

INTIMATE PARTNER KIDNAPPING: AN EXPLORATORY ANALYSIS

by

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## **ABSTRACT**

The following study is an exploratory analysis of intimate partner kidnapping. The current study will give a descriptive picture of the victim, offender, and incident characteristics of a form of intimate partner violence that has never been studied before, intimate partner kidnapping, as well as a form of physical violence often seen in the literature, intimate partner assaults. The study will use a combination of the National Incident Based Report System (FBI, 2009), and the American Community Survey (Census, 2012) to identify these characteristics and also to identify any potential relationships between structural-level correlates and rates of intimate partner violence. The purpose of this study is to gain a better understanding of multiple forms of intimate partner violence using police data, as well as, understand their relationships to structural-level correlates of counties.

The current study uses the National Incident-Based Reporting (FBI, 2009) system from the year 2009 in order to identify both types of intimate partner violence. It is rare that police data is used to study intimate partner violence, and the current study expands our knowledge of this violence by using a different type of data to study this area. Additionally, the American Community Survey (Census, 2012) estimates between 2005-2009 are utilized to measure the structural-level variables, including concentrated disadvantage, racial heterogeneity, immigrant concentration, and residential stability.

Overall, this study finds that intimate partner kidnapping is a different form of violence than intimate partner assaults. Only one structural level variable, residential stability is significantly associated with intimate partner kidnapping, whereas, 3 of the 4 structural level

variables are significantly related to intimate partner assaults and most in the direction expected. The conclusions suggest that intimate partner kidnapping may be a part of “coercive controlling violence” which involves severe amounts of control, isolation, and intimidation, and may not have the same relationships to structural-level correlates as other types of intimate partner violence, such as physical assaults.

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## TABLE OF CONTENTS

LIST OF TABLES .....	x
CHAPTER ONE: INTRODUCTION.....	1
CHAPTER TWO: LITERATURE REVIEW .....	5
Definitional Issues of Intimate Partner Violence .....	5
Data Sources for Intimate Partner Violence.....	9
The Scope of Intimate Partner Violence .....	12
The Scope of Kidnapping.....	14
Kidnapping of Children and its Relationship to Intimate Partner Violence .....	17
Intimate Partner Kidnapping .....	18
CHAPTER THREE: THEORY .....	22
Social Disorganization Theory.....	22
Social Disorganization Theory and Intimate Partner Violence.....	26
CHAPTER FOUR: METHODS .....	31
Current Study .....	31
Data .....	32
National Incident-Based Reporting System Data .....	32
American Community Survey Data .....	34
Sample.....	35



Measures.....	37
Dependent Variables.....	37
Independent Variables .....	38
Control Variables.....	42
Analytic Strategy.....	43
CHAPTER FIVE: DESCRIPTIVE STATISTICS.....	45
CHAPTER SIX: BIVARIATE RESULTS .....	61
CHAPTER SEVEN: MULTIVARIATE RESULTS.....	70
CHAPTER EIGHT: DISCUSSION.....	76
Conclusions .....	77
Strengths and Limitations.....	82
Implications and Future Research Directions .....	84
APPENDIX: TABLES.....	87
REFERENCE LIST .....	103

## LIST OF TABLES

Table 1: Adult Intimate Partner Kidnapping Descriptive Results (n=753) .....	88
Table 2: Adult Intimate Partner Assaults Descriptive Results (n=7290).....	89
Table 3: Descriptive Results for Dependent Variables, Structural-Level Variables, and Control Variables for Both States Combined (n=228).....	90
Table 4: Descriptive Results for Dependent Variables, Structural-Level Variables, and Control Variables for Tennessee (n=95).....	91
Table 5: Descriptive Results for Dependent Variables, Structural-Level Variables, and Control Variables for Virginia (n=133) .....	92
Table 6 : Bivariate Pearson Correlations between the Dependent Variables Intimate Partner Kidnapping and Intimate Partner Assaults and the Structural-Level Independent Variables .....	93
Table 7 : Bivariate t-Tests between the Dependent Variable Intimate Partner Kidnapping, and the Control Variables .....	94
Table 8 : Bivariate Pearson Correlations between the Dependent Variable Intimate Partner Assaults and the Structural-Level Independent Variables .....	95
Table 9 : Bivariate t-Tests between the Dependent Variable Intimate Partner Assaults, and the Control Variables .....	96
Table 10: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Kidnapping, the Structural-Level Independent Variables, and Control Variables for Both States Combined (n=226) .....	97

Table 11: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Kidnapping, the Structural-Level Independent Variables, and Control Variables for Tennessee (n=94) .....	98
Table 12: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Kidnapping, the Structural-Level Independent Variables, and Control Variables for Virginia (n=132) .....	99
Table 13: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Assault, the Structural-Level Independent Variables, and Control Variables for Both States Combined (n=227) .....	100
Table 14: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Assaults, the Structural-Level Independent Variables, and Control Variables for Tennessee (n=94) .....	101
Table 15: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Assaults, the Structural-Level Independent Variables, and Control Variables for Virginia (n=133).....	102

## **CHAPTER ONE: INTRODUCTION**

Intimate partner violence has been deemed an important social issue not only in the United States, but globally as well (Tjaden and Thoennes, 2000). Prevalence rates of intimate partner violence within the United States vary significantly due to underreporting and disparity in data collection methods (Gunter, 2007; World Health Organization, 2005). However, regardless of the underreporting, the numbers are alarmingly high (Bensley et al., 2000; Black et al., 2011; Bonomi et al., 2006; Gunter, 2007; Moracco et al., 2007; Tjaden, and Thoennes, 2000). Across the United States, approximately 7 million men and 25 million women have experienced intimate partner violence at some point in their lifetimes (Bureau of Justice Statistics, 2001). It is clear that intimate partner violence is still a major social and public issue within the United States.

Since the women's movement of the 1970's there have been hundreds upon hundreds of empirical research studies addressing all aspects of intimate partner violence ((Johnson et al., 2005; Stith and Straus, 1995; Walton and Zigley, 2000). Countless specialty areas of intimate partner violence have been explored including child abuse, elder abuse, stalking, and intimate partner homicide. Research on intimate partner violence has become widespread, however, one area has been relatively ignored within the literature, that of intimate partner kidnappings. Empirical research on kidnapping among intimate partners is nonexistent within the literature; additionally, there is very little information on kidnapping generally. The few extant articles studying kidnapping mainly focus on parental kidnappings and child abductions, and these are few and far between (Asdigian et al., 1995; Boudreaux et al., 1999; Finkelhor and Ormrod, 2000;

Finkelhor et al., 1991; Finkelhor et al., 2002; Finkelhor et al., 2005; Greif and Hegar, 1993).

Intimate partner violence can take many forms, and as the field has progressed, these various forms of violence have become popular sub-areas of study, with the exception of intimate partner kidnapping. It is important to identify if the spectrum of violent acts that may occur in abusive situations have similar relationships among correlates so that proper prevention and intervention programs can be implemented and research efforts can be more effective.

Although the majority of research within the area of intimate partner violence has ignored macro-level correlates and focused largely on individual-level factors (Pinchevsky and Wright, 2012), recently researchers have begun to offer conceptualizations of community or structural-level factors that may influence the prevalence of intimate partner violence (Browning, 2002). One theory that offers the opportunity to study contextual effects is social disorganization theory (Shaw and McKay, 1942). This theory argues that individual-level behaviors, such as violence and crime, can be influenced by neighborhood characteristics (Shaw and McKay, 1942).

Neighborhood characteristics and effects have become increasingly more important in the study of deviant behaviors and crime, as well as social science generally (Sampson et al., 1999). There has been a plethora of empirical support for the relationship between structural and neighborhood correlates and street crime. Neighborhood features such as socioeconomic status, ethnic heterogeneity, residential stability, population density, and family disruption and their association to street crime have been well documented (Van Wyk et al., 2003). However, we know much less about the effects of these same structural correlates and their associations with other forms of crime, such as intimate partner violence. Recently, several studies have provided

evidence that social disorganization theory is applicable to understanding intimate partner violence (Benson et al., 2003; Browning, 2002; Van Wyk et al., 2003; Wright and Benson, 2010, 2011). Although limited in its existence, the small amount of research in this area has revealed a relationship between social disorganization indicators and intimate partner violence. This research suggests that neighborhood characteristics are important to fully understanding intimate partner violence (Pinchevsky and Wright, 2012), however, it is still unclear which contextual factors are the most relevant. Importantly, in the studies that have examined intimate partner violence and social disorganization correlates, no studies have included intimate partner kidnapping as a form of violence. In fact, most of the studies have only included less severe forms of violence (Benson et al., 2000; Benson et al., 2003; Van Wyk et al., 2003), often referred to as “common couple” violence (Johnson, 1995), or situational couple violence (Johnson and Leone, 2005). Authors have argued that the current studies on social disorganization theory and intimate partner violence are not suited to identifying more extreme, or different, forms of violence (Benson et al., 2003), such as intimate partner kidnapping. However these analyses have yet to be conducted.

There are various forms of intimate partner violence, however, there is a gap in the literature focusing on one of these forms of violence, intimate partner kidnapping. The current study expands our knowledge not only on intimate partner kidnapping, but also identifies the role structural-level factors may have on this type of violence. Using the National Incident Based Reporting System (FBI, 2009), this study examines demographic differences and patterns of intimate partner kidnappings, and the relationship of structural characteristics (related to social disorganization theory) to intimate partner kidnappings to address the gap in the literature on

this type of violence. As there is no previous research on kidnapping among intimate partners the current study will be an exploratory study and the first of its kind.

## **CHAPTER TWO: LITERATURE REVIEW**

### Definitional Issues of Intimate Partner Violence

Intimate partner violence may take various forms including but not limited to rape, physical assault, emotional and psychological violence, economic violence, kidnapping and false imprisonment, and stalking. As the field has progressed, these various forms of violence have become popular sub-areas of study in intimate partner violence, and several of these areas have been included in major national surveys about intimate partner violence. These more popular sub-areas include rape, physical assault, and more recently stalking (including cyberstalking) (Black et al., 2011; Tjaden and Thoennes, 2000). It is important to look at the different forms of violence in order to identify not only differing perpetrator characteristics, but victimization risk and protective factors for specific types of violence, so that proper intervention and prevention programs can be implemented, and research and support efforts can be more effective. One area of violence that has been completely ignored in the intimate partner violence literature is the area of kidnapping. One reason that this area of violence has been ignored may have to do with the fact that there is lack of an agreed upon definition of domestic violence, and kidnapping has not been included in any of the definitions of intimate partner violence This is a very important issue in the field of domestic violence because the way in which acts are defined has implications for methodological techniques, research on prevalence, policy initiatives, and ultimately the lives of many individuals (DeKeseredy and Schwartz, 2001)). How we define intimate partner violence ultimately has an impact on the way in which we monitor the occurrence and prevalence of this



violence, how we measure it and which forms of violence are included in our measurement, and the policy and social programs we create to prevent this violence.

One of the biggest debates on the definition of violence against women has been whether violence against women should be a narrow versus broad definition of violence in intimate relationships. A majority of researchers, policy makers, and the general public view violence against women as only physical or sexual assaults (DeKeseredy and Schwartz, 2001). There is a long standing history of discounting other forms of abuse such as psychological, verbal, and economic from the equation. There are several arguments for not including these other forms of abuse. Some proponents of a narrow definition argue that by including these other forms of abuse it is too difficult to determine what is actually causing the abuses (Gelles & Cornell, 1985). Others, such as political conservatives, argue that by including forms of abuse other than just physical and sexual abuse, researchers are able to artificially inflate the rates of abuse overall in order to make political points (Dutton, 2006; Fekete, 1994; Gilbert, 1994). Similar attacks have been seen from feminists who argue that combining all abuses trivializes what most everyone considers to be serious abuse in physical and sexual violence (Fox, 1993). Psychological and emotional abuse is seen as less harmful and, therefore, not as important.

However, there are some major issues in only using narrow legalistic definitions of violence. Research has shown that unless women label hurtful behaviors, such as physical assault, rape, or stalking, as being “criminal,” they will be much less likely to report them on surveys (Koss, 1996; Schwartz, 2000). In surveys that use such techniques and definitions there is a much lower incident rate of violence conveyed, which reflects differences in victimization

(Fisher, 2009). Actual victimization that is occurring may not be reported because the violence is not being defined in that manner. Therefore, the incidence of reported victimization may be much lower than actual victimization, dependent on the definitions being used in a survey. By using narrower operational definitions of domestic violence in the realm of criminality we will identify much less intimate violence. By only uncovering low rates of violence, especially on studies sponsored by the government, policy makers may be less likely to listen and take action. Some government officials may not be willing to provide funding to a problem that does not illicit large numbers of victims. Narrow definitions of violence against women exacerbate the problem of underreporting (DeKeseredy and Schwartz, 2001).

Other problems remain with using narrow definitions of abuse. Some women may feel that their problems are being trivialized. Because of these feelings, they may be discouraged from seeking help. If a woman's abuse does not coincide with the definitions put forth by criminal justice officials, government officials, researchers, and even the general public, then they themselves may not define it as abuse (DeKeseredy, 2009). If a victim does not classify themselves as a victim they will not seek help and will continue to remain in a violent and destructive relationship.

Women who are the targets of intimate violence are rarely only the targets of one type of assault (DeKeseredy and Schwartz, 2001). Many times victimization can take the form of multiple behaviors including physical violence, psychological abuse, sexual abuse that may not include penetration, or economic abuse. Some have argued that in fact psychological abuse is just as, if not more so, injurious than physical violence (Adams et al., 2008). Also, women are

often harmed through sexual abuse that does not involve penetration, when many times narrow definitions of sexual assault must include penetration of some form. A new body of research has shown growing concern for the problem known as coercive control, which typically involves emotional and psychological abuse, but can be hard to detect. These combined reasons are why many researchers assert that definitions of intimate violence should be broader and include multiple types of abuse, as well as multiple types of intimate relationships.

Broad definitions of violence against women have been criticized for trying to include too many behaviors. Researchers have argued that by including too many types of violence there will be a breakdown in people being able to label behaviors as violent or abusive (Duffy & Momirov, 1997). Also, some have argued that it is extremely difficult within a single research study to look at so many different types of behaviors at the same time. However, despite the critiques, many women and researchers are rejecting the notion that psychological, economical, or emotional abuses are not as injurious as physical or sexual assaults (DeKeseredy, 2000). A growing body of literature has shown that other types of behaviors that may be considered nonviolent are just as worthy of empirical, theoretical, and political attention. Furthermore, research has shown that a multitude of abuses are not mutually exclusive, and victimization may be occurring in a variety of ways (DeKeseredy and Schwartz, 2001). One plausible explanation for the reason that kidnapping has not been included in any of the previous studies of intimate partner violence is because it has yet to be included in any of the definitions of intimate partner violence.

This study will focus on a form of intimate partner violence that has not been studied in an attempt to help broaden the definition of intimate partner violence and identify a form of violence that may be more frequent than previously thought. To date, there are no empirical studies involving intimate partner kidnappings. We know virtually nothing about the incidence, perpetration, or characteristics of kidnappings among intimate partners. Furthermore, there is very little research at all on the area of kidnapping generally. The current study fills this gap in the research on intimate partner violence kidnapping/abduction.

#### Data Sources for Intimate Partner Violence

Since the 1970's, when intimate partner violence became a major concern among researchers and the general public, there have been several large scale and national studies that have attempted to identify prevalence rates and estimates of intimate partner violence, as well as to assess the impact this violence has on individuals within the United States. These surveys include the National Family Violence Survey (1975) and the National Family Violence Re-Survey (1985) (Straus and Gelles, 1986), the National Crime Victimization Survey (NCVS) (Bureau of Justice Statistics, 1973), the National Violence Against Women Survey (NVAWS) (Tjaden and Thoennes, 2000), and most recently the National Intimate Partner and Sexual Violence Survey (NISVIS) (Center for Disease Control, 2010).

The first two national surveys to examine violence within intimate and family relationships in the United States were developed by Straus and Gelles (1986). These were the National Family Violence Survey (1975) and the National Family Violence Re-Survey (1985). These surveys were the first systematic attempt to identify prevalence rates among intimate

partners. They used the Conflict Tactics Scale (CTS), which was developed by Murray Straus in the 1970's in order to study violence within families (Straus, 1979). Currently the CTS, the revised CTS, and the modified CTS appear in hundreds of scientific journal articles and numerous books (DeKeseredy and Schwartz, 1998). This instrument solicits information from both women and men about the "conflict tactics" they use with each other. The CTS consists of items that measure different ways of handling conflict in intimate relationships including physical violence, reasoning, and verbal aggression (also known as psychological abuse) (Straus 1979). The questions on the CTS include items such as, "Have you ever yelled and/or insulted your partner, threw something at your partner, or threatened to hit my partner." Although the CTS is a popular tool for soliciting information about violence within families, many researchers have criticized it for several important reasons. Some of the arguments against using the CTS include, but are not limited to, only asking about specific types of abuse, using simply counts of raw numbers of violent acts committed, and that the CTS only examines violence and psychological abuse within the context of settling disputes (DeKeseredy and Schwartz, 1998). Although Straus took some of these issues in to account when creating the revised CTS (Straus et al., 1996), the CTS2 does not resolve all the problems with the Conflict Tactics Scale (DeKeseredy and Schwartz, 1998). Importantly, although only several types of violence are measured, and there are no questions that ask about kidnapping, false imprisonment, abduction, or hostage taking situations.

Following the National Family Violence Surveys, the government attempted to study intimate partner violence nationally through not only the National Crime Victimization Survey (NCVS), which measures intimate partner violence within the larger context of general

victimization, but also the National Violence Against Women Survey (NVAWS), which was specific to intimate partner violence. The NVAWS, the next major national survey dedicated to studying intimate partner violence, examined the nature, extent and consequences of intimate partner violence in the United States (Tjaden and Thoennes, 2000). This survey consisted of telephone interviews with 16,000 United States residents (8,000 women and 8,000 men). The survey included comparisons among ethnic and racial groups, examinations of risk factors associated with intimate partner violence, rates of physical assault, rape, and stalking, injuries that resulted due to violence, and victims' involvement with the justice system and medical services (Tjaden and Thoennes, 2000). This was the first national study to include a measure of stalking and to assess patterns of stalking among intimate partners. Although the NVAWS helped expand our knowledge about the prevalence, incidence, and risk factors associated with intimate partner violence, it did not include any questions on kidnapping, abduction, hostage situations, or false imprisonment related to intimate partner violence. There were no questions on the survey that were remotely related to kidnapping situations.

Most recently in 2010, the Centers for Disease Control and Prevention initiated the National Intimate and Sexual Violence Survey (NISVS) in order to gather information about intimate partner violence, stalking, and sexual violence (Black et al., 2011). This survey's primary objectives were to describe the prevalence and characteristics of intimate partner violence, stalking, and sexual violence, patterns and the impact of violence, health consequences of this violence, and identification of who is most likely to experience this violence (Black et al., 2011). The NISVS not only asked questions about physical violence but psychological aggression as well. Included in the questions on psychological aggression was an item that asked

if one's partner had ever "kept you from leaving the house when you wanted to go." Although this question was included in the items on coercive control and psychological aggression, this is the first of any survey on intimate partner violence to include a question related to kidnapping in intimate partner relationships. Approximately 36% of female victims and 20% of male victims in the sample indicated this behavior had occurred in their intimate relationship, which potentially indicates intimate partner kidnapping to be a significant understudied problem.

These large-scale and national surveys have increased our knowledge about the nature and scope of intimate partner violence, however, our knowledge is limited to primarily physical violence, sexual violence, rape, and stalking, and we still know virtually nothing about kidnapping in intimate partner relationships.

### The Scope of Intimate Partner Violence

Intimate partner violence is a significant public health, and criminal (or legal) concern not only in the United States, but worldwide as well. In the United States alone, approximately 25 million women and 7 million men have experienced intimate partner violence across their lifetimes (Bureau of Justice Statistics, 2001). The Center for Disease Control and Prevention (CDC) defines intimate partner violence to include physical and sexual violence, the threat of physical or sexual violence, and emotional or psychological abuse that occurs in the context of physical or sexual violence, or threats of such violence by intimate partners who may include current or former spouses, boyfriends/girlfriends, dating partners, and same or opposite sex partners (Saltzman et al., 1999). Prevalence rates of intimate partner violence within the United States vary significantly due to underreporting and disparity in data collection methods (Gunter,

2007; World Health Organization, 2005). Regardless of the underreporting, the numbers are alarmingly high; lifetime prevalence rates range from 23% to 60%, and annual prevalence rates are approximately 17% (Bensley et al., 2000; Black et al., 2011; Bonomi et al., 2006; Gunter, 2007; Moracco et al., 2007; Tjaden and Thoennes, 2000). Annually, approximately 1.3 million women, and 835,000 men are the victims of physical assaults by an intimate partner within the United States (Tjaden and Thoennes, 2000). Additionally, the lifetime prevalence rates of intimate partner violence for women are nearly 25%, while for men they are about 8%; and recent estimates show that approximately 1 in 4 men, and 1 in 3 women, have experienced physical violence, rape, and/or stalking by an intimate partner in their lifetimes (Black et al., 2011). Moreover, in the United States, nearly half of all men and women have experienced psychological aggression by an intimate partner in their lifetime (Black et al., 2011). For women, intimate partner violence is the most common cause of nonfatal injury. Intimate partner violence has resulted in 2 million injuries and 1,300 deaths annually for women alone in the United States (National Center for Injury Prevention and Control, 2003). Women are also significantly more likely than men to be injured during an assault from an intimate partner, 39% compared to 25% respectively (Tjaden and Thoennes, 2000). Additionally intimate partner homicides account for approximately 40 percent of all murders of women in the United States (Campbell et al., 2003).

The consequences of intimate partner violence are numerous and far reaching. Many survivors of this violence report not only physical injuries, but serious mental health consequences such as anxiety, depression, and low self-esteem (Black et al., 2011). Additionally other health consequences have been reported such as substance abuse, gastrointestinal disorders, and sexually transmitted diseases, as well as gynecological or pregnancy complications (Black et



al., 2011). Many of these consequences can lead to disability, hospitalization and, at the worst end of the spectrum, death. The research has made it clear that although our understanding of intimate partner violence has grown substantially over the years, it is still a major public health concern and problem across the United States.

### The Scope of Kidnapping

Much of the research that has been completed in the area of kidnapping has focused on kidnappings of children (Asdigian et al., 1995; Boudreaux et al., 1999; Finkelhor and Ormrod, 2000; Finkelhor et al., 1991; Finkelhor et al., 2002; Finkelhor et al., 2005). The kidnapping of children has generated public concern, controversy, and confusion (Finkelhor and Ormrod, 2000). There have been several highly publicized news stories that have increased the fears and anxieties of parents. However, there is an ongoing debate over the frequency of the crime of kidnapping, the identity of the offenders, and who is most at risk. The nature and scope of kidnapping has been unclear because of a lack of an existing data collection system for the crime of kidnapping, as well as a concise definition of kidnapping (Finkelhor and Ormrod, 2000). The absence of reliable statistics about kidnapping has made it difficult to identify any patterns. Kidnapping is not included as one of the crimes in the Federal Bureau of Investigations (FBI's) Uniform Crime Reporting (UCR) system. Additionally, states or jurisdictions have not made any attempt to collect an independent tally of kidnapping statistics. As a result, there is a lack of a national picture, or large dataset, about this crime from a law enforcement perspective. There have been attempts to collect kidnapping data, but they were limited in scope and based specifically on children. One example is the National Incidence Studies of Missing, Abducted,

Runaway, and Thrownaway Children (NISMAART), which estimated the number of abductions, family and nonfamily, for a single year (Finkelhor et al., 1990), but this dataset did not include any statistics based on police data. Additionally, the FBI has a database on very serious kidnapping cases that have been reported to it, and the Washington State Attorney General's Office has compiled data on abduction homicides that are known to the police (Boudreaux et al., 1999; Hanfland et al., 1997). Nonetheless, these various data sources do not create a full picture of kidnapping offenses that are reported to and investigated by law enforcement.

More recently, the FBI, along with the Bureau of Justice Statistics, began supplementing the UCR with a more comprehensive dataset known as the National Incident-Based Reporting System (NIBRS) (Finkelhor and Ormrod, 2000). The intent is to eventually have NIBRS replace the UCR. This dataset collects extremely detailed information on all types of crimes known to the police, including kidnapping. NIBRS offers the opportunity to learn more about the extent and nature of kidnapping, including kidnappings of children, as well as intimate partners. This dataset offers information on the crime of kidnapping that was not available in the past, and the opportunity to better understand the patterns of this crime. NIBRS was implemented by the FBI in 1988. The data are submitted voluntarily by state, county, and city law enforcement agencies. As of 2009, the NIBRS dataset included incident records from 35 states and the District of Columbia (NIBRS, 2009). Some states report completely to NIBRS and, in other states, only some law enforcement agencies report under NIBRS, and all states report under the UCR system. NIBRS data include the nature and types of specific offenses, characteristics of offenders and victims, characteristics of persons arrested in connection with the crime, and the types and value of property stolen and recovered (NIBRS, 2009). NIBRS is far from perfect but offers the

opportunity to analyze the nature and scope of crimes that we were unable to examine in the past, such as kidnapping. Specifically, NIBRS offers the chance to examine not only child kidnappings, but other types of kidnappings such as intimate partner kidnappings, which we were unable to study previously due to a lack of data. NIBRS specifies the victim/offender relationship and, therefore, makes it possible to partial out those kidnappings that occur in intimate relationships (NIBRS, 2009).

The other side of the controversy is the lack of a clear definition of kidnapping. In a legal sense, kidnapping involves both short-distance and short term displacements and can include acts common to robberies and many sexual assaults (Finkelhor and Ormrod, 2000). Kidnapping occurs whenever a person is detained or taken against his/her will; this may include hostage situations in which the victim may or may not have been actually moved. Kidnapping can be committed by a variety of offenders including strangers, acquaintances, romantic partners, and parents (Finkelhor and Ormrod, 2000). For the purposes of this research, the definition of kidnapping that will be followed is the FBI's definition. According to NIBRS, kidnapping/abduction is "the unlawful seizure, transportation, and/or detention of a person against his/her will, or of a minor without the consent of his/her custodial parent(s) or legal guardian" (NIBRS, 2009). This offense includes not only abduction and kidnapping but hostage situations as well. This category is intended to capture information on the persons kidnapped and includes characteristics on those victims taken or detained against their will (NIBRS, 2009). Overall, NIBRS offers the first data source to look at this type of intimate partner violence.

## Kidnapping of Children and its Relationship to Intimate Partner Violence

The little research that has been conducted on kidnapping has focused on the kidnapping or abduction of children (Asdigian et al., 1995; Boudreaux et al., 1999; Finkelhor and Ormrod, 2000; Finkelhor et al., 1991; Finkelhor et al., 2002; Finkelhor et al., 2005;). According to Finkelhor and Ormrod (2000), there are three types of perpetrators of child kidnapping, family kidnapping, stranger kidnapping, and acquaintance kidnapping. The overwhelming majority of child kidnappings fall under the category of family kidnappings. The research shows that the perpetrators of family kidnappings are usually adults (98 percent) and often female (43 percent) (Finkelhor and Ormrod, 2000). Females appear to commit a larger portion of the family abductions than other types of abductions or violent crimes in general. This is important because research has shown that domestic violence and child abuse frequently occur in the same families (Greif and Hegar, 1993), and one potential reason for females kidnapping their children may be a result of trying to flee violence from their partners. A woman may see no other option and therefore she may take her children on the run. Although her actions may arouse sympathy from many, they still constitute a parental abduction under some state laws (Greif and Hegar, 1993). Children may also play a major role in a women's decision about staying or leaving an abusive partner (Shetty and Edleson, 2005). There are currently no data available on the number of women who have kidnapped their children while fleeing domestic violence. However, several studies have repeatedly shown that mothers who have been battered express concern for the safety of their children, and this concern may lead them to flee with their children for everyone's safety (Humphreys, 1995a, 1996b; Levondosky et al., 2000; Short et al., 2000). In fact the majority of residents at women's shelters include battered women with their children who are

fleeing an abusive partner (Minnesota Department of Public Safety, 2004; Shetty and Edleson, 2005). The little research on parental child abductions has suggested that adult domestic violence is a significant issue in parental abductions (Shetty and Edleson, 2005). For example, Greif and Hegars' (1993) book on parental kidnapping directly discusses the presence of family violence in cases of parental abduction. According to the authors' survey, the majority of marriages (54%) in which abductions occurred also involved intimate partner violence. Although there is little research in this area, it is clear that intimate partner violence and parental kidnappings of children are related. It is important to get a better understanding of kidnapping and intimate partner violence more generally to understand how this behavior fits into the spectrum of violent acts that occur in abusive situations in order to create better prevention and intervention efforts.

To date there have been no studies on intimate partner kidnapping. This is one area of violence that researchers know very little about, especially within the dimensions of intimate partner relationships. Questions about kidnapping were not asked in any of the major surveys on intimate partner violence till recently, giving researchers the opportunity to gain more knowledge in this area. The current research study looks to fill this serious gap in the literature on kidnapping and intimate partner violence.

### Intimate Partner Kidnapping

In recent years, a growing body of evidence and research has demonstrated the existence of different types or patterns of intimate partner violence. There have been several attempts to classify different types of intimate partner violence, as some researchers have argued that not all violence is the same (DeKeseredy, 2006; Johnson, 2006; Kelly and Johnson, 2008; Stark, 2007).

There has been some consensus in the research concerning a particularly important form of intimate partner violence which has been termed “intimate terrorism” (Johnson, 2008), or more recently known as “coercive controlling violence” (Kelly and Johnson, 2008). It is my belief that intimate partner kidnappings fall into this type of violence. The research argues that this type of violence is more severe than physical aggression or assaults, or what is referred to as “situational couple violence (SCV)” (Johnson, 2008; Johnson and Leone, 2005; Kelly and Johnson, 2008). Due to the fact there are no research studies on intimate partner kidnappings, in the following section I will present my argument for why kidnappings between intimate partners fall into this category and are therefore a more severe form of intimate partner violence.

According to the research, the term coercive controlling violence is used for a pattern of control, coercion, and emotionally abusive intimidation that is coupled with physical violence (Kelly and Johnson, 2008). The major forms or tactics that constitute coercive controlling violence used by abusers include intimidation, isolation, emotional abuse, use of children, economic abuse, and coercion and threats (Kelly and Johnson, 2008; Pence and Paymar, 1993). Because some of these tactics are considered nonviolent control tactics, coercive controlling violence does not necessarily manifest as high levels of violence. However, although this type of violence does not always involve severe or frequent violence, on average coercive controlling violence is more severe and frequent than other types of violence (Kelly and Johnson, 2008).

The combination of the pattern of coercive control coupled with higher levels of violence produces a highly negative impact on its victims, which has been argued to be worse than physical aggression and assaults. Victims of coercive controlling violence report that the

physical effects are not as negative as the psychological impact of their experiences. Research indicates victims have higher levels of fear and anxiety, depression, and post-traumatic stress disorder. Additionally, one of the major predictors of continued violence among intimate partners is the presence of controlling behaviors that are a part of the coercive controlling violence (Campbell et al., 2003; Kelly and Johnson, 2008).

On the other hand, another type of intimate partner violence, termed situational couple violence, results from arguments or situations between partners that may escalate into physical violence. This is not a minor version of coercive controlling violence but a different type of violence altogether with different causes and consequences (Kelly and Johnson, 2008). In situational couple violence there is no pattern of coercion, power, or control. Although this type of violence may include emotional abuse, it is not accompanied by a chronic pattern of controlling or intimidating behaviors (Kelly and Johnson, 2008; Leone et al., 2004). Situational couple violence is less likely to escalate over time and can stop altogether in some cases. Further, victims of situational couple violence indicate fewer health problems and psychological symptoms compared to victims of coercive controlling violence (Johnson and Leone, 2005).

It is my belief that intimate partner kidnappings fall into the category of coercive controlling violence. I believe there is a certain amount of psychological control that must be present in this form of violence. I think this is best demonstrated by the inclusion of a question of kidnapping/false imprisonment in the newest intimate partner dataset, the NISVS. This question was included in the section on coercive control and psychological aggression. Within coercive control the main goal is to restrict the other person's liberties with a pattern of violence,

intimidation, control, and isolation (Stark, 2006). Therefore it is my argument that intimate partner kidnappings are not a more severe form of physical violence or situational couple violence, but instead a different type of violence that falls into the typology of coercive controlling violence.



## CHAPTER THREE: THEORY

### Social Disorganization Theory

The majority of research in the area of intimate partner violence has focused largely on individual-level factors and ignored macro-level elements (Pinchevsky and Wright, 2012). The few studies that have included contextual effects have largely been grounded in social disorganization theory (Shaw and McKay, 1942), which argues that individual-level behaviors, such as crime and violence, can be influenced by neighborhood characteristics. Social disorganization theory (Shaw and McKay, 1942) highlights crime within a context of community and suggests that contextual factors influence criminological outcomes, including but not limited to violent crime (Hipp et al., 2009), delinquency (Bernburg and Thorlindsson, 2007), and property crime (Xie and McDowall, 2008). Of fundamental importance to social disorganization theory are neighborhood compositional factors and structural economic factors related to concentrated disadvantage and low economic status, residential instability, and ethnic heterogeneity (Sampson and Groves, 1989; Sampson et al, 1997; Sampson and Wilson, 1995; Shaw and McKay, 1942). Several studies have provided evidence that social disorganization theory is applicable to understanding intimate partner violence (Benson et al., 2003; Browning, 2002; Wright and Benson, 2010, 2011). However, it is still unclear exactly which contextual factors are most relevant to intimate partner violence, and no studies have included kidnapping as a form of intimate partner violence. Research suggests that neighborhood characteristics and macro-level indicators are important for fully understanding intimate partner violence (Pinchevsky and Wright, 2012); therefore, the current study will include measures of structural-

level correlates of social disorganization theory in order to assess the empirical and theoretical relationship between macro-level factors and a specific form of intimate partner violence, kidnapping/abduction.

Social disorganization theory posits that neighborhoods characterized by high levels of residential instability, ethnic heterogeneity, and high levels of concentrated disadvantage are likely to have greater crime rates because of a reduced ability to exert social control, both formal and informal. Shaw and McKay (1942) hypothesized that economic class and ethnic heterogeneity were highly related. This was due to the fact that ethnic minorities were more likely to live in neighborhoods characterized by disadvantage because they were less expensive and undesirable. Subsequently, the presence of multiple ethnicities in low income neighborhoods led to dysfunctional communication between residents which inhibited the formation of social ties (Kornhauser, 1978). With a lack of social ties, there was a reduction of informal social control within these neighborhoods. Residential instability was hypothesized to be positively associated with crime, because as the number of strangers increases social control is hampered due to a lack of invested residents (Bursik and Webb, 1982; Byrne and Sampson, 1986). More recently, reformulations of social disorganization theory place emphasis on social processes between residents of neighborhoods that may influence the association between crime and structural factors (Bellair, 1997; Browning et al., 2004; Pattillo, 1998; Sampson et al., 1997; Sampson and Groves, 1989; Sampson and Wilson, 1995; Warner and Rountree, 1997).

In the 1980s a renewed focus on social disorganization theory revived interest in neighborhood- and community-level effects on a range of outcomes (Browning, 2002; Wilson, 1987). Macro-level processes such as immigration, industrialization, and urbanization

transformed the social structure within neighborhoods. Social disorganization theory articulates that a number of neighborhood-level characteristics, including neighborhood poverty, ethnic heterogeneity, and residential instability, produce barriers that generate ineffective responses to regulation of residents behaviors by weakening the cohesiveness of a community (Bursik and Grasmick, 1993; Kornhauser, 1978, 1993; Sampson and Groves, 1989; Shaw and McKay, 1942). Socioeconomic disadvantage and a lack of social cohesion lead to a lower capacity for creating and maintaining social organization (Shaw and McKay, 1942). Further, communities in poverty are characterized by fewer structural and material resources. These resources are necessary to sustain basic social institutions such as family, schools, churches, and voluntary organizations. Additionally, poverty contributes to ethnic heterogeneity and residential instability, which weaken community attachments, restrain relationships, and impede the formation of shared goals within a neighborhood. Furthermore, neighborhoods with severe socioeconomic disadvantage have residents that are less socially connected (Bellair, 1997; Morenoff et al., 2001; Sampson et al., 1997), and are less likely to participate in local community organizations (Sampson and Groves, 1989). Residents of neighborhoods characterized by concentrated disadvantage are less able to build mutually beneficial relationships with one other based on trust and good will (Sampson et al., 2002). This lack of social capital leads to residents' inability to intervene in undesirable behavior as well as to come together collectively to address the needs of the community.

One of the most notable processes that have been emphasized in the reformulations of social disorganization theory is collective efficacy (Pinchevsky and Wright, 2012). A key component of the ability of a neighborhood to informally control problem behaviors is social

cohesion (Sampson and Groves, 1989). Sampson (1997), more recently, explicitly identified the social processes that link community crime and structural features of the neighborhood. In his view, the emergence of trust and solidarity among residents in a community is related to the prevalence and density of friendship and kinship networks, as well as the level of participation in organizations based within that community. This mutual residential trust is also known as social cohesion, and effective informal social control is encouraged by this social cohesion. When there is effective informal social control the capacity of a community to monitor and minimize undesirable behaviors becomes more successful (Browning, 2002; Sampson et al., 1997). Residents within cohesive communities can better and more effectively mobilize with one another to regulate crime and violence. Collective efficacy refers to the degree of social cohesion among residents and their willingness to intervene in social problems in the community for the greater good of the neighborhood (Sampson et al., 1997).

Contemporary disorganization theory holds that the degree to which community residents are able to establish strong relational networks is influenced by structural characteristics of neighborhoods, including levels of concentrated disadvantage and rates of residential instability. Communities characterized by high population turnover have more difficulty establishing and maintaining relational networks (Kornhauser, 1978). Residents of areas characterized by high levels of economic and social disadvantage are likely to feel alienated, socially isolated, and powerless (Ross and Mirowsky, 2009; Stark, 1987). These feelings work against residents and collective actions to reduce and solve social problems (Sampson et al., 1997). In the end, neighborhoods with high rates of economic disadvantage, residential instability, and ethnic heterogeneity have lower levels of collective efficacy and, in turn, higher crime rates.

Shaw and McKay (1942) showed in their research that macro-level processes exert control over crime, independent of individual-level characteristics, suggesting that structural factors have an effect on the rate of crime and violence within a community. Social disorganization theory proposes that concentrated disadvantage is positively associated with crime and violence. Since the early work of Shaw and McKay (1942) there has been a plethora of research in the area of social disorganization and its effects on crime, especially street crime. It has been well established that community-level processes and characteristics influence street crime (Bursik, 1988; Bursik and Grasmick, 1993; Kubrin and Weitzer, 2003; Sampson et al., 1997; Shaw and McKay, 1942; Wright and Benson, 2011). There is much less evidence on whether these same community-level processes influence other crimes such as intimate partner violence.

#### Social Disorganization Theory and Intimate Partner Violence

Although studies examining the processes of social disorganization theory have largely focused on street crimes such as robbery, assault, burglary, and homicide (Bellair, 1997; Kubrin and Weitzer, 2003; Mazerolle et al., 2010; Sampson and Lauritsen, 1994; Sampson et al., 1997), there is some evidence that the tenants of social disorganization may also apply to other forms of victimization, specifically intimate partner violence (Pinchevsky and Wright, 2012). There is a growing body of evidence that structural characteristics of neighborhoods such as ethnic heterogeneity and economic disadvantage influence neighborhood levels of intimate partner violence (Benson et al., 2003; Browning, 2002; Lauritsen and White, 2001; Miles-Doan, 1998; Wright and Benson, 2011).

It has been suggested that structural correlates of social disorganization theory may not have an impact on intimate partner violence because this type of crime happens “behind closed doors” (Sampson and Raudenbush, 1999). Others, however, have noted that macro-level characteristics may actually have an impact on violence between intimate partners, and it has been stipulated that higher levels of concentrated disadvantage may hinder the formation of social ties between residents which, in turn, leaves victims of intimate partner violence more vulnerable (Stets, 1991). Additionally, these higher levels of disadvantage may increase stress levels within partnerships which could increase the likelihood of violence (Wright and Benson, 2011). Other arguments have included the idea that disadvantaged neighborhoods may facilitate alienation and foster social isolation among residents. This isolation may decrease the likelihood individuals will seek help from shelters or police and also inhibits the transmission of values that domestic violence is wrong (Anderson, 1999; Plass, 1993; Warner, 2003; Wilson, 1987; Wright and Benson, 2011). It has also been theorized that social disorganization may be related to partner violence because strong ties between residents are lacking, and therefore individuals may be less likely to intervene in disputes by calling the police, personally intervening, or shaming the aggressor publicly. Partner violence may be exacerbated because residents do not have strong social networks and aggressive partners engage in violence with little fear of intervention (Van Wyk et al., 2003).

Research in this area using structural factors has shown that areas with concentrated poverty and resource deprivation, neighborhoods with high rates of unemployment, and socially disadvantaged communities were at a higher risk for intimate partner violence compared to socially organized neighborhoods (Browning, 2002; Cunradi et al., 2000; Frye et al., 2008; Mile-

Doan, 1998; Miles-Doan and Kelly, 1997; O'Campo et al., 1995; Rennison and Welchans, 2000; Spriggs Madkour et al., 2010; Van Wyk et al., 2003). In one of the first examinations of neighborhood-level effects on intimate partner violence, spousal violence was nearly six times higher in areas characterized by concentrated poverty (Miles-Doan, 1998). Additionally, several research studies by Benson and colleagues have indicated that disadvantage impacts the rates of intimate partner violence within a neighborhood (Benson et al., 2000; Benson et al., 2003; Van Wyk et al., 2003). Another study by Lauritsen and White (2001) reported that the risk of victimization by intimates was associated with neighborhood disadvantage, which is consistent with social disorganization expectations. Overall the results from these studies indicated that the likelihood of intimate partner violence among couples increased in neighborhoods with higher concentrated disadvantage.

However, there is still lack of a clear understanding of which structural variables may influence intimate partner violence and specific types of violence between intimate partners. Additionally, many of the research studies have only included specific forms of intimate partner violence, such as arguments and physical assaults. In none of the studies on intimate partner violence and social disorganization has kidnapping/abduction been included as a form of violence. It is important to note that a good deal of the research in this area has only focused on less severe forms of intimate partner violence. Bensons and colleagues' earlier work relied on the National Survey of Families and Households (Benson et al., 2000; Benson et al., 2003; Van Wyk et al., 2003), which uses measures of violence modeled after the Conflict Tactics Scale (CTS) (Straus, 1979). The respondents are asked how often in the past year arguments between intimates had resulted in shoving, hitting, or throwing things. The authors argue that the

measures used most likely only tap what is referred to as “common couple” violence (Johnson, 1995), or more recently referred to as situational couple violence (Johnson and Leone, 2005), and are not suited to identify more extreme forms of violence (Benson et al., 2003), such as coercive controlling violence. Only very recently have more severe forms of intimate partner violence been examined (Wright and Benson, 2011), yet the measures used are still derived from the popular CTS (Straus, 1979), which does not ask any questions on kidnapping/abduction or false imprisonment. Therefore, relatively little is known about different forms of intimate partner violence and social disorganization, and there is no information on intimate partner kidnapping and social disorganization.

An important facet of coercive controlling violence is isolation and control (Kelly and Johnson, 2008). It seems reasonable to argue that in cases of intimate partner kidnapping structural-level correlates could be related because of the social isolation that is produced from them. Disadvantaged neighborhoods may facilitate alienation and foster social isolation among residents. Due to this isolation victims of this violence may not seek help from shelters, or police, but also the transmission of values that domestic violence is wrong may be inhibited (Anderson, 1999; Plass, 1993; Warner, 2003; Wilson, 1987; Wright and Benson, 2011). Additionally, when there is a lack of relationships with other members of the community, as is common in disadvantaged neighborhoods, it may be easier to create a controlling environment in which one is held against their will, because others may not be aware of the situation. Therefore, it is reasonable to assume that although intimate partner kidnapping is a different form of intimate partner violence there may be still be a relationship with structural-level correlates indicative of social disorganization theory.



Although limited, existing research has revealed a relationship between neighborhoods that have high levels of indicators of disorganization and intimate partner violence. It is clear that neighborhood conditions in which couples live may influence the rates of intimate partner violence (Pinchevsky and Wright, 2012). Additionally, social disorganization theory provides reasonable theoretical linkages between intimate partner violence and neighborhood-level factors. However, the research that has been done using neighborhood-level factors with regard to intimate partner violence has been inconsistent, and it may be that certain forms of domestic violence may not be concentrated in disorganized neighborhoods at the same rate as criminal violence (Sabol et al., 2004). The purpose of this study is to gain a better understanding of the relationships between social disorganization correlates and intimate partner violence, as well as to identify if there is a relationship between these structural-level correlates and a different form of intimate partner violence, kidnapping/abduction. The current study will identify which structural-level correlates may have an impact on intimate partner kidnapping/abduction, and fill a gap in the research not only in intimate partner violence generally, but also with respect to social disorganization theory and intimate partner violence. Additionally, this study will identify if the same structural-level correlates of social disorganization are related to intimate partner kidnapping and to intimate partner aggravated assaults in an attempt to see if different forms of intimate partner violence, such as kidnapping and assaults, have a similar relationship to structural-level correlates.

## CHAPTER FOUR: METHODS

### Current Study

The current study is an exploratory study on intimate partner kidnapping. To date there is no research related to this topic area, and the current study will attempt to fill this gap in the literature by trying to answer the following research questions:

- What are the characteristics of intimate partner kidnappings reported to the police?*
- What are the characteristics of intimate partner aggravated assaults reported to the police?*
- Are intimate partner kidnappings more likely to occur in socially disorganized areas?*
- Are intimate partner aggravated assaults more likely to occur in socially disorganized areas?*
- Are the same structural-level characteristics related to intimate partner kidnapping also related to intimate partner aggravated assaults?*

This study will provide a more thorough understanding of the relationship between social disorganization and intimate partner violence by not only providing an analysis using a more severe form of violence, but also by including data from the NIBRS dataset which has not been previously used in the research on intimate partner violence and social disorganization theory.

## Data

### National Incident-Based Reporting System Data

The first data set to be utilized in the current study is the National Incident-Based Reporting System (NIBRS), which is compiled by the FBI, and the current data come from the year 2009. NIBRS is an incident-based crime reporting system for federal, state, and local law enforcement agencies. NIBRS data are generated by local, campus, and state law enforcement which then forward the data to a state-level crime reporting program (Thompson et al., 1999). After data are checked for errors they are then sent to the FBI and each agency must demonstrate its ability to meet the reporting requirements of NIBRS before their data are accepted. NIBRS is able to capture information on each criminal incident, and provides a plethora of information about each crime including offender and victim characteristics, property information, offense information, person's arrests, and detailed information about the incident itself (Akiyama and Nolan, 1999). This data set provides a substantial amount of information compared to the Uniform Crime Reports and the Supplementary Homicide Reports and provides a useful resource for crime information (Dunn and Zelenock, 1999). NIBRS offers the ability to link and analyze corresponding offense, victim, offender, property, and arrestee details, making it a significant improvement over the existing Uniform Crime Reporting system. Participation in NIBRS is voluntary, and incident reports are submitted by agencies across the country and then compiled by the FBI.

Within the area of intimate partner violence, researchers have long struggled with the shortcomings of police report data in addressing intimate partner violence (Thompson et al.,

1999). These shortcomings include but are not limited to absence of victim/offender relationship, limited types of reported crimes, and only counting one crime in incidents involving multiple offenses (Saltzman et al., 1992; Thompson et al., 1999; Vazquez et al., 2005). Traditional Uniform Crime Reporting techniques have been too narrowly focused and have not allowed for relational connections, making intimate partner violence research using police report data difficult. NIBRS was implemented to not only enhance the quality of statistical data collection by police, but also to enhance methodologies for analyzing crime data. NIBRS offers data on an expanded list of crime incidents (from 7 categories to 22) and allows for greater information on victim and offender demographics, relationships, weapon types, location offense, property loss and other information as well. Overall, NIBRS data are more complete in the characteristics of a crime occurrence and the documentation of the breadth of the crime (Vazquez et al., 2005). Although NIBRS does not address all the deficits of police reporting data, it does tend to capture more of the context and extent of crimes (Rantala, 2000; Thompson et al., 1999). According to Thompson and her colleagues (1999), NIBRS data enhances the study of IPV for three reasons: (1) it offers the ability to report more than one crime per incident, (2) the ability to link and compare offender and victim data, and (3) the ability to examine multiple crimes in tandem with victim/offender relationships. Additionally, NIBRS data offer rich understanding on less-studied crimes, particularly those outside the index variety (Vazquez et al., 2005), such as intimate partner kidnappings. NIBRS provides the rare opportunity to use police report data to look at crimes that may not often come to the attention of the police or were not previously reported to national reporting systems.

Although NIBRS provides the opportunity to examine less-studied crimes such as intimate partner kidnapping, it is not without its limitations. Perhaps the biggest limitation of using NIBRS is that it has limited representativeness. NIBRS is not nationally representative because, as mentioned previously, NIBRS is a voluntary activity undertaken by law enforcement agencies (Weaver et al., 2004). Within the NIBRS data, cities and urban areas are underrepresented, likely due to the fact that these jurisdictions may already have large case loads and paperwork, making it difficult to devote time to developing reporting and data procedures that meet the criteria for NIBRS. Therefore, NIBRS data are not usable to obtain information that can be generalized to the national level (National Research Council, 2005). However, it is not the purpose of the current study to generalize findings, but rather to begin to explore the crime of intimate partner kidnapping and attempt to gain some insight into the characteristics of this crime, as well as attempt to identify a relationship between intimate partner kidnapping and structural-level correlates of social disorganization theory.

#### American Community Survey Data

The second data set to be utilized in the current study is the American Community Survey (ACS) (U.S. Census Bureau, 2010). The ACS is an ongoing survey that provides yearly data on communities in order to help determine the need for services and investments from the federal and state government. The ACS provides the following information: age, sex, race, family and relationships, income and benefits, health insurance, education, veteran status, disabilities, where individuals work and how they get there, and where individuals live and how much they pay for essentials. The ACS randomly samples addresses in every state, the District of

Columbia and Puerto Rico. The data from the ACS are estimates; the ACS draws a sample of the United States population rather than the whole population and provides information for the years in between censuses (U.S. Census Bureau, 2010). For the purposes of this study, the ACS 5-year estimates for 2005-2009 were employed. The ACS will be used to provide information on the structural-level correlates of social disorganization theory as well as some of the control variables. A number of studies that have analyzed the relationship between intimate partner violence and social disorganization theory have employed census data as measures of structural-level correlates (Benson et al., 2003; Benson et al., 2004; Caetano et al., 2010; DeMaris et al., 2003; Fox and Benson, 2006; Lanier and Maume, 2009; Lauritsen and White, 2001; Pearlman et al., 2003; Wu, 2009).

### Sample

The dependent variables for the current study are a count of the number of intimate partner kidnappings and intimate partner assaults in each county across two states. The states included are Tennessee and Virginia. The criterion from which the states were chosen was based not only on compliancy rates, but also the number of intimate partner kidnappings reported. The compliancy for both states is 100 percent. This means that both states have been certified by NIBRS and 100 percent of the population, as well as 100 percent of the crimes are covered by NIBRS. Virginia includes 5 of the top 25 largest agencies reporting to NIBRS and currently includes the only agency, Fairfax County, which serves over a million people reporting to the NIBRS data. Tennessee includes 2 of the top 25 largest agencies currently reporting to NIBRS (Justice Statistics and Research Association, 2012). These two states were chosen because they

were not only two of the states with 100 percent compliancy, but also were in the top five states with the highest number of intimate partner kidnappings reported. In order to make sure that analyses could be conducted it was important to include enough kidnappings to identify potential characteristics and relationships, but also include states with enough counties (all of which report to NIBRS) to make the analyses possible. Since the goal of this study is to provide some information about the patterns and sources of intimate partner kidnappings and not generalize to the population as a whole the use of two states for this study is adequate.

Additionally, although NIBRS allows for the identification at the city level, there are two reasons that counties were chosen as the unit of analysis. First, the city as well as county, is not the location that the actual crime occurred but instead it is the location of the agency that investigated the crime. While this is not ideal for identifying where crimes may actually have occurred, the belief is that it will be less likely that a crime will have occurred in a county other than the investigating county, while it is potentially more likely that a crime occurring in one city could be investigated by a law enforcement agency in another city, which would mean the crime would not have occurred in the investigating agency's city. Second, by using the city as opposed to the county, this excludes the possibility of investigating urban and rural relationships because a city by definition is urban.

## Measures

### Dependent Variables

*Intimate Partner Kidnappings.* The first dependent variable is the number of intimate partner kidnappings in each county across the two states, Tennessee and Virginia. The intimate partner kidnapping variable was created by first identifying all offenses that fell into the kidnapping/abduction offense category in the NIBRS data. Next, in order to ascertain which kidnappings were intimate partner kidnappings it was necessary to classify the victim/offender relationship. NIBRS provides several distinct victim/offender relationship categories in the variable relationship of victim to offender. Intimate partner kidnappings were created by first selecting only those victim/offender relationships that would be defined as intimates; these include spouse, common-law spouse, boyfriend/girlfriend, homosexual relationship, and ex-spouse. Once the victim/offender relationship was identified, any kidnappings that identified as one of those 5 categories was included and all others excluded. Additionally because NIBRS defines kidnapping as “the unlawful seizure, transportation, and/or detention of a person against his/her will, or of a minor without the consent of his/her custodial parent(s) or legal guardian” (NIBRS, 2009), and it is not this study’s intention to look at minors’ kidnapped as a result of intimate partner violence, all victims under the age of 18 were removed. Therefore, the resulting variable includes only those individuals that are age 18 and over and does not include those individuals that may have been kidnapped as minors. The resulting variable is the intimate partner kidnapping dependent variable. It is also important to note that the kidnapping incidents in NIBRS not only include those persons taken or detained against their will but also includes



hostage situations. Additionally, the variable intimate partner kidnapping was highly skewed, well over the 3 level, therefore it was important to use a count measure for this dependent variable.

*Intimate Partner Aggravated Assaults.* The second dependent variable for the current study is the number of intimate partner aggravated assaults in each county in two states. The states included are the same states used for intimate partner kidnappings so that cross comparisons can be made; these include Tennessee and Virginia. The intimate partner physical assault variable was created by first identifying all those assaults in the offense category aggravated assault. Next the victim/offender relationship was identified, and only those offenses that fell under the following victim/offender relationships that are considered intimate relationships were included, spouse, common-law spouse, boyfriend/girlfriend, homosexual relationship, and ex-spouse. Then all victims under the age of 18 were excluded, because it is this study's intention to focus on adult relationships only, and also that it follows the same patterns as the intimate partner kidnapping variable in order to make cross comparisons. The resulting variable is the intimate partner aggravated assault dependent variable. It is important to note that the intimate partner assault variable was skewed, skewness over the 3 level, therefore it was important to use a count measure for this dependent variable.

### Independent Variables

*Concentrated Disadvantage.* The concentrated disadvantage variable is the most widely used measure of all the social disorganization measures (Pinchevsky and Wright, 2012); therefore, it will be included in this analysis as one of the structural-level measures. This measure is a

modified version of the concentrated disadvantage variable used by Morenoff, Sampson and Raudenbush (2001; See also Sampson et al., 1997), as well as that used by Wright and Benson (2011). In order to capture this construct a scale of disadvantaged conditions was created<sup>1</sup>. The final scale is defined by the inclusion of the following four measures from each of the counties in Tennessee and Virginia using the American Community Survey 2005-2009 estimates: percent of residents below the poverty line, the percent of residents receiving public assistance, percent of residents unemployed, and percent of residents living in female headed households ( $\alpha=.72$ ). Although Morenoff et al. (2001) includes percent African American in their analyses it was not included in this measure of concentrated disadvantage because including it would be making the assumption that all African Americans are economically disadvantaged. The percentage of African Americans is therefore included in the measure of ethnic heterogeneity instead. Additionally, although Wright and Benson (2011) included percent of residents younger than 18, reliability analyses indicated that the Cronbachs Alpha would be stronger by deleting this variable from the scale, increasing from .61 to .72, and instead including it as its own variable. The scale is based on the summation of equally weighted z-scores for each item divided by the total number of items, in this case 4. The resulting concentrated disadvantaged measure is a scale of these four measures that tap disadvantaged conditions of an area. Additionally, percent of residents younger than 18 years old is also measured for each county and included as a separate

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<sup>1</sup> A factor analysis was run in order to establish that it was necessary for these measures to be put together in a scale. The factor analysis revealed that these four items had an eigenvalue of 3.385 and loaded highly together. Additionally several previous studies on intimate partner violence and structural-level factors included the item, percent younger than 18 in their scales on concentrated disadvantage (Browning, 2002; DeMaris et al., 2003; Wright and Benson, 2010; Wright and Benson, 2011), however the factor analysis showed that this item did not fit well in the scale and would be better as its own variable and measure of concentrated disadvantage.

variable also tapping into concentrated disadvantage. Higher numbers indicate greater concentrated disadvantage.

*Racial Heterogeneity.* Racial heterogeneity, one of the popular structural-level measures of social disorganization theory was measured following the procedures used by many researchers in the area of social disorganization theory (Sampson, 1985; Osgood and Chambers, 2000; Warner and Pierce, 1993). Racial heterogeneity was measured in terms of the proportion of households occupied by Caucasian, versus African American, versus American Indian/Alaskan native, versus Asian, versus Native Hawaiian/other Pacific Islander versus some Other race residents. Racial heterogeneity was calibrated with the index of diversity, calculated at  $1 - (\sum pi^2)$ . In this equation  $Pi$  is the proportion of households of a given ethnic group. This is then squared and summed across the 6 different racial groups. The index reflects the probability that if two individuals are randomly drawn they would differ in ethnicity (Blau, 1977). A minimum score of zero is given to a county with only one or the entirely same racial group and an equal number of all 6 racial groups would receive a maximum score of 0.5. Therefore, higher scores indicate greater racial heterogeneity.

*Immigrant Concentration.* Immigrant concentration is also included as a popular structural-level correlate in studies on social disorganization and intimate partner violence (Browning et al., 2004; Gibson et al., 2010; Maimon and Browning, 2010; Morenoff et al., 2001; Pinchevsky and Wright, 2012). Immigrant concentration is measured by using the following measures from the American Community Survey, 2005-2009 estimates: percent of foreign born residents and percent Hispanic residents. These percentages were identified for each of the counties in both

Tennessee and Virginia. Both of these measures needed to be transformed due to skewness.

Percent of Hispanic residents had a skewness of 3.651, and percent foreign born residents had a skewness of 3.351. Typically, transformations will need to be made if the skew is over 3. Both of these variables were skewed to the right or positively skewed, therefore the square root and the log of each variable was conducted in an attempt to create a normal distribution. The natural log of both variables created a more normal distribution and had a lower skew. The final variable for both percent of Hispanic residents and percent of foreign born residents is the log of the original variable.

*Residential Stability.* Residential stability has been uniformly measured across studies of intimate partner violence and social disorganization theory (Benson et al., 2003; Browning, 2002; Diem and Pizarro, 2010; DeJong et al., 2011; Li et al., 2010; Miles-Doan, 1998; O'Campo et al., 1995; Pinchevsky and Wright, 2012; Wooldredge and Thistlewaite, 2003; Wright and Benson, 2010; Wu, 2009). The current study follows the previous studies in measuring residential stability using the following two measures from the American Community Survey 2005-2009 estimates: percent of residents living in their current household one or more years<sup>2</sup>, and percent of houses occupied by owners as opposed to renters. Percentages were identified for each county in Tennessee and Virginia. Both measures attempt to tap into residential stability.

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<sup>2</sup> For the 2005-2009 ACS estimates, the variable percent of residents living in their current household 5 or more years is no longer available, or measured. It has been replaced by the current variable the percent of residents living in their current household 1 or more years. This variable is the closest measure to what has been previously used in studies and is the only variable available to measure residential mobility in this way. Therefore, the current study will rely on this measure. However, I am aware that a one-year estimate is a weak measure of residential stability and is probably not enough time to gauge stability of living situations, but it is the only measure available at the current time. I will use multiple measures of residential stability in other ways in order to attempt to compensate for this weakness.

## Control Variables

*Urbanity.* Urbanity will be controlled for in the following study. Typically more urban areas have a higher concentration of crime generally, therefore it is important to control for urbanity. This study operationalized the urban/rural divide based on county population size which is consistent with previous studies of violence in urban and rural areas (Hannicutt, 2007; Lanier and Maume, 2009; Lee et al., 2003; Lee and Stevenson, 2006; Petee and Kowalski, 1993). Counties are classified as urban if they have a population of 20,000 or more and rural if they have less than 20,000, based on the ACS population estimates for 2005-2009. The measure for urbanity is then dichotomized by coding the variable “0” for a rural county, and “1” for an urban county.

*Domestic Violence Shelters.* Whether or not a county has access to domestic violence resources will be controlled for in the current study. I argue that those areas that offer domestic violence services may have lower rates of intimate partner violence because communities have more access to other options including shelter, education, and safety. Previous studies have shown that access to domestic violence resources may lower the rates of intimate partner violence (Browne and Williams, 1989; Dugan et al., 1999; Dugan et al., 2003). The following item will be a measure of access to domestic violence resources, whether or not a county has a domestic violence shelter. The current study identifies whether or not there is a domestic violence shelter in the county by using a dichotomous variable coded “0” for no and “1” for yes. The data for the state of Tennessee comes from the Tennessee Coalition to End Domestic and Sexual Violence (Tennessee Coalition to End Domestic and Sexual Violence, 2012). The domestic violence

shelter data for the state of Virginia comes from the Virginia Sexual and Domestic Violence Action Alliance (Virginia Sexual and Domestic Violence Action Alliance, 2012). These alliances are governmental websites that provide domestic violence information for each state and offer the location by county for all of the domestic violence shelters in the state.

*Military Base.* This study will control for whether or not the county has a military base. Research indicates that rates of intimate partner violence are high on military bases (Campbell et al., 2003; Heyman and Neidig, 1999). Due to the fact that Virginia especially and also Tennessee have a large military population it is important to control for this. The current study identifies whether or not there is a military base in each county using a dichotomous variable coded “0” for no and “1” for yes. The website [militarybases.com](http://militarybases.com) identifies all the military bases in each state and where they are located (2012). The website identifies all bases from each of the branches of the military including, navy, army, marines, coast guard, and air force.

### Analytic Strategy

The current study will first assess the descriptive statistics for each variable in order to identify the prevalence and characteristics of intimate partner kidnapping in general (i.e. characteristics of the victim and/or the offender), as well as intimate partner aggravated assaults. This will give an indication of not only the prevalence of these crimes within the states of Tennessee and Virginia, but also give a picture of what the typical victim and offender look like and if there are any major differences in victim and offender characteristics for these two intimate partner crimes. Additionally the descriptive statistics will provide an overview and the composition of each of the structural-level variables and control variables that will be included in

the multivariate analysis. Next, there will be an examination of the bivariate tests for each of the dependent variables and each of the independent variables. Lastly, Negative Binomial Regressions will be conducted in order to provide a more in-depth look at the relationships between the indicators of social disorganization and intimate partner violence, including both intimate partner kidnappings and intimate partner aggravated assaults. Negative Binomial Regression will be conducted because the dependent variables are a count of the number of intimate partner kidnappings and the number of intimate partner aggravated assaults in each county, and this regression is a count model. By treating the dependent variable as a continuous measure, which it is not can lead to inefficient or biased results, and Negative Binomial Regression is appropriate for data in which the dependent variable is a count. Additionally, Negative Binomial Regression is used for over-dispersed count data in which the variance exceeds the mean. For both dependent variables this was the case indicating Negative Binomial Regression was the best model for the analysis. Multiple models will be run with both dependent variables, with and without controls, in order to identify differences in the relationships.

## CHAPTER FIVE: DESCRIPTIVE STATISTICS

The purpose of this chapter is to provide a thorough understanding of the victim, offender, and incident characteristics for both intimate partner kidnapping and intimate partner aggravated assaults. Additionally, this chapter will provide an overview of the final dataset and the composition of the variables to be used within each analysis. I will first provide an overview of the characteristics of intimate partner kidnapping across both states, as well as identify any differences between the two states. I will then provide a summary of the characteristics of intimate partner assaults across both states, as well as identify any possible variations between the two states. Lastly, I will provide a discussion of the differences in the victim, offender, and incident characteristics between intimate partner kidnapping and intimate partner assault, as well as provide a general synopsis as to the composition of the variables that will be used in the bivariate and multivariate analyses stages.

Table 1 displays the results of the descriptive characteristics for intimate partner kidnapping. Across the two states of Tennessee and Virginia, the total number of incidents for intimate partner kidnapping, after removing those younger than 18 from the 2009 NIBRS data, was 753 cases. It is important to remember that only those incidents in which the victim offender relationship was identified as ‘boyfriend/girlfriend, common law spouse, homosexual, spouse, or ex-spouse’ were included in the analysis. Also, all those victims that were under the age of 18 were removed, because for the purposes of this study the interest is in adults who themselves are kidnapped, and not those who have children that may have been kidnapped. The total number of



cases for intimate partner kidnapping for both states was 753, for Tennessee the total number of cases was 317 and for Virginia the total number of cases was 436.

The victim characteristics included in these analyses were the sex of the victim, the race of the victim, the ethnicity of the victim, and the mean age of the victim and these are presented in Table 1. For both states the gender of the typical victim of intimate partner kidnapping was almost exclusively female (94.2%). Only 6 percent of all victims of intimate partner kidnapping were male, indicating that this is a crime in which females dominate as the victim. When looking at the states individually, there was still a very high percentage of female victims with Tennessee having 88.6% female victims, and Virginia having 98.2% victims. Overall, female victims appeared to be the most common victim of this crime for both states (well over the majority); however, Tennessee does appear to have a slightly higher percentage of male victims with 11.4% of the victims being men. Before discussing the racial breakdown it is important to discuss the racial percentages for all residents for both states combined as well as each state individually. For both states combined, the racial breakdown is as follows, approximately 82% of the residents are Caucasian, 14% are African American, 1% Asian, and about 2% are other race. In Tennessee 90% of the residents are Caucasian, 7% are African American, and about 3% are other race. In Virginia, 76% of the residents are Caucasian, 19% are African American, 2% are Asian, and about 2% are other race. The racial breakdown of the victims of intimate partner kidnapping indicated that Caucasians made up more than half of the victims of this crime, with a percentage of 61.4% across both states. Additionally, the data indicated that African Americans made up slightly more than one third of the victims of intimate partner kidnapping (36.9%). When examining the states separately this same pattern still emerged, in Tennessee 59.3% of the

victims were Caucasian, and in Virginia 62.8% of the victims were Caucasian. Additionally, the percentage of African Americans was also similar to the states combined, about one third of the victims of intimate partner kidnapping were African American, for Tennessee the percentage was 40.4% and for Virginia it was 34.4%. The ethnicity of the victims was overwhelmingly not Hispanic with 90.8% of the victims being identified as this. Only about 7% of the victims were indicated as being Hispanic. However, Virginia (9.9%) appeared to have a higher percentage of Hispanic victims than Tennessee (3.2%), although this was still a low percentage, with the majority being not Hispanic. The mean age of the victims of intimate partner kidnapping was 31 years old (sd=9.3). When examining the states separately the results were the same, both states had a mean age of the victim at 31 years old (Tennessee sd=9.4; Virginia sd=9.2). Overall the victim characteristics of intimate partner kidnapping indicated that the typical victim was female, Caucasian, not Hispanic, and approximately 31 years of age.

The offender characteristics included in these analyses were the sex of the offender, the race of the offender, and the mean age of the offender. These results are outlined in Table 1. The typical gender of the offender of intimate partner kidnapping was overwhelmingly male with 94% of the cases being male offenders. Only 6% of the offenders were female. When examining the states individually the same pattern emerged. Both Tennessee and Virginia had the majority of cases identified as male offenders, 88.6% and 97.9% respectively. However, although only a small percentage, Tennessee had a greater percentage of female offenders than did Virginia. Approximately 11% of the offenders were female in Tennessee, while only about 2% of the offenders were female in Virginia. With respect to the racial composition of the offenders of intimate partner kidnapping, about 52% of the offenders were Caucasian and about 47% of the

offenders were African American. When examining the states separately there was a similar breakdown. For Tennessee 51.7% of the offenders were Caucasian and 47.9% were African American, and for Virginia 51.6% of the offenders were Caucasian and 46.6% were African American. The mean age of the offenders of intimate partner kidnapping was similar to the victims, with a mean of age of 32 years old (sd=9.4). The states individually presented comparable results, with the mean age in Tennessee at 33 (sd=9.4) and the mean age in Virginia at 32 (sd=9.4). Taken as a whole the offender characteristics reveal the typical offender of intimate partner kidnapping was a male, either Caucasian or African American, and approximately 32 years of age.

The incident characteristics of intimate partner kidnapping are presented in Table 1 and include the victim/offender relationship and injury sustained in intimate partner kidnappings. The most common intimate partner relationship between the victims and offenders of intimate partner kidnapping was boyfriend/girlfriend. The percentage of cases in which the victim/offender relationship was identified as boyfriend/girlfriend was 71.4%. Additionally, the victim/offender relationship of spouse held the next highest percentage at 19.9%. When examining the states separately there was a similar pattern. For both Tennessee and Virginia the vast majority of the victim/offender relationships were boyfriend/girlfriend, 70.3% in Tennessee and 72.2% in Virginia. Also, for both states the next highest group was spouse. In Tennessee the percentage of spousal victim/offender relationships was 16.7% and for Virginia it was 22.2%. However, Virginia had a higher percentage of spousal relationships than Tennessee. This may be because in Tennessee there was a larger ex-spouse victim/offender relationship (12.3%) than in Virginia which only indicated 2.5% of the cases were ex-spouse. Across both states it appears the most

common injuries sustained in intimate partner kidnapping were either apparent minor injury or no injury at all. In 49.8 percent of the cases of intimate partner kidnapping there was an apparent minor injury and in 42.5% of the incidents there was no injury at all. Only about 8% of the cases involved a more severe injury which could have included a broken bone, possible internal injury, a severe laceration, loss of teeth or unconsciousness. When observing the states individually there were some slight differences; Tennessee had a slightly higher percentage of no injury (48.6%) and a lower percentage of apparent minor injuries (44.2%). Virginia on the other hand had a lower percentage of no injury (38.1%), and a higher percentage of apparent minor injury (53.9%). The incident characteristics of intimate partner kidnapping indicated that the typical incident had a victim/offender relationship of boyfriend/girlfriend and involved either an apparent minor injury or no injury at all.

Table 2 presents the results of the descriptive characteristics for intimate partner assaults. The combined total of intimate partner assaults for both states was 7,290. Again, any victim under the age of 18 was removed because this study is interested in adult intimate partner kidnapping and assault only. Tennessee had a much larger percentage of the cases of intimate partner assault with results indicating 5,908 of the cases were from Tennessee and 1,382 were from Virginia.

The victim characteristics for intimate partner assault are displayed in Table 2. The victim characteristics included in this analysis were sex of the victim, race of the victim, ethnicity of the victim, and mean age of the victim. The majority of victims were female with 69.4% of the cases indicating a woman as the victim. A separate analysis of each state revealed a

similar pattern; the majority of victims in both Tennessee and Virginia were female, 71.3% and 61.1% respectively. However, it appears that Virginia had a higher percentage of male victims than Tennessee. In Virginia, 38.9% of the cases had a man as the victim and only 28.7% of the cases in Tennessee had a male victim. The racial composition of the victims of intimate partner assault revealed the majority of cases listed a Caucasian victim (53.8%) and in a close second an African American victim (45.2%). When looking at the states individually there were similar findings. In Tennessee, 54.5% of the victims were Caucasian and 44.6% were African American, and in Virginia 50.7% were Caucasian and 47.9% were African American. The ethnicity of the victim reveals that almost none of the cases were Hispanic. Only 3% of the cases of intimate partner assault were identified as being Hispanic. When investigating the states separately the results were almost identical. In Tennessee 2.4% of the cases were Hispanic victims, and in Virginia, although slightly higher, only 5.4% of the victims were Hispanic. The mean age of the victims of intimate partner assault was 34 years old (sd=11.1). The state of Tennessee had a mean age of the victim at 33 years old, and Virginia at 34 years old. The overall results showed that the typical victim of intimate partner assault was a female, either Caucasian or African American, not Hispanic and approximately 34 years of age.

The offender characteristics included in the analyses were the sex of the offender, the race of the offender, and the mean age of the offender. These results are presented in Table 2. Across both states the majority of the offenders were male (69.0%). Additionally, although both states individually had a majority of offenders as male (Tennessee=70.9%; Virginia=60.9%), a greater proportion of the cases in Virginia involved a female offender (39.1% vs. 29.1%). With respect to the racial breakdown, about 51% of the cases had a Caucasian offender, and 48% of

the cases had an African American offender. This pattern was similar for the states individually. In Tennessee 51.5% of the cases had a Caucasian offender and 47.8% had an African American offender. In Virginia, 47.8% of the cases had a Caucasian offender and 51.4% had a African American offender. The mean age of the offender was approximately 34 years of age (sd=11.0). The analyses revealed that in Tennessee the mean age was 34 years old (sd=10.9), and in Virginia the mean age was 35 years old (sd=11.2). In conclusion, the results indicated the typical offender of intimate partner assault was a male, either Caucasian or African American, and about 34 years of age.

The incident characteristics of intimate partner assault are presented in Table 2 and included the victim/offender relationship and injuries sustained during the incident. For all cases the most common victim/offender relationship was boyfriend/girlfriend (64.9%), the next most common relationship was spouse (28.6%). When looking at the states separately a similar pattern emerges. In Tennessee 65.1% of the cases were boyfriend/girlfriend and 28.5% were spouse, and in Virginia 64% of the cases were boyfriend/girlfriend and 29.1% were spouse. As for injury sustained there was greater distribution of injuries across all groups. In 37% of the cases of intimate partner assault there was no injury sustained, 38% indicated an apparent minor injury, and 24.9% of all cases involved a more severe injury such as a broken bone, possible internal injury, a severe laceration, loss of teeth, or unconsciousness. However, when looking at the states individually there were some differences. In Tennessee there was a much greater percentage of cases in which no injury is involved (41.7% as opposed to 16.8% in Virginia), as for Virginia there is a much larger percentage of cases in which a more severe injury was sustained (47.5% as opposed to 19.7%). Both states have a similar percentage of cases in which an apparent minor

injury was sustained, for Tennessee 38.6% and for Virginia 35.7%. Taken as a whole, the results of the incident characteristics of intimate partner assaults indicated the typical incident included a victim/offender relationship of boyfriend/girlfriend, and involves an apparent minor injury, no injury, or a more severe injury.

When looking at the victim, offender, and incident characteristics of both intimate partner kidnapping and intimate partner assaults there were some differences in the patterns. While for both intimate partner crimes the majority of the victims were female, within intimate partner assaults there was a much larger percentage of males as the victim. Almost 31% of the victims in intimate partner assault were male while only 6% of the victims in intimate partner kidnapping were male. Intimate partner kidnapping and assault both had a majority of Caucasian victims, however, there was a slightly greater percentage of Caucasian victims in intimate partner kidnapping (61.4%) than there was in intimate partner assault (53.8%). The mean age of the victims for both intimate partner kidnapping and assault was in the early 30s, but intimate partner kidnapping had a slightly lower mean age at 31 years compared to intimate partner assaults with a mean age of 34. With respect to the gender of the offender, both crimes indicated a majority of the cases involving a male offender; however, intimate partner assaults included a much larger proportion of female offenders with 31% of the cases involving a woman offender. Only 6% of the cases in intimate partner kidnapping involved a woman as the offender. For the racial composition of the offender there were some similarities between the two crimes. Both intimate partner kidnapping and intimate partner assault had an almost equal percentage of Caucasian and African American offenders, with intimate partner kidnapping cases involving 51.7% Caucasian offenders, and 47.1% African American offenders and intimate partner assault cases involving

50.8% Caucasian offenders and 48.4% African American offenders. The mean age for offenders was in the low 30s, however, intimate partner kidnapping cases had a slightly lower mean age at 32 compared to the 34 for intimate partner assaults. The majority of cases for both intimate partner kidnappings and intimate partner assaults involved boyfriend/girlfriends as the victim/offender relationship. Yet, for intimate partner assault there was a much larger percentage of spouse victim/offender relationships (28.6% compared to 19.9%). This may be due to the fact that in intimate partner kidnapping there was a larger percentage of cases involving ex-spouses (6.6% compared to 3.0%). As for injuries sustained, there were some vast differences between the two types of crimes. For intimate partner kidnapping the results indicated that there were only a very small percentage of cases that involved a more severe injury such as a broken bone, possible internal injury, a severe laceration, loss of teeth, or unconsciousness (7.8%). On the other hand, almost 25% of cases in intimate partner assaults involved a more severe injury. While it is expected that assaults would incur more injuries due to the nature and definition of the crime, there is less evidence that kidnappings may or may not include physical violence. Overall, it appears that kidnappings do not include high rates of physical violence. In conclusion, although there were some similarities among the two intimate partner crimes there were also some differences. Most notably, there was a greater percentage of males as victims and females as offenders in intimate partner assaults, there was a larger percentage of ex-spouses as the victim/offender relationship in intimate partner kidnapping, and lastly the percentage of cases involving an injury was considerably less in intimate partner kidnapping.

Table 3 presents the descriptive results for the variables to be included in the multivariate analyses for both states combined. These variables included the two dependent variables intimate



partner kidnappings and intimate partner assaults, the independent structural-level variables concentrated disadvantage, racial heterogeneity, immigrant concentration, residential stability, and total population, as well as the control variables urbanity, domestic violence shelters, and military bases. The total number of counties from both Tennessee and Virginia included in the analysis was 228. The mean number of intimate partner kidnappings in each county was 3.46 (sd=8.54), while the mean number of intimate partner assaults in each county was 32.97 (sd=124.44).

There were two items that tapped the variable concentrated disadvantage, the concentrated disadvantage scale, and the percent of residents younger than 18 years old. The mean of the concentrated disadvantage scale was 0.00 with a standard deviation of 1.00. The scale is based on the summation of equally weighted z-scores for four items including percent of residents below the poverty level, percent of female-headed households, percent of unemployed residents, and the percent of residents on public assistance in each county. The Cronbachs alpha for this scale was 0.72, indicating the variables were strongly correlated with one another. The mean of the individual items was as follows: the percent of residents below the poverty level had a mean of 11.35% (sd=5.23), the mean for percent of female headed households was 12.05% (sd=3.34), the mean for the percent of residents unemployed was 7.22% (sd=2.75), and the mean for the percent of residents on public assistance was 2.40% (sd=1.29). The other variable tapping concentrated disadvantage is the percent of residents younger than 18 years old, which had a mean of 22.23% (sd=3.20).

The next structural-level variable included in the analysis was racial heterogeneity. This variable is an index of diversity and is measured in terms of the proportion of households occupied by Caucasian, versus African American, versus American Indian/Alaskan native, versus Asian, versus Native Hawaiian/other Pacific Islander versus some other race residents. The mean for the racial heterogeneity index was 0.26 with a standard deviation of 0.17. However, the individual means for each race indicated that the largest percentage of a race is for Caucasians at 81.68% (sd=16.13) with the second highest percentage being that for African Americans at 14.21% (sd=15.47).

Two variables are used to measure immigrant concentration these included the percent of Hispanic residents, and the percent of foreign born residents. The mean for the percent of Hispanic individuals in each county was 3.20% (sd=3.86), and the mean for the percent of foreign born residents was 3.59 (sd=4.67).<sup>3</sup> The last structural-level variable included in the analysis was residential stability. This variable is measured using two separate items, the percent of owner occupied houses, and the percent of residents living in the same house for at least one year. The mean for the percent of owner occupied houses was 72.87% (sd=9.57), and the mean for the percent of individuals living in the same house at least one year was 85.67% (sd=5.59). The mean for the total population in each county was 60614.34 with a standard deviation of 115602.91.

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<sup>3</sup> The descriptive analysis indicated that both of the variables used to measure immigrant concentration were highly skewed to the right. Therefore, transformation of the variables was required. Both a square root transformation, and a log transformation were conducted, and the log transformation created a distribution that most closely resembled normality. For the final multivariate analysis the log transformation for both variables is used.

The control variables were all dichotomous measures and included urbanity, domestic violence shelters, and military bases. The proportion of urban counties was 0.62, the proportion of counties with a domestic violence shelter was 0.88, and the proportion of counties with a military base was 0.08.<sup>4</sup>

Table 4 and Table 5 present the results from the descriptive analysis of each state. In Table 4 the results for Tennessee are displayed, and Table 5 shows the results for Virginia. The total number of counties for Tennessee was 95, while Virginia had a slightly larger number of counties at 134. The mean number of intimate partner kidnappings in each county for Tennessee was 3.45 (sd=10.93), and the mean number for Virginia was similar at 3.46 (sd=6.35). The mean number of intimate partner assaults in each county for Tennessee was 64.45 (sd=187.88), while Virginia had a mean number at 10.65 (sd=19.76).

The concentrated disadvantage scale had a mean of 0.00 (sd=1.00) in Tennessee, and mean of 0.00 (sd=1.00) in Virginia. The individual variables that made up the concentrated disadvantage scale had percentages in Tennessee as follows: the percent of residents below the poverty level had a mean of 14.25% (sd=4.30), the percent of female-headed households had a mean of 11.76% (sd=2.68), the percent of unemployed residents had a mean of 8.77% (sd=2.19), and the percent of residents on public assistance had a mean of 2.60% (sd=1.14). For Virginia,

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<sup>4</sup> In addition to the descriptive analyses results presented in the table, tests for multicollinearity were conducted in order to determine if the independent variables are so highly correlated with one another that they would not be able to be independently related to the dependent variables. The tolerance levels for the tests of multicollinearity indicated that each independent variables level was above the .30 level. Therefore, there are no problems with multicollinearity for the multivariate analyses. Related to issues of multicollinearity was whether or not the individual variables for the measures of residential stability and immigrant concentration should be used or scales created from these variables. Results of the analyses suggested that there was only one difference and was for the dependent variable intimate partner assault. However, because multicollinearity was not an issue, there was not enough justification for using scales as opposed to individual measures. Therefore, the individual measures were used.

the mean percentage of residents below the poverty level was 9.30% (sd=4.86), the mean percent of female headed-households was 12.25% (sd=3.73), the mean percent of residents unemployed was 6.11% (sd=2.57), and the mean percent of residents on public assistance was 2.26% (sd=1.37). The second variable tapping concentrated disadvantage was the percent of residents younger than 18 years old and had a mean percent of 23.12% (sd=2.13) in Tennessee and a mean percent of 21.60% (sd=3.66) in Virginia.

The racial heterogeneity scale had a mean of 0.17 (sd=0.13) in Tennessee, and a mean of 0.33 (sd=0.17) in Virginia. For both states Caucasian made up the largest percentage of race. In Tennessee the mean percentage of Caucasians in each county was 89.62% (sd=10.86), and in Virginia the mean percentage was 76.05% (sd=16.90). Additionally, the next largest racial group was African Americans for both states as well. In Tennessee the mean percentage of African Americans in each county was 7.19% (sd=2.50), while in Virginia the mean percentage was 19.18% (sd=16.55).

For immigrant concentration across the two states, the mean percentage of Hispanic residents in each county in Tennessee was 2.54% (sd=2.26), and the mean percentage in Virginia was 3.67% (sd=4.63). The variable percent of foreign born individuals had a mean of 2.16% (sd=1.91) in counties in Tennessee and a mean of 4.60% (sd=5.68) in counties in Virginia. The first measure of residential stability, the percent of owner occupied houses, had a mean percentage of 74.53% in Tennessee counties, while in Virginia it had a mean of 71.70% (sd=11.54). The second measure of residential stability, the percent of residents living in the same house at least one year had a mean percent of 86.12% (sd=3.42) in counties in Tennessee,

and had a mean percent of 85.35% (sd=6.71) in counties in Virginia. The mean total population for Tennessee was 64,831.08 (sd=123,601.41), and the mean total population in Virginia is 57,624.85 (sd=109,957.13).

The descriptive analysis for the control variables across the two states indicated that the proportion of urban counties in Tennessee was 0.66, and in Virginia it was 0.59. The proportion of domestic violence shelters in Tennessee was 0.73, and in Virginia it was 0.99. Lastly, the proportion of military bases in Tennessee was 0.03, while in Virginia it was 0.11.

Overall, Tables 4 and 5 reveal some distinct differences in the descriptive analysis of the structural-level and control variables between the two states of Tennessee and Virginia. While the mean number of intimate partner kidnappings between the two states was comparable, there was a noticeable difference in the mean number of intimate partner assaults. Tennessee had a much larger mean number of intimate partner assaults than Virginia, 64.45 versus 10.65. The mean level of concentrated disadvantage was slightly higher in Tennessee than in Virginia, with a mean of .30 on the scale in Tennessee and a mean of -0.21 on the scale in Virginia. The individual percentages for each of the four items, with the exception of the percentage of female headed households, were higher in Tennessee than in Virginia. Additionally, the percentage of residents younger than 18 years of age was slightly higher in Tennessee. As for racial heterogeneity among the two states, there appeared to be only slight differences. While the percentage of Caucasians in both states was well over the majority, Virginia had a lower percentage of Caucasians 76.05% versus 89.62% in Tennessee, and this appeared to be due to the much larger percentage of African Americans in Virginia (19.18%), while Tennessee only had a

small percentage (7.19%). For both states immigrant concentration was low. Both of the variables, the percent of Hispanic individuals, and the percent of foreign born individuals was relatively low not exceeding 5 percent. However, both of these variables had a slightly higher mean percentage in Virginia than they did in Tennessee. The residential stability variables were comparable for the two states, although Tennessee did have slightly higher percentages for both the percent of owner occupied houses, and the percent of individuals living in the same house at least one year. The average total population in each county was higher in Tennessee than in Virginia, 64,831.08 versus 57,624.85 respectively.

Additionally, there were some slight differences in the proportions of the control variables urbanity, domestic violence shelters, and military bases across the two states. While Tennessee had a higher proportion of urban counties than Virginia, the proportion of domestic violence shelters was considerably larger in Virginia than Tennessee. In fact, almost every county in Virginia had a domestic violence shelter while only approximately 75 percent of the counties in Tennessee had one. Also, the proportion of military bases in Virginia was much higher than the proportion in Tennessee. In summary, there were several differences in the descriptive analysis of the variables across the two states of Tennessee and Virginia.

Within this chapter, descriptive information on the victim, offender, and incident characteristics for both intimate partner kidnapping and intimate partner assaults has been presented. Furthermore, the descriptive analysis of the structural-level and control variables to be used in the bivariate and multivariate analysis has been discussed. The next two chapters will

present the results from the bivariate and multivariate analyses conducted pertaining to the theoretical framework defined earlier.

## CHAPTER SIX: BIVARIATE RESULTS

This chapter presents the results from the bivariate models estimated. The first set of bivariate models includes the correlations and t-tests conducted with the dependent variable intimate partner kidnapping, and the second set of bivariate models contains the results of the correlations and t-tests conducted using the dependent variable intimate partner assaults. The results include analyses for both of the states combined as well as each state, Tennessee and Virginia, separate of one another.

The first two tables to be discussed use the dependent variable intimate partner kidnapping. Table 6 presents the results from the bivariate correlations between the dependent variable intimate partner kidnappings and each of the other continuous variables, including the other dependent variable intimate partner assaults, and all of the structural-level variables. The first set of results is for both states combined. The Pearson correlations indicated that there was a significant relationship between the dependent variable intimate partner kidnapping and the following continuous variables: intimate partner assaults, percent of residents younger than 18, racial heterogeneity, the percent of Hispanic residents, the percent of foreign born residents, the percent of residents living in the same house at least one year, the percent of owner occupied houses, and the total population. The only variable that was not significantly related was the concentrated disadvantage scale. The Pearson coefficient between intimate partner kidnapping and intimate partner assaults was 0.82 ( $p=0.00$ ), indicating a positive and strong relationship between the two variables. The correlation coefficient suggested that as the number of intimate partner assaults increased in a county so too did the number of intimate partner kidnappings. The



Pearson correlation for the percent of residents younger than 18 and intimate partner kidnapping was 0.21 ( $p=0.00$ ), signifying a positive but weak relationship. The correlation coefficient indicated that counties with higher percentages of residents younger than 18 had higher numbers of intimate partner kidnappings. The Pearson correlation for racial heterogeneity and intimate partner kidnapping was 0.32 ( $p=0.00$ ), suggesting a positive but relatively weak relationship. The correlation coefficient indicated that counties that were more racially diverse had higher numbers of intimate partner kidnappings. The Pearson correlation for the percent of Hispanic residents and intimate partner kidnapping was 0.24 ( $p=0.00$ ), signifying a positive but weak relationship. The correlation coefficient indicated that counties with a higher percentage of Hispanic residents had higher numbers of intimate partner kidnappings. The Pearson correlation for the percent of foreign born residents and intimate partner kidnappings was 0.33 ( $p=0.00$ ), suggesting a positive but weak relationship. The correlation coefficient denoted that counties with higher percentages of foreign born residents had higher numbers of intimate partner kidnappings. The Pearson correlation for the percent of residents living in the same house at least one year and intimate partner kidnappings was -0.24 ( $p=0.00$ ), indicating a negative and weak relationship. The correlation coefficient suggested that counties with a higher percentage of residents who have lived in the same house at least one year, had lower numbers of intimate partner kidnappings. The Pearson correlation for the percent of owner occupied houses and intimate partner kidnappings was -0.27 ( $p=0.00$ ), signifying a negative and weak relationship. The correlation coefficient indicated that counties with a higher percentage of owner occupied houses had lower number of intimate partner kidnappings. Lastly, the Pearson correlation for the total population and intimate partner kidnappings was 0.87 (0.00), indicating a positive and strong relationship.

The correlation coefficient suggested that counties with higher populations had a higher number of intimate partner kidnappings.

Table 6 also presents the results of the bivariate correlations for Tennessee and Virginia individually. According to the table there was only one major difference between the correlation coefficients for both states combined and the states individually. This difference is with the percent of residents younger than 18. The Pearson correlation for the percent of residents younger than 18 and intimate partner kidnapping for both states combined was 0.21 ( $p=.00$ ). However, the Pearson correlation for Tennessee was 0.19 ( $p=.07$ ), and was not significant, but the Pearson correlation for Virginia was 0.30 ( $p=.00$ ), indicating a positive but weak relationship. Therefore, the results suggested that there was a relationship between the percentage of residents younger than 18 and intimate partner kidnapping in Virginia but not in Tennessee.

Table 7 presents the results from the bivariate t-tests between the dependent variable intimate partner kidnapping and the dichotomous control variables. The first set of results is for both states combined. Urbanity was significantly related to intimate partner kidnapping ( $t=-5.25$ ,  $p=0.00$ ). The t-score indicated that rural and urban counties had significantly different mean numbers of intimate partner kidnappings. Rural counties' mean number of intimate partner kidnappings was 0.57, while urban counties' mean number of intimate partner kidnappings was 5.23. Overall, this indicated that urban counties had a higher number of intimate partner kidnappings. The presence of domestic violence shelters was also significantly related to intimate partner kidnappings ( $t=-4.73$ ,  $p=0.00$ ). The t-score signified that counties with a domestic violence shelter and counties without a domestic violence shelter had significantly

different mean numbers of intimate partner kidnappings. Counties that did not have a domestic violence shelter had a mean of 0.64, while counties that did have a domestic violence shelter had a mean of 3.85. These difference in means indicated that counties with a domestic violence shelter had a significantly higher number of intimate partner kidnappings. Whether or not a military base was present in a county was also significantly related to intimate partner kidnappings ( $t=-2.26$ ,  $p=0.04$ ). The t-score indicated that counties without a military base, and counties with a military bases differed significantly in their mean number of kidnappings. Counties without a military base had an average of 2.50 intimate partner kidnappings, while counties with a military base had a mean number of 14.67. The results suggested that counties with a military base had a significantly larger number of intimate partner kidnappings.

Table 7 also illustrates the bivariate t-tests between the dependent variable intimate partner kidnapping and the dichotomous control variables for the states of Tennessee and Virginia separately. The results suggested that there were some differences between the two states and the relationships between the intimate partner kidnappings and the control variables. First, there was no difference in the relationship between urban and rural counties for the t-tests for the states individually. However, both the relationships between intimate partner kidnapping and the presence of domestic violence and intimate partner kidnapping and the presence of military bases were different for the two states individually. The presence of domestic violence shelters was significantly related to intimate partner kidnapping but only for Tennessee ( $t=-2.57$ ,  $p=.01$ ). There was no significant relationship for Virginia. The t-score for Tennessee indicated that counties with domestic violence shelters had a higher mean number of intimate partner kidnappings. Additionally, the relationship for the presence of military bases and intimate partner

kidnapping was only significant for Virginia ( $t=-2.58$ ,  $p=0.02$ ). There was no significant relationship between these two variables for Tennessee. The t-score for Virginia suggested that counties with a military base had a higher mean number of intimate partner kidnappings. Overall, there were some differences between the states individually with respect to the dependent variable intimate partner kidnapping.

The next two tables to be discussed use the dependent variable intimate partner assaults. Table 8 presents the results from the bivariate correlations between the intimate partner assaults and each of the structural-level variables. The first set of results includes both states combined. The Pearson correlations indicated there was a significant relationship between intimate partner assaults and the following variables: the percentage of residents younger than 18, ethnic heterogeneity, the percent of individuals living in the same house at least one year, the percent of owner occupied houses, and the total population. Neither the concentrated disadvantage scale nor either of the immigrant concentration variables were significantly related to intimate partner assaults. The Pearson correlation for the percent of residents younger than 18 and intimate partner assaults was 0.17 ( $p=0.01$ ), indicating a positive but weak relationship. The correlation coefficient suggested that those counties with a higher percentage of residents younger than 18 had a higher number of intimate partner assaults. The Pearson correlation for racial heterogeneity and intimate partner assaults was 0.16 ( $p=0.02$ ), signifying a positive but weak relationship. The correlation coefficient indicated that counties that were more racially diverse had a higher number of intimate partner assaults. The Pearson correlation for the percent of residents living in the same house at least one year and intimate partner assaults was -0.16 ( $p=0.02$ ), suggesting a negative and weak relationship. The correlation coefficient indicated that counties with a higher

percent of individuals living in the same house at least one year had a lower number of intimate partner assaults. The Pearson correlation for the percent of owner occupied houses and intimate partner assaults was  $-0.17$  ( $p=0.01$ ), signifying that counties with a higher percentage of owner occupied houses had lower numbers of intimate partner assaults. The Pearson correlation for total population and intimate partner assaults was  $0.69$  ( $p=0.00$ ), suggesting a positive and strong relationship. The correlation coefficient indicated that counties with a higher total population had a higher number of intimate partner assaults.

Additionally, Table 8 reports the results for the bivariate correlation of intimate partner assaults and the structural level variables for Tennessee and Virginia separately. There were two major differences in the results between the states combined and the states individually. For the states combined the concentrated disadvantage scale and the neither of the immigrant concentration variables were significantly related to intimate partner assaults, however, once the states were examined separately the concentrated disadvantage scale was significant for Virginia and both the percent of Hispanic individuals and the percent of foreign-born individuals were significant for Tennessee and Virginia. For Virginia, the Pearson correlation of the concentrated disadvantage scale and intimate partner assaults was  $0.21$  ( $p=.04$ ), indicating a positive but weak relationship. For Tennessee, the Pearson correlation for percent of Hispanic individuals and intimate partner assaults was  $0.26$  ( $p=0.01$ ), indicating a positive but weak relationship. The Pearson correlation for percent of foreign born individuals and intimate partner assaults was  $0.48$  ( $p=0.00$ ), suggesting a positive but moderately strong relationship. For Virginia, the Pearson correlation for the percent of Hispanic individuals and intimate partner assaults was  $0.18$  ( $p=0.04$ ), and the Pearson correlation for the percent of foreign-born individuals and intimate

partner assaults was 0.26 ( $p=0.003$ ). All of the correlation coefficients indicated that the higher the concentrated disadvantage, the percent of Hispanics, and the percent of foreign-born individuals, the higher the number of intimate partner assaults. However, once the states were combined this relationship was no longer significant. There were no other major differences between the states combined and the states individually.

Table 9 illustrates the results from the bivariate t-tests between the dependent variable intimate partner assaults and the dichotomous control variables. The first set of results is for both states combined. Urbanity was significantly related to intimate partner assaults ( $t=-3.53$ ,  $p=0.00$ ). The t-score indicated urban and rural counties had a significantly different mean number of intimate partner assaults. Rural counties had a mean number of intimate partner results of 4.39 and urban counties had a mean number of intimate partner assaults at 50.48, indicating that urban counties had a higher number of intimate partner assaults. The presence of domestic violence shelters in a county was not significantly related to intimate partner assaults ( $t=-0.88$ ,  $p=0.38$ ). Additionally, the presence of a military base was also not significantly related to intimate partner assaults ( $t=-1.12$ ,  $p=0.28$ ).

Table 9 also illustrates the results of the bivariate t-tests conducted for each state, Tennessee and Virginia, separately. There were some differences in the results for the states combined and the states separately. There was no difference in the states separately for the relationship between urbanity and intimate partner assaults. The t-scores for both Tennessee ( $t=-2.97$ ,  $p=0.00$ ), and Virginia ( $t=-5.38$ ,  $p=0.00$ ), indicated that there was a significant difference in the mean number of intimate partner assaults with urban counties having more intimate partner

assaults than rural counties. However, there were differences for both the presence of domestic violence shelters and military bases. While the presence of domestic violence shelters in a county was not significantly related to intimate partner assaults for both states combined, it was significantly related to intimate partner assaults in the state of Tennessee ( $t=-2.61$ ,  $p=0.01$ ). The t-score indicated the mean number of intimate partner assaults was significantly different for those counties with domestic violence shelters and those without. With a mean score of 83.28, counties with domestic violence shelters had more intimate partner assaults than counties without a domestic violence shelter, which had a mean of 14.50. The presence of domestic violence shelters in a county was not significantly related to intimate partner assaults for the state of Virginia. On the other hand, the presence of military bases in a county was significantly related to intimate partner assaults for the state of Virginia ( $t=-3.28$ ,  $p=0.01$ ), but not for the state of Tennessee ( $t=-1.00$ ,  $p=0.42$ ). For Virginia, the t-score indicated that there was a significant difference between the mean number of intimate partner assaults for counties with a military base and counties without a military base. Counties with a military base had a higher mean number of assaults (34.13) than counties without a military base (7.69). Overall, there are some differences with respect to the states combined and the examination of the states separately.

The results of the analyses for tables 6, 7, 8 and 9 indicate that there are some differences at the bivariate level between intimate partner kidnappings and intimate partner assaults. For both states combined, there was one major difference in the bivariate relationship between the structural-level variables and intimate partner kidnappings and intimate partner assaults. The Pearson coefficients for immigrant concentration, which included the variables percent of Hispanic residents and the percent of foreign born residents, were not significantly related to

intimate partner assaults; however, they were related to intimate partner kidnappings. When examining the states separately, there was only one difference in the bivariate relationships of the structural-level variables to intimate partner kidnappings and intimate partner assaults. For Tennessee, the Pearson coefficient indicated that the percentage of residents younger than 18 was not significantly related to intimate partner kidnappings, but it was significantly related to intimate partner assaults. The results of the bivariate relationship between the control variables and the dependent variables indicated some differences, but only when both states were combined. For intimate partner kidnappings there was a significant difference between counties with domestic violence shelters and those without, as well as a significant difference between counties with military bases and those without. However, this relationship does not exist with intimate partner assaults. There are no differences in intimate partner kidnappings and assaults when investigating the states separately.



## CHAPTER SEVEN: MULTIVARIATE RESULTS

This chapter includes the results from the multivariate models estimated. For each dependent variable, intimate partner kidnapping and intimate partner assault, a negative binomial regression was conducted; however, there are three separate analyses for each dependent variable. These include the results from both of the states combined as well as each state, Tennessee and Virginia, separately. Negative Binomial Regression was conducted because not only are the dependent variables count variables, the variance also exceeded the mean. Additionally the likelihood ratio test that alpha equals zero (or the likelihood ratio test comparing this model to a Poisson model) strongly suggested that alpha was non-zero and the use of Negative Binomial Regression was more appropriate than a Poisson model. An offset variable was also used for the purposes of this regression. By using an offset variable, the incidence rate ratios (IRRs) can be interpreted as rates, which is intuitively easier to comprehend than interpreting the base coefficients as changes in the log of counts (Osgood, 2000). For each of the Negative Binomial regressions the offset variable used was total population, which is a commonly used offset variable<sup>5</sup>.

The first three negative binomial regressions conducted use the dependent variable intimate partner kidnapping, and the independent structural-level variables, and control variables discussed in the previous sections. Table 10 presents the negative binomial regression results for the dependent variable intimate partner kidnapping for both states combined (n=226). The

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<sup>5</sup> It is important to note that in STATA there are two options for running negative binomial regression using an offset variable. If you use the exposure command you do not need to use the log of the variable, as STATA does this automatically for you. If you use the offset command, you need to use the log of the variable. For the purposes of this study the exposure command was used and the total population (not logged) was used.

model-level results indicated that the model as a whole was significant ( $X^2=43.62$ ,  $df=10$ ,  $p=0.00$ ). The incidence rate ratios (IRR) revealed that only one of the independent variables included in the model was significantly related to intimate partner kidnapping, the percentage of owner occupied houses (IRR=0.96, S.E.=-0.01,  $p=0.00$ ). The IRR for the percent of owner occupied houses indicated that for each percentage increase in owner occupied houses the expected rate of intimate partner kidnappings decreased by a factor of 0.96, or 4 percent, controlling for all other variables in the model. None of the other structural-level variables or control variables were significantly related to intimate partner kidnappings for both states combined.

Table 11 presents the negative binomial regression results for the dependent variable intimate partner kidnapping for the state of Tennessee only ( $n=94$ ). The model-level results indicated that the model as a whole was significant ( $X^2=18.92$ ,  $df=10$ ,  $p=0.04$ ). The incidence rate ratios revealed that only one variable was significantly related to intimate partner kidnappings, the control variable urbanity (IRR=3.27, S.E. = 0.50,  $p=0.02$ ). The IRR for urbanity indicated that urban counties, compared to rural counties, were expected to have a rate 3.27 times greater for intimate partner kidnappings, holding all other variables in the model constant. None of the structural level variables or any of the other control variables were significantly related to intimate partner kidnappings in the state of Tennessee.

Table 12 presents the negative binomial regression results for the dependent variable intimate partner kidnapping for the state of Virginia only ( $n=132$ ). The model level results indicated that the model as a whole was significant ( $X^2=36.52$ ,  $df=10$ ,  $p=0.00$ ). The incidence

rate ratios revealed that one of the structural-level variables, the percent of owner occupied houses (IRR=0.96, S.E. =0.01, p=0.02), and one of the control variables, military bases (IRR=0.57, S.E. =0.27, p=0.04), were significantly related to intimate partner kidnapping. The IRR for percent of owner occupied houses indicated that for each percentage increase in owner occupied houses the expected rate of intimate partner kidnapping decreased by a factor of 0.96, or 4 percent, controlling for all other variables in the model. Lastly, the IRR for military bases indicates that counties with a military base, compared to counties without a military base, were expected to have a rate 0.57 times lower for intimate partner kidnappings, holding all other variables in the model constant.

The results presented in Tables 10, 11 and 12 indicate that there were several differences between the models. When both states were combined only one variable, the percent of owner occupied houses, a measure of residential stability, was significantly related to intimate partner kidnappings. However, when the states were examined separately there was a different picture presented. For Tennessee, only urbanity was significantly related to intimate partner kidnapping, while in Virginia, the percent of owner occupied houses, and military bases were both significantly related to intimate partner kidnappings. Overall, there were several differences in the models presented, and none of the same variables were significant across all three models.

The last three negative binomial regressions conducted use the dependent variable intimate partner assault, the independent structural-level variables, and control variables discussed in the previous sections. Table 13 presents the negative binomial regression results for the dependent variable intimate partner assaults for both states combined (n=227). The model as

a whole was significant ( $X^2=111.47$ ,  $df=10$ ,  $p=0.00$ ). The incidence rate ratios revealed that four of the structural-level variables, the concentrated disadvantage scale (IRR=2.02, S.E.=0.10,  $p=0.00$ ), the percent of residents younger than 18 (IRR=1.05, S.E.=0.02,  $p=0.02$ ), racial heterogeneity (IRR=0.21, S.E.=0.41,  $p=0.00$ ), and the percent of Hispanic residents (IRR=1.27, S.E.=0.11,  $p=0.03$ ), as well as one of the control variables, urbanity (IRR=1.53, S.E.=0.13,  $p=0.00$ ), were significantly related to intimate partner assaults. The IRR for the concentrated disadvantage scale indicated that for every unit increase on the scale the expected rate of intimate partner assaults increased by a factor of 2.02, or 102 percent, controlling for all other variables in the model. The IRR for the percent of residents younger than 18 indicated that for each percentage increase in residents younger than 18, the expected rate of intimate partner assaults increased by a factor of 1.05, or 5 percent, controlling for all other variables. The IRR for racial heterogeneity revealed that for each unit increase in heterogeneity the expected rate of intimate partner assaults decreased by a factor of 0.21, or 79 percent, controlling for all other variables. The IRR for the percent of Hispanic residents suggested that for every percentage increase in Hispanics the expected rate of intimate partner assaults increased by a factor of 1.27, or 27 percent, controlling for all other variables. Lastly, the IRR for urbanity indicated that urban counties, compared to rural counties, were expected to have a rate 1.53 times greater for intimate partner assaults, holding all other variables in the model constant.

Table 14 presents the negative binomial regression results for the dependent variable intimate partner assaults for the state of Tennessee only ( $n=94$ ). The model as a whole was significant ( $X^2=44.83$ ,  $df=10$ ,  $p=0.00$ ). The incidence rate ratios revealed that one of the structural level variables, concentrated disadvantage scale (IRR=1.06, S.E. =0.03,  $p=0.02$ ), and

one of the control variables, urbanity (IRR=1.31, S.E. =0.12, p=0.03), were significantly related to intimate partner assaults. The IRR for the concentrated disadvantage scale indicated that for every one unit increase on the scale the expected rate of intimate partner assaults increased by a factor of 1.06, or 6 percent, controlling for all other variables. The IRR for urbanity suggested that urban counties, compared to rural counties, were expected to have a rate 1.31 times greater for intimate partner assaults, holding all other variables constant.

Table 15 presents the negative binomial regression results for the dependent variable intimate partner assaults for the state of Virginia only (n=133). The model as a whole was significant ( $X^2=35.61$ ,  $df=10$ ,  $p=0.00$ ). The incidence rate ratios revealed that only one structural-level variable, the percent of owner occupied houses (IRR=0.98, S.E. =0.01,  $p=0.04$ ), was significantly related to intimate partner assaults. The IRR for the percent of owner occupied houses indicated that for every percentage increase in owner occupied houses the expected rate of intimate partner assaults decreased by a factor of 0.98, or 2 percent, controlling for all other variables in the model. No other variables were significantly related to intimate partner assaults for the state of Virginia.

The results presented in Tables 13, 14 and 15 indicated that there were several differences between the models. When both states were combined several of the structural-level variables including both concentrated disadvantage variables, ethnic heterogeneity, and percent of Hispanic residents, as well as one of the control variables, urbanity, were all significantly related to intimate partner assaults. However, when the states were examined independently there were striking differences. For the state of Tennessee the concentrated disadvantage scale and

urbanity were significantly related to intimate partner assaults; however, in Virginia, only the percent of owner occupied houses was significantly related to intimate partner assaults. None of the same variables were significant across the three models.

When looking at the negative binomial regression models as a whole, there were several differences in the relationships of intimate partner kidnapping and the independent variables, and the intimate partner assaults and the independent variables, although both models as a whole were significant. For both states combined the only variable significantly related to intimate partner kidnapping was a measure of residential stability, the percent of owner occupied houses. However, for intimate partner assaults the measures of concentrated disadvantage, ethnic heterogeneity, and one of the measures of immigrant concentration were all significant. Additionally, urbanity was also significantly related to intimate partner assaults. Overall, the results appear to suggest that there are some striking differences between the sources and patterns of intimate partner kidnappings and intimate partner assaults with respect to the relationships with structural-level variables, as well as some of the controls.

## CHAPTER EIGHT: DISCUSSION

The purpose of this research was twofold. First, it provided an explanation and description of two types of intimate partner violence, intimate partner kidnapping—which has never been explored before—and intimate partner assault, using a police dataset that has rarely been used to study intimate partner violence. Second, it investigated the relationship between structural-level and contextual variables and the same two types of intimate partner violence.

The use of the National Incident-Based Reporting System (FBI,2009) offered the opportunity to not only use a different dataset that included the crime of kidnapping, but also to look at intimate partner violence from a different perspective, of crimes that come to the attention of the police as opposed to self-report surveys. Additionally, the structural-level analysis was grounded in social disorganization theory (Shaw and McKay, 1942). Recently, there has been a shift in intimate partner violence research from a focus on individual-level factors to a focus on structural-level factors (Pinchevsky and Wright, 2012). This growing body of research has focused mostly on situational couple violence (Johnson and Leone, 2005), and has rarely looked at other types of violence such as kidnapping, questioning whether the measures are not suited to identify more extreme forms of violence (Benson et al., 2003). This study offered the opportunity to not only explore a new form of violence, but make comparisons between a form of intimate partner violence that has been studied repeatedly and one that virtually nothing is known about. This study sought to address five specific research questions: 1) what are the characteristics of intimate partner kidnappings reported to the police? 2) What are the characteristics of intimate partner aggravated assaults reported to the police? 3) Are intimate

partner kidnappings more likely to occur in social disorganized areas? 4) Are intimate partner aggravated assaults more likely to occur in social disorganized areas? 5) Are the same structural-level characteristics related to intimate partner kidnapping also related to intimate partner aggravated assaults? The following chapter will address each of these questions as well as provide a thorough discussion of the conclusions, strengths and limitations, and future research directions and implications.

### Conclusions

In an attempt to answer the first two research questions this study included a description of the victim, offender, and incident characteristics for both intimate partner kidnapping and intimate partner assaults across the two states of Tennessee and Virginia. Overall, there were several striking differences between these two forms of intimate partner violence. First, the total number of intimate partner assaults was much greater than the total number of intimate partner kidnappings, 7,290 versus 753. Nonetheless, while the number of assaults was much greater, the number of kidnappings was still relatively high considering that this is a crime that has never been studied before. Second, with respect to the gender of the victim and offender, for both crimes the majority of the victims were female and the majority of the offenders were male. However, while there were almost no male victims and female offenders for intimate partner kidnapping (6%), almost 31% of the intimate partner assaults had male victims and female offenders. The results appear to suggest that females engage in the violent behavior of intimate partner assault much more frequently than intimate partner kidnapping, which is almost entirely a male dominated violent act. Third, and probably of most importance, is the breakdown of



injuries to victim. Both intimate partner kidnapping and intimate partner assault had a majority of apparent minor injuries to the victim, but 43% of the cases (almost half) for intimate partner kidnapping had no injury to the victim, while 25% of the cases for intimate partner assault had a more severe injury, including broken bones, possible internal injury, severe lacerations, loss of teeth and even unconsciousness. While we would expect assaults to have a high number of injuries, it was less clear if kidnapping would involve high amounts of physical violence and injuries. The results seem to indicate that kidnapping does not typically involve any form of physical violence. This could signify that kidnapping involves more psychological acts of aggression and could fall under the category of coercive controlling violence as opposed to situational couple violence. Overall, for both intimate partner kidnapping and intimate partner assault the racial distribution of the victim and offender, the ethnicity of the victim, the mean age of the victim and offender, as well as the victim/offender relationship were similar.

One of the main purposes of this research was to provide a description of a form of intimate partner violence that has never been studied before, intimate partner kidnapping. The current research was also able to compare this violence to a more commonly studied form of violence intimate partner assault. These analyses indicated that kidnapping is somewhat different from assault between intimate partners. Recently, there has been an attempt to classify different types of intimate partner violence because not all violence is the same (Johnson, 1995; Johnson, 2008; Johnson and Leone, 2005; Kelly and Johnson, 2008; Stark, 2007). Specifically, two categories of violence were identified, coercive control, or intimate terrorism, and situational couple violence. Coercive control is a pattern of violence that includes control, coercion, emotional abusive intimidation, threats and other forms of violence. This type of violence does

not always involve severe or frequent physical violence, but is still considered more severe because the main goal is to restrict persons' liberties with control, isolation, and intimidation (Kelly and Johnson, 2008). While this violence does not always manifest at high levels, coercive controlling violence is more frequent and severe than situational couple violence. Situational couple violence includes arguments or situations between partners that may escalate into physical violence, but the causes and consequences are not accompanied by a pattern of intimidating and controlling behaviors (Kelly and Johnson, 2008; Leone et al., 2004). Half of all intimate partner kidnappings do not include physical violence, suggesting that in order to engage in this form of violence, psychological means, such as intimidation and control, may be necessary. If this is true then this form of violence would fall under the category of coercive controlling violence and not situational couple violence. Additionally, almost none of the intimate partner kidnappings include males as victims and females as offenders while almost one third of the intimate partner assaults did. Situational couple violence typically includes a much greater proportion of females engaging in this violent behavior, and often there are similar number of males and females engaging in physical violence against one another (Johnson and Leone, 2005). The differences in the descriptive characteristics of intimate partner kidnapping and intimate partner assault suggest that kidnapping is not the same form of violence as assault and may fit better under the category of coercive controlling violence.

In an attempt to answer the research questions regarding the relationship of these forms of intimate partner violence to structural-level characteristics a multivariate analysis was conducted using Negative Binomial Regression. The unit of analysis was counties across the two states of Tennessee and Virginia and the measures included were as follows: concentrated

disadvantage scale, percent of residents under the age of 18, racial heterogeneity index, percent of foreign born residents, percent of Hispanic residents, percent of owner-occupied houses, percent of residents living in the same house for one year, urbanity, presence of a domestic violence shelter, and presence of a military base. The analyses conducted ended with very different results for the two forms of intimate partner violence. Intimate partner assaults were related to almost all of the structural-level variables and in the expected directions with the exception of one. Both measures of concentrated disadvantage, the concentrated disadvantage scale and the percent of residents under the age of 18, were significantly associated with intimate partner assaults. As concentrated disadvantage increased in a county the expected rate of intimate partner assaults also increased. Racial heterogeneity was also associated with intimate partner assaults, however, not in the direction expected. As racial heterogeneity increased the expected rate of intimate partner assaults actually decreased. However, immigrant concentration was also significantly associated with intimate partner assaults in the expected direction. As the percent of Hispanic individuals increased in a county the expected rate of intimate partner assault also increased. Additionally, urbanity, which was included as one of the control variables, was also significantly related to assaults. Urban counties had higher expected rates of intimate partner assaults. Residential stability was the only structural-level measure not related to assaults. These measures have been found to be related to intimate partner violence, specifically measures of violence consistent with situational couple violence in previous studies, and the results here suggest similarities between assaults and other forms of physical violence that have been tested in previous research. Also, these same relationships are consistent across different types of data.

This study indicated similar relationships that have been shown previously in self-report data, and now with the use of police data. There is consistency across data types.

On the other hand, the relationship between the structural-level variables and intimate partner kidnapping was very different than intimate partner assaults. The only variable that was significantly associated with intimate partner kidnapping was a measure of residential stability, the percent of owner-occupied houses. As the percent of owner-occupied houses in a county increased the expected rate of intimate partner kidnappings decreased. None of the other structural variables or control variables were significantly associated with this form of violence. It has been argued that disadvantaged neighborhoods may facilitate social isolation among residents. This isolation may decrease the ability of residents to seek help from shelters, police, and neighbors, and also may inhibit residents from intervening in a situation (Anderson, 1999; Plass, 1993; Warner, 2003; Wilson, 1987; Wright and Benson, 2011). While kidnapping may not be related to structural-level characteristics in the same way that assaults are, it makes sense that kidnapping is related to residential stability. Kidnapping can include not only transporting someone from place to place, but also keeping them from leaving their home, false imprisonment. If there is a constant flow of people in and out of residences it may be difficult to even identify if someone is living in a home, and it may be less likely for someone to intervene if another person is being held prisoner or has been taken from their home. However, the results suggest that kidnapping is not the same form of violence as assaults since none of the same variables were significantly related to either of the two violent acts. While assaults were related to the structural-level variables in the way that was expected, kidnapping was not and the only measure kidnapping was associated with was not one that assault was significantly related to.

This further suggests that intimate partner kidnapping does not fall under the situational couple violence category, but instead that it is actually a part of coercive controlling violence, and involves levels of control, intimidation, and isolation, that are not necessary for intimate partner assault.

### Strengths and Limitations

While the current study addresses a serious gap in the literature on a form of intimate partner violence never studied previously, there are both limitations and strengths to the current research. It is important to note that this study is the first of its kind. There are no previous studies addressing intimate partner kidnapping. Therefore, one of the strengths of this study is that it provides a description of intimate partner kidnapping, including victim, offender and incident characteristics. The current research provides a starting point for addressing this form of violence. Additionally, this study provides a comparison between intimate partner kidnapping, which little to nothing is known about, and a form of violence that is often studied in the IPV literature. By doing this, the research is able to provide a contrast between these forms of violence to identify any similarities and differences between a form of violence we know a great deal about and one that we do not know anything about. Not only did NIBRS allow for the identification and description of intimate partner kidnapping, it also allowed for this study to test the relationship between structural-level variables and intimate partner assaults by combining census data with NIBRS data. The current study was able to replicate results from previous studies with respect to the relationships between structural characteristics and intimate partner physical violence using police data, which has never been done before.

Another strength of this research is that this study utilizes a data set that is rarely used to study intimate partner violence. This study relied on the National Incident Based Reporting System (FBI, 2009), which is police data. Often research in the area of intimate partner violence uses self-report data to measure violence and identify relationships and patterns. NIBRS is the first police dataset to offer the ability to look at intimate partner violence from a different perspective. Using police data not only identifies those crimes that come to the attention of the police but also eliminates the potential problem of misinterpretation of self-report questions by individuals because the police are required to report crimes in very specific ways. Additionally, quality assurance checks are done by the FBI when reporting to NIBRS ensuring fewer problems with missing data, bias, and other problems self-report surveys may suffer from. Also, by using NIBRS it may be possible to identify if there are major differences in the characteristics of intimate partner violence incidents that actually come to the attention of the police and those that do not.

While NIBRS allows the chance to look at intimate partner violence from a different perspective it is not without its flaws. Perhaps the biggest limitation of using NIBRS is that it has limited representativeness. NIBRS is a voluntary activity undertaken by law enforcement agencies (Weaver et al., 2004). Within the NIBRS data, cities and urban areas are underrepresented, likely due to the fact that these jurisdictions may already have large case loads and paperwork, making it difficult to devote time to developing reporting and data procedures that meet the criteria for NIBRS. Therefore, NIBRS data are not usable to obtain information that can be generalized to the national level (National Research Council, 2005). Additionally, only two states were included in this analysis and the unit of analysis was at the county level.

However, because this was an exploratory study the goal was not to be able to generalize findings nationally, but instead was to provide a picture of a violent act that has never been studied before and create a starting point for looking at this crime in more depth. As for the use of county as the unit of analysis, while it is not the most ideal way of conducting analysis of structural-level correlates, it is not uncommon. Additionally, it was the lowest level possible with the use of NIBRS data. Overall, these results are not generalizable, but this was not the main goal at hand as this was an exploratory study.

#### Implications and Future Research Directions

Overall, this study was able to identify characteristics of intimate partner kidnapping, and also suggest that intimate partner kidnapping is not the same type of violence as intimate partner assault. The findings in this study potentially indicate that intimate partner kidnapping may fall under the category of coercive controlling violence. However, this form of violence is under studied and more research is necessary to assess whether this type of violence falls under this category. . It is important to identify all forms of violence because especially within the category of coercive controlling violence, there is a spectrum of violent acts. In fact, often coercive controlling violence does not include frequent physical violence but instead, intimidation, control, and isolation. The research suggests that coercive controlling violence has worse consequences for its victims (Campbell et al., 2003; Kelly and Johnson, 2008). If kidnapping is one of the forms of violence under this category it is important to identify prevalence, patterns, and potential prevention and intervention strategies for victims. If we truly want to make an

impact on this type of violence, we must be able to understand all the forms of violence that are occurring in these situations.

The biggest implication of this research is that it identifies a violent act that is occurring in intimate partner relationships. Although it may not be occurring to the extent of physical violence, it is happening, and if it is a part of coercive controlling violence, which is arguably the worst form of intimate partner violence, it is important to begin to study this act more. Self-report surveys need to begin to ask more questions about this type of violence. While the most recent national self-report survey, the NISVS, did include a question about false imprisonment, it was only one, and more than 36% of the sample indicated that they had been held against their will (Black et al., 2011). It could be that the act of false imprisonment and the act of actually transporting individuals from place to place are very different, but unfortunately the NIBRS data does not allow one to identify exactly what happened in the incident other than it was a kidnapping as defined by NIBRS. It is imperative to understand this violence much more in depth in order to create appropriate intervention and prevention strategies.

Because this was an exploratory study it offers many future research directions. The first direction would be to look at all intimate partner kidnappings in the NIBRS data. To do this all states and counties could be included and would help to make identification of characteristics and patterns more clear. While the NIBRS data will not allow generalizability at the national level it does include a large number of jurisdictions and every year more and more states are becoming fully compliant. The more kidnappings included the better understanding we will gain about this violent act. Not only does NIBRS allow for future research on kidnapping specifically,



it also allows for a study on all forms of intimate partner violence. By looking at the intimate partner violence acts in NIBRS we may be able to make comparisons between what the prevalence incidence rates and characteristics of IPV in police data are versus what they are in self-report data. This will allow us to ascertain if crimes that come to the attention of the police are different in some way from those that do not. One could argue that maybe only the most severe crimes come to the attention of the police, and this may offer a better outlet to studying coercive controlling violence. Another future research direction would be to look at parental kidnappings of children and how that might relate to intimate partner violence. Some women may 'kidnap' their children in an effort to protect them from an abusive partner. If the kidnapping is committed because of intimate partner violence, it is important to understand this to help better protect not only victims but their children as well.

However, future research directions do not only include using the NIBRS data, but also attempting to add or create questions to current self-report surveys to study this violence as well. If we can look at this violence from multiple perspectives we will have a much deeper understanding of the problem. We cannot intervene or protect victims in the appropriate way if we are under-studying a form of violence that is occurring more often than some thought. The current study provides a starting off point for studying intimate partner kidnapping and coercive controlling violence. It is important to continue this work in order to continue to lower rates of intimate partner violence not only in the United States but across the world as well.

## **APPENDIX: TABLES**

Table 1: Adult Intimate Partner Kidnapping Descriptive Results (n=753)

Variable Name	Both States (n=753)	Tennessee (n=317)	Virginia (n=436)
<i>Victim Characteristics</i>			
Sex of Victim			
Male	5.8%	11.4%	1.8%
Female	94.2%	88.6%	98.2%
Race of Victim			
Asian/Pacific Islander	1.1%	0.3%	1.6%
African American	36.9%	40.4%	34.4%
American Indian/Alaskan Native	0.1%	-	0.2%
Caucasian	61.4%	59.3%	62.8%
Other	0.5%	-	0.9%
Ethnicity of Victim			
Hispanic	7.0%	3.2%	9.9%
Not Hispanic	90.8%	95.3%	87.6%
Unknown	2.1%	1.6%	2.5%
Mean Age of Victim	31 (sd=9.3)	31 (sd=9.4)	31 (sd=9.2)
<i>Offender Characteristics</i>			
Sex of Offender			
Male	94.0%	88.6%	97.9%
Female	6.0%	11.4%	2.1%
Race of Offender			
Asian/Pacific Islander	0.7%	0.3%	0.9%
African American	47.1%	47.9%	46.6%
American Indian/Alaskan Native	0.3%	-	0.5%
Caucasian	51.7%	51.7%	51.6%
Other	0.3%	-	0.5%
Mean Age of Offender	32 (sd=9.4)	33 (sd=9.4)	32 (sd=9.4)
<i>Incident Characteristics</i>			
Injury			
None	42.5%	48.6%	38.1%
Apparent Minor Injury	49.8%	44.2%	53.9%
Other more Severe Injury	7.8%	7.3%	8.0%
Victim/Offender Relationship			
Boyfriend/Girlfriend	71.4%	70.3%	72.2%
Common Law Spouse	1.5%	0.6%	2.1%
Homosexual	0.5%	-	0.9%
Spouse	19.9%	16.7%	22.2%
Ex-Spouse	6.6%	12.3%	2.5%

Table 2: Adult Intimate Partner Assaults Descriptive Results (n=7290)

Variable Name	Both States (n=7290)	Tennessee (n=5908)	Virginia (n=1382)
<i>Victim Characteristics</i>			
Sex of Victim			
Male	30.6%	28.7%	38.9%
Female	69.4%	71.3%	61.1%
Race of Victim			
Asian/Pacific Islander	0.4%	0.3%	0.7%
African American	45.2%	44.6%	47.9%
American Indian/Alaskan Native	0.1%	0.1%	0.1%
Caucasian	53.8%	54.5%	50.7%
Other	0.5%	0.5%	0.6%
Ethnicity of Victim			
Hispanic	3.0%	2.4%	5.4%
Not Hispanic	95.0%	95.5%	92.6%
Unknown	2.0%	2.1%	2.0%
Mean Age of Victim	34 (sd=11.1)	33 (sd=11.0)	34 (sd=11.4)
<i>Offender Characteristics</i>			
Sex of Offender			
Male	69.0%	70.9%	60.9%
Female	31.0%	29.1%	39.1%
Race of Offender			
Asian/Pacific Islander	0.3%	0.3%	0.6%
African American	48.4%	47.8%	51.4%
American Indian/Alaskan Native	0.1%	0.1%	-
Caucasian	50.8%	51.5%	47.8%
Other	0.3%	0.3%	0.3%
Mean Age of Offender	34 (sd=11.0)	34 (sd=10.9)	35 (sd=11.2)
<i>Incident Characteristics</i>			
Injury			
None	37.0%	41.7%	16.8%
Apparent Minor Injury	38.0%	38.6%	35.7%
Other more Severe Injury	24.9%	19.7%	47.5%
Victim/Offender Relationship			
Boyfriend/Girlfriend	64.9%	65.1%	64.0%
Common Law Spouse	1.2%	0.9%	2.4%
Homosexual	2.3%	2.2%	2.9%
Spouse	28.6%	28.5%	29.1%
Ex-Spouse	3.0%	3.3%	1.7%

Table 3: Descriptive Results for Dependent Variables, Structural-Level Variables, and Control Variables for Both States Combined (n=228)

Variable Name	Both States Combined			
	Mean/Proportion	SD	Min	Max
<i>Dependent Variables</i>				
Intimate Partner Kidnappings	3.46	8.54	0.00	93.00
Intimate Partner Assaults	32.97	124.44	0.00	1561.00
<i>Independent Variables</i>				
Concentrated Disadvantage				
Concentrated Disadvantage Scale	0.00	1.00	-7.00	9.50
% below poverty level	11.35	5.23	1.10	26.90
% female headed-households	12.05	3.34	5.47	25.03
% unemployed	7.22	2.75	0.25	18.15
% on public assistance	2.40	1.29	0.15	8.34
% Younger than 18 years old	22.23	3.20	9.40	30.99
Ethnic Heterogeneity				
% Caucasian	81.68	16.13	20.63	99.23
% African American	14.21	15.47	0.00	77.04
% American Indian/Alaskan Native	0.31	0.54	0.00	7.19
% Asian	1.16	2.13	0.00	16.03
% Native Hawaiian/Pacific Islander	0.05	0.14	0.00	1.48
% Other Race	1.15	1.91	0.00	16.68
Immigrant Concentration				
% Hispanic	3.20	3.86	0.00	30.35
% foreign born	3.59	4.67	0.00	27.89
Residential Stability				
% owner occupied houses	72.87	9.57	38.03	92.51
% living in same house at least 1 year	85.67	5.59	56.02	95.36
Total Population	60614.34	115602.91	2399.00	1012751.00
<i>Control Variables</i>				
Urbanity <sup>1</sup>	0.62	-	0.0	1.0
Domestic Violence Shelters <sup>1</sup>	0.88	-	0.0	1.0
Military Bases <sup>1</sup>	0.08	-	0.0	1.0

<sup>1</sup>The reference group for urbanity is rural county. The reference group for domestic violence shelters is no shelter in the county. The reference group for military bases is no military base in the county.

Table 4: Descriptive Results for Dependent Variables, Structural-Level Variables, and Control Variables for Tennessee (n=95)

Variable Name	Tennessee			
	Mean/Proportion	SD	Min	Max
<i>Dependent Variables</i>				
Intimate Partner Kidnappings	3.45	10.93	0.00	93.00
Intimate Partner Assaults	64.45	187.88	0.00	1561.00
<i>Independent Variables</i>				
Concentrated Disadvantage				
Concentrated Disadvantage Scale	0.00	1.00	-4.97	10.38
% below poverty level	14.25	4.30	3.28	26.90
% female headed-households	11.76	2.68	6.61	22.91
% unemployed	8.77	2.19	4.05	18.15
% on public assistance	2.60	1.14	0.15	6.90
% Younger than 18 years old	23.12	2.13	16.30	29.33
Ethnic Heterogeneity				
% Caucasian	89.62	10.86	43.45	99.23
% African American	7.19	2.50	0.00	50.62
% American Indian/Alaskan Native	0.31	0.32	0.00	2.34
% Asian	0.52	0.61	0.00	3.06
% Native Hawaiian/Pacific Islander	0.05	0.18	0.00	1.48
% Other Race	0.84	0.99	0.00	6.82
Immigrant Concentration				
% Hispanic	2.54	2.26	0.13	13.63
% foreign born	2.16	1.91	0.00	10.73
Residential Stability				
% owner occupied houses	74.53	5.35	58.54	84.56
% living in same house at least 1 year	86.12	3.42	75.44	94.01
Total Population	64831.08	123601.41	4803.00	918186.00
<i>Control Variables</i>				
Urbanity <sup>1</sup>	0.66	-	0.00	1.00
Domestic Violence Shelters <sup>1</sup>	0.73	-	0.00	1.00
Military Bases <sup>1</sup>	0.03	-	0.00	1.00

<sup>1</sup>The reference group for urbanity is rural county. The reference group for domestic violence shelters is no shelter in the county. The reference group for military bases is no military base in the county.

Table 5: Descriptive Results for Dependent Variables, Structural-Level Variables, and Control Variables for Virginia (n=133)

Variable Name	Virginia			
	Mean/Proportion	SD	Min	Max
<i>Dependent Variables</i>				
Intimate Partner Kidnappings	3.46	6.35	0.00	47.00
Intimate Partner Assaults	10.65	19.76	0.00	131.00
<i>Independent Variables</i>				
Concentrated Disadvantage				
Concentrated Disadvantage Scale	0.00	1.00	-5.82	8.26
% below poverty level	9.30	4.86	1.10	22.70
% female headed-households	12.25	3.73	5.47	25.03
% unemployed	6.11	2.57	0.25	13.15
% on public assistance	2.26	1.37	0.28	8.34
% Younger than 18 years old	21.60	3.66	9.40	30.99
Ethnic Heterogeneity				
% Caucasian	76.05	16.90	20.63	98.83
% African American	19.18	16.55	0.00	77.04
% American Indian/Alaskan Native	0.32	0.66	0.00	7.19
% Asian	1.61	2.64	0.00	16.03
% Native Hawaiian/Pacific Islander	0.05	0.10	0.00	0.90
% Other Race	1.37	2.34	0.00	16.68
Immigrant Concentration				
% Hispanic	3.67	4.63	0.00	30.35
% foreign born	4.60	5.68	0.02	27.89
Residential Stability				
% owner occupied houses	71.70	11.54	38.03	92.51
% living in same house at least 1 year	85.35	6.71	56.02	95.36
Total Population	57624.85	109957.13	2399.00	1012751.00
<i>Control Variables</i>				
Urbanity <sup>1</sup>	0.59	-	0.00	1.00
Domestic Violence Shelters <sup>1</sup>	0.99	-	0.00	1.00
Military Bases <sup>1</sup>	0.11	-	0.00	1.00

<sup>1</sup>The reference group for urbanity is rural county. The reference group for domestic violence shelters is no shelter in the county. The reference group for military bases is no military base in the county.

Table 6 : Bivariate Pearson Correlations between the Dependent Variables Intimate Partner Kidnapping and Intimate Partner Assaults and the Structural-Level Independent Variables

Variable	Both States (n=228)	Tennessee (n=95)	Virginia (n=133)
<i>Dependent Variable</i>			
Intimate Partner Assaults	0.82**	0.97**	0.62**
<i>Structural-Level Independent Variables</i>			
Concentrated Disadvantage			
Concentrated Disadvantage Scale	0.02	0.13	0.10
% younger than 18	0.21**	0.19	0.30**
Ethnic Heterogeneity	0.32**	0.45**	0.32**
Immigrant Concentration			
% Hispanic	0.24**	0.22**	0.34**
% foreign Born	0.33**	0.44**	0.45**
Residential Stability			
% living in same house 1 year ago	-0.24**	-0.33**	-0.26**
% owner occupied houses	-0.27**	-0.44**	-0.26**
Total Population	0.87**	0.93**	0.83**

\*\*p<.01,\* p<.05

Note. The first correlation is a correlation between the two dependent variables, intimate partner kidnapping and intimate partner assaults. The remaining correlations are between the dependent variable intimate partner kidnapping and the structural-level independent variables.



Table 7 : Bivariate t-Tests between the Dependent Variable Intimate Partner Kidnapping, and the Control Variables

Variable	Both States (n=228)		Tennessee (n=95)		Virginia (n=133)	
	Mean <sup>1</sup>	<i>t</i>	Mean <sup>1</sup>	<i>t</i>	Mean <sup>1</sup>	<i>t</i>
<i>Control Variables</i>						
Urbanity						
Rural	0.57	-5.25**	0.25	-2.91**	0.76	-5.17**
Urban	5.23		5.08		5.36	
Domestic Violence Shelters						
No	0.64	-4.73**	0.58	-2.57*	1.50	-0.43
Yes	3.85		4.54		3.49	
Military Bases						
No	2.50	-2.26*	2.48	-1.03	2.51	-2.58*
Yes	14.67		33.33		10.93	

<sup>1</sup>The mean is the mean number of intimate partner kidnappings in each group. \*\*p<.01, \*p<.05

Table 8 : Bivariate Pearson Correlations between the Dependent Variable Intimate Partner Assaults and the Structural-Level Independent Variables

Variable	Both States (n=228)	Tennessee (n=95)	Virginia (n=133)
<i>Structural-Level Independent Variables</i>			
Concentrated Disadvantage			
Concentrated Disadvantage Scale	0.11	0.15	0.21*
% younger than 18	0.17*	0.21*	0.26**
Ethnic Heterogeneity	0.16*	0.48**	0.34**
Immigrant Concentration			
% Hispanic	0.08	0.26*	0.18*
% foreign Born	0.10	0.48**	0.26**
Residential Stability			
% living in same house 1 year ago	-0.16*	-0.37**	-0.26**
% owner occupied houses	-0.17*	-0.47**	-0.33**
Total Population	0.69**	0.96**	0.57**

\*\*p<.01, \*p<.05

Table 9 : Bivariate t-Tests between the Dependent Variable Intimate Partner Assaults, and the Control Variables

Variable	Both States (n=228)		Tennessee (n=95)		Virginia (n=133)	
	Mean <sup>1</sup>	<i>t</i>	Mean <sup>1</sup>	<i>t</i>	Mean <sup>1</sup>	<i>t</i>
<i>Control Variables</i>						
Urbanity						
Rural	4.39	-3.53**	8.41	-2.97**	2.06	-5.38**
Urban	50.48		92.92		16.63	
Domestic Violence Shelters						
No	13.57	-0.88	14.50	-2.61*	1.50	-0.66
Yes	35.67		83.28		10.79	
Military Bases						
No	25.50	-1.12	48.53	-1.00	7.69	-3.28**
Yes	120.56		552.67		34.13	

<sup>1</sup>The mean is the mean number of intimate partner assaults in each group. \*\*p<.01, \*p<.05

Table 10: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Kidnapping, the Structural-Level Independent Variables, and Control Variables for Both States Combined (n=226)

Variable	b	Both States S.E.	IRR
<i>Structural-Level Independent Variables</i>			
Concentrated Disadvantage			
Concentrated Disadvantage Scale	0.01	0.14	1.01
% younger than 18	0.04	0.03	1.04
Ethnic Heterogeneity	0.36	0.62	1.43
Immigrant Concentration			
% Hispanic	-0.18	0.15	0.84
% foreign born	0.27	0.18	1.31
Residential Stability			
% living in same house 1 year ago	0.01	0.02	1.01
% owner occupied houses	-0.04	0.01	0.96**
<i>Control Variables</i>			
Urbanity	-0.01	0.21	0.99
Domestic Violence Shelters	0.36	0.31	1.44
Military Bases	-0.35	0.25	0.70
Constant	-8.90	1.32	0.00
<i>Model-Level Results</i>			
LR Chi2		43.62**	
Pseudo R2		0.05	

\*\*p<.01, \* p<.05

Note. The offset variable included in the analysis was total population.

Table 11: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Kidnapping, the Structural-Level Independent Variables, and Control Variables for Tennessee (n=94)

Variable	b	Tennessee S.E.	IRR
<i>Structural-Level Independent Variables</i>			
Concentrated Disadvantage			
Concentrated Disadvantage Scale	-0.05	0.08	0.95
% younger than 18	-0.08	0.07	0.92
Ethnic Heterogeneity	1.83	1.35	6.26
Immigrant Concentration			
% Hispanic	0.26	0.38	1.30
% foreign born	-0.38	0.38	0.68
Residential Stability			
% living in same house 1 year ago	0.07	0.06	1.07
% owner occupied houses	-0.05	0.04	0.95
<i>Control Variables</i>			
Urbanity	1.18	0.50	3.27*
Domestic Violence Shelters	0.47	0.36	1.59
Military Bases	0.60	0.51	1.82
Constant	-12.13	4.67	0.00
<i>Model-Level Results</i>			
LR Chi2		18.92*	
Pseudo R2		0.06	

\*\*p<.01, \* p<.05

Note. The offset variable included in the analysis was total population.

Table 12: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Kidnapping, the Structural-Level Independent Variables, and Control Variables for Virginia (n=132)

Variable	b	Virginia S.E.	IRR
<i>Structural-Level Independent Variables</i>			
Concentrated Disadvantage			
Concentrated Disadvantage Scale	0.04	0.05	1.04
% younger than 18	0.07	0.04	1.07
Ethnic Heterogeneity	-0.46	0.81	0.63
Immigrant Concentration			
% Hispanic	-0.19	0.16	0.82
% foreign born	0.36	0.21	1.43
Residential Stability			
% living in same house 1 year ago	-0.01	0.02	0.99
% owner occupied houses	-0.04	0.01	0.96*
<i>Control Variables</i>			
Urbanity	-0.24	0.24	0.78
Domestic Violence Shelters	-0.77	0.79	0.46
Military Bases	-0.56	0.27	0.57*
Constant	-7.05	1.44	0.00
<i>Model-Level Results</i>			
LR Chi2		36.52**	
Pseudo R2		0.07	

\*\*p<.01, \* p<.05

Note. The offset variable included in the analysis was total population.

Table 13: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Assault, the Structural-Level Independent Variables, and Control Variables for Both States Combined (n=227)

Variable	b	Both States S.E.	IRR
<i>Structural-Level Independent Variables</i>			
Concentrated Disadvantage			
Concentrated Disadvantage Scale	0.70	0.10	2.02**
% younger than 18	0.05	0.02	1.05*
Ethnic Heterogeneity	-1.56	0.41	0.21**
Immigrant Concentration			
% Hispanic	0.24	0.11	1.27*
% foreign born	-0.09	0.11	0.91
Residential Stability			
% living in same house 1 year ago	-0.02	0.41	0.98
% owner occupied houses	0.01	0.02	1.00
<i>Control Variables</i>			
Urbanity	0.43	0.13	1.53**
Domestic Violence Shelters	-0.07	0.17	0.93
Military Bases	-0.25	0.20	0.78
Constant	-7.24	1.10	0.00
<i>Model-Level Results</i>			
LR Chi2		111.47**	
Pseudo R2		0.07	

\*\*p<.01, \* p<.05

Note. The offset variable included in the analysis was total population.

Table 14: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Assaults, the Structural-Level Independent Variables, and Control Variables for Tennessee (n=94)

Variable	b	Tennessee S.E.	IRR
<i>Structural-Level Independent Variables</i>			
Concentrated Disadvantage			
Concentrated Disadvantage Scale	0.06	0.03	1.06*
% younger than 18	-0.02	0.03	0.98
Ethnic Heterogeneity	0.87	0.47	2.38
Immigrant Concentration			
% Hispanic	0.14	0.12	1.15
% foreign born	-0.08	0.13	0.92
Residential Stability			
% living in same house 1 year ago	0.01	0.02	1.01
% owner occupied houses	-0.01	0.01	0.99
<i>Control Variables</i>			
Urbanity	0.27	0.12	1.31*
Domestic Violence Shelters	0.19	0.11	1.22
Military Bases	0.13	0.22	1.14
Constant	-7.57	1.55	0.00
<i>Model-Level Results</i>			
LR Chi2		44.83**	
Pseudo R2		0.06	

\*\*p<.01, \* p<.05

Note. The offset variable included in the analysis was total population.



Table 15: Negative Binomial Regression Results between the Dependent Variable Intimate Partner Assaults, the Structural-Level Independent Variables, and Control Variables for Virginia (n=133)

Variable	b	Virginia S.E.	IRR
<i>Structural-Level Independent Variables</i>			
Concentrated Disadvantage			
Concentrated Disadvantage Scale	0.06	0.04	1.06
% younger than 18	0.01	0.03	1.01
Ethnic Heterogeneity	0.48	0.56	1.61
Immigrant Concentration			
% Hispanic	-0.02	0.11	0.98
% foreign born	-0.09	0.13	0.91
Residential Stability			
% living in same house 1 year ago	0.01	0.02	1.00
% owner occupied houses	-0.02	0.01	0.98*
<i>Control Variables</i>			
Urbanity	0.13	0.17	1.13
Domestic Violence Shelters	0.44	0.73	1.55
Military Bases	-0.28	0.20	0.75
Constant	-8.09	1.24	0.00
<i>Model-Level Results</i>			
LR Chi2		35.61**	
Pseudo R2		0.05	

\*\*p<.01, \* p<.05

Note. The offset variable included in the analysis was total population.

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