2005

# Individual, Neighborhood, and Situational Factors Associated with Violent Victimization and Offending

Jerry K. Daday
*Western Kentucky University*, jerry.daday@wku.edu

Lisa M. Broidy
*University of New Mexico - Main Campus*, lbroidy@unm.edu

Cameron S. Crandall
*University of New Mexico - Main Campus*, ccrandall@salud.unm.edu

David P. Sklar
*University of New Mexico - Main Campus*, dpsklar@salud.unm.edu

# Individual, Neighborhood, and Situational Factors Associated with Violent Victimization and Offending

Jerry K. Daday, Ph.D.
Department of Sociology
Western Kentucky University

Lisa Broidy, Ph.D.
Department of Sociology
University of New Mexico

Cameron Crandall, M.D
Department of Emergency Medicine
University of New Mexico Health Sciences Center

David Sklar, M.D.
Department of Emergency Medicine
University of New Mexico Health Sciences Center

Published in *Criminal Justice Studies* (2005) Volume 18, Issue 2, pages 215-235.

---

Please direct all correspondence to:

Jerry Daday
Department of Sociology
Western Kentucky University
1 Big Red Way,
Bowling Green, KY 42101-3576
Email: jerry.daday@wku.edu
Phone: 270-745-8764

This research was funded by a Dissertation Grant from the Centers for Disease Control and Prevention in Atlanta, Georgia (R49/CCR622427-01-1). The contents of this document are solely the responsibility of the authors and do not necessarily represent the official views of the Centers of Disease Control and Prevention.

ABSTRACT

The criminological literature presents substantial evidence that victims and offenders in violent crimes share demographic characteristics, engage in similar lifestyles and activities, and reside in socially disorganized neighborhoods. However, research has examined these relationships separately using either victimization or offending data, and prior studies have not examined these relationships by comparing victims and offenders within the same incidents. This has limited efforts to examine whether these factors are associated with victimization and offending in similar or distinct ways. Using a law enforcement database of victims (N = 1,248) and offenders (N = 1,735) involved within the same aggravated battery incidents (N = 1,015) in Bernalillo County, New Mexico, this research explores whether victims and offenders involved in non-lethal violence share certain individual, neighborhood, and situational characteristics. Results suggest that victims and offenders live in socially disorganized neighborhoods and engage in risky lifestyles and violent offending behaviors in similar proportions. These findings highlight the overlapping factors associated with victimization and offending in non-lethal violent personal crimes. The implications of these findings are discussed.

## Introduction

Although the victimization and offending literatures initially appear to be distinct in their theoretical and empirical focus, criminologists and sociologists have discovered significant overlap among the factors associated with victimization and offending (Gottfredson 1981; Jensen and Brownfield 1986). For example, empirical research has found similarities between victims and offenders in their 1) demographic composition, 2) prior offending, 3) proximity to high crime areas, and lastly 4) risky lifestyles and behaviors. Moreover, each of these factors has been empirically linked to an increased risk of subsequent victimization and offending. Based on the fact that prior offending and deviance seem to influence one's chances of subsequent victimization and offending, and since violent victims and offenders appear to share a similar demographic profile, engage in similar risky behaviors, and live in neighborhoods with similar ecological characteristics, researchers believe that victims and offenders of violent crime originate from the same population and are often "one in the same" (Sampson and Lauritsen 1990; Singer 1981).

An important limitation of prior studies is that researchers have often examined the factors influencing victimization and offending separately by only focusing on victims or offenders through the use of either victimization or offending data. Prior research has not examined the factors influencing victimization and offending simultaneously using one sample of victims and offenders involved in the same incidents. It may be possible that these prior studies have overstated the observed overlap in the correlates of victimization and offending. This research attempts to fill this void by examining a range of factors that influence victimization and offending using a dataset of victims and offenders involved in the same aggravated battery incidents in Bernalillo County, New Mexico in 2001. These data allow for a

more systematic study of the similarities and differences between victims and offenders by facilitating within incident comparisons of the correlates of victimization and offending.

## Literature Review

### *Demographic Factors*

One of the most consistent findings from the victimization and offending literatures is that victims and offenders have a similar demographic profile. Studies focusing on the correlates of offending suggest that violent offenders are primarily from racial/ethnic minority groups and tend to be male youth (between the ages of 15-25) who exhibit low parental attachment, low educational achievement, and low occupational aspirations (Braithwaite 1999). This work also indicates that violent offenders are more likely to live in socially disadvantaged neighborhoods and communities (Shaw and McKay 1942). Using data from the National Crime Survey, researchers have found that victims of violent crime in the United States tend to be male, young, racial/ethnic minorities, and live in urban areas that closely resemble the characteristics associated with offenders (US Department of Justice 2001; Gottfredson 1986; Hindelang 1981; Hindelang, Gottfredson, and Garofalo 1978; Singer 1981).

Hindelang et al. (1978) and Cohen, Kluegel and Land (1981) offer the "principle of homogamy" to address the overlap in demographic characteristics between victims and offenders. The principle of homogamy suggests that individuals from demographic groups that contain a disproportionate number of offenders will also have an increased risk of victimization because of their increased exposure to these offenders (Sampson and Lauritsen 1990; see also Sacco and Kennedy 2002). Building on the homogamy principle, routine activities theory argues that the increased risk of victimization associated with shared demographic characteristics is largely dependent on situational factors. When potential victims and willing offenders interact at

times of the day with reduced guardianship (i.e. at night) and in settings where individuals engage in risky behaviors and activities (i.e. in bars), the opportunities for offending and the risks of victimization increase. While shared demographic characteristics could simply indicate that victims and offenders are groups converging in crime prone environments, other research more explicitly indicates that these are, in fact, overlapping populations.

### *Offending History*

One of the most salient lifestyles or routine activities associated with offending behavior is a prior offending history. As Nagin and Paternoster (2000) state, "perhaps the most robust finding in the criminological research is the moderately strong positive correlation between past and future offending; people who commit offenses at one point in time are more likely than non-offenders to commit crimes at a later point" (Nagin and Paternoster 2000: 117-118). While prior offending is a strong predictor of future offending, studies in the lifestyle-routine activities framework have found that prior offending also increases one's risk of future victimization. By engaging in crime, individuals are associating with other known offenders, thus increasing their chances of future victimization and reducing their ability to turn to law enforcement for assistance (Dobrin 2001; Sacco and Kennedy 2002). In a case-control study of homicide offenders and victims in Maryland, Dobrin (2001) found that previous offending increased one's chances of being a homicide victim. In a qualitative study of homeless street youth, Baron (1997) found that these youth had prior victimization histories, with the most extensive ones belonging to youth who also had extensive offending histories. Sampson and Lauritsen (1990) examined the relationship between measures of self-reported victimization and offending using data from the British Crime Survey. They found prior offending in general and prior violent offending specifically were significantly related to various types of victimization, including

nonviolent victimization and victimization by strangers and acquaintances. Using longitudinal data from the National Youth Survey (NYS), Lauritsen, Sampson, and Laub (1991) found that "delinquents were four-times more likely to be the victim of an assault than non-delinquents" (Lauritsen et al. 1991: 276-277). Delinquents were also more likely to be the victim of a robbery or vandalism than non-delinquents. More specifically, in 15 of their 16 models, they found that "the extent of the respondents' involvement in delinquent lifestyles has the largest direct effect on assault, robbery, larceny, and vandalism victimization" (Lauritsen et al. 1991: 286). Clearly, a prior offending history must be considered when examining the similarities and differences between victims and offenders involved in violent crime.

### *Routine Activities and Deviant/Risky Lifestyles*

As noted above, lifestyle-routine activities theory focuses on the ways in which the routine activities of everyday life can increase the risks of victimization for individuals and the rates of victimization within geographically defined areas by bringing potential victims in contact with motivated offenders (Cohen and Felson 1979; Hindelang, Gottfredson, and Garofalo 1978; Miethe and Meier 1993, 1994). While only a few studies have used lifestyle-routine activities theory to examine offending, a large number of studies have examined the influence of specific delinquent behaviors and "risky" lifestyles on victimization. Some researchers have demonstrated how victims and offenders lead similar lifestyles and "interact with people similar to themselves in both demographic and behavioral characteristics, which may lead to alternating roles of offender and victim" (Dobrin 2001: 156). Using British Crime Survey Data, Sampson and Lauritsen (1990) incorporated measures of risky behaviors (nights out and drinking) into their multivariate logistical regression models predicting the probability of victimization. After controlling for demographic characteristics as well as self-reported prior violent offending

histories and the proximity to high crime areas, they found that involvement in risky behaviors significantly increased the likelihood of personal victimization, assault victimization, and stranger violence (Sampson and Lauritsen 1990). Similarly, using data from the Denver Youth Survey (DYS), researchers have found various risky behaviors to be among the best predictors of victimization. In particular, alcohol and drug use were both associated with increased risks of victimization and offending (Huizinga et al. 2003).

One of the primary criticisms of lifestyle-routine activities theory is the lack of attention devoted to the "motivated offender" and how specific risky behaviors relate to offending behaviors. However, some researchers have identified the value of using lifestyle-routine activities theory to examine offending behaviors (Kennedy and Forde 1999; Mustaine and Tewksbury 2000; Osgood et al. 1996; Riley 1987). They use the theory to explore how "the routine activities in which people engage increase or decrease the likelihood that they will find themselves in situations that encourage or allow offending behavior" (Sacco and Kennedy 2002: 70). If some routine activities and lifestyles are related to increased victimization risks, then they should also be related to activities and behaviors associated with opportunities for offending. Researchers such as Osgood et al. (1996) primarily focus on the ways in which unstructured routine activities in the absence of authority figures provide situations that are conducive to offending and deviant behaviors. Because risky lifestyles and routine activities are equally associated with victimization and offending, and since these activities bring willing offenders in contact with suitable targets, it is essential to include measures of risky lifestyles and behaviors if one is to explore in greater detail the relationship between victimization and offending.

### *Ecological Proximity to Violence*

Prior research using social disorganization theory has found a significant relationship between certain measures of disadvantage and increased rates of crime, offending, and victimization (Fagan, Piper, and Cheng 1987; Garofalo 1987; Lee 2000; Sampson, Morenoff, and Gannon-Rowley 2002; Sampson and Lauritsen 1990). This work has found that the spatial proximity to crime strongly increases one's chances of offending and risks of victimization, "either by influencing or shaping the types and levels of criminal behavior by the people who frequent the area, or by attracting to an area people who already share similar criminal inclinations" (Anselin et al. 2000: 215). Consistent with this, offenders are more likely to commit crimes in areas where "they live, work, or entertain themselves" (Mustaine and Tewksbury 1998: 833). As a result, people who live in high crime environments are commonly exposed to motivated offenders, thus increasing their victimization risks (see also Brantingham and Brantingham 1981; Buck et al. 1993; Holmes and Holmes 1996).

There are numerous factors that contribute to social disorganization and the weakening of formal and informal social control mechanisms in primarily large inner city neighborhoods. Poverty, unemployment, cultural heterogeneity, high population density, high mobility and turnover, racial/ethnic heterogeneity, disruptions in the family structure, weak ties between parents and children, weak and fragmented social networks, low social capital among residents, discriminatory housing policies, gang networks, drug trafficking, and the structure of economic markets are all associated with social disorganization. Each of these variables "provide some independent explanatory power in accounting for neighborhood variation in crime or problem behavior [and] combine over time to disrupt the social organizational process in the neighborhood" (Elliott et al. 1996: 392 and 393; see also Bellair 2000; Messner and Tardiff 1986; Miethe and McDowall 1993; Morenoff, Sampson, and Raudenbush 2001; Roncek 1981;

Sampson 1985, 1986; Sampson and Groves 1989; Sampson, Raudenbush, and Earls 1997; Sampson and Raudenbush 1999; Sampson et al. 2002; Smith and Jarjoura 1989; Wilson 1987, 1996). The presence of these structural and ecological factors leads to weakened social networks, lower supervision of youth within the community, and less participation by residents in formal and informal institutions. Not only does this reduce the presence and strength of informal controls to regulate offending, but it also limits a community's ability to protect residents from victimization.

### *Summary*

A review of the existing literature suggests that victims and offenders have similar demographic characteristics and offending histories, and they engage in similar lifestyles and activities that bring them together in criminogenic settings. While we know victims and offenders share demographic and neighborhood characteristics as well as prior offending and risky behaviors, research has not explored potential variation in the processes that lead to increased victimization and offending risks. For example, are some demographic characteristics, risky lifestyles and behaviors, and/or neighborhood characteristics stronger correlates of victimization while others are more strongly correlated with offending? Moreover, prior research exploring the similarities and differences between victims and offenders has also not examined the ways in which the situational characteristics of incidents mediate the potential similarities and differences between these two groups. Often, data limitations have precluded researchers from comparing victims and offenders in this way (Mustaine and Tewksbury 2000). Do the characteristics of incidents influence the extent to which victims and offenders overlap or diverge? This research attempts to address these questions by examining the demographic and neighborhood characteristics as well as the offending and medical utilization histories of victims

and offenders involved within the same aggravated battery incidents in Bernalillo County, New Mexico in 2001.

## Current Study: Methods and Variables

This research assesses the influence of individual, ecological, and situational characteristics on the odds of being a victim or an offender within aggravated battery incidents using bivariate conditional logistic regression modeling. This research examines these relationships using a sample of victims (N = 1,248) and offenders (N = 1,735) involved in the same aggravated battery incidents (N = 1,015) in Bernalillo County, New Mexico in 2001. Bernalillo County is the largest metropolitan area in the state of New Mexico with 556,687 residents. Almost 80% of the county's population lives in the state's largest city, Albuquerque, which has a total residential population of 448,607[1]. The county provides a unique setting for conducting this study for several reasons. First, few studies have been conducted exploring victimization and offending in medium sized cities located in the Southwestern United States, and Bernalillo County provides this opportunity. Secondly, Bernalillo County has a large Hispanic Population (41% of the total), whose victimization and offending experiences have largely been neglected by the sociological and criminological literatures (Martinez 1996). Since the Hispanic population now represents the largest racial/ethnic minority group in the United States, and because this population continues to grow, Bernalillo County provides an excellent location to conduct research on Hispanic victimization and offending. Thirdly, a majority of Bernalillo County's population represent racial and ethnic minority groups. Less than 48% of the population is White, with the remaining 52% representing Hispanics, Blacks, Native Americans, and a very small Asian/Pacific Islander population. Therefore, it is possible to

[1] Population statistics based on US Census Bureau Data from the year 2000.

compare victimization and offending experiences in an area where Whites and racial/ethnic minorities have nearly equal representation in the larger population.

For each victim and offender, we have obtained their known criminal histories in Bernalillo County and their known medical utilization at the University of New Mexico Health Sciences Center (UNM-HSC), the only level one trauma center in the state and the only public hospital in the county. We also used Arc View GIS and US Census Data from the year 2000 to obtain the census block group characteristics for each victim's and offender's home address. Based on the prior theoretical and empirical literature examining victimization and offending, we test the following hypotheses:

H1: Victims and offenders overlap within incidents based on their demographic characteristics: sex, race/ethnicity, and age.

H2: Within incidents, victims and offenders have overlapping violent offending histories.

H3: Within incidents, victims and offenders have overlapping risky behaviors and engage in similar risky lifestyles.

H4: Victims and offenders live in neighborhoods with similar levels of social disorganization.

H5: Victims and offenders overlap in their individual and ecological characteristics for incidents with different situational characteristics.

Statute number 30-3-5 from the New Mexico Traffic and Criminal Code was used to identify the aggravated battery incidents for this study and the individuals associated with these incidents. In accordance with Statute 30-3-5, an aggravated battery incident is defined as the unlawful touching or application of force with the intent of injuring an individual(s). It should be noted that these incidents represent felony and misdemeanor incidents and do not include aggravated

battery incidents between household members, which are classified under a separate New Mexico State Statute[2].

### *Data Sources*

Table 1 provides a brief summary of the data sources used for this research and the key variables culled from each source. We used Arc View GIS software to determine the census block group characteristics associated with each victim's and offender's home address, and we used STATA 8.0 for our conditional logistic regression analyses.

TABLE 1: DATA SOURCES (ABOUT HERE)

As Table 1 shows, the incident, victim and offender data for these aggravated battery incidents were obtained from the Albuquerque Police Department (APD) and the Bernalillo County Sheriff's Department (BCSD). These data contained information on the victims (N = 1,248) and offenders (N = 1,735) involved in the 1,015 aggravated battery incidents in Bernalillo County, New Mexico in 2001[3]. These data provide demographic information on the victims and offenders (sex, race/ethnicity, age, home address), personal identifiers (social security number and date of birth), and some information on the characteristics associated with each incident (address of the incident and time of incident). In some instances, the police and sheriff department data identified individuals as a "suspect" rather than as the "arrestee," meaning the individual was not formally arrested or charged in the incident. We combined the "suspects" and "arrestees" into an "offender" category for this study because these individuals were identified by APD and BCSD to have some involvement as the actual or suspected perpetrator in the

[2] The correlates of victimization and offending in household member violence are known to differ from the factors associated with violent victimization and offending outside of domestic/household member violence (Avakame 1997). Therefore, we excluded incidents of household member violence from the analyses.

[3] In order to perform our linkage with other data sources in Bernalillo County, such as the crime history database and the hospital utilization records at UNM-HSC, it was necessary to restrict the number of victims, offenders and incidents to a manageable number of cases. Therefore, for the purposes of this study, we only chose to focus on aggravated battery incidents during the calendar year of 2001.

incident. The suspects and the offenders have very similar demographic characteristics, crime histories, and medical utilization histories (results not shown), which provided additional support for combining these two groups into the offender category for the purposes of this study.

Second, the list of victims and offenders was electronically linked to the Crime History Data System maintained by APD and BCSD using the last name, social security number and date of birth for each individual. If a match was found based on two of the three criteria, his/her crime history was extracted from the crime history database. These data provide information on the date of each arrest and the charges associated with each arrest in Bernalillo County. Because of potential record keeping errors on the part of law enforcement officials, crime history arrest dates that were within seven days of the 2001 aggravated battery incident date were assumed to be the same date as the incident, and thus, excluded from the analysis.[4] There are some limitations of using this data source: 1) the crime histories are based on offenses known to law enforcement which resulted in an arrest, and do not include instances where an arrest was not made or where law enforcement was not aware of the offense; 2) the database only includes arrests made in Bernalillo County and does not include arrests made in other New Mexico counties or in other states, 3) there is an inherent length based sampling bias in these data since older individuals have greater chances of having an arrest. Clearly, these data represent a conservative measure of each individual's prior offending history. We used the crime history data to create dichotomous variables measuring the presence of a violent[5] offending charge as

[4] It is possible that some of these omitted arrests represent valid arrests not associated with the aggravated battery incident. However, we felt that excluding arrests records within seven days of the aggravated battery incident prevented the possibility of including the 2001 aggravated battery incident itself in the crime history records.
[5] Includes the following charges: homicide, aggravated assault, aggravated battery, domestic violence, child abuse and robbery.

well as three dichotomous risky lifestyle variables measuring the presence of a drug use/possession, DUI, and property[6] crime charge in arrest histories of the victims and offenders.

Third, the sample of victims and offenders was linked to the University of New Mexico Health Sciences Center's (UNM-HSC) University Physician's Associates (UPA) billing database. UNM-HSC is the only level one trauma center in New Mexico and the only public hospital in Bernalillo County. By linking the list of victims and offenders to the UPA system based on their name, social security number, date of birth, and sex, we were able to determine their total medical utilization within the UNM-HSC. All visits at the UNM-HSC on or within three years preceding the aggravated battery incident were included in the analysis. Again, because of potential record keeping errors, visit dates that were within seven days of the aggravated battery incident were assumed to be visits associated with the incident itself (i.e., they sought medical treatment at UNM-HSC because of the aggravated battery incident)[7]. Similar to the limitations of the crime history variables, these data only provide information on the known medical utilization of the victims and offenders who link with the UNM-HSC UPA billing database system. There are no medical records in the UPA system for individuals who used other health care facilities or who have never sought medical treatment. Using this data source, we created four dichotomous risky lifestyle variables measuring the presence of the following characteristics in their medical histories at UNM-HSC in the three years preceding the aggravated battery incident: Emergency Department Injury/Trauma Related Visit, Assault Related Visit, Mental Health Related Visit, and a Substance Abuse Related Visit.

[6] Includes the following charges: larceny, shoplifting, burglary, and motor vehicle theft

[7] Similar to the crime history variables, it was necessary to exclude visits within seven days of the aggravated battery incident to avoid the possibility of counting injuries or hospital visits resulting from the incident itself as part of the medical histories. Subsequently, these visits and any visits after the 2001 aggravated battery incident date were excluded from the analysis.

Lastly, United States Census Data were used to incorporate the residential census block group characteristics for each victim and offender to measure the elements of social disorganization in each individual's home neighborhood. All of the home addresses for the victims and offenders were mapped using Arc View GIS to determine the appropriate Census Block Group characteristics for each person's residence[8]. Because the variables typically associated with social disorganization are highly correlated, we created a factor weighted summed index variable to measure the level of social disorganization in each victim's and offender's residential census block group. Using a principal components analysis, five of the census block group variables were used to create an index variable of social disorganization: 1) Percent of total population with less than an eighth grade education, 2) Percent of total population with no high school diploma, 3) Percent of total population living in poverty, 4) Percent of total population unemployed, and finally 5) Average median family income.[9]

By linking these four data sources together, we were able to construct an integrated database which contained the variables necessary to explore the characteristics associated with victimization and offending. These analyses include variables from a variety of agencies within Bernalillo County, which allow us to compare the violent offending histories, risky lifestyles, and the demographic and residential characteristics of these two groups. Table 2 provides descriptive statistics for the variables used in the study.

---

[8] We chose to compare victims and offenders based on their home residence for two reasons. First, it was impossible to examine the similarities and differences between victims and offenders using the neighborhood characteristics of where the incident occurred. Victims and offenders shared the same incident address/location in our database, and thus, there would be no variation between these two groups if we used the incident address. Second, to accurately test Hypothesis 4, it was necessary to examine the overlap and divergence between victims and offenders based on their home addresses. The incident address reflects the characteristics of the neighborhood which attracted the victims and offenders and does not provide information on the ecological factors that shape similarities and differences between victims and offenders.

[9] The index has an Alpha value of 0.90. Factor weights for each variable are include: Percent of total population with less than an eighth grade education (.861); Percent of total population with no high school diploma (.909); Percent of total population living in poverty (.891); Percent of total population unemployed (.722); and Average median family income (-.810).

TABLE 2: DESCRIPTIVE STATISTICS (ABOUT HERE)

Finally, several situational characteristics are used to examine in greater detail the similarities and differences between victims and offenders involved in different types of incidents. For example, in our analyses, we explore the overlap and divergence between victims and offenders for incidents occurring during the day and in the evening, incidents in residential and non-residential settings, and finally incidents where there is only one offender and one victim (i.e., a dyad) and incidents with multiple victims and/or multiple offenders (i.e. a non-dyad). Table 3 provides additional information on the situational characteristics of the 1,015 aggravated battery incidents in our sample. Data limitations prevent us from comparing more specific or additional incident level characteristics.

TABLE 3: INCIDENT CHARACTERISTICS (ABOUT HERE)

To test our five hypotheses, we utilize conditional logistic regression analyses to determine the influence of the demographic characteristics, violent offending histories, risky lifestyles, and residential neighborhood characteristics on the odds of being a victim (coded as a 0) or an offender (coded as a 1) within incidents. Conditional logistic regression is very similar to logistic regression modeling, except the conditional analyses allows us to examine the similarities and differences between victims and offenders while accounting for the unspecified correlations within each incident. Conditional logistic regression models compare victims and offenders within each incident by conditioning the analyses on the law enforcement incident ID number, a number in which victims and offenders involved in the same incident share.

## Results/Findings

Table 4 presents the bivariate conditional logistic regression results showing the influence of the independent variables on the odds of being a victim or an offender within

aggravated battery incidents that have varying situational characteristics. Females, Whites and the 15-24 year old age group were used as the reference categories for the categorical variables sex, race/ethnicity, and age. Model 1 shows the bivariate relationships between the independent and dependent variables for all of the aggravated battery incidents in 2001. Victims and offenders appear to diverge in their demographic characteristics, with males having significantly greater odds (45%) of being an offender than a victim relative to females within incidents. There is also divergence between victims and offenders based on their racial/ethnic compositions, as Hispanics (34%), Blacks (209%), Native Americans (94%), and Asians (624%) have significantly greater odds of being offenders than victims relative to Whites. Youth between the ages of 0-14 have greater significantly greater odds (733%) of being a victim than an offender relative to those in the 15-24 age group. These findings suggest significant divergence across victims and offenders in their demographic characteristics and challenge our first hypothesis.

TABLE 4: RESULTS (ABOUT HERE)

Consistent with expectations, Model 1 shows that victims and offenders do not significantly diverge in their violent offending histories within all incidents. This finding supports Hypothesis 2. Our third hypothesis tests similar relationships using measures of risky lifestyles and activities. There is only one variable exhibiting divergence between victims and offenders: a DUI arrest from the crime history data is associated with significantly greater odds (61%) of victimization within incidents. Victims and offenders overlap based on the two remaining crime history variables (a drug use/possession arrest and a property crime arrest) and the five variables derived from the medical utilization records at UNM-HSC. These findings provide substantial support for our third hypothesis. Results are also consistent with Hypothesis 4, which states that victims and offenders will not significantly diverge in the ecological

characteristics of their residential neighborhoods. The social disorganization index, reflective of the ecological factors, appears to influence victimization and offending in similar ways.

In summary, these results show that males have greater odds of being offenders than victims relative to females, and all of the racial/ethnic minority groups have greater odds of being offenders than victims relative to Whites. We should not expect to see these demographic differences based on the theoretical and empirical statements of lifestyle-routine activities theory, and these results challenge Hypothesis 1. However, the results in Model 1 provide substantial support for Hypotheses 2, 3 and 4, as victims and offenders appear to share violent offending histories, risky lifestyles, and neighborhood characteristics within these violent incidents.

Hypothesis 5 states that victims and offenders will have overlapping individual and ecological characteristics within incidents that have varying situational factors. To test this hypothesis, we examine the influence of the same independent variables on the odds of victimization and offending within aggravated battery incidents that have varying situational characteristics, such as time of day, location, and victim/offender ratios. First, we examine incidents occurring during the day (Model 2 in Table 4) and incidents in the evening (Model 3 in Table 4). We define a daytime incident as one that occurred between 6:00am and 5:59pm, and a nighttime incident as one that occurred between 6:00pm and 5:59am. As the results in Model 2 and 3 show, the influence of the independent variables on the odds of victimization or offending is very similar in comparison to Model 1. Victims and offenders significantly diverge in their demographic characteristics for incidents occurring during the day and in the evening. Males have greater odds of offending relative to Whites. Also, youth (0-14 years old) have significantly greater odds of victimization relative to 15-24 year olds. In daytime incidents, Hispanics, Blacks and Asians have significantly greater odds of being offenders than victims

relative to Whites; for nighttime incidents, Blacks and Native Americans have significantly greater odds of offending relative to Whites. In both daytime and nighttime incidents, victims and offenders overlap in their violent offending histories, risky lifestyles, and in their neighborhood characteristics for daytime and nighttime incidents. The influence of the independent variables on the odds of victimization and offending appear to be similar for incidents occurring during the day and evening. Since victims and offenders overlap and diverge in similar ways for daytime and nighttime incidents, these findings support Hypothesis 5.

Next, we examine incidents occurring in residential (Model 4) and non-residential settings (Model 5)[10]. In residential incidents, victims and offenders have overlapping violent crime histories, medical utilization, property crime arrests, and neighborhood characteristics. Similar to previous findings, victims and offenders significantly diverge in their sex, race/ethnicity, and age compositions. Males have significantly greater odds of offending relative to women, and Hispanics and Blacks have significantly greater odds of being offenders relative to Whites. Again, we see youth between the ages of 0-14 having significantly greater odds of victimization relative to 15-24 year olds; however, there is no divergence among the other age groups relative to the reference category. Also similar to the previous findings, a DUI arrest is associated with greater odds of victimization. However, in residential incidents, we also see some additional divergence between victims and offenders, with a drug use/possession arrest associated with greater odds of being an offender. These results provide mixed support for Hypothesis 5 since victims and offenders in residential incidents diverge on demographic characteristics and in some risky lifestyle measures.

[10] It should be noted that these incidents occurred in a residential setting, though not necessarily in the victims' and/or offenders' homes. Some examples of non-residential incidents include such places as bars, hotels, streets, and parking garages.

For non-residential incidents, victims and offenders overlap in their sex compositions, violent crime histories, medical utilization, and in their drug/use possession and property crime arrests. There is divergence between these two groups based on their racial/ethnic characteristics, with Blacks and Asians having greater odds of offending relative to Whites. Moreover, 0-14 year olds once again have greater odds of victimization relative to 15-24 year olds. Within non-residential incident, there is also divergence in their DUI arrests and neighborhood characteristics, with a DUI arrest associated with greater odds of victimization and more socially disorganized neighborhoods associated with greater odds of offending. Interestingly, for non-residential incidents, victims and offenders overlap in their sex composition, a finding which is very different from previous models. These findings challenge Hypothesis 5, since victims and offenders in non-residential incidents differ on certain demographic variables, neighborhood characteristics, and in their DUI arrest histories.

Finally, we examine the influence of these independent variables on the odds of victimization and offending for dyad and non-dyad incidents. Since there is a greater ratio of offenders to victims in the sample (Ratio of Off/Vic = 1.39), we explore the influence of the independent variables on the odds of being a victim or an offender for the 548 dyad incidents (54% of the total) compared to the 467 non-dyad incidents (46% of the total)[11]. The findings from the dyad (Model 6) and non-dyad incidents (Model 7) are very similar to the previous models. Victims and offenders do vary along several characteristics in dyad and non-dyad incidents, such as in their sex, race/ethnicity, age, and DUI arrests. Once again, we see that males have greater odds of being offenders than victims relative to women, and racial/ethnic minorities have greater odds of being offenders than victims relative to Whites within dyad and

[11] A dyad incident is one in which there was only one offender and one victim. A non-dyad incident is one in which there was multiple offenders and/or multiple victims.

non-dyad incidents. We also see 0-14 year olds and those with a DUI arrest history have greater odds of victimization in both types of incidents. These findings are consistent with the previous models. Again, these results provide mixed support for Hypothesis 5.

## Conclusion/Discussion

Prior studies have found that victims and offenders have similar demographic characteristics and offending histories and engage in similar lifestyles and activities, which bring these two groups together in criminogenic settings. As we have noted, researchers have reached these conclusions by examining the factors associated with victimization and offending separately, often using either victimization or offending data in separate studies. While we know a great deal about the characteristics associated with heightened victimization risks and the characteristics associated with subsequent offending, few researchers have brought these two separate yet very similar research traditions together (Mustaine and Tewksbury 2000). These facts represent an important limitation to our understanding of the etiological factors associated with victimization and offending. Equally important, researchers have also not examined the overlap and divergence between victims and offenders involved within the same incidents.

This research is an attempt to bridge this gap by examining individual, ecological, and situational factors associated with victimization and offending using a sample of victims and offenders involved in the same violent incidents. Analyses test hypotheses derived primarily from lifestyle-routine activities theory that predict similarities across victim and offender populations and focus on personal characteristics, neighborhood/residential characteristics, known offending histories, and known medical utilization at the public hospital and trauma center in the county.

As the results in the previous section showed, the victims and offenders in our sample exhibit similar violent offending histories and risky lifestyles and live in similarly disorganized neighborhoods. Moreover, victims and offenders shared these characteristics for incidents with varying situational characteristics. However, we did discover some unexpected divergence between the victims and offenders in the sample. One important difference is their DUI arrest histories. Since victims appear to have much more extensive DUI arrest histories, perhaps the consumption of alcohol makes these individuals more vulnerable to victimization. Routine activities and lifestyles associated with the "active pursuit of fun," such as drinking, tend to bring together willing offenders and suitable targets in the absence of authority figures, which increase the risks of victimization and offending in these environments. Arrests for DUI may represent a lifestyle marked by serious levels of intoxication and a lack of good judgment, leading to a particularly heightened risk of victimization compared to offending.

While the victims and offenders in our sample overlapped in their violent offending histories, risky lifestyles, and in their neighborhood characteristics for a variety of incidents, the divergence between these two groups based on sex, race/ethnicity, and age also did not support our core hypothesis. The results in the previous section showed the males and racial/ethnic minorities having greater odds of being offenders than victims relative to the females and Whites within these aggravated battery incidents. Since our study uses official law enforcement data, the demographic differences between victims and offenders may be the result of biases within the criminal justice system (Mosher et al. 2002). Law enforcement officials have varying degrees of discretion in making decisions when reporting to an incident, which may lead to biases in the data used for this study. For example, that males are significantly more likely to be offenders than victims, with the reverse being true of females, may be the result of law

enforcement officials arresting men or classifying men as the offenders and classifying women as the victims in aggravated battery incidents involving both sexes. At the same time, these results may reflect actual sex differences in offending and victimization across sex. The findings are indeed consistent with existing literature, which suggests than men outnumber women as victims and offenders in violent crimes, but the percentage of women in victim populations is larger than their percentage in the offender populations (Kruttschnitt 2001; Steffensmeier and Broidy 2001). Similarly, racial/ethnic differences may represent biases in law enforcement practices, as officers may be more likely to arrest racial and ethnic minorities or to classify them as offenders, whereas Whites are more likely to be classified as the victim at the time of the incident. However, it is also possible that the divergence may be a function of actual variation in criminal involvement or a statistical artifact driven by the small number Asians, Native Americans, and Blacks relative to the larger numbers of Whites and Hispanics in the sample. These small sizes may have skewed our findings by inflating differences between these groups.

Despite this divergence, our results are mainly consistent with the theoretical and empirical work in the lifestyle-routine activities framework and support for many of the hypotheses offered. Within incidents of varying situational characteristics, victims and offenders have overlapping violent offending histories, property crime histories, and medical utilization characteristics. We used these measures to capture risky lifestyles and behaviors, and it appears that victims and offenders exhibit these characteristics in similar proportions. Victims and offenders are also similarly likely to have prior drug use/possession arrests and are equally likely to live in neighborhoods marked by social disorganization. These similarities generally hold across aggravated battery incidents, regardless of variation in situational features. These findings highlight the overlapping nature of victimization and offending.

We used bivariate conditional logistic regression modeling to compare victims and offenders involved in the same incidents. By conditioning on the incident, we compared victims and offenders within each incident to determine the extent to which these groups overlapped or diverged within the sample. However, we should note that we also performed multivariate logistic regression modeling using these data, which examined the overlap and divergence between all victims and offenders in the sample. These analyses are not presented in this paper due to length constrictions. The results of the multivariate logistic regression analyses are very similar to the bivariate conditional logistic regression results presented in Table 4 (i.e. statistically significant versus non-significant variables, and the odds-ratio values). When demographic characteristics, neighborhood characteristics, offending histories, and medical utilization histories are incorporated into a multivariate logistic regression model, victims and offenders diverge in their sex, race/ethnicity, and age and overlap in their violent offending histories, property crime histories, drug use/possession histories and neighborhood characteristics. Therefore, our multivariate analyses and our within incident bivariate conditional logistic regression analyses produced very similar results.

When developing violence reduction initiatives and intervention programs in communities and neighborhoods, practitioners often consider separate strategies for victims and offenders. Separate intervention strategies may not be warranted given that the findings from this research suggest that victims and offenders share numerous individual and ecological characteristics. Therefore, intervention programs that target victims and offenders could potentially provide the most effective strategy for reducing interpersonal violence. While these findings are based on data culled from various locations in one medium sized metropolitan area in the United States, our results primarily support the hypotheses offered based on the lifestyle-

routine activities framework, and future research should examine the overlapping nature of victimization and offending using data from other areas.

## Works Cited


Anselin, Luc, Jacqueline Cohen, David Cook, Wilpen Gorr, and George Tita. (2000) "Spatial Analyses of Crime." In *Measurement and Analysis of Crime and Justice*, Volume 4 of *Criminal Justice* 2000. Gary LaFree (ed). Washington DC: National Institute of Justice. pp. 213-262.

Avakame, Edem F. (1997). Urban Homicide: A Multilevel Analysis Across Chicago's Census Tracts. *Homicide Studies*. 1: 338-358.

Baron, Stephen. (1997) "Risky Lifestyles and the Link Between Offending and Victimization." *Studies on Crime and Crime Prevention*. 6(1): 53-71.

Bellair, Paul E. (2000) "Informal Surveillance and Street Crime: A Complex Relationship. *Criminology*, Volume 38, Issue 1: 137-167.

Braithwaite, John. (1999) *Crime, Shame and Reintegration*. New York, NY: Cambridge University Press.

Brantingham, Paul L. and Patricia J. Brantingham. (1981) "Notes on the Geometry of Crime." In Paul L. Brantingham and Patricia L. Brantingham (eds.), *Environmental Criminology*. Beverly Hills, CA: Sage.

Buck, Andrew J., Simon Hakim, and George F. Rengert. (1993) "Burglar Alarms and the Choice of Behavior of Burglars: A Suburban Phenomenon." *Journal of Criminal Justice* 21: 497-507.

Cohen, Lawrence E. and James R. Kluegel and Kenneth C. Land. (1981). "Social Inequality and Predatory Criminal Victimization: An Exposition and Test of a Formal Theory." *American Sociological Review*, Volume 46: 505-524.

Cohen, Lawrence and Marcus Felson. (1979) "Social Change and Crime Rate Trends: A Routine Activities Approach." *American Sociological Review*, Volume 44: 588-608

Dobrin, Adam. (2001). The Risk of Offending on Homicide Victimization: A Case Control Study. *Journal of Research in Crime and Delinquency* 38: 154-173.

Elliott, Delbert S., William J. Wilson, David Huizinga, Robert J. Sampson, Amanda Elliott, and Bruce Rankin. (1996) "The Effects of Neighborhood Disadvantage on Adolescent Development." *Journal of Research in Crime and Delinquency*, Volume 33, No. 4: 389-426.

Fagan, Jeffrey and Elizabeth Piper and Yu-The Cheng. (1987) "Contributions of Victimization to Delinquency in Inner-Cities." *Journal of Criminal Law and Criminology*, 78: 586-613.

Garofalo, James. (1987) "Reassessing the Lifestyle Model of Criminal Victimization." In Michael Gottfredson and Travis Hirschi (eds.) *Positive Criminology*. Newbury Park, CA: Sage Publications.

Gottfredson, Michael R.. (1981) "On the Etiology of Criminal Victimization." *Journal of Criminal Law and Criminology*, 72(2): 714-726.

Gottfredson, Michael R. (1986). "Substantive Contributions of Victimization Surveys." In M. Tonry & N. Morris (eds.), *Crime and Justice: An Annual Review of Research* (pp. 251-187). Chicago: University of Chicago Press.

Hindelang, Michael J. (1981). "Variations in Sex-Race-Age Specific Incidence Rates of Offending." *American Sociological Review*. 46: 462-474.

Hindelang, Michael J., Michael R. Gottfredson, and James Garofalo. (1978). *Victims of Personal Crime: An Empirical Foundation for a Theory of Personal Victimization*. Cambridge, MA: Ballinger.

Holmes, Roland M. and Stephen T. Holmes. (1996) *Profiling Violent Crimes*. Thousand Oaks, CA: Sage.

Huizinga, David, Anne W. Weiher, Rachel Espiritu, and Finn Esbensen. (2003) "Delinquency and Crime: Some Highlights from the Denver Youth Survey." In *Taking Stock of Delinquency: An Overview of Findings from Contemporary Longitudinal Studies* by Terence Thornberry and Marvin Krohn (eds.). New York, NY: Kluwer Academic / Plenum Publishers.

Jensen, Gary F. and David Brownfield. (1986). Gender, lifestyles, and victimization: Beyond routine activity. *Violence and Victims*. 1: 85-99.

Kennedy, Leslie W. and David R. Forde. (1999) *When Push Comes to Shove: A Routine Conflict Approach to Violence*. Albany: State University Press.

Kruttschnitt, Candace. (2001) "Gender and Violence," in *Women, Crime, and Criminal Justice,* Ed. Claire M. Renzetii and Lynne Goodstein. Los Angles, CA: Roxbury Publishing Company (77-92).

Lauritsen, Janet L., Robert J. Sampson, and John H. Laub. (1991). "The Link between Offending and Victimization among Adolescents." *Criminology*. 29: 265-291.

Lee, Matthew R. (2000) "Community Cohesion and Violent Predatory Victimization: A Theoretical Extension and Cross-National Test of Opportunity Theory." *Social Forces,* 79(2): 683-688.

Martinez, Ramiro. (1996) "Latinos and Lethal Violence: The Impact of Poverty and Inequality." *Social Problems*, 43: 131-146.

Messner, Steven F. and Kenneth Tardiff. (1986) "Economic Inequality and Levels of Homicide: An Analysis of Urban Neighborhoods." *Criminology*, Volume 24: 297-314.

Miethe, Terance D. and Robert F. Meier. (1993) "Understanding Theories of Criminal Victimization." *Crime and Justice: A Review of Research,* 17: 459-499.

Miethe, Terance D. and Robert F. Meier. (1994) *Crime and Its Social Context: Toward ad Integrated Theory of Offenders, Victims, and Situations*. Albany: State University of New York Press.

Miethe, Terance D. David McDowall. (1993) "Contextual Effects in Models of Criminal Victimization." *Social Forces*, Volume 71, Issue 3: 741-759.

Morenoff, Jeffrey D., Robert J. Sampson, and Stephen Raudenbush. (2001) "Neighborhood Inequality, Collective Efficacy, and the Spatial Dynamics of Urban Violence." *Criminology*, Volume 39, Number 3: 517-558.

Mosher, Clayton, Terance D. Miethe and Dretha M. Phillips. (2002) *The Mismeasure of Crime*. Thousand Oaks, CA: Sage Publications.

Mustaine, Elizabeth Ehrhardt and Richard Tewksbury. (1998) "Predicting Risks of Larceny Theft Victimization: A Routine Activity Analysis using refined Lifestyle Measures." *Criminology*, Volume 36, Issue 4: 829-857.

Mustaine, Elizabeth Ehrhardt and Richard Tewksbury. (2000) "Comparing the Lifestyles of Victims, Offenders, and Victim-Offenders: A Routine Activity Theory Assessment of Similarities and Differences for Criminal Incident Participant." *Sociological Focus*, Volume 33 (3): 339-362.

Nagin, Daniel and Raymond Paternoster. (2000) "Population Heterogeneity and State Dependence: State of the Evidence and Directions for Future Research." *Journal of Quantitative Criminology*, 16, 2: 117-144.

Osgood, D. Wayne, Janet Wilson, Patrick O'Malley, Jerald Backman, and Lloyd Johnston. (1996) "Routine Activities and Individual Deviant Behavior." *American Sociological Review*, Volume 61: 635-655.

Riley, David. (1987) "Time and Crime: The Link Between Teenage Lifestyle and Delinquency." *Journal of Quantitative Criminology* 3: 339-354.

Roncek, Dennis W. (1981) "Dangerous Places: Crime and Residential Environment." *Social Forces* 60 (1): 74-96.

Sacco, Vincent F. and Leslie Kennedy. (2002) *The Criminal Event: Perspectives in Space and Time*. Belmont, CA: Wadsworth Publishers.

Sampson, Robert. (1985). "Neighborhood and Crime: The Structural Determinants of Personal Victimization." *Journal of Research in Crime and Delinquency.* 22: 7-40.

Sampson, Robert J. (1986) "Neighborhood Family Structure and the Risk of Criminal Victimization." In The *Social Ecology of Crime*, ed. J. Byrne and R. Sampson. New York: Springer-Lerlag.

Sampson, Robert and W. Byron Groves. (1989) "Community Structure and Crime: Testing Social Disorganization Theory." *American Journal of Sociology* 94: 774-802.

Sampson, Robert J. and Janet L. Lauritsen. (1990) "Deviant Lifestyles, Proximity to Crime, and the Offender-Victim Link in Personal Violence." *Journal of Research in Crime and Delinquency*. 27: 110-139.

Sampson, Robert J., Steven Raudenbush and Felton Earls. (1997) "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 277: 918-924.

Sampson, Robert J. and Steven Raudenbush. (1999) "Systematic Social Observation of Public Spaces: A New Look at Disorder in Urban Neighborhoods." *American Journal of Sociology* 105: 603-651.

Sampson, Robert J., Jeffrey D. Morenoff and Thomas Gannon-Rowley. (2002) "Assessing 'Neighborhood Effects': Social Processes and New Directions in Research. *Annual Review of Sociology*, 28: 443-478.

Shaw, Clifford R. and Henry McKay (1942) *Juvenile Delinquency and Urban Areas: A Study of Rates of Delinquency in Relation to Differential Characteristics of Local Communities in American Cities.* Chicago: University of Chicago Press.

Singer, Simon I. (1981) "Homogeneous Victim-Offender Populations: A Review and Some Research Implications." *Journal of Criminal Law and Criminology*. 72: 779-788.

Smith, Douglas and G. Roger Jarjoura. (1989) "Household Characteristics, Neighborhood Composition, and Victimization Risk." *Social Forces*, Volume 68, Number 2: 621-640.

Steffensmeier, Darrell and Lisa Broidy. (2001) "Explaining Female Offending," in *Women, Crime, and Criminal Justice,* Ed. Claire M. Renzetii and Lynne Goodstein. Los Angles, CA: Roxbury Publishing Company (111-132).

Thornberry, Terence P. and Marvin Krohn. (2003) *Taking Stock of Delinquency: An Overview of Findings from Contemporary Longitudinal Studies*. New York, NY: Kluwer Academic / Plenum Publishers.

United States Department of Justice. (2001) "Bureau of Justice Statistics Special Report: Violent Victimization and Race: 1993-1998." March 2001, NCJ #: 176354.

Wilson, William J. (1987) *The Truly Disadvantaged: The Inner-city, the Underclass, and Public Policy* Chicago, IL: University of Chicago Press.

Wilson, William J. (1996) *When Work Disappears.* New York, NY: Knopf

**Table 1: Data Sources for the Study of Victims and Offenders Involved in Aggravated Battery Incidents in Bernalillo County, New Mexico in 2001**

| Type of Data | Source |
|---|---|
| **Aggravated Battery Incident Data** | |
| Incident Addresss | |
| Time of Day of Incident | Police and Sheriff |
| Location of Incident | Department Records |
| Number of Vicims and Offenders | |
| **Victim and Offender Data** | |
| Name | Police and Sheriff |
| Sex | Department Records |
| Race/Ethnicity | |
| Age / DOB | |
| Social Security Number | |
| Home Address | |
| **Known Crime Histories in Bernalillo County** | |
| Violent Crime Charge in Crime History (a) | Bernalillo County |
| Drug Use Charge in Crime History | Crime History Database |
| DUI Charge in Crime History | |
| Property Crime Charge in Crime History (b) | |
| **Known Medical Records at UNM-HSC** | |
| Emergency Department Injury/Trauma Visit | University of New Mexico |
| Assault Related Visit | Health Sciences Center |
| Mental Health Related Visit | Billing Database |
| Substance Abuse Related Visit | |
| **Neighborhood Characteristics** | |
| Victim's Home Address - Mapped | Police and Sheriff Department Records |
| Offender's Home Address - Mapped | Mapped using Arc View GIS |
| Census Block Group Characteristics for Each Mapped Address | Census Block Group Data - 2000 |

(a): Includes the following charges: homicide, aggravated assault, aggravated battery, domestic violence, child abuse and robbery

(b): Includes the following charges: larceny, shoplifting, burglary, and motor vehicle theft

**Table 2. Descriptive Statistics for Victims and Offenders Involved in Aggravated Battery Incidents in Bernalillo County, NM 2001**

| Variables | Total Sample N=2983 % | Victims N=1248 % | Offenders N=1735 % |
|---|---|---|---|
| **Dependent Variable** | | | |
| Offender | 58.2 | --- | --- |
| Victim | 41.8 | --- | --- |
| **Demographic Characteristics** | | | |
| *Sex* | | | |
| Male | 70.3 | 66.9 | 72.6 |
| Females | 29.7 | 33.1 | 27.4 |
| *Race/Ethnicity* | | | |
| Hispanic | 41.4 | 39.0 | 43.2 |
| Black | 6.1 | 3.9 | 7.7 |
| Native American | 6.1 | 5.7 | 6.3 |
| Asian | 1.1 | 0.6 | 1.6 |
| White | 45.3 | 50.8 | 41.2 |
| *Age* | | | |
| 0-14 Years Old | 16.3 | 23.3 | 9.9 |
| 15-24 Years Old | 38.3 | 34.8 | 41.4 |
| 25-34 Years Old | 19.4 | 18.2 | 20.5 |
| 35-44 Years Old | 15.4 | 13.6 | 17.0 |
| 45 and Over | 10.6 | 10.1 | 11.2 |
| **Violent Offending History** | | | |
| Violent Crime Arrest | 12.0 | 11.5 | 12.4 |
| **Risky Lifestyles** | | | |
| Drug Use/Possession Arrest | 8.2 | 7.5 | 8.8 |
| DUI Arrest | 10.3 | 12.8 | 8.4 |
| Property Crime Arrest | 11.7 | 11.5 | 11.8 |
| ED Injury or Trauma Visit | 11.8 | 10.6 | 12.6 |
| Assault Related Visit | 3.6 | 2.9 | 4.1 |
| Mental Health Related Visit | 5.2 | 5.8 | 4.7 |
| Substance Abuse Visit | 4.8 | 4.4 | 5.0 |
| **Structural/Ecological Variable** | | | |
| Social Disorganization Index (a) | 0.00 | -0.05 | 0.04 |

(a): Includes the Following US Census Block Group Variables from 2000: Percent with less than 8th grade education, Percent with no high school diploma, Percent in poverty, Percent unemployed, Average Median Family Income

For the social disorganization index, the minimum value is -2.19 and the maximum value is 2.61. The Factor 1 Eigenvalue was 3.266 and accounted for 94.3% of the cumulative variance. The Alpha Scale Reliability Coefficient was 0.90

Data in table provide the means for the social disorganization index

**Table 3: Characteristics of Aggravated Battery Incidents in Bernalillo County New Mexico in 2001.**

| Total Number of Incidents = 1015 | % | N |
|---|---|---|
| **Time of Incident** | | |
| Daytime Incidents (6:00am - 5:59pm) | 45.6 | 463 |
| Nighttime Incidents (6:00pm - 5:59am) | 54.4 | 552 |
| **Location of Incident** | | |
| Residential | 51.3 | 521 |
| Non-Residential | 48.7 | 494 |
| **Victims and Offenders in Incident** | | |
| Dyad Incident (one offender and one victim) | 54.0 | 548 |
| Non-Dyad Incident (multiple offenders and/or multiple victims) | 46.0 | 467 |

**Table 4. Conditional Logistic Regression Comparing Victim and Offender Characteristics within Aggravated Battery Incidents with Varying Situational Characteristics: Bernalillo County, NM: 2001**

| Variables | All Incidents (Inc) Model 1 O-R | *S.E.* | $X^2$ | Day Inc Model 2 O-R | *S.E.* | $X^2$ | Night Inc Model 3 O-R | *S.E.* | $X^2$ |
|---|---|---|---|---|---|---|---|---|---|
| **Demographic Characteristics** | | | | | | | | | |
| *Sex* | | | 15.75 | | | 12.20 | | | 4.60 |
| Male | 1.45* | 0.14 | | 1.61* | 0.22 | | 1.32* | 2.14 | |
| Female | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | |
| *Race/Ethnicity* | | | 38.43 | | | 17.62 | | | 26.49 |
| Hispanic | 1.34* | 0.14 | | 1.63* | 0.26 | | 1.15 | 0.95 | |
| Black | 3.09* | 0.73 | | 2.34* | 0.79 | | 3.99* | 4.11 | |
| Native American | 1.94* | 0.53 | | 1.48 | 0.69 | | 2.16* | 2.27 | |
| Asian | 7.24* | 5.32 | | 8.61* | 10.06 | | 5.69 | 1.81 | |
| White | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | |
| *Age* | | | 146.13 | | | 116.01 | | | 35.50 |
| 0-14 Years Old | 0.12* | 0.03 | | 0.11* | 0.03 | | 0.16* | -5.40 | |
| 15-24 Years Old | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | |
| 25-34 Years Old | 0.83 | 0.12 | | 0.91 | 0.22 | | 0.78 | -1.36 | |
| 35-44 Years Old | 0.91 | 0.15 | | 1.22 | 0.31 | | 0.72 | -1.49 | |
| 45 and Over | 0.81 | 0.15 | | 1.07 | 0.28 | | 0.62 | -1.82 | |
| **Violent Offending History** | | | | | | | | | |
| Violent Crime Arrest | 1.10 | 0.14 | 0.61 | 1.40 | 0.28 | 3.02 | 0.93 | -0.44 | 0.19 |
| **Risky Lifestyles** | | | | | | | | | |
| Drug Use/Possession Arrest | 1.19 | 0.18 | 1.43 | 1.39 | 0.35 | 1.74 | 1.10 | 0.50 | 0.25 |
| DUI Arrest | 0.62* | 0.08 | 12.69 | 0.72 | 0.15 | 2.53 | 0.55* | -3.31 | 11.20 |
| Property Crime Arrest | 1.04 | 0.13 | 0.10 | 1.17 | 0.24 | 0.60 | 0.97 | -0.22 | 0.05 |
| ED Injury or Trauma Visit | 1.20 | 0.16 | 1.94 | 1.29 | 0.25 | 1.63 | 1.13 | 0.20 | 0.53 |
| Assault Related Visit | 0.86 | 0.32 | 0.16 | 1.35 | 0.75 | 0.30 | 0.58 | -1.06 | 1.13 |
| Mental Health Related Visit | 0.64 | 0.22 | 1.75 | 0.66 | 0.36 | 0.58 | 0.63 | -1.08 | 1.17 |
| Substance Abuse Visit | 1.22 | 0.42 | 0.33 | 1.51 | 0.80 | 0.61 | 1.04 | 0.08 | 0.01 |
| **Structural/Ecological Variable** | | | | | | | | | |
| Social Disorganization Index | 1.10 | 0.09 | 1.24 | 1.00 | 0.12 | 0.00 | 1.19 | 1.51 | 2.29 |

* : $p < 0.05$

**Table 4. Conditional Logistic Regression Comparing Victim and Offender Characteristics within each Aggravated (Cont') Battery Incidents with Varying Situational Characteristics: Bernalillo County, NM: 2001**

| | Residential Inc | | | Non-Residential Inc | | | Dyad Inc | | | Non-Dyad Inc | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 4 | | | Model 5 | | | Model 6 | | | Model 7 | | |
| **Variables** | **O-R** | ***S.E.*** | **$X^2$** | **O-R** | ***S.E.*** | **$X^2$** | **O-R** | ***S.E.*** | **$X^2$** | **O-R** | ***S.E.*** | **$X^2$** |
| **Demographic Characteristics** | | | | | | | | | | | | |
| *Sex* | | | 17.08 | | | 1.51 | | | 13.79 | | | 3.81 |
| Male | 1.66* | 0.21 | | 1.20 | 0.18 | | 1.69* | 0.24 | | 1.25* | 0.15 | |
| Female | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | |
| *Race/Ethnicity* | | | 15.89 | | | 26.72 | | | 21.46 | | | 15.06 |
| Hispanic | 1.41* | 0.21 | | 1.28 | 0.20 | | 1.48* | 0.21 | | 1.19 | 0.16 | |
| Black | 2.93* | 0.98 | | 3.31* | 1.12 | | 2.99* | 0.85 | | 2.21* | 0.68 | |
| Native American | 2.08 | 0.84 | | 1.72 | 0.62 | | 1.46 | 0.39 | | 2.09* | 0.80 | |
| Asian | 1.47 | 1.51 | | 24.65* | 27.86 | | 3.99 | 4.62 | | 5.97* | 4.56 | |
| White | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | |
| *Age* | | | 155.16 | | | 12.43 | | | 32.49 | | | 89.41 |
| 0-14 Years Old | 0.05* | 0.02 | | 0.37* | 0.11 | | 0.39* | 0.09 | | 0.13* | 0.03 | |
| 15-24 Years Old | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | | 1.00 | --- | |
| 25-34 Years Old | 0.71 | 0.16 | | 0.86 | 0.17 | | 1.20 | 0.23 | | 0.79 | 0.15 | |
| 35-44 Years Old | 0.69 | 0.17 | | 1.02 | 0.24 | | 1.38 | 0.27 | | 0.75 | 0.16 | |
| 45 and Over | 0.68 | 0.18 | | 0.87 | 0.22 | | 1.02 | 0.22 | | 0.93 | 0.24 | |
| **Violent Offending History** | | | | | | | | | | | | |
| Violent Crime Arrest | 1.11 | 0.20 | 0.37 | 1.09 | 0.19 | 0.25 | 1.12 | 0.20 | 0.37 | 1.09 | 0.18 | 0.24 |
| **Risky Lifestyles** | | | | | | | | | | | | |
| Drug Use/Possession Arrest | 1.51* | 0.32 | 4.00 | 0.93 | 0.20 | 0.13 | 1.12 | 0.25 | 0.28 | 1.24 | 0.24 | 1.25 |
| DUI Arrest | 0.63* | 0.12 | 5.73 | 0.60* | 0.12 | 6.99 | 0.66* | 0.13 | 4.54 | 0.62* | 0.11 | 7.11 |
| Property Crime Arrest | 1.14 | 0.21 | 0.56 | 0.95 | 0.17 | 0.09 | 1.17 | 0.22 | 0.69 | 0.95 | 0.16 | 0.10 |
| ED Injury or Trauma Visit | 1.35 | 0.25 | 2.77 | 1.06 | 0.19 | 0.09 | 1.27 | 0.26 | 1.39 | 1.15 | 0.19 | 0.69 |
| Assault Related Visit | 1.06 | 0.61 | 0.01 | 0.74 | 0.36 | 0.38 | 1.82 | 0.68 | 2.63 | 0.61 | 0.30 | 1.04 |
| Mental Health Related Visit | 0.44 | 0.21 | 3.13 | 1.00 | 0.51 | 0.00 | 0.66 | 0.20 | 1.89 | 0.48 | 0.21 | 2.89 |
| Substance Abuse Visit | 1.33 | 0.66 | 0.33 | 1.12 | 0.55 | 0.06 | 1.31 | 0.41 | 0.79 | 0.71 | 0.36 | 0.45 |
| **Structural/Ecological Variable** | | | | | | | | | | | | |
| Social Disorganization Index | 0.92 | 0.10 | 0.50 | 1.36* | 0.17 | 6.06 | 1.18* | 0.09 | 4.16 | 1.06 | 0.10 | 0.39 |

* : $p < 0.05$