3).

The sixth hypothesis stated that men who kill their domestic partners will be more likely to have previously threatened to kill these partners than will men who abuse but do not kill their partners. Chi-square analysis reflected no relationship between this variable and the outcome of homicide ($\chi^2(1, N = 109) = 2.77, p > .05$). As may be seen in Figure 4, in 19 of 77 aggravated assault cases (25%) there was a prior threat to kill. The number of homicide cases in which there was a prior threat to kill was 13 of 32 (40%). Although

there were a greater percentage of homicide cases with a prior threat to kill, it was not large enough to explain the difference between the groups.

3.11: *Post-Hoc Power Analysis*

A post-hoc power analysis revealed a power of .67 to detect a small effect size (.23) for separation after living together, using a logistic regression analysis with 109 cases and a critical alpha-level of .05. There was a power of .997 to detect a medium effect size (.53) with the same conditions for abuser access to gun. Therefore, the chances of detecting the change in the effect size for separation after living together were somewhat better than chance. However, in regard to abuser access to gun, power was considerably high to detect a medium effect size. This means that the probability of detecting a medium sized effect based on the statistical analysis used with the current data was close to 100%.

CHAPTER 4: DISCUSSION

The current study examined six factors that Campbell et al. (2003) determined to be most useful for identifying female victims of intimate partner violence at the greatest risk for being murdered. Those factors included abuser unemployed and not seeking job,¹ abuser access to a gun, victim had a child in home by a previous partner, separation after living together, abuser threatened victim with a weapon, and abuser threatened to kill the victim. The current study found support for two of these factors: abuser access to gun and separation after living together.

¹ In the current study, abuser unemployed was examined in the statistical analyses of demographic variables, but this was not included in any hypotheses. The current researcher wanted to keep the number of independent variables at an appropriate level for the total number of cases for greater statistical power.

Access to a gun was associated with a substantially increased risk of homicide. This factor was the strongest predictor of homicide, increasing the odds of being murdered by 10.7. In the current study, 59% of the homicides had this factor present, compared to only 13% of the aggravated assault control group. Results also indicated that estrangement was related to an increased risk for homicide. In 57% of the homicide cases, the couple had separated after having lived together, compared with only 27% of the aggravated assault cases. In the final model, separation after living together was related to a three-fold increase in risk of homicide. These factors were significant predictors of homicide in both bivariate and multivariate analyses.

“Prior threats with a weapon” was a significant predictor in a bivariate analysis, but was excluded from the final model in the multivariate analysis. This factor was present in 19% of the homicide cases and 4% of the aggravated assault cases. In the current study, prior threats with a weapon was strongly related to abuser access to a gun and prior threats to kill. In the final multivariate model, only abuser access to gun was a significant predictor in the model. In a model in which abuser access to gun was removed, prior threats with a weapon became a significant predictor in the model, as well as separation after living together. In that model, it was connected with an increased risk of homicide by an adjusted odds ratio of 5.56.

The final model, consisting of abuser access to a gun and separation after living together, correctly classified 59% of the homicides and 87% of the aggravated assaults. The final model in the Campbell et al. (2003) study, using the six factors described earlier, correctly classified 73% of the femicides and 93% of the control women.

However, the levels of predictive accuracy in both studies are difficult to compare, as neither was cross-validated to control for shrinkage.

Nevertheless, the present results were consistent with the existing literature as reviewed by Campbell et al. (2001), who identified three consistently strong risk factors of intimate partner femicide: prior domestic violence, access to a gun, and estrangement. The current study found support for two of these three variables. Further, access to a firearm and estrangement have been described by others (e.g., Hilton & Harris, 2005; Campbell et al., 2007) as predictive of intimate partner homicide. Although the present study did not find support for increased risk of homicide associated with stepchildren in the home and prior threats to kill the victim (as reported by Campbell et al., 2003), the current study did find support for the two strongest predictors in their final model.

Campbell et al. (2007) pointed out that one of the limitations of previous studies on risk factors of intimate partner homicide is the absence of rural and suburban cases, which may limit generalizability to those settings. The present data were drawn from a suburban county of the Philadelphia metropolitan area. Therefore, the results of the current study suggest that estrangement and access to a gun generalize as risk factors for homicide among cases from a suburban geographic area.

Based upon a review of more than thirty empirical studies, Hepburn and Hemenway (2004) concluded that existing research strongly supports firearm access as increasing the risk of homicide. This seems applicable to the present sample. Indeed, the adjusted odds ratio reported here (10.7) was much higher than that reported by Campbell et al. (2003), who indicated that abused women were 5.4 times more likely to be killed when the abuser had access to a gun. The increased risk for homicide associated with

access to guns is consistent with the findings of other researchers (e.g., Bailey et al, 1997; Koziol-McClain et al., 2006) as well. Clearly, there is strong empirical evidence regarding the heightened risk for homicide within intimate relationships when the abuser has access to a firearm. The results of the current study were consistent with such findings.

Regarding the impact of estrangement, the present results were comparable to the figures reported by Campbell et al. (2003). These researchers found separation after living together in 55.2% of the homicide cases, relative to 34.9% of the controls. Campbell et al. (2003) further reported that separation after living together increased the odds of being killed by a ratio of 3.64 among cases in which the abuser was not highly controlling, and by 5.52 when the abuser was highly controlling. Unfortunately, it was not possible to use the abuser control variable in the current study, so it is unclear how abuser control would have moderated the risk of being killed among those who were separated after living together. Also, it is important to note that the current study used a more narrow definition of estrangement than Campbell et al. (2003), who defined it as having separated at least once in the past year, even if the couple was currently living together. The current study defined separation as the couple living together previously, but not at the time of the assault or murder.

Estrangement is a well supported risk factor, and the current study replicated such support. Estrangement was identified as one of the main risk factors for intimate partner homicide in a review of over two thousand intimate partner homicides from Chicago (Block & Christakos, 1995). Wilson and Daly (1993) have reported that the highest risk is for women who have both physically and legally separated from their partners, with the

first three months after separation posing the greatest risk period (Wilson et al., 1995). Buteau, Lesage, & Kiely (1993) found estrangement to be a risk factor for murder-suicide in their review of 39 such cases from Quebec, Canada between 1988 and 1990. Koziol-McClain et al. (2006) reported that separation after living together increased the odds of a murder-suicide by 4.3.

In the current study, the percentage of the abused women who had been threatened with a weapon was similar to that reported by Campbell et al. (2003) (4% vs. 4.7%, respectively). However, Campbell et al. reported a higher percentage of homicide cases than was observed in the current study when there was a prior threat with a weapon (55% versus 19%, respectively), increasing the odds of being killed by 3.38. Similarly, Koziol-McClain et al. (2006) found this factor present in 55.6% of the femicide-suicide group and 55.6% of the femicide group compared to 5.1% of controls. Certainly prior threats with a weapon has been supported as a risk factor for intimate partner homicide in the literature. Indeed, in their review of 16,595 spousal homicides from the United States between 1976 and 1985, Mercy and Saltzman (1989) identified prior threats to kill and prior threats with a weapon as key risk factors for homicide. The results of the current study are consistent with these findings. However, the relationship may not be straightforward, since it was excluded in the multivariate model. Possible reasons for this are discussed below. Future research should attempt to elaborate upon the relationship between prior threats with a weapon and risk for homicide between intimate partners.

Having a child in the home from a previous sexual partner was not supported in the current study as a risk factor for intimate partner homicide. This finding is inconsistent with those of other researchers, who have identified this family situation as

yielding an increased risk for homicide in intimate relationships (e.g., Brewer & Paulsen, 1999; Daly et al., 1997). In fact, some early studies of domestic homicides identified stepchildren in the home as a risk factor for homicide (Lundsgaarde, 1977). Further, this finding was inconsistent with that of Campbell et al. (2003), who found that this factor remained consistent as a predictor of femicide across all seven models, and more than doubled the risk of abused women being killed. Still, over one-quarter of the homicides in the current study had this factor present--as did slightly over one-fifth of the assault cases. It could be that this factor is poor at distinguishing between aggravated assaults and homicides, but better at discriminating between homicides and less severely abused victims. Future research should explore this issue in greater detail.

Prior threats to kill the victim was not found to be associated with an increased risk for being killed in an intimate relationship. This finding was inconsistent with those of many other researchers in this area (Koziol-McClain et al., 2006; Moracco, Runyan, and Butts, 1998; Stuart & Campbell, 1989). Still, in the current study, 41% of the homicides involved a prior threat to kill. As with stepchildren in the family, this factor may not be good at discriminating between homicides and aggravated assaults, since 25% of that group also had this factor present. Consistent with that, some argue that prior threats to kill are a common characteristic of relationships plagued by domestic violence (Websdale, 1999), while other researchers have reported different findings. At least one study reported that 60% of 88 wife assaulters or killers in their study had never threatened to kill their spouses or used a weapon against them (Grann & Wedin, 2002). Further research is needed to determine if prior threats to kill is a risk factor for intimate partner homicide and the appropriate groups for comparison.

4.1: Implications

Over the past thirty years, intimate partner homicide has decreased drastically (Fox & Zawitz, 2004). Experts suggest that this decrease has been at least partially due to increased domestic violence resources and policy changes in regards to domestic violence laws (Campbell et al., 2007; Klein et al., 1997). It has been suggested that domestic violence laws sanctioning the seizure of firearms from an abuser and prohibiting them from owning or buying them have had the strongest effect on the reduction of intimate partner homicide rates (Vidgor & Mercy, 2006). The results of the current study support the purpose and utility of such laws. Further, since previous research has found that domestic violence offenders who possessed guns purportedly were under a court order prohibiting them from having them (Campbell et al., 2003; Webster, 1997), the results observed in the present study indicate a need to continuously review the effectiveness of such laws and revise them if necessary.

Experts in the field of intimate partner violence have argued for the development and implementation of risk assessment measures aimed at identifying victims at risk for continued abuse and/or being killed (Hilton & Harris, 2005; Roehl et al., 2005). Regarding present findings, it is important to recognize the strength of the risk factors for homicide supported here. The results of the current study support the inclusion of estrangement and abuser access to a firearm in risk assessment models for intimate partner homicide. Hilton and Harris (2005) point out that there are some assessment tools that are currently being used that include items that have been shown to be poor predictors of re-abuse and/or homicide. This is a problem, since including such factors in the assessment of risk will likely diminish the accuracy of the tool. By choosing factors

to be included in a risk assessment measure on an empirical basis, this problem can be averted (Hilton & Harris, 2005). These researchers have suggested using a validated risk assessment of recidivism for wife assaults when concerned about lethality risk, since our ability to develop an accurate actuarial assessment tool for intimate partner homicide is limited by the low base rate of such homicide.

There is a continued need for intervention in cases of domestic violence with the potential for a lethal outcome. This seems particularly important in situations in which the victim has decided to physically separate from her abuser and the abuser has access to a gun, as indicated by the results of the current study. Though not measured in the current study, the majority of the murdered women in the Campbell et al. (2003) study had at least one prior contact with a social service system of some kind. According to Sharps, Koziol-McLain et al. (2001), in the 11-city case control study of IP femicide, as many as 83% of victims and/or perpetrators had some prior contact with the criminal justice system, victim assistance services, and/or healthcare agencies in the year prior to the murder.

It seems apparent that there are opportunities for professionals across many disciplines to intervene in cases of intimate partner violence in an effort to prevent further violence and/or lethality. Based on the current findings, this becomes particularly important when there is knowledge that the victim intends to separate from her abuser. Safety planning is crucial in such situations, and efforts should be made to assess for lethality risk and address a plan to keep the victim safe and alive, given that many wife assaulters recidivate against the same victim despite separation and restraining orders (Buzawa & Buzawa, 2003; Gondolf, 2002).

In addition, improved communication and collaboration between emergency health care providers, social service agencies, and law enforcement is indicated. The various disciplines that interact with victims of intimate partner violence need to form greater alliances and work together to learn more about risk factors, develop and implement risk assessments, and ultimately reduce the prevalence of intimate partner violence and its overrepresentation among all homicides.

While the present study focused on the most serious domestic violence offenders in terms of physical violence, it did not address the issue of non-violent coercion and control of victims. This area of domestic violence presents an enormous challenge for researchers to investigate due to the hidden nature of such behavior. It seems likely that there are many women being verbally and psychologically coerced in abusive relationships that are not being identified by our present surveillance systems (e.g., medical care professionals, police, courts). Future research should address this aspect of domestic violence and determine the relationship between such behavior and physical violence and the interplay with risk factors for homicide. Additionally, the various professions that currently interact with victims of domestic violence need to collaborate further to determine methods of assessing coercion in abusive relationships. Recently Starke (2007) has addressed this need with compelling and provocative arguments concerning the prevalence of this type of abusive behavior and a call to order for social and legal intervention.

The present findings reveal a need to further explore the relationship between prior threats with a weapon and abuser access to a gun. One implication of the current findings is that in the absence of information concerning the availability of a firearm to

the abuser, it would be extremely important for an intervening officer to ask about prior threats with any weapon.

4.1.1: Summary of Major Implications. The current study provided support for two major risk factors of intimate partner homicide previously identified in the literature: separation after living together and abuser access to gun. It also provided support for prior threats with a weapon in bivariate analyses. Results here indicated that these factors may be generalizable to a suburban community, not just to major cities as in the Campbell et al. (2003) study. Further, these two factors were able to discriminate between severely violent assaults and homicides as predictors of the latter, whereas Campbell and colleagues (2003) compared femicides with abused women identified in the community via telephonic survey. The current study revealed that these factors continue to receive support for inclusion in risk assessment of lethality in domestic violence situations, and supported the purpose and utility of laws restricting an abuser's access to a firearm.

4.2: Limitations

It is important to note that the abuser control variable was removed from study because it often could not be rated due to limited information in the investigative case file. Initially, information on this variable was collected and rated from fifteen total cases in accordance with the procedures described earlier in the methods section of this dissertation. However, after exhaustive searching through all information in the file, there was rarely any indication regarding the extent to which an abuser was controlling. The current researcher chose to treat the absence of information from the case file as indicating that the factor was not present in the case. This approach can be problematic

in general, but was particularly problematic in regard to the abuser control variable. Since the majority of files mentioned nothing about the factors considered in the operational definition for abuser control described previously, the variable was treated as not present. This resulted in very few cases, aggravated assaults or homicides, having this factor rated as present. It was decided that this variable would likely confound statistical analyses and results; it was therefore discarded.

One of the limitations and threats to internal validity involved in a case-control design involves the possibility of selection bias. In the current study, it was necessary to utilize preformed groups. Because of this, however, it is possible that these groups differed on the variables being studied, to a degree much greater than the general population of abused women, prior to being examined in this study (Kazdin, 2003). The thirty-two murdered women and seventy-seven assaulted women in this study from Burlington County, NJ, may not be representative of all abused women who are murdered or assaulted. Hence, this is also a problem for external validity.

Another problem regarding group selection could be that the two groups were actually very similar to each other. One reason that only two of the factors identified by Campbell et al. (2003) as risk factors for homicide were supported by the current study might have been the similarities between the aggravated assault and homicide groups. In the current study, the control group was comprised of domestic-violence-related aggravated assaults. However, the cases were not screened to determine the level of violence used by the perpetrator. The cases were selected on the basis of an aggravated assault charge against the perpetrator. Therefore, it is likely that these cases varied in the amount of force and violence used, and whether a weapon was used. As a result, some of

the aggravated assault cases could have involved potentially lethal wounds, possibly making the characteristics of the case more similar to the homicide group than the aggravated assault group.

Furthermore, the aggravated assault cases used in this study represent the most serious that come to the attention of the prosecutor's office. Cases presented by the prosecutor's office to the grand jury are those that represent indictable offenses. The majority of aggravated assault cases that are sent up to the prosecutor's office are remanded to municipal court, downgraded and remanded, or dismissed. The number of cases that fall into these categories in any given year is estimated to be around 2500. As a result, there were likely many cases involving non-fatal domestic violence related physical assaults that fell into this category and were hence excluded from this study. Furthermore, of the cases prosecuted at the state level, the current study only included those that ended in conviction. By only including the most serious, indictable offenses ending in conviction, it becomes even more apparent that the two groups compared in the current study may have been more similar than different.

This poses problems when trying to distinguish these two groups on a number of risk factors. These problems are exacerbated by the existing overlap of risk factors for different contexts of intimate partner violence. Prior domestic violence, for example, has been shown to be predictive of both further abuse and homicide. As Hilton and Harris (2005) point out, the ODARA revealed that having stepchildren in the family is a risk factor for subsequent abuse, indicating it may not distinguish well between such a risk and the risk for lethality. In addition, there are unique factors based on context, such as those implicated only in the onset of domestic violence, or its desistance. This could

explain why having a child in the home from a previous sexual partner, prior threats with a weapon, and prior threats to kill were not found to distinguish the homicide and aggravated assault groups in this sample.

On the other hand, if we assume these two groups are similar, two of the strongest factors consistently supported in the literature as risk factors for homicide were still able to distinguish these two groups--even if they were similar in other respects. This underscores the strength of these two factors in identifying cases at highest risk for homicide.

With respect to construct validity, it is possible that some of the risk factors examined here did not capture the underlying constructs (Kazdin, 2003). For example, the variables of "prior threats to kill" and "prior threats with a weapon" were highly correlated. Perhaps these variables are better accounted for by a broader risk factor (e.g., "prior threats of any kind"). As evidence to the contrary, in a multivariate model in which these variables were combined and recoded in this way, the new variable was still not a significant predictor in the final model--suggesting such a strategy did not improve the understanding of the underlying construct. Further, since Campbell et al. (2003) found both factors to independently contribute to their model, there is some evidence that these constructs are different. Future research should attempt to further explain the underlying construct of prior threats.

Another limitation of past studies involves the limited information available from police files. Although the current study relied on prosecutor's case files, which often contain additional information not present in police files (Campbell et al., 2007), the available information was still often limited. To manage this and obtain additional

information, the current study could have involved interviews with the investigating detective, police officers, and/or prosecutors. Moracco et al. (1998) successfully employed such a strategy by interviewing the police officers involved in the cases they reviewed. Likewise, Campbell et al. (2003) used proxy informants, another good way to obtain missing information and corroborate other information. Future research should utilize a proxy informant as an additional source of information.

In addition to the issues presented above, there was also a problem with limited information available in the files from the defendants. Often, in these cases, defendants did not provide statements to the police. Even after conviction, defendants refrain from providing a statement of their version of the offense on the pre-sentence investigation reports. In such cases, we are left to rely only upon the information from the victim and police.

In general, the strategy used in the current study to select the non-fatal domestic violence group has substantial limitations. In selecting this group, the current researcher focused on an official charge and ultimate conviction of an indictable offense of aggravated assault. The previously-noted limitations highlight the problem of outcome insensitivity: using a conviction for an offense is not equivalent to studying actual behavior. In the current study, the aggravated assault group may not be representative of domestic violence offenders' actual behavior due to the various selection biases addressed here. Unfortunately, however, this is always a problem with archival research using law enforcement records.

There was also a potential problem with low power (Kazdin, 2003). The generally-accepted guideline for observational designs such as this one involves having at

least ten observations per independent variable. In the current study, there were six independent variables and one-hundred and nine total observations. However, there were only thirty two homicide cases reviewed. In the current study, trends were emerging, but it was difficult to detect significant differences due to the low number of homicide outcomes. Future research should include a greater number of homicide cases.

One of the assumptions of logistic regression is that all potential risk factors were included in the model, and no plausible risk factors were excluded. There were some potential factors that were excluded in the present study, however. Abuse during pregnancy, forced sex, and non-fatal strangulation or choking have received empirical support as other major risk factors of intimate partner femicide (Campbell et al., 2007). Stalking has also received support as a risk factor. However, the degree of association is not yet established, since most studies of intimate partner homicide have not examined this factor (Campbell et al., 2007). All of these factors could have been included in the current study as independent variables to be observed. Given the already-limited sample size, however, the inclusion of additional independent variables could not be justified.

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Appendix A: Tables and Figures

TABLE 1

Categories of Domestic Violence Risk Assessment Instruments

Instruments With No Available Validation Data	Instruments Undergoing Evaluation and Validity Testing at Time of Review	Instruments with Existing, Published Data Concerning Validity
Domestic Violence Risk Assessment Form used in Delaware	Domestic Violence Inventory (DVI) (as cited in Roehl & Guertin, 1998)	Danger Assessment (DA) Scale (Campbell, 1995, 1998, 1999)
Mosaic-20 developed by Gavin deBecker (Trone, 1999)	Domestic Violence Screening Instrument (DVSI) used in Colorado (Williams & Houghton, 1999)	Spousal Assault Risk Assessment (SARA) (Kropp, Hart, Webster, & Eaves, 1995, 1998)
Risk Assessment and Lethality Assessment used in Hawaii (Roehl & Guertin, 1998)	Kingston Screening Instrument for Domestic Violence (K-SID) (Gelles, 1998)	Propensity for Abusiveness Scale (PAS) (Dutton, 1995b, 1999)
	Navy Risk and Safety (as cited by Campbell, 1999)	PCL-R (Hare, 1991)
	Pre-Sentence Investigation (PSI) Domestic Violence Supplement associated with the Domestic Abuse Intervention Project in Duluth, Minnesota (Roehl & Guertin, 1998)	

Source: Dutton & Kropp (2000)

TABLE 2***Demographic Information for Burlington County, NJ, 2000 Census***

Population Estimate 2003	444,381
Population, percent change, April 1, 2000 to July 1, 2003	5.0%
Population, 2000	423,394
Population, percent change, 1990 to 2000	7.2%
Persons under 5 years old, percent, 2000	6.4%
Persons under 18 years old, percent, 2000	25.2%
Persons 65 years old and over, percent, 2000	12.6%
Female persons, percent, 2000	50.5%
White persons, percent, 2000	78.4%
Black or African American persons, percent, 2000	15.1%
American Indian and Alaska Native persons, percent, 2000	0.2%
Asian persons, percent, 2000	2.7%
Persons reporting some other race, percent, 2000	1.5%
Persons reporting two or more races, percent, 2000	2.1%
White persons, not of Hispanic/Latino origin, percent, 2000	76.3%
Persons of Hispanic or Latino origin, percent, 2000	4.2%

Source: NJ Quick Facts: Burlington, 2000

TABLE 3*Suspect (N = 109) and Victim (N=109) Age by Type of Crime*

	<u>Type of Crime</u>							
	<u>Aggravated Assault</u>				<u>Homicide</u>			
	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum
Suspect (N=109) Age	34.51	8.62	19.00	55.00	37.84	12.56	18.00	65.00
Victim (N=109) Age	33.00	9.42	17.00	52.00	31.63	10.67	15.00	57.00

TABLE 4

Racial/Ethnic Distribution of Suspects (N=109), Victims (N=109), and Burlington County, NJ (N=423,394)

	Census 2000	Victim Race	Suspect Race
White persons	78.4%	62.4%	51.4%
Black or African American persons	15.1%	32.1%	43.1%
Asian persons	2.7%	2.8%	0%
Persons reporting some other race	1.7%	.9%	.9%
Persons of Hispanic or Latino origin	4.2%	1.8%	4.6%

Note: Census 2000 total % is greater than 100% because of overlap between White and Hispanic/Latino groups.

TABLE 5

Race of Suspects (N = 109) and Victims (N=109), Employment Status, Children in Home, Previous Threats, and Weapon Access by Type of Crime

		Type of Crime			
		Aggravated Assault		Homicide	
		<i>n</i>	N %	<i>n</i>	N %
Suspect Race	Caucasian	39	50.6%	17	53.1%
	African-American	34	44.2%	13	40.6%
	Hispanic/Latino	3	3.9%	2	6.3%
	Asian	0	.0%	0	.0%
	Other	1	1.3%	0	.0%
Victim Race	Caucasian	48	62.3%	20	62.5%
	African-American	25	32.5%	10	31.3%
	Hispanic/Latino	1	1.3%	1	3.1%
	Asian	2	2.6%	1	3.1%
	Other	1	1.3%	0	.0%
Unemployed	Employed	54	70.1%	21	65.6%
	Unemployed	23	29.9%	11	34.4%
Child In Home From Previous Partner of Victim	No Child	61	79.2%	23	71.9%
	Child From Previous Partner	16	20.8%	9	28.1%
Separation After Living Together	No Separation After Living Together	56	72.7%	16	50%
	Separation After Living Together	21	27.3%	16	50%
Prior Threats to Kill	No Prior Threats to Kill	58	75.3%	19	59.4%
	Prior Threats to Kill	19	24.7%	13	40.6%
Prior Threats with Weapon	No Prior Threats with a Weapon	74	96.1%	26	81.3%
	Prior Threats with a Weapon	3	3.9%	6	18.7%
Abuser Access to Gun	No Access to Gun	67	87.0%	13	40.6%
	Abuser Access to Gun	10	13%	19	59.4%

TABLE 6*Bivariate Logistic Regression Analyses of Demographic Variables*

<i>Demographic Variable</i>	<i>Statistics</i>						
	<i>b</i>	<i>SE b</i>	<i>Odds Ratio</i>	<i>95% C.I.</i>	<i>Wald's Chi-Square</i>	<i>df</i>	<i>p</i>
Victim age	-.015	.022	.985	.94 to 1.03	.45	1	.50
Victim race							
Caucasian	.01	.43	1.01	.43 to 2.36	.00	1	.99
African-American	-.06	.45	.95	.39 to 2.29	.02	1	.90
Hispanic/Latina	.90	1.43	2.45	.15 to 40.44	.39	1	.53
Asian	.19	1.24	1.21	.11 to 13.83	.02	1	.88
Other	-20.34	40192.97	.00	.00 to .00	.00	1	1.0
Suspect Age	.034	.021	1.04	.99 to 1.08	2.49	1	.12
Suspect Race							
Caucasian	.099	.42	1.10	.48 to 2.52	.05	1	.81
African-American	-.145	.43	.865	.38 to 1.99	.12	1	.74
Hispanic/Latino	.497	.94	1.64	.26 to 10.34	.28	1	.59
Asian	-	-	-	-	-	-	-
Other	-20.34	40192.97	.00	.00 to .00	.00	1	1.0
Suspect Unemployed	.21	.45	1.23	.51 to 2.96	.21	1	.64

TABLE 7*Chi-square Analyses of Demographic Variables*

<i>Demographic Variable</i>	<i>Statistics</i>		
	χ^2	<i>df</i>	<i>p</i>
Victim Age Groups	2.65	4	.449
Victim race	.86	4	.930
Suspect Age Groups	5.48	4	.242
Suspect Race	.781	3	.854
Suspect Unemployed	.21	1	.64

TABLE 8***Multivariate Logistic Regression Analysis: Demographic Variables with Risk Factors***

<i>Predictor</i>	Final Model						
	<i>b</i>	<i>SE b</i>	<i>Odds Ratio</i>	<i>95% C.I.</i>	<i>Wald's Chi-Square</i>	<i>df</i>	<i>p</i>
Victim age	-.053	.029	.948	.895 to 1.00	3.28	1	.07
Victim race							
Caucasian	.093	1.18	1.10	.110 to 10.98	.006	1	.937
African-American	-.131	1.19	.877	.084 to 9.11	.012	1	.913
Suspect Employment Status	.765	.570	2.15	.704 to 6.56	1.80	1	.179
Abuser Access to Gun Separation After Living Together	2.75	.635	15.65	4.51 to 54.28	18.78	1	<.001
Victim with Child in Home from Previous Sexual Partner	1.30	.565	3.68	1.22 to 11.13	5.32	1	.021
Prior Threats with a Weapon	.486	.619	1.63	.483 to 5.48	.617	1	.432
Prior Threats to Kill	.809	1.07	2.25	.273 to 18.43	.566	1	.452
	.033	.634	1.03	.298 to 3.58	.003	1	.958

Note: Hispanic/Latina, Asian, and Other excluded from multivariate due to cell count being lower than five for each category

TABLE 9*Summary of Logistic Regression Analysis Results*

<i>Predictor</i>	Final Model						
	<i>b</i>	<i>SE b</i>	<i>Odds Ratio</i>	<i>95% C.I.</i>	<i>Wald's Chi-Square</i>	<i>df</i>	<i>p</i>
Constant	-2.11	.40	.12	N/A	27.68	1	<.001
Separation after living together	1.15	.51	3.14	1.16 to 8.53	5.04	1	.025
Abuser access to gun	2.37	.52	10.72	3.87 to 29.71	20.78	1	<.001
<i>Test</i>					χ^2	<i>df</i>	<i>P</i>
Overall model evaluation							
Likelihood ratio test					28.80	2	<.001
Goodness-of-fit test							
Hosmer & Lemeshow					1.61	2	.446

TABLE 10***Accuracy of Predictions of Aggravated Assault Versus Homicide: Null and Final Models^a***

Observed			Predicted		
			Type of Crime		Percentage Correct
			Aggravated Assault	Homicide	
Null Model	Type of Crime	Aggravated Assault	77	0	100.0
		Homicide	32	0	.0
	Total Percentage Correct				70.6
Final Model	Type of Crime	Aggravated Assault	67	10	87.0
		Homicide	13	19	59.4
	Total Percentage Correct				78.9

^a The cut value is .500

FIGURE 1

Type of Crime by “Separation After Living Together”

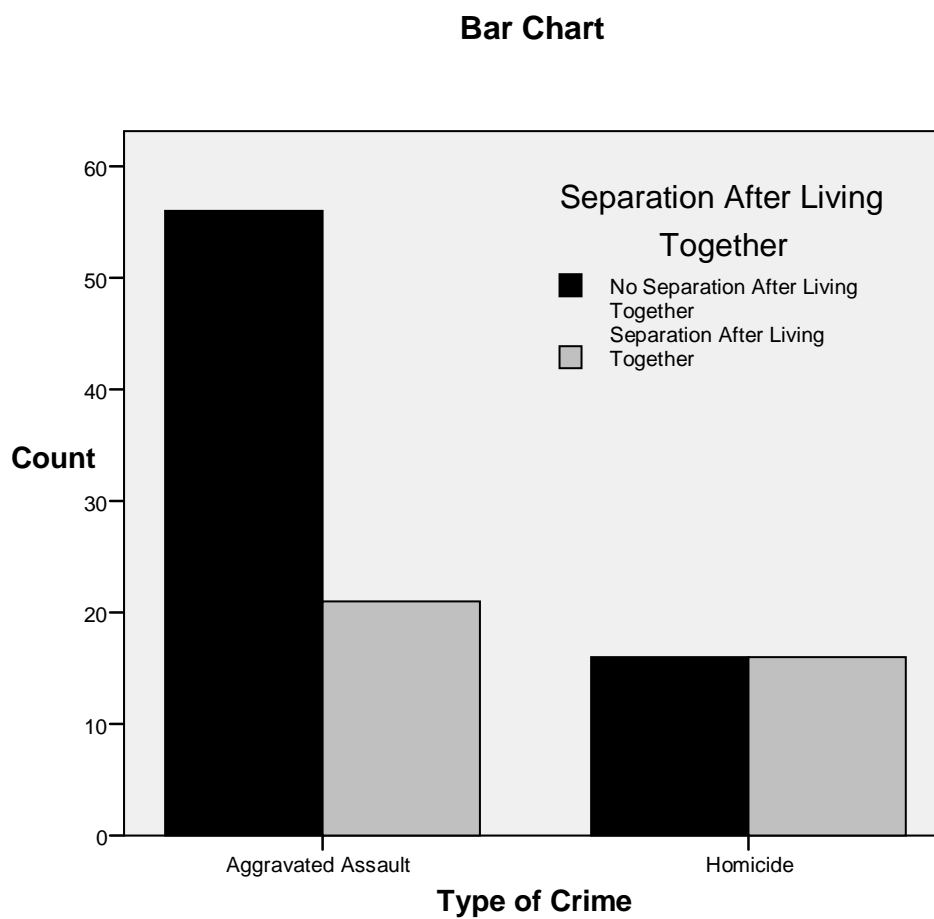


FIGURE 2

Type of Crime by “Prior Threats with a Weapon”

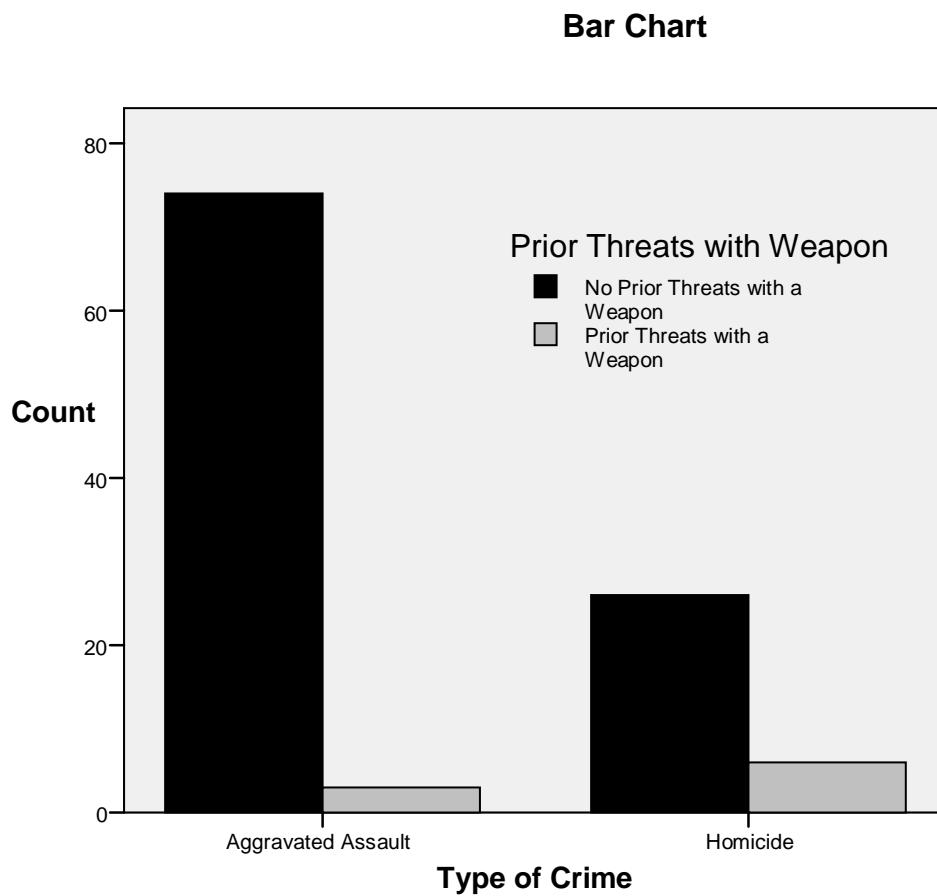


FIGURE 3

Type of Crime by “Abuser Access to Gun”

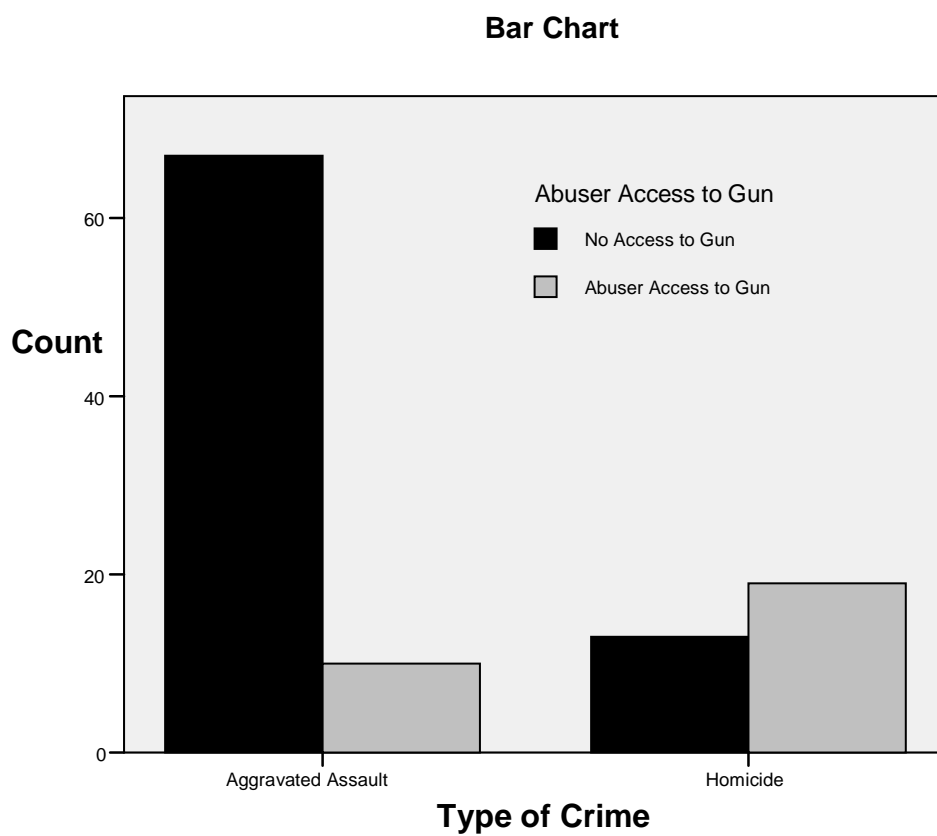
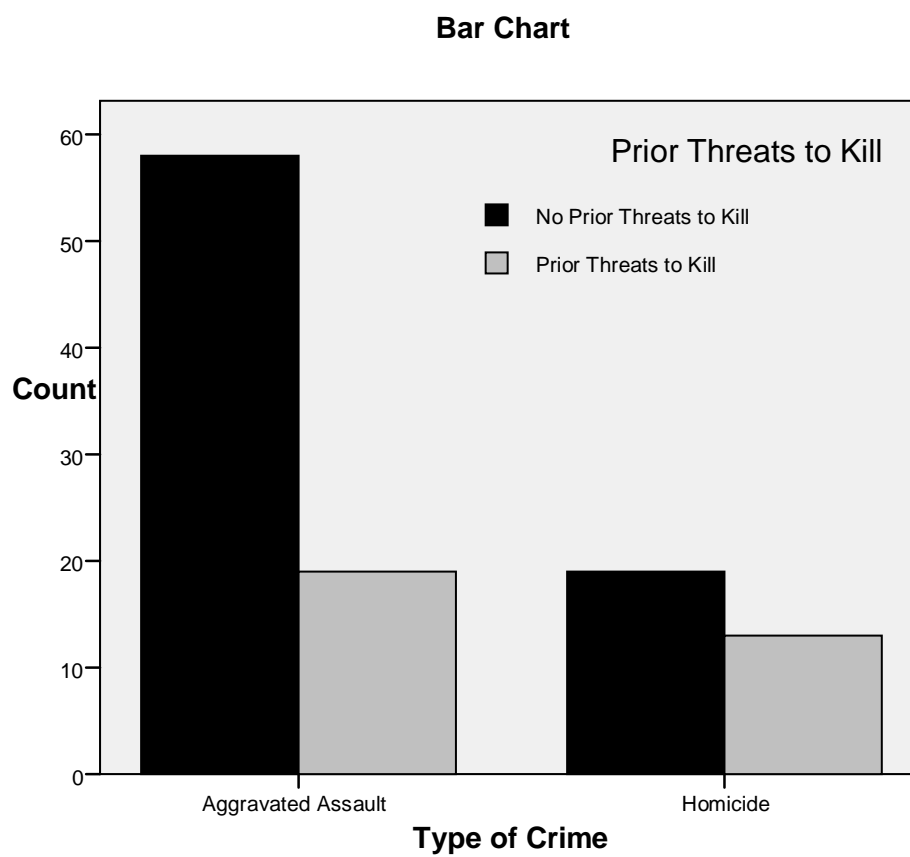


FIGURE 4*Type of Crime by "Prior Threats to Kill"*

VITA

Michael T. Wiltsey was born in New Jersey and attended Gloucester City High School. He graduated as valedictorian in 1992. He went on to attend Monmouth University as a double major in Psychology and Criminal Justice. He graduated with honors in 1996 with a B.A. in both and finished first in his class among those who attended Monmouth exclusively. Mr. Wiltsey then attended John Jay College of Criminal Justice and obtained a Master of Arts degree in Forensic Psychology in 2001. He entered the doctoral program in Clinical Psychology in September of 2001. Mr. Wiltsey presented the findings of this dissertation at the 2007 American Psychological Association Conference.

Selected Research Experience

Research Intern with Policy Research Associates on cross-training curriculum development project concerning co-occurring substance abuse and mental illness.
Primary Investigator: Policy Research Associates, Inc.

Interviewer for Classification of Violence Risk (COVR) software validation project. This project was an outgrowth of the ten-year study completed by Monahan et al. on Violence Risk Assessment. Primary responsibility involved interviewing psychiatric inpatients at Hahnemann Hospital concerning violence.

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Selected Teaching Experience

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'04-'05 - *Departments of Psychology and Law & Justice, Rowan University, NJ*

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Practicum Student Trainee – (July 2003 – September 2004)

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