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I, Megan C Stewart , hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in Criminal Justice.

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The Effect of Victimization on Women's Health: Does the Victim-Offender Relationship Matter?

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By

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ABSTRACT

The study of violence against women has slowly begun to gain momentum in the last two decades. Empirical research from various disciplines such as criminology, sociology, psychology, and medicine has demonstrated that violence against women is a pervasive social problem affecting women of all ages, races, and socioeconomic statuses. Despite criticism of the field for a lack of national-level data and problems with differing terminology and definitions, the violence against women research has made great progress towards demonstrating the scope and extent of violence women experience. Using the National Violence Against Women Study (NVAWS), the present research seeks to expand what is known about violence against women by exploring the impact of the victim-offender relationship on psychological and physical health and wellbeing for the crimes of rape, stalking, and physical assault. Specifically, this research hypothesizes that using a general strain theory (GST) lens would lead one to expect differences in health outcomes depending on the perpetrator committing the violence. Two research questions are tested in this current study: 1) what is the prevalence of violence against women by victim-offender relationship? and 2) what is the effect of the victim-offender relationship on a woman's psychological and physical health, and overall wellbeing? Findings indicate that across three types of violence against women, a variety of perpetrator types are responsible for violence against women, and that no single group can be ignored. Additionally, it appears that while victimization is related to negative health outcomes, the victim-offender relationship does not significantly contribute to increasing the odds of experiencing negative health outcomes. These findings are discussed in relation to previous empirical research and the future of violence against women research.

DEDICATION

This dissertation is dedicated to my late grandparents, William “Bill” Stewart, Phyllis Stewart, and George Krozier. You may be gone, but you are definitely not forgotten.

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THE EXTENT OF SEXUAL ASSAULT, PHYSICAL ASSAULT, AND STALKING

INTRODUCTION

A growing number of national-level studies have revealed the prevalence of sexual assault and other forms of violence against women. These works estimated the scope of and identified sources of victimization against women in the United States. In general, these studies have examined adult women, and included specific subgroups such as college students and post-menopausal elderly. These works have examined a variety of topics, including the extent to which women have experienced various forms of violence, across different setting/locations (i.e. nursing home, college campus, at home) and victim-offender relationships (i.e. dating or intimate partner, college classmate, caregiver). There have also been studies which have focused on predictors of violence against women, such as alcohol/drug use (see Mohler-Kuo, Dowdall, Koss, & Wechsler, 2004).

Within the criminological literature, less attention has been devoted to investigating the impact that experiencing violence has on women's mental and physical wellbeing (see Tables 2.1, 2.2, and 2.3 for exceptions by crime type). This lack of attention is most likely a result of not having data available to examine the relationship between violence against women and health outcomes. Further, relatively little systematic attention has been given to whether the impact of such victimization is conditioned by the relationship of the victim to the perpetrator, except in the case of rape (see Table 4.17).

In this context, this dissertation uses the National Violence Against Women Survey (NVAWS) to explore the impact of sexual assault, physical assault, and stalking victimization on

women's psychological and physical health across different types of perpetrators (Tjaden & Thoennes, 1998). As a prelude to this analysis, chapter 1 establishes the extent to which women experience sexual assault, physical assault and stalking in the United States. This review will focus on the extant national-level studies of adult females. Second, the research exploring the impact of criminal victimization on health outcomes is assessed. To the extent possible, this discussion will also consider whether prior studies have reported different health outcomes by type of perpetrator. Finally, the chapter will end with a discussion of the dissertation's research strategy and pose the central research questions to be examined. Before the previous research is presented, the major contributions of this current research are discussed.

CONTRIBUTION OF RESEARCH

The focus of this dissertation, the negative health consequences of violence against women across different victim-offender relationships, is important for several reasons. Only a modest amount of research has examined the relationship between victimization and psychological and physical wellbeing outcomes. Even fewer have examined their relationship by perpetrator type. Also, few studies used national-level probability samples, and most have instead relied on convenience samples of college women or community samples of adult women. Therefore, this current research fills a gap in knowledge within the victimization field. However, it is then important to ask why victimologists and criminologists would be interested in examining this relationship between victimization and negative health outcomes by perpetrator type?

First, women who experience negative mental or physical health consequences do not experience such consequences in an isolated context. In other words, the effects of victimization

are widespread. The family of the victim is often emotionally impacted by the victimization, or the family can help influence the type of impact the crime has on the victim. For example, the family can feel guilt or blame themselves for the violence, just as they can also define the incident as not a crime and blame the victim (White & Rollins, 1981). Also, the victimization can impact all members of society, especially through its financial burden. Both public and private funds are spent to assist victims cope with their experiences and its impact on their lives, from crisis response organizations and hospitals to the criminal justice system. For example, many communities employ sexual assault nurse examiners (SANE) to assist sexual assault victims at the hospital or in a medical setting (Littel, 2001). Also, individuals working in the criminal justice system, such as law enforcement officers, prosecutors, and judges, are trained on appropriate strategies (i.e. interrogation tactics, how to collaborate with the victim) to use when dealing with victims of violence, especially those who have been raped or sexually assaulted (Elstein & Smith, 2000).

Second, there are numerous economic costs of victimization that the victim incurs directly. Victims of violence are more involved in the health care system than nonvictims. Research confirms women who are physically injured from violence may visit the hospital or a doctor more frequently than nonvictims (Campbell, 2002). Tjaden and Thoennes (1998) found that 36 percent of women over the age of 18 as a result of their most recent rape, and 30 percent of women over the age of 18 as a result of their most recent physical assault received some form of medical treatment. There are also major expenses associated with health care, and victims pay substantially more as compared to those who are not victims of violence (Koss, Koss, & Woodruff, 1991; Wisner, Gilmer, Saltzman, & Zink, 1999).

Victims may also be forced to miss days of work due to the physical and emotional impact of violence, which is a burden on the victim as well as employer. According to the 2002 National Crime Victimization Survey (NCVS), 14 percent of rape and sexual assault victims lost time from work, and 28 percent of them lost 6 to 10 days. Stalking victims also lose time from work because of their victimization. According to the NCVS stalking supplement, it is estimated that 1 in 8 employed victims of stalking will lose time from work, and more than 50 percent lose 5 or more days of work (Baum, Catalano, Rand, & Rose, 2009).

It is imperative that violence against women be seen as a social problem that affects all aspects of society. The negative health consequences of victimization are too costly to ignore. If it is known who is greatest at risk for injury and other negative health consequences, then there can be more targeted prevention efforts to help reduce the occurrence of violence from the beginning of the violence. It is also important to identify victims as quickly as possible and attempt to intervene. Research has shown that victims of one type of violence are at an increased risk to experience a subsequent act of violence (Desai, Arias, Thompson, & Basile, 2002; Humphrey & White, 2000; Smith, White, & Holland, 2003). An increase in negative health symptoms from being victimized multiple times has been documented as well (Campbell & Soeken, 1999, Green et al., 2000, Koss et al., 1991).

Third, there are numerous personal costs of victimization the victim may experience. The relationship between victimization and health outcomes is also important because these "health outcomes" are much more diverse and abundant in number than most people realize. A violent physical assault can lead to more than just broken bones, just as rape and stalking can lead to more than just fear and depression. Logan, Walker, Jordan and Leukefeld (2006) divided their review of the health outcomes of victimization into two groups: 1) physical health

manifestations of victimization, and 2) mental health manifestations of victimization – recognizing there is some overlap in between. Within physical health problems, they describe 1) acute health problems (e.g. broken bones, bruises, vaginal trauma), 2) chronic health problems (e.g. headaches, gastrointestinal problems, stomach ulcers), and 3) stress-related health problems (e.g. fatigue, constipation, disturbed sleep) (pg. 20). Mental health problems range from depression and posttraumatic stress disorder (PTSD) to suicidal thoughts or attempts.

Research on the psychological and physical health impact of victimization has well documented that the negative health consequences can range from relatively minor (e.g. bruise, scratch) to chronic or lifetime in nature (e.g. sleep disorders, pain, anxiety) (Campbell, 2002; Coker, Smith, Bethea, King, & McKeown, 2000; Logan et al., 2006; Plichta & Falik, 2001; Resnick, Acierno, & Kilpatrick, 1997). With the vast array of possible negative health outcomes, as well as the chronic nature of many of them, it is crucial that this topic be further explored. As the costs associated with victimization continue to rise – from financial to the victim's ability to raise her children, maintain an intimate relationship, or function routinely daily – this research is both vital and necessary.

One final reason why this research is important is because a majority of victimization studies do not use a representative national sample. Most violence against women studies use convenience or community samples that are not nationally-representative (for example, see: Amar, 1996; Atkeson, Calhoun, Resick, & Ellis, 1982; Bjerregaard, 2000; Brewster, 2000; Campbell & Soeken, 1999; Clum, Calhoun, & Kimerling, 2000; Coker et al., 2000; Del Ben & Fremouw, 2002; Dickinson, deGruy, Dickinson, & Candib, 1999; Frank & Stewart, 1984; Frank, Turner, & Stewart, 1980; Fremouw, Westrup, & Pennypacker, 1997; Girelli, Resick, Marhoefer-Dvorak, & Hutter, 1986; Hegarty, Gunn, Chondros, & Small, 2004; Hickman & Muehlenhard,

1997; Kamphuis & Emmelkamp, 2001; Kimerling & Calhoun, 1994; Kramer & Green, 1991; LeBlanc, Levesque, Richardson, & Ladislav, 2001; Logan, Cole, & Capillo, 2007; Logan, Leukefeld, & Walker, 2000; McCauley et al., 1995; Mechanic, Uhlmansiek, Weaver, & Resick, 2000; Nicastro, Cousins, & Spitzberg, 2000; Russell, 1982; Smith, White, & Holland, 2003; Sugar, Fine, & Eckert, 2003; Ullman, Filipas, Townsend, & Starzynski, 2006; Waigandt, Wallace, Phelps, & Miller, 1989; Westrup, Fremouw, Thompson, & Lewis, 1999). The weaknesses inherent in convenience and community samples are that their results are not widely generalizeable.

For this dissertation, results from existing national-level sources of data that report prevalence rates for rape, stalking, and physical assaults using female samples are presented to illustrate the scope of violence against women in the United States. Each national-level study will be discussed according to research design, how each survey defined the crime, and then estimates will be presented for three types of victimization: 1) rape/sexual assault, 2) stalking, and 3) physical assault.

PREVALENCE RATES

The amount of published violence against women research has increased exponentially over the past two decades (Jordan, 2009). Researchers expanded what is known about different types of victimizations women experience, the prevalence of each type of victimization, the nature of repeat victimization, who commits these victimizations, and the general wellbeing of women, including psychological and physical health, after being victimized. Different populations of women have been examined, including adults age 18 to 55 years (Tjaden & Thoennes, 1998), college students (see Koss, Gidycz & Wisniewski, 1987; Fisher, Cullen &

Turner 2000; Kilpatrick, Resnick, Ruggiero, Conoscenti & McCauley 2007; Wilcox, Jordan, & Pritchard, 2007) and the elderly (see Zink, Fisher, Regan & Pabst, 2005; Fisher & Regan, 2006). There is also a large segment of research dedicated to violence that occurs within intimate partner relationships (Mitchell, 2009). However, little research exists on the national-level that examines the effects of victimization on various measures of psychological and physical wellbeing, across numerous different victim-offender relationships. The following sections will examine three types of violence – rape/sexual assault, stalking, and physical assault – and present national-level studies of adult women and college students that have sought to describe the prevalence of violence against women in the United States. For each study, research design and definition of victimization type will be presented, as well as the prevalence of the type of victimization. Tables 1.1 through 1.4 summarize the national-level studies of violence against women and their findings.

Rape/Sexual Assault in Adults Samples

Uniform Crime Reports

There are currently two annual government sources of rape statistics that are used to estimate the prevalence of rape: 1) the Uniform Crime Reports (UCR) as administered by the Federal Bureau of Investigation (FBI), and 2) the National Crime Victimization Survey (NCVS), formerly known as the National Crime Survey (NCS), which is under the control of the Bureau of Justice Statistics (BJS). According to the UCR, forcible rape is defined as "the carnal knowledge of a female forcibly and against her will," and the definition includes "assaults or attempts to commit rape by force or threat of force" (FBI, 2002). The UCR program was started in 1929, and has two modes for collecting data: 1) voluntary summary reporting of local,

university, county, state, tribal and federal law enforcement agencies and more recently 2) the National Incident-Based Reporting System (NIBRS) (FBI, 2002). Using a reference period of one year, the 2009 UCR data, there were 88,097 estimated forcible rapes known to law enforcement, or a rape rate of 56.6 offenses per 100,000 female inhabitants in the United States (FBI, 2009).

National Crime Victimization Survey

The National Crime Victimization Survey (NCVS), previously known as the National Crime Survey (NCS), has been collecting data since 1973 on household and personal victimization. The survey is administered by the US Census Bureau on behalf of the Bureau of Justice Statistics, and is a nationally representative sample of individuals age 12 or older living in United States residential households. Respondents are interviewed twice yearly, over a three and a half year period resulting in a total of seven interviews, the first and fifth of which are conducted face-to-face, as opposed to the others that are conducted via telephone. The NCVS data is collected using a two-stage process, which includes screening questions and an incident report. The definition of rape used by the NCVS is almost identical to that in the UCR, except that it includes male and female victims. Data from the 2009 NCVS, which asked respondents about their victimization experiences in the last six months, indicated that there were a total of 125,910 rape/sexual assaults that occurred that year, with a rate for females of 0.8 per 1,000 persons age 12 years and older (Truman & Rand, 2010).

National Women's Study

In the early 1990s, Kilpatrick, Edmunds and Seymour (1992) conducted the National Women's Study (NWS), which is one of the most commonly cited estimates of rape, along with the NCVS (Lynch, 1996). The NWS is a 3-year longitudinal study of women, age 18 years and

older, conducted in 3 waves, 1990-1992. Specifically, the NWS used a probability sample of 4,008 adults in the United States. The response rate for the first wave was 85 percent, and 68.9 percent for the second wave. At the time of the first interview (wave 1), respondents were asked whether they had experienced forcible rape anytime during their lifetime. During the second interview (wave 2), respondents were asked whether they had experienced a forcible rape in the last year, or since the last interview – thus, their second interview was bounded by the first interview. Rape was conservatively defined as "an event that occurred without the woman's consent, involved the use of force or threat of force, and involved sexual penetration of the victim's vagina, mouth or rectum;" therefore, attempted rape is not covered by this definition (Kilpatrick et al., 1992, p. ii). The NWS asked respondents about victimization in the past year and in their lifetime, and found that 13 percent of women in the sample were the victim of a forcible rape at least once during their lifetime, while 0.7 percent had experienced a forcible rape within the last 12 months (Kilpatrick et al., 1992).

National Violence Against Women Survey

The National Violence Against Women Survey (NVAWS) is a household survey on personal safety that was conducted from November 1995 until May 1996, using a nationally representative sample of 8,000 men and 8,000 women, 18 years and older, in the United States (Tjaden & Thoennes, 1998). Conducted via telephone interview, the survey included English- and Spanish-speaking respondents drawn via random-digit dialing of households with a landline in all 50 states and the District of Columbia. Respondents were asked general questions about emotional abuse, physical abuse, sexual abuse, stalking and threat victimization in the last year and lifetime; the response rate for the survey was 72 percent (Tjaden & Thoennes, 1998). Rape was defined in the NVAWS as "an event that occurred without the victim's consent, that

involved the use or threat of force to penetrate the victim's vagina or anus by penis, tongue, fingers, or objects, or the victim's mouth by penis" (Tjaden & Thoennes, 1998, p. 13). This definition included both attempted and completed rape. The NVAWS found that 17.6 percent of the female respondents reported they had been raped (14.8% completed rape and 2.8% attempted rape) at least once during their lifetime, while 0.3% of female respondents reported they had been raped (attempted or completed) within the last 12 months (Tjaden & Thoennes, 1998).

Second Injury Control and Risk Survey

The Second Injury Control and Risk Survey (ICARIS-2) is a nationally representative survey conducted from 2001 to 2003 by the Centers for Disease Control and Prevention's National Center for Injury and Prevention and Control. The ICARIS-2 is cross-sectional random-digit-dial telephone survey given to adults 18 years of age and older, and included 9,684 completed interviews (4,877 of which were female respondents). Respondents were asked "During the past 12 months, have you experienced any sexual activity when you did not want to, including touch that made you uncomfortable?" and "have you ever been forced to have sex?" (Basile, Chen, Black, & Saltzman, 2007, p. 440). According to the results, 2.5% of females were victims of unwanted sexual activity in the last 12 months, while 10.6% of females were victims of forced sex over their lifetime.

Drug-Facilitated, Incapacitated, and Forcible Rape Project

More recently, Kilpatrick and colleagues (2007) conducted the National Study of Drug Facilitated, Incapacitated, and Forcible Rape (DAFR/IR) Project and were interested in studying three types of rape: 1) forcible rape, 2) drug or alcohol-facilitated rape, and 3) incapacitated rape, both among the female general population and college students. Specifically, this survey was a national household probability sample of adult women between the ages of 18 and 34 (n=1998)

and a national household probability sample of adult women age 35 and older (n=1003) (Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007). Conducted during 2005, phone numbers were generated via random digit dial (RDD) and one eligible woman was selected per household. Forcible rape was defined as an "unwanted sexual act involving oral, anal, or vaginal penetration; no attempted assaults that did not involve penetration were included" (Kilpatrick et al., 2007, p. 10). Drug or alcohol-facilitated rape (DAFR) was defined as "unwanted sexual act involving oral, anal, or vaginal penetration, no attempts included," but in order to be counted as DAFR, the victim had to believe that the offender purposely gave her drugs without her permission or tried to get her drunk, or that the victim was too drunk or unconscious and could not control her behavior (Kilpatrick et al., 2007, p. 10). Incapacitated rape (IR) was defined as "unwanted sexual act involving oral, anal or vaginal penetration, no attempts," but in this case the victim voluntarily used drugs or alcohol, but was either passed out or too drunk/high to know what she was doing and unable to control her behavior (Kilpatrick et al., 2007, p. 10).

Respondents were asked about victimizations occurring in the past year as well as during their lifetime. According the Kilpatrick et al. (2007), lifetime estimates for the general population of women are 18 percent for rape, 14.5 percent for forcible rape, and 5 percent for DAFR/IR. Past year estimates for women in the general population are 0.94 percent for rape, 0.52 percent for forcible rape, and 0.42 percent for DAFR/IR. Table 1.1 is a summary table of the national-level studies of violence against adult women and their findings.

Table 1.1: National-Level Studies of Rape/Sexual Assault Using Adult Samples

Study (date)	Type of Victimization	Reference Frame	Research Design	Prevalence
Kilpatrick et al. (1992)	Rape	Annual and lifetime	3-year longitudinal study	Annual: 0.7% Lifetime: 13%
Tjaden & Thoennes (1998)	Rape	Annual and lifetime	RDD to draw sample from within census regions	Annual: 0.3% Lifetime: 17.6%
Basile et al. (2007)	Unwanted sexual activity and forced sex	Annual and lifetime	RDD telephone survey	Annual: 2.5% unwanted sexual activity Lifetime: 10.6% forced sex
Kilpatrick et al. (2007)	Rape, forcible rape, drug or alcoholic-facilitated rape, and incapacitated rape	Annual and lifetime	RDD to randomly select individual within household	Annual: 0.94% rape 0.52% forcible rape 0.42% DAFR/IR Lifetime: 18% rape 14.6% forcible rape 5% DAFR/IR
FB I (2009)	Forcible rape	Annual	Two methods: Summary reporting system and NIBRS	56.6 per 100,000 women in the US
Truman & Rand (2009)	Rape and sexual assault	Annual	Longitudinal study with a rotating panel design	0.8 per 1,000 persons age 12 or older

Rape/Sexual Assault in College Student Samples

Sexual Experiences Survey

Mary Koss and her colleagues (1982, 1985, 1987) sought to create a standardized instrument for measuring rape and a broad array of other types of sexual victimization. Thus the Sexual Experiences Survey (SES) was developed. Koss, Gidycz, and Wisniewski (1987), unlike previous studies using college student samples from a single university, executed a national-level study of college women. They utilized a two-stage sampling design to first choose schools (n=32), and then classes from which students (n=3,187) would be administered the the SES as part of the National Survey of Inter-Gender Relationships, which was a 330 question self-report questionnaire.

Koss et al. (1987) used two reference periods for their estimates, since the age of 14 and within the last academic year (September to September). Rape was defined as "vaginal intercourse between male and female, and anal intercourse, fellatio, and cunnilingus between persons regardless of sex," and included when the offender used force or threat of force, as well as when the offender attempted to impair the victim's judgment and/or control by providing alcohol or drugs (Koss et al., 1987, p. 166).

Results of this study revealed that since the age of 14, 53.8 percent of women had experienced some form of victimization, 12.1 percent had experienced an attempted rape, 15.4 percent indicated having been raped. Using the one-year estimates, Koss and associates reported that 10.1 percent of their sample had experienced an attempted rape and 6.5 percent had been raped. Finally, the authors calculated a one year attempted rape/rape rate at 166 per 1,000 female college students (Koss et al., 1987). Table 1.2 summarizes this study, as well as the other national-level rape victimization studies of college women found in this section.

National College Women Sexual Victimization Study

Fisher and Cullen's (1998) National College Women Sexual Victimization (NCWSV) Study was designed in part to examine the extent to which different types of sexual victimizations occur among college women. The NCWSV was a telephone survey of a randomly selected, national sample of 4,446 women from 2- or 4-year colleges. This two-stage sample design first selected schools from a stratified random sample by location and total student enrollment. Second, students were randomly selected using a sampling frame from the American Student List Company, with a response rate of 84.6 percent. According to the NCWSV, rape was defined as "unwanted penetration (completed and attempted) by force or threat of force" and included the following types of penetration "penile-vaginal, mouth on genitals, mouth on someone else's genitals, penile-anal, digital-vaginal, digital-anal, object-vaginal, and object-anal" (Fisher, Cullen, & Turner, 2000, pp. 8-9).

Fisher and Cullen (1998) employed a two-stage process, including screening questions and an incident report for every different incident identified. Using roughly a 6-month reference period bounded by the beginning of the school year in the fall, 1.7 percent of the sample experienced a completed rape and 1.1 percent of the sample experienced an attempted rape (Fisher et al., 2000). The total percentage of those experienced either a completed or attempted rape was 2.5 percent (Fisher et al., 2000).

Drug-Facilitated, Incapacitated, and Forcible Rape Study

While the methodology and definitions employed in this study have already been presented earlier in this paper, Kilpatrick and colleagues (2007) also wanted to study college women in addition to their sample of adult women in the general population. Female college students were asked about victimizations that occurred in the past year as well as in their

lifetime. Among college women, the lifetime estimates are 11.5 percent for rape, 6.4 percent for forcible rape, and 6.4 percent for DAFR/IR. The past year estimates for college women are 5.15 percent for rape, 1.75 percent for forcible rape, and 3.58 percent for DAFR/IR. Table 2 is a summary table of national-level studies examining rape/sexual assault using college samples.

Campus Sexual Assault (CSA) Study

Krebs, Lindquist, Warner, Fisher, and Martin's (2007) Campus Sexual Assault (CSA) Study was designed to document the prevalence of incapacitated and forced sexual assault among college women. Although the CSA is not a national-level study, it is included in this present research because of the large sample size and collection of data from two universities. The CSA Study used a web survey of 5,446 undergraduate females age 18 to 25, from two large public universities. The response rate was 42 percent at both universities (Krebs et al., 2007). The CSA study focused on two types of completed sexual assaults, one of which involves the use of physical force or threat of physical force in achieving a sexual assault, and one involves the incapacitation of the victim. Incapacitated sexual assault "occurs when a victim is unable to provide consent or stop what is happening because she is passed out, drugged, drunk, incapacitated, or asleep, regardless of whether the perpetrator was responsible for her substance use or whether substances were administered without her knowledge" (Krebs et al., 2007, section 1, pp. 3-5). Victims are asked about their experiences before entering college, as well as since entering college.

Results from the CSA Study reveal that before entering college, 15.9 percent of college women experienced a sexual assault (completed or attempted). Specifically, 11.3 percent experienced a completed sexual assault, 6.4 percent reported a physically forced sexual assault, and 7.0 percent reported an incapacitated sexual assault. Since entering college, 13.7 percent of

college women reported a completed sexual assault, 4.7 percent reported a physically forced sexual assault, and 11.1 percent reported an incapacitated sexual assault.

Stalking in Adult Samples

National Violence Against Women Survey

A meta-analysis of 108 samples from 103 studies revealed that the average prevalence rate of stalking victimization is 23.5 percent for women (Spitzberg, 2002). With that said, there are only a very limited number of national-level stalking surveys conducted on adult women in the United States that have been undertaken. The most commonly cited stalking study is the NVAWS (Tjaden & Thoennes, 1998). The NVAWS is a nationally representative telephone survey of 8,000 men and women in the U.S. The survey questions asked women about victimizations that occurred in the past year and during their lifetime. The definition of stalking used in the NVAWS is as follows: "a course of conduct directed at a specific person that involves repeated visual or physical proximity, nonconsensual communication, or verbal, written or implied threats, or a combination of thereof" (Tjaden & Thoennes, 1998, p. 2). This definition required that pursuit behavior(s) occur at least twice, similar to most stalking laws states in the US have adopted. It is also noteworthy that the researchers, in accordance with most state laws, required a high level of fear be experienced by the victim.

The NVAWS stalking estimates for women are 8.1 percent in a lifetime, and 1.0 percent in the previous 12 months. These estimates are calculated specifying a higher standard of fear, or in other words, victims reported feeling very frightened. When the estimates were calculated requiring victims only feel somewhat or a little frightened, the lifetime percentage increases to 12.0 percent and the annual percentage increases to 6.0 percent. Clearly, the stalking estimates

Table 1.2: National-Level Studies of Rape/Sexual Assault Using College Samples

Study	Type of Victimization	Reference Frame	Research Design	Prevalence
Koss et al. (1987)	Attempted and completed rape	Annual and since the age of 14	Self-report questionnaire	Since the age of 14: 12.1% attempted rape 15.4% completed rape Annual: 10.1% attempted rape 6.5% completed rape
Fisher & Cullen (1998)	Rape	About 6 months	Two-stage probability sampling design	1.7% completed rape 1.1% attempted rape
Kilpatrick et al. (2007)	Rape, forcible rape, drug or alcohol-facilitated rape, and incapacitated rape	Annual and lifetime	RDD to randomly select individual from household	Annual: 5.15% rape 1.75% forcible rape 3.58% DAFR/IR Lifetime: 11.5% rape 6.4% forcible rape 6.5% DAFR/IR
Krebs et al. (2007)*	Completed sexual assault, incapacitated sexual assault, and physically forced sexual assault	Prior to college and since college began	Web-based survey using random sample of undergraduates at two large universities	Before College: 11.3% completed SA 6.4% forced SA 7.0% incapacitated SA Since College Began: 13.7% completed SA 4.7% forced SA 11.1% incapacitated SA

*Not a national-level study

change markedly depending on how the level of fear is operationalized. Table 1.3 summarizes this study, as well as the other national-level stalking victimization studies in this section.

Second Injury Control and Risk Survey

The Second Injury Control and Risk Survey (ICARIS-2) is a national study of stalking, conducted from 2001 to 2003. The ICARIS-2 consisted of a cross-sectional, random-digital-dial telephone survey of adults 18 years and older (Basile, Swahn, Chen, & Saltzman, 2006). The survey resulted in 9,684 completed interviews, and a response rate of 48 percent. Respondents were classified as a victim of stalking in the ICARIS-2 if the respondent answered yes to the question "have you ever had someone besides bill collectors or sales people follow or spy on you, try to communicate with you against your will, or otherwise stalk you for more than one month" and noted that the experience was "somewhat dangerous or life threatening" (Basile et al., 2006, p. 173). The reference period used was over a lifetime. The lifetime stalking estimate for women was 7 percent.

National Crime Victimization Survey Supplemental Victimization Survey

In 2006, a supplement was added to the NCVS, referred to as the Supplemental Victimization Survey (SVS), which is the largest study of stalking ever conducted, including approximately 65,270 individuals. The purpose of the SVS was to gather data on the extent of stalking victimization in the United States, defined as "a course of conduct directed at a specific person that would cause a reasonable person to feel fear" (Baum et al., 2009, p. 1). Specifically, the SVS examined seven types of unwanted or harassing behaviors which included: " making unwanted phone calls, sending unsolicited or unwanted letters or e-mails, following/spying, showing up at places without a legitimate reason, waiting at places, leaving unwanted items, presents, or flowers, and posting information or spreading rumors about the victim" (Baum et al,

2009, p. 1). In order to be considered stalking, these behaviors had to happen at least twice. According to SVS estimates, the rate at which women reported having been stalked in the prior 12 months was 20 stalking victimizations per 1,000 females 18 years or older (Baum et al., 2009).

Stalking in College Student Samples

National College Women Sexual Victimization Study

Fisher and Cullen's (1998) NCWSV also estimated the extent of stalking victimization against college women. The NCWSV asked respondents: "since school began in fall 1996, has anyone – from a stranger to an ex-boyfriend – repeatedly followed you, watched you, phone, written, e-mailed, or communicated with you in other ways that seemed obsessive and made you afraid or concerned for your safety?" (Fisher et al., 2000). If respondents answered yes to this screening question, they were then asked to complete an incident report. The results exposed that 13.1 percent of the college women in the sample had been stalked at least once since the academic school year had begun (Fisher et al., 2000). See Table 1.3 for summary information on the NCWSV study of stalking victimization.

Physical Assault in Adult Samples

As with the stalking research, there have been very few studies looking at adult females in the U.S. who have been victims of physical assault. While there is a plethora of research existing on intimate partner violence (IPV), specific studies of physical assault against women are limited. Studies of IPV and domestic violence use a definition that often includes a set of various violent actions and behaviors that go beyond what would legally be considered physical

assault (e.g. include sexual violence or verbal threats), as well as specify a certain type of perpetrator, usually a husband, boyfriend, or live-in partner (Tjaden & Thoennes, 2000).

National Violence Against Women Survey

The NVAWS used a modified version of the Conflict Tactics Scale to ask respondents about any type of physical assault they might have encountered in the last 12 months as well as during their lifetime. A variety of different types of physical assault actions were presented to the respondents as representing physical assault such as: 1) something being thrown, 2) being pushed, grabbed or shoved, 3) having hair pulled, 4) being slapped or hit, 5) being choked or attempting to be drowned, 6) being hit by an object, or 7) being beat up (Tjaden & Thoennes, 1998). The NVAWS estimates for physical assault during a lifetime were 22.1 percent, and 1.3 percent in the previous 12 months.

National Crime Victimization Survey

The NCVS provides rates of simple and aggravated assault, asking respondents about assaults occurring in the past 12 months. A simple assault is defined as "an unlawful physical attack or threat of attack" and an aggravated assault is when someone "intentionally and without legal justification cause[s] serious bodily injury, with or without a deadly weapon" (BJS, 2009, para. 5). According to the 2009 NCVS data, females experienced simple assaults at a rate of 11.2 per 1,000 persons age 12 or older, and aggravated assaults at a rate of 2.3 per 1,000 persons age 12 or older, in the previous 12 months. The NCVS also provides the rate for all assaults, and females experienced a rate of 13.5 assaults per 1,000 persons age 12 or older, in the last 12 months (Truman & Rand, 2010). Table 1.4 is a summary table of the national-level physical assault studies.

Table 1.3: National-Level Studies of Stalking

Study (date)	Sample Type	Reference Frame	Research Design	Prevalence
Fisher & Cullen (1998)	College	Approximately 6 months	Two-stage probability sampling design	13.1% of college women
Tjaden & Thoennes (1998)	Adult	Annual and lifetime	RDD to draw sample from within census regions	With high standard of fear: Lifetime: 8.1% Annual: 1% With lower standard of fear: Lifetime: 12% Annual: 6%
Basile et al. (2006)	Adult	Lifetime	RDD telephone survey	7% of adult women
Baum et al. (2009)	Adult	Annual	NCVS supplement - Longitudinal study with a rotating panel design	20 per 1,000 females age 18 and older

Table 1.4: National-Level Studies of Physical Assault Using Adult Samples

Study (date)	Type of Victimization	Reference Frame	Research Design	Prevalence
Tjaden & Thoennes (1998)	Physical assault	Annual and lifetime	RDD to draw sample from within census regions	Lifetime: 22.1% Annual: 1.3%
Truman & Rand (2009)	Simple assault and aggravated assault	Annual	Longitudinal study with a rotating panel design	Simple Assault: 11.2 per 1,000 persons age 12 or older Aggravated Assault: 2.3 per 1,000 persons age 12 or older

VICTIM-OFFENDER RELATIONSHIP

In the examination of the relationship between violence against women and negative health outcomes, one cannot overlook the "who did it" part of the equation. Although researchers have described the demographic attributes of the victim, it is also important to find out who is committing violence against women and the attributes of the perpetrator(s). In the past some researchers categorized perpetrators into one general category of offender, or made very little differentiation other to identify "strangers," "acquaintances," and "intimates" (e.g. Stermac, Du Mont, & Dunn, 1998; Ullman & Siegel, 1993), possibly because there was an inability to disentangle different perpetrators due to the nature or limitations of the data set being utilized. This being said, much progress has been made with the growing number of national-level studies that have included specific questions regarding the victim-offender relationship. For example, the NVAWS asks respondents to identify their relationship to the offender, and the study provides over 59 offender-relationships from which the victim can choose (Tjaden & Thoennes, 1998). These victim-offender relationships identified in the NVAWS range from which husband or partner (e.g. first husband or second partner), all the way to relative (e.g. father, uncle, cousin) and type of acquaintance or stranger (e.g. male or female) (Tjaden & Thoennes, 1998).

Researchers also have found that different types of offenders are associated with different crimes or crime characteristics. For example, Riggs, Kilpatrick, and Resnick (1992) discovered that husbands who assaulted their wives were more likely to do so in a series of attacks, as opposed to those incidents perpetrated by a stranger. Further, different victim-offender relationships may be related to severity of victimization or more psychological symptomology. Ullman and colleagues (2006) showed that stranger perpetrators were associated with more

severe sexual assaults than with other perpetrator types, as well as that more PTSD symptoms were associated with strangers and relatives than with acquaintances and intimate partners. In this next section, the relationship between the perpetrator and the victim will be examined. Further, existing empirical research will be presented demonstrating not only that there are a variety of different perpetrators victimizing women, but that there are differences in who is more likely to perpetrate the crime according to crime type.

Table 1.5: Percentage of Stranger Perpetrators in Rape/Sexual Assault Studies

Study	Type of Sample	Percent Stranger-Perpetrator
Kilpatrick, Edmunds & Seymour (1992)	Adult	22
Fisher & Cullen (1998)	College	10
Tjaden & Thoennes (1998)	Adult	17
Kilpatrick et al. (2007) Forcible Rape	College	6
Kilpatrick et al. (2007) Incapacitated Rape	College	17
Kilpatrick et al. (2007) Forcible Rape	Adult	11
Kilpatrick et al. (2007) Incapacitated Rape	Adult	19
Krebs et al. (2007)* Forced Sexual Assault	College	23
Krebs et al. (2007)* Incapacitated Sexual Assault	College	12
Truman & Rand (2010)	Adult	21

*Not a national-level study

Rape/Sexual Assault

Research that examines rape and/or sexual assault indicates that the perpetrator is typically known to the victim, even though women most fear rape by a stranger (Hickman & Muehlenhard, 1997). Major studies using general population adult samples have demonstrated some slight variation in stranger-perpetrator estimates, but primarily conclude that the perpetrator is typically known to the victim. See Table 1.5 for a summary of the percentage of stranger-perpetrators in rape and sexual assault studies. This table clearly shows that strangers only account for between 6% and 32% of the total percentage of all possible perpetrator types in

the studies reviewed herein. Specifically, stranger-perpetrators were reported in about 11 percent of the forcible rapes and 19 percent of the drug-facilitated/incapacitated rapes in the DAFR/IR study, 17 percent rapes in the NVAWS, 21 percent in the NCVS, and 22 percent in the NWS (Truman & Rand, 2010; Kilpatrick et al., 2007; Tjaden & Thoennes, 2006; Kilpatrick et al., 1992).

Studies that examine the victim-offender relationship where the perpetrator is known are fairly similar in their findings of women in the general population (see Table 1.6). According to the NWS, the relationship of the perpetrator to the rape victim was most commonly someone known to the victim, but not a relative (29%). This category would be similar to the acquaintance category used in many other studies. Other perpetrators included: other (non-father) relative (16%), father/step-father (11%), boyfriend/ex-boyfriend (10%), or a husband/ex-husband (9%) (Kilpatrick et al., 1992). Results from the NVAWS also show that the most common perpetrator of rape was an acquaintance (27.3%), as in someone who was known to the victim but was not an intimate partner or a relative (Tjaden &Thoennes, 2006). Other identified perpetrator types for rape in the NVAWS include: relative – other than spouse (22.4%), date/former date (21.5%), spouse/ex-spouse (20.2%), and cohabitating partner/ex-partner (4.3%).

Also in common with both the NVAWS and NWS results, the DAFR/IR study also found that for forcible rape, the most commonly identified perpetrator was a non-stranger/non-relative (22%), also similar to the acquaintance category used in other studies. The following types of perpetrators were also identified for forcible rapes in the DAFR/IR study: relative – not father (18%), boyfriend (14%), friend (12%), father/step-father (11%), and husband/ex-husband (10%) (Kilpatrick et al., 2007). Findings in the DAFR/IR study for incapacitated rape were slightly different, indicating the most common perpetrators were: friend (31%), acquaintance (21%), and

boyfriend (18%) (Kilpatrick et al., 2007). The 2008 NCVS does not break rape/sexual assault perpetrators into as many categories as the other studies presented here, although 63 percent of perpetrators were nonstrangers to the victim, with 23% of the offenders being intimate partners, and 38% being friends or acquaintances (Rand, 2009).

In college samples, stranger perpetrators were also less common than known perpetrators, as shown in Table 1.6. Strangers only made up 10 percent of the perpetrators of rape in the NCWSV, and about 6 percent for forcible rape and 17 percent for drug-facilitated/incapacitated rape in the DAFR/IR study – both of which consisted of college student samples (Fisher et al., 2000; Kilpatrick et al., 2007). In the CSA study, stranger perpetrators were found in 23.3 percent of the physically forced sexual assaults, and 11.5 percent of the incapacitated sexual assaults (Krebs et al., 2007).

Table 1.6: Most Common "Known" Victim-Offender Relationships in Rape/Sexual Assault Victimization

Study	Most Common Victim-Offender Relationship	2nd Most Common Victim-Offender Relationship	3rd Most Common Victim-Offender Relationship
Adult Sample			
Kilpatrick et al. (1992)	Acquaintance – 29%	Relative – 16%	Step-/Father – 11%
Tjaden & Thoennes (1998)	Acquaintance – 27%	Relative – 22%	Ex/Current Date – 22%
Kilpatrick et al. (2007)[1]	Acquaintance – 22%	Relative – 18%	Boyfriend – 14%
Kilpatrick et al. (2007)[2]	Friend – 31%	Acquaintance – 21%	Boyfriend – 13%
Rand (2009)	Friend/Acquaintance – 42%	Intimate Partner – 18%	Other Relative – 3%
College Sample			
Fisher & Cullen (1998)	Classmate – 36%	Friend – 34%	Ex/Current Boyfriend – 24%
Kilpatrick et al. (2007)[1]	Boyfriend – 26%	Friend – 19%	Relative – 15%
Kilpatrick et al. (2007)[2]	Friend – 40%	Classmate – 21%	Acquaintance – 11%
Krebs et al. (2007)[1]*	Acquaintance – 28%	Friend – 24%	Classmate – 22%
Krebs et al. (2007)[2]*	Friend – 35%	Acquaintance – 34%	Classmate – 27%

***Not a national-level study**
[1] Forcible Rape
[2] Incapacitated Rape

Among known perpetrators identified in studies examining college samples, results are fairly consistent (see Table 1.6). The NCWSV used a college student sample, and results showed that for completed rapes, the most common types of perpetrators were: classmates (35.5%), friends (34.2%), boyfriends/ex-boyfriends (23.7%), and acquaintances (2.5%) (Fisher et al, 2000). These findings were also similar to the victim-offender relationship in attempted rapes in the NCWSV.

According to the DAFR/IR study by Kilpatrick and associates (2007), college women were most likely to experience forcible rapes by: boyfriends (26%), friends (19%), other (non-father) relatives (15%), non-relative/non-strangers (15%), classmates (10%), father/step-father (4%), and husband/ex-husband (3%). When examining the victim-offender relationship for drug-facilitated or incapacitated rape, identified perpetrators were somewhat different in their percentages, and included: friends (40%), classmates (21%), non-relative/non-strangers (11%), boyfriends (9%) and father/step-fathers (2%) (Kilpatrick et al., 2007).

Krebs et al. (2007) found that for physically forced sexual assaults, the most common types of perpetrators were as follows: acquaintance (27.9%), friends (24.3%), classmates (21.7%), an ex-dating partner or spouse (20.0%), or a current dating partner or spouse (17.8%). For those college women who reported an incapacitated sexual assault, the most common types of perpetrators were: a friend (35.4%), acquaintance (33.9%), classmate (27.1%), or dating partner/spouse (18.3%) (Krebs et al., 2007).

Regardless of the type of rape/sexual assault (e.g. forced or drug-facilitated) reported using college women, it appears that friends/acquaintances, classmates and boyfriends together represent a large portion of perpetrators in the case of rape among college women, as evidenced in Table 1.6. These results make sense as young female college students are a high risk group

for rape/sexual assault, as a greater number of potential perpetrators come into contact with potential victims on campuses, and college students engage in riskier behavior (e.g. drug and alcohol use) than perhaps those in the general population (Fisher, Sloan, Cullen & Lu, 1998).

Stalking

Findings from national-level studies of stalking indicate that the perpetrator of stalking tends to be known to the victim, regardless of whether the sample is of college women or women in the general population. See Table 1.7 for a summary of findings regarding the victim-offender relationship in national-level stalking studies. In the NVAWS, which surveyed adult women in the general population, 23 percent of victims identified their attacker as a stranger (Tjaden & Thoennes, 1998). Results from the NCVS SVS do not provide results on the victim-offender relationship for females alone, so for men and women, 9.7 percent of victims identified their stalker as a stranger, and 15 percent said the relationship to the perpetrator was unknown (Baum et al., 2009). The NCVS SVS, which did not break perpetrator type down by female victim alone, found the following perpetrator types most common: a friend, roommate or neighbor (16.4%), an ex-boy/girlfriend (13.1%), a known person from work or school (9.9%), an acquaintance (9.8%), a stranger (8.7%), a relative (9.0%), an ex-spouse (8.4%), a spouse (5.6%), or a boy/girlfriend (3.2%) (Baum et al., 2009). According to the NVAWS, women were most likely to be stalked by the following perpetrators: spouse/ex-spouse (38%), acquaintance (19%), date/former date (14%), cohabitating partner/ex-partner (10%), or a relative – other than spouse (4%) (Tjaden & Thoennes, 1998).

According to the NCWSV, which was given to a sample of college women, 17.7 percent of the stalking perpetrators were a stranger, as opposed to 80.3 percent of respondents who said

they knew or had seen their stalker before the stalking began (Fisher et al., 2002). To more fully identify the victim-offender relationship in stalking, respondents of the NCWSV were asked the specific relationship status they had to the stalker. The most common perpetrator types included: boyfriend/ex-boyfriend (42.9%), classmate (24.8%), acquaintance (9.5%), friend (5.7%), and co-worker (5.7%) (Fisher et al., 2002). Due to the fact respondents were typically young college students, these results were as expected; however, different from what has been found for female victims in the general population.

Table 1.7: Summary of Victim-Offender Relationships that are Most Common in Stalking Victimization

Study	Percent Stranger-Perpetrator	Most Common Victim-Offender Relationship	2nd Most Common Victim-Offender Relationship	3rd Most Common Victim-Offender Relationship
Adult Sample				
Tjaden & Thoennes (1998)	23	Ex/Current Spouse – 38%	Acquaintance – 19%	Ex/Current Date – 14%
Baum et al. (2009)*	10	Friend, Roommate or Neighbor – 16%	Ex-Boyfriend or Girlfriend – 13%	Person from work or school – 10%
College				
Fisher & Cullen (1998)	18	Ex/Current Boyfriend – 43%	Classmate – 25%	Acquaintance – 10%

***Study includes men and women together in estimates**

Physical Assault

The 2009 NCVS data breaks down perpetrator type down by female victims for aggravated assault and simple assault. Female victims of aggravated assault and simple assault were more likely to be victimized by a nonstranger (65% and 70%, respectively) than a stranger (36% and 28%, respectively) (Truman & Rand, 2010). Simple assault against a female was often perpetrated by friend or acquaintance (33%) or an intimate partner (28%), while aggravated assault was often perpetrated by a friend or acquaintance (40%) or a by an intimate partner

(18%) (Truman & Rand, 2010). See Table 1.8 for a summary of the findings from the NCVS for physical assault.

Table 1.8: Summary of Victim-Offender Relationships that are Most Common in Physical Assault Victimization

Study	Percent Stranger-Perpetrator	Most Common Victim-Offender Relationship	2nd Most Common Victim-Offender Relationship	3rd Most Common Victim-Offender Relationship
Truman & Rand (2010)				
Simple Assault	28.0	Friend/Acquaintance – 33%	Intimate Partner – 28%	Other Relative – 10%
Aggravated Assault	36.0	Friend/Acquaintance – 40%	Intimate Partner – 18%	Other Relative – 7%

SUMMARY

There have been a number of national-level studies that have revealed a substantial percent of women are violently victimized. The extent of rape/sexual assault victimization that occurs seems to vary according to how the survey defines a crime and the population being examined, as well as the recall period being utilized. For example, the UCR typically has the lowest rape estimates, primarily because these data only capture rapes that were reported to law enforcement and the definition of rape is very narrow. Other studies produce differing estimates for a number of reasons, one of which is because of the definition being used for rape. Clearly broader definitions of rape that encompass different types of penetration will yield higher estimates than those studies which use narrower definitions. Different estimates may also be due to the way the questions are asked (e.g. use of behaviorally specific questions), or the population being examined (e.g. college women or women in general population). It is clear that there is a significant problem with the amount of rape against women.

The same reasons referred to for differing rape estimates can also be made for stalking and physical assault victimization. Stalking estimates appear higher for college-aged females (e.g. 13.1% in the NCWSV) as compared to in the general population (e.g. 8.1% in the NVAWS). Differing estimates among studies may be due to different thresholds of fear and measured different pursuit behaviors. For the most part, physical assault has not been looked at more generally as a construct, separate from domestic violence and intimate partner violence.

In regards to the victim-offender relationship, what is known about "who" the perpetrator is? First, results from major studies have shown that there are many different types of perpetrators. These perpetrators range from those personally close to the victim, such as a husband or family member, to those acquainted or friend with the victim, to strangers. The continuum of perpetrator types essentially ranges from someone completely unknown all the way to someone who is a daily part of the victim's life. Second, research suggests that a woman is more likely to be victimized by a person known to her as compared to being victimized by a stranger, regardless of the type of victimization being examined. Third, there is also evidence to suggest that certain types of perpetrators are more common depending on the type of crime being examined and the sample (i.e. college women or women in general population). For example, college students are more likely to be victimized by boyfriends, friends, classmates, and other known acquaintances. This would be expected due to the typical college student lifestyle and demographic, but not so for a sample of women in the general population. In any case, it is difficult to make comparisons across studies, as each study tends to categorize perpetrators slightly differently. Some studies, like the NCWSV and NVAWS, provide respondents with the opportunity to identify a very specific type of perpetrator, while other data sets like the NCVS do

not. But regardless, the overall pattern for all crime types is that women are more likely to be victimized by someone who is known to them.

The next chapter will present the results from published studies regarding the relationship between victimization and health outcomes. Specifically, negative physical and psychological health consequences of violence against women will be presented. Also, the chapter will discuss how strain is a "cost" of being victimized, and will bring in studies from the strain literature that may help explain why violence against women has such a negative health impact. Relatedly, the next chapter will also provides a plausible theoretical explanation as to why the victim-offender relationship may affect the amount and level of negative health outcomes experienced by the victim.

Chapter 2

VIOLENCE AGAINST WOMEN AND NEGATIVE HEALTH OUTCOMES: PSYCHOLOGICAL AND PHYSICAL WELLBEING

INTRODUCTION

The available studies that examine the relationship between victimization and negative health outcomes can be found across many disciplines, including medicine, psychology, and criminal justice. Negative health outcomes vary across many different spectrums – from physical injuries like bruises and bone breaks, to psychological disorders like depression and PTSD, all the way to illicit drug use (Resnick et al., 1997). Negative health consequences can also vary in their duration – from a few days in the case of a bruise, to a lifetime with anxiety or a sexually transmitted disease such as herpes or HIV (Logan et al., 2006). The following section discusses research encompassed under the umbrella of "negative health outcomes," as well as presents relevant research that has linked violence against women to various negative health outcomes women experience. The chapter ends with a theoretical explanation for why violent victimization can lead to negative health outcomes, and why one might expect the victim-offender relationship to affect the negative health outcomes of victims of violence differently.

NEGATIVE HEALTH OUTCOMES

Types of Health Outcomes

Any discussion of the psychological and physical health consequences of victimization warrants an overview of what is included under this catch-all terminology. How violent victimization impacts women varies quite substantially from one victim to the next. At the very least, victimization is a stressful event for the victim (Logan et al., 2006). Empirical models to

date have not been able to predict how a female victim of violence will respond to the victimization. However, how a woman handles that stressful event is related to a variety of factors, from previous victimization history, individual and situational characteristics, life circumstances both past and present, coping mechanisms and resources available, and existing support system (Campbell, Dworkin, & Cabral, 2009). The following section discusses what type of psychological and physical health consequences are related to having been violently victimized.

Psychological Health Consequences

An individual's psychological well-being is an important component of her overall health. According to the World Health Organization (WHO), mental health can be thought of as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO, 2007). Mental illness and other psychological health problems can "disrupt a person's thinking, feeling, mood, ability to relate to others and daily functioning" (National Alliance on Mental Health, 2010). There are a number of significant mental health problems that can manifest themselves, either in the short term or chronically, which can interrupt a victim's life and make general daily functioning quite difficult.

Short-term manifestations would include problems that are more immediate in occurrence, such as fear or anxiety. Chronic problems would be those that plague the victim without cessation long after the incident has occurred, such as severe depression. There is evidence to suggest that psychological problems are typically most severe directly following the victimization (Campbell & Soeken, 1999), and those with previous victimization experiences

have more psychological symptoms and the symptoms last longer (Riggs, Kilpatrick & Resnick, 1992).

One of the most common psychological problems experienced following victimization is depression (Campbell, Kub, Belknap, & Templin, 1997; Resick, 1993). According to the National Institute of Mental Health, the there are two major types of depression, one of which is more severe than the other. The definitions are as follows:

> "**Major depressive disorder,** also called major depression, is characterized by a combination of symptoms that interfere with a person's ability to work, sleep, study, eat, and enjoy once-pleasurable activities. Major depression is disabling and prevents a person from functioning normally. An episode of major depression may occur only once in a person's lifetime, but more often, it recurs throughout a person's life.
>
> **Dysthymic disorder,** also called dysthymia, is characterized by long-term (two years or longer) but less severe symptoms that may not disable a person but can prevent one from functioning normally or feeling well. People with dysthymia may also experience one or more episodes of major depression during their lifetimes" (NIMH, 2009).

In general, women are approximately twice as likely as men to develop depression (Robins & Regier, 1991). Depression symptoms include insomnia, irritability, persistent sadness, decreased energy, and loss of interest in activities and hobbies. It is well documented that depression can be devastating to a victim and those around her (see Logan et al., 2006).

Posttraumatic Stress Disorder (PTSD) is also a common way victimization impacts a woman's psychological health. According to the National Institute of Mental Health (2008), PTSD is "an anxiety disorder that some people develop after seeing or living through an event that caused or threatened serious harm or death." PTSD symptoms can include the following: flashbacks, bad dreams, emotional numbness, memory problems, trouble concentrating, anger, trouble sleeping, hopelessness, and trouble maintaining relationships (NIH, 2008). According to the Diagnostic and Statistic Manual of Mental Disorders, fourth edition (DSM-IV), numerous criteria must be met to receive the PTSD diagnosis. These criteria involve not only witnessing or

experiencing a traumatic event, but also include symptom duration and severity. Women are more likely to experience PTSD than males (Horwath & Weissman, 1997), and it is important to note that anxiety disorders (e.g. PTSD) and mood disorders (e.g. depression) often co-occur (Kessler et al., 2003).

Other possible types of psychological problems victims of violence may experience include anxiety, borderline personality disorder (BPD), eating disorders, drug abuse, and sleep disorders (Logan et al., 2006; Resnick et al., 1997). For example, 28.3 percent of women experiencing intimate partner abuse in Massachusetts reported they were worried or anxious for fourteen or more days in the previous month (Hathaway, Mucci, Silverman, Brooks, Mathews, & Pavlos, 2000). There can be overlap between different mental symptoms, as well as overlap between physical and psychological symptoms. As an example, a person who is physically hurt by violence may also become depressed or suffer from anxiety. The following section will examine a diverse group of physical health problems female victims of violence experience.

Physical Health Consequences

Defining physical health is somewhat difficult. The World Health Organization (WHO) has defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (1946, para.1). This definition clearly defines what health is considered, but does not singularly address physical health. Also, many entities such as the National Institute of Health (NIH) and the Center for Disease Control (CDC) spend a great deal of time and research defining and researching what is *not* good physical health, but no definition could be located that specifically defined general or good physical health. Therefore, a simple definition of health will be used here to define physical health, which is that physical health is the absence of disease, illness, or infirmity (Emson, 1987).

Physical health problems that occur from victimization can be from the actual victimization or be stress-related (Campbell, 2002). For example, a woman can break her wrist from a domestic dispute with her husband. This injury would be a physical health problem that resulted from the actual physical assault. Conversely, a woman could suffer from stomach ulcers because she is a victim of domestic violence. In this particular case, the health problem is due to the continued stress from the abuse, not from the actual act of violence committed by the abuser.

Also much like psychological health problems, physical health problems are also divided into those that are short-term or acute, versus those that are chronic and generally long-lasting. Acute physical health problems are those that occur as a direct result of the victimization, and are immediate. Physical health problems that are acute would include those such as bruises, cuts, scrapes, broken bones, sprains, strains, contusions, abrasions, vaginal trauma, and head injury (Resnick et al., 1997). Findings from the NVAWS have shown that acute injuries such as scratches, bruises and welts are the most commonly reported injuries by adult rape and physical assault victims (Tjaden & Thoennes, 1998). Chronic or ongoing health problems that women experience as a result of violent victimization can include hearing or vision problems, headaches, gastrointestinal problems, gynecological problems, painful intercourse, irritable bowel syndrome, cardiac problems, stomach ulcers, and neurological impairment (Campbell, 2002; Logan et al., 2006). Research by Coker et al. (2000) reported that 38.0 percent of their respondents who suffered intimate partner violence reported chronic neck or back pain, and 17.3 percent reported chronic pelvic pain. Pre-existing health problems may also be aggravated and worsened as a result of violence, such as diabetes, high blood pressure, and migraines (Campbell, 2002; McCauley et al., 1995).

Women's Wellbeing

Beyond physical and psychological consequences, there are a couple of other measures of wellbeing that can additionally indicate how violent victimization negatively affects a woman's overall health. First, women who are victims of violence tend to perceive their current health status as being poorer than women who have not been victimized (Coker et al., 2002; Plichta, 1996). For example, Plichta & Falik (2001) found that victims of violence perceived their health as "fair/poor" more often than nonvictims of violence. Another indicator of women's wellbeing can be illicit drug or alcohol use/abuse, which has been linked to victims of violence (Coker et al., 2002; Davis, Coker & Sanderson, 2002).

Rape

How pervasive are negative health problems?

Women who are raped/sexually assaulted tend to perceive their general health status as more negatively than nonvictimized women (Kimerling & Calhoun, 1994; Koss et al., 1991). For example, findings by Plichta and Falik (2001) in a sample of 1,821 adult women indicated that only 11.9 percent of nonvictims rated their health as "fair/poor," as opposed to 18.4 percent of sexually assaulted women (perpetrator non-intimate), and 28.0 percent of women victims of IPV. A study by Waigandt, Wallace, Phelps, and Miller (1990) supported these findings, reporting that 31 percent of sexual assault victims perceived their health as "fair or poor," compared to 12 percent of nonvictims. Koss et al. (1991) provide further support, finding that those individuals who had been sexually victimized experienced less physical wellbeing and experienced more total symptoms than those who had been nonvictimized.

Research has shown evidence for a link between rape and sexual assault and negative psychological health consequences (Campbell et al., 2009, Kramer & Green, 1991). Results from the NVAWS revealed that 33 percent of female rape victims reported receiving counseling from a mental health professional after their most recent rape (Tjaden & Thoennes, 1996). Kimerling and Calhoun (1994) also found that victims' psychological symptoms were significantly higher following a rape than nonvictims in a comparison group. Koss et al. (1991) provide further support, reporting that sexual assault victims, as compared to nonvictims, reported higher emotional stress and lower levels of mental wellbeing. In another sample, 4 percent of sexual assault victims were admitted to a psychiatric service (Sugar et al., 2004). See Table 2.1 for an overview of rape/sexual assault studies that look at health outcomes.

There have also been a number of studies linking rape and sexual assault with negative physical health consequences, and specifically that victims have elevated negative physical health symptoms than nonvictims (Kimerling & Calhoun, 1994). A study of 819 sexual assault victims age 15 and older found that 52 percent reported general body injury and 20 percent had genital or anal injury (Sugar, Fine & Eckert, 2004). According to results from the NVAWS, 31.5 percent of women of rape victims reported receiving a physical injury because of the rape (Tjaden & Thoennes, 1998). Waigandt et al. (1990), in a study of 51 sexual assault victims living in Atlanta, provided further support for the relationship between sexual assault and negative physical health. Sexual assault victims scored twice as high as nonvictims on a measure of present illness symptoms (e.g. headaches, high/low blood pressure), as well as had 50 percent more negative health behaviors (e.g. lack of excercise, excessive alcohol consumption) and 42 percent more female reproductive physiology illness symptoms than nonvictims (Waigandt et al., 1990).

Table 2.1: Rape/Sexual Assault Studies That Examine Health Outcomes

Study	Sample Composition (n)	Health Outcome
Atkeson et al. (1982)	Women victims and nonvictim control group (n=115; n=87)	Depressive symptoms
Waigandt et al. (1990)	Women from rape crisis centers (n=204)	Perceived health status, doctor visits, present illness symptoms, past illness symptoms, negative health behaviors, female reproductive physiology illness symptoms, family health history
Koss et al. (1991)	Women victims and nonvictims (n=316; n=74)	Health status (general health status, mental health status, total symptoms), outpatient visits, outpatient expenses
Kramer & Green (1991)	Women victims admitted to Center for Emergency Care (n=169)	PTSD Symptoms
Kilpatrick et al. (1992)	Women 18 and older from the NWS (n=4,008)	Physical injury, medical care, PTSD, major depression, suicidal thoughts and attempts, substance use
Kimerling & Calhoun (1994)	Women victims at Rape Crisis Center and a comparison group of nonvicitms (n=115)	Physical symptoms, perceived health, physician visits, psychological symptoms
Kilpatrick et al. (1997)	Women in general population and in college (n=3,000; n=2,000)	Physical injury, medical care, PTSD, depression, binge drinking, drug use
Tjaden & Thoennes (1998)	Women from the NVAWS (n=8,000)	Physical injury, medical care, psychological support
Plichta & Falik (2001)	Women aged 18 to 64 in Survey of Women's Health (n=1,802)	Physical health and mental health indicators
Sugar et al. (2004)	Women > 15 years old at the ER (n=819)	General body trauma and genital-anal trauma
Krebs et al. (2007)	College undergraduate women (n=5,466)	Physical injury, emotional injury, medical or crisis care

Medical Care Cost and Utilization.

Victims of rape and sexual assault also visit the hospital more often and spend more money on health care than do nonvictims. Koss et al. (1991) found that victims of sexual assault and rape were significantly more likely to visit a physician and spend more healthcare dollars than those who were not victims. Data from the NVAWS reveal that 35.6 percent of women injured by the rape they experienced received medical care (Tjaden & Thoennes, 1998). Specifically, 81.9 percent of the women who sought medical care went to the hospital, 54.8 percent went to a physician, 16.9 visited a dentist, 19.0 percent required an ambulance or paramedic, and 16.7 percent needed physical therapy.

Types of health consequences.

There are a variety of reported negative health consequences, both physical and psychological, reported by rape/sexual assault victims. The study by Sugar et al. (2004) indicated that general body injuries were often bruises, abrasions, intracranial and visceral trauma and fractures. Similarly, NVAWS respondents most typically reported body injuries such as bruises, cuts, broken bones, strains, and chipped teeth (Tjaden & Thoennes, 1996). Further support was found by Kimerling and Calhoun (1994), in which sexual assault victims reported elevated physical symptoms including tension headaches, back pain, menstrual symptoms, and nausea. Also, Waigandt et al. (1990) reported that victims indicated three times more painful menstrual periods, two times more vaginal discharge, and frequent urination symptoms, and more burning pain while urinating than nonvictims.

Kilpatrick et al. (1992) reported from their sample of rape victims that 31 percent developed PTSD, 30 percent experienced major depression, 33 percent contemplated suicide, and 13 percent attempted suicide – all significantly higher percentages than those reported by

non-victims of crime. Relatedly, NWS respondents also indicated higher percentages of illicit drug use and alcohol consumption (Kilpatrick et al., 1992). In Plichta & Falik's (2001) nationally representative sample of women, victims of sexual violence reported higher percentages of depression or anxiety, more depressive symptoms, and medication use for depression or anxiety as compared to nonvictims. Both Kilpatrick et al., (1997) and Atkeson et al. (1982) reported finding significantly higher levels of depression among rape victims than nonvictims. Overall, there has been widespread empirical support for the association between rape/sexual assault and negative health consequences.

Stalking

It is reasonable to conclude that the extent of published research assessing the negative health impact of stalking on victims is limited. This might not be completely unexpected, as the crime of stalking has only started receiving attention within the last two decades (see Spitzberg & Cupach, 2003). With that said, there has been a limited number of studies that have examined the relationship between stalking and negative health consequences for female victims, and the following section will review these studies and present relevant findings.

How pervasive are negative health problems?

A consistent finding across the stalking research appears to be similar to the negative toll of rape, being stalked has a significant psychological and physical impact on victims of stalking. In his meta-analysis of 103 stalking studies, Spitzberg (2002) examined stalking symptomology, including general disturbance, affective health, cognitive health, physical health, social health, resource health, and resilience. Findings from this meta-analysis indicated 42 percent of victims experience at least one of these categories of symptoms.

Numerous studies have discovered a significant link between stalking and negative physical health consequences for women. In a sample of 187 female former intimate stalking victims, 37.4 percent reported there were physical injuries sustained (Brewster, 2000). Nicastro, Cousins and Spitzberg (2000), in their sample of 55 stalking victims (93 percent female) found 38 percent of the victims reported incurring minor physical harm, and 11 percent reported physical illness. In a study of stalking among a sample of 1171 adult women living in Louisiana, 32 percent of the identified stalking victims reported injuries sustained from being assaulted by their stalker (Kohn, Flood, Chase, & McMahon, 2000). A study of 601 women from two universities revealed 13 percent of respondents reported they were physically injured by their stalker and significantly more victims reported a lower perceived physical health status (Amar, 2006).

It is clear from previous research that nonvictims experience mental illness and psychological problems as well as victims, but studies have shown that victims report significantly higher rates of mental health problems than nonvictims (Amar, 2006; Logan & Cole, 2007). The NVAWS revealed that 30 percent of female stalking victims sought some type of professional counseling because of their stalking victimization (Tjaden & Thoennes, 1998). Using a college sample, results from the NCWSV revealed 2.9 percent of stalking victims had sought psychological counseling (Fisher et al., 2002). Similarly, significant differences between stalking victims and nonvictims for levels of general psychological distress have also been found (Amar, 2006). In a study of Dutch females, 59 percent reported a significant level of psycho-medical symptoms (Kamphuis & Emmelkamp, 2001). See Table 2.2 for a summary of studies examining health outcomes for stalking victimization.

Table 2.2: Stalking Studies That Examine Health Outcomes

Study	Sample Composition (n)	Health Outcome
Pathe & Mullen (1997)	Male and female victims (n=100)	Psychological and physical symptoms
Tjaden & Thoennes (1998)	Women from the NVAWS (n=8,000)	Psychological help sought
Brewster (2000)	Women victims (n=187)	Physical injury
Kohn et al. (2000)	Louisiana women residents 18 or older (n=1,171)	Physical injury, stress
Nicastro et al. (2000)	Stalking cases of men and women (n=55, 93% female)	Victim symptoms (physical and emotional), coping responses
Kamphuis & Emmelkamp (2001)	Women victims (n=201)	Physical health and PTSD
Davis et al. (2002)	Women from the NVAWS (n=6,563)	Current health, chronic disease, physical injury, current depression, chronic mental illness, substance use, and binge drinking
Fisher et al. (2002)	College women (n=4,446)	Physical injury, psychological injury, and psychological help sought
Dressing et al. (2005)	German women (n=400)	Physical symptoms, mental symptoms, and sought psychological or medical help/care
Amar (2006)	College women (n=601)	Psychological distress, physical injury, and perceived health status.
Logan & Cole (2007)	Women victims (n=662)	Physical injury, depression, PTSD, substance use
Baum et al. (2009)	Men and women in NCVS SVS (n=65,270)	Emotional impact and physical injury

Types of Health Consequences.

Specific injuries reported by stalking victims in the study by Kohn et al. (2000) included: bruises, scratches, cuts, sprains, strains, burns, swelling, broken teeth, and gunshot/knife wounds. In a German sample of 679 people (400 women and 279 men), 35 percent reported stomach trouble and 14 percent reported headaches (Dressing, Kuehner & Gass, 2005). In Pathe and Mullen (1997) study of 100 stalking victims, victims identified general poor health and complained of headaches, eating disorders, and digestive disorders. Approximately 14 percent of NCVS SVS respondents indicated they felt sick when the stalking first began and as it progressed (Baum et al., 2009).

Stalking victimization was also significantly associated with current depression, antidepressant use, and drug use for female respondents in the NVAWS (Davis et al., 2002). According to the NCVS which looked at male and female victims together, over 15 percent responded that they felt depressed (Baum et al., 2009)[1]. Dressing et al. (2005), in their sample of German men and women found that 44 percent of respondents had anxiety, 41 percent had sleep disturbances, 28 percent had depression, and 12 percent had panic attacks. Results from the study by Kohn et al. (2000) of a sample of women living in Louisiana indicated that 55 percent of stalking victims reported having stress that interfered with regular activities for longer than a month time period. Further empirical support by Nicastro et al. (2000) indicated that 11 percent of their sample reported having general stress, while 9 percent reported experiencing depression. Stalking victims in Pathe and Mullen's (1997) study reported increased levels of anxiety over nonvictims (83%), intrusive recollections and flashbacks (55%), and 37 percent met the

[1] The NCVS Supplemental Victimization Survey (SVS) does not separate males and females in the presentation of their results.

requirements for PTSD. A growing body of research indicates a significant relationship between stalking victimization and negative health consequences, both physical and psychological.

Physical Assault

There has been little empirical testing of the relationship between physical assault and negative health consequences. This oversight is in part because physical assault is often combined with sexual assault and other violence against women under the umbrella of intimate partner violence (IPV). With that said, there have been a handful of studies that have investigated the relationship between physical abuse and its impact on women's health. Table 2.3 provides a summary of studies that have examined physical assault and health outcomes.

Table 2.3: Physical Assault Studies That Examine Health Outcomes

Study	Sample Composition (n)	Health Outcome
Hathaway et al. (2000)	Massachusetts women (n=2,043)	Health status, health care use, and sought medical care or counseling
Plichta & Falik (2001)	Women aged 18 to 64 in Survey of Women's Health (n=1,802)	Physical health and mental health indicators
Coker et al. (2002)	Women from the NVAWS (n=6,790)	Chronic disease, injury, and mental illness; current poor health, depression, and substance use
Demaris & Kaukinen (2009)	Women from the NVAWS (n=8,000)	Depressive symptomology, self-assessed health, and binge-drinking

How pervasive are negative health problems?

Research examining the relationship between physical assault and negative health consequences has been generally supportive. According to a national sample of women 18 and older by Plichta & Falik (2001), a large percentage of those who are physically assaulted self-report that their health is fair or poor. These women also disclose suffering from a chronic physical health condition, defined as any type of health conditions that required ongoing treatment. A study of 2043 Massachusetts women examining intimate partner abuse (includes physical violence, threats, and a controlling partner), revealed victims were more likely to report their mental and physical health as not good, not get enough sleep, or sustain physical injury than nonvictims (Hathaway et al., 2000). Similarly, Coker et al. (2002), using NVAWS data reported physical IPV was associated with injury (e.g. spinal cord, neck or head injury), current poor health, and risk of developing a chronic disease.

Negative psychological consequences have also been linked to physical assault victimization, and generally the research has been supportive of such a relationship. Supportive of the negative toll physical assault takes on women's health, Plichta & Falik (2001) reported significantly higher percentages of depression and anxiety diagnoses, more depressive symptoms, and medication use for depression or anxiety than nonvictims. Likewise, Coker et al. (2002) reported finding that physical IPV was associated with an increased risk of depressive symptoms, substance use, and developing a mental illness as compared to nonvictims. Physical intimate partner abuse has also been shown to lead to respondents feeling sad, depressed, worried or anxious (Hathaway et al., 2000). Somewhat differently, though, Demaris and Kaukinen (2005) found only moderate support for the relationship between physical assault and depressive symptomology.

Summary

Previous research findings that have demonstrated a negative relationship between violence against women and negative health consequences show the magnitude of the mental and physical health burden on women who experience violent victimization. However, there are limitations to these existing studies that are important to keep in mind. First, a majority of the published research does not use national-level data. Second, the victim-offender relationship has not been fully examined for multiple types of violence against women within the same study, which is the major contribution of this current study. Keeping both of these possible limitations in mind, investigating the victim-offender relationship and its impact on women's negative health consequences is a logical next step in this area of research. More understanding of the factors underlying the substantial negative health impact of violence against women is certainly needed.

Victim-Offender Relationship and Health Outcomes

Previous research reveals that depending on the type of violent victimization, certain perpetrator types are more common. National-level studies of stalking victimization in general population samples of women have revealed perpetrators are most commonly an intimate, friend, or an acquaintance (Baum et al., 2009; Tjaden & Thoennes, 1998). In addition, whether the study uses a college or adult general population sample also will affect the most common victim-offender relationships. For example, college samples have consistently shown that perpetrators or rape/sexual assault tend to be known to the victim, and are often a friend, acquaintance, classmate, or current or ex-boyfriend (see Fisher et al., 2002, Kilpatrick et al., 2007; Krebs et al., 2007). This is in contrast to studies that draw their sample from the general population and have

found that relatives and spouses/ex-spouses play a large role in the perpetration of sexual assault and rape (see Kilpatrick et al., 2007; Tjaden & Thoennes, 2006).

While research has shown certain victim-offender relationships are more common for certain types of crime, and that violent victimization has a negative effect on women's health status, studies examining the relationship between perpetrator type and health outcomes have produced mixed results. Many have assumed that stranger-perpetrated incidents are more stressful and traumatizing (Kilpatrick, Best, Saunders, & Veronen, 1988). The empirical literature, however, does not support this assumption. In a group of 50 sexual assault victims ages 14 – 52, there was no significant relationship between type of assailant (stranger or known) and severity of psychological impact (Frank, Turner, & Stewart, 1980). A study by Kilpatrick, Veronen, Saunders, Best, Amick-McMullan and Paduhovich (1987) also indicated that there was no difference in the impact of rape on mental health across three perpetrator groups – stranger, marital, and date. Similarly, Koss, Dinero, Seibel and Cox (1988) also found that college students who were victims of acquaintance rape and stranger rape did not differ in their current levels of psychological symptoms, although both groups had higher levels of psychological symptoms than what would be expected in the normal population.

Previous studies have produced even more divergent findings when examining the negative psychological health consequence of violence against women by victim-offender relationship. For example, women attacked by acquaintances had fewer problems with fear and depression than those attacked by strangers (Ellis, Atkeson, & Calhoun, 1981; Thornhill & Thornhill, 1990). However, there is other research that has found that this not to be the case (see Resick, 1988). For example, Girelli, Resick, Marhoefer-Dvorak, and Hutter (1986) studied 41 rape victims and found that the victim's subjective experience, not perpetrator type, was not

related to fear and anxiety experienced by the victim after the rape. Ullman and Siegel (1993) discovered that depression in sexual assault victims did not vary by victim-offender relationship in a community sample of 240 women. Contrary to these findings, Demaris and Kaukinen (2005) present findings indicating the victim-offender relationship was the most important factor for depressive symptomology. Specifically, victims reported more symptoms of depression if the perpetrator was someone known to them.

There is even more research on the relationship between perpetrator type and negative psychological health consequences for victims of violence, and these findings are equally as mixed. Ullman, Filipas, Townsend and Starzynski (2006) found that sexual assaults by acquaintances and intimate partners were associated with less PTSD symptoms then strangers and relatives – in a sample of 1,084 sexual assault surviving females in the Midwest. Somewhat differently, Temple, Weston, Rodriguez and Marshall (2007) used a sample of nearly 900 low-income females. Their results indicated that sexual assault by a current partner was the strongest predictor of PTSD, as compared to sexual assaults by a former partner or intimate partner. Culbertson and Dehle (2001) examined the impact of sexual assault by perpetrator type using undergraduates. They discovered something different, that sexual assault has more of an adverse effect on victims if the perpetrator was a spouse, live-in partner, or an acquaintance, compared to the effects when the perpetrator is a date or intimate sexual partner. From a slightly different perspective which labeled perpetrators differently than just known versus unknown, Cascardi, Riggs, Hearst-Ikeda and Foa (1996) reported finding that perpetrators who were perceived as more dangerous – as opposed to being labeled as safe - caused their victims more severe PTSD symptoms.

Impact on physical health has also been briefly researched. According to a community based sample of women, those women who were sexually assaulted by husbands or boyfriends experienced higher levels of violence and physical trauma (Stermac et al., 1998). This is as opposed to assaults by other known-assailants, but similar to sexual assaults perpetrated by strangers.

To date, only mixed support has been reported for the relationship between victimization and health status varies by perpetrator type. Many factors may have potentially contributed to these mixed findings, such as the limited number of studies, the different samples examined, and the lack of shared terminology/definitions about the type of crime being researched. Also, no study used a large number of possible perpetrators categories in a single study when examining the relationship between violence and negative health status. This is most likely due to the lack of available data that contain survey questions asking respondents very specific victim-offender relationship details. These mixed results highlight the need for continued research about the victim-offender relationship and its effect on negative health outcomes. Until then, the association between perpetrator type and negative health consequences remains an open question, one which deserves further empirical scrutiny.

SUMMARY

Several conclusions can be drawn from the body of research examining violence against women. First, there has been research that indicates violence against women is a pervasive social problem, and in particular, this violence poses a major mental and physical health burden to its victims. Second, previous research has established there is a relationship between violence against women and negative health outcomes, both psychological and physical. There is also a

relationship between violent victimization and measures of wellbeing, such as overall health status and drug/alcohol abuse. Third, there are several studies that have examined the relationship between violence against women and health status by perpetrator type. This research has produced mixed results.

What has not been addressed thus far in this present study is why one would expect negative health consequences would differ for victims depending on the victim-offender relationship. It is the contention of this current study that strain is an outcome of victimization. Strain manifests itself in different negative physical and psychological health consequences, as well as in drug and alcohol abuse. The following section develops a theoretical framework, grounded in general strain theory that will guide the present study. First, a review of widely applied theoretical approaches used in victimology research is presented. An explanation as to why they are not appropriate for this present study is put forth. Second, a review of strain theory and relevant research will be presented. Third, the argument that strain literature neglects victimization is made by presenting past strain theory empirical studies. Finally, it will be explained how key aspects of strain theory may help explain why different victim-offender relationships are associated with different health outcomes for women who experience violent victimization.

STRAIN THEORY'S APPLICATION TO VICTIMIZATION

Introduction

Violence against women research has grown exponentially in volume in recent years, even though the field itself is relatively young (Fisher, Daigle, & Cullen, 2008). There has been a noticeable and increasing presence of violence against women articles in peer-reviewed

published journals, as well as across many different disciplines (Lauritsen & Archakova, 2008). In addition, there has been a growing number of specialty journals which frequently focus on violence against women (e.g. *Violence Against Women, Journal of Interpersonal Violence, Feminist Criminology, Violence and Victims*). However, the field of violence against women has had challenges developing into a cohesive structure as terminology does not remain constant across different disciplines, and there is a real criticism as to the methodology and lack of scientific rigor (Ford, 2009; Jordan, 2009). There has also been criticism of a lack of a uniting theory or set of theories, although some would also argue that having numerous theories from multiple disciplines is a good thing, as it encourages researchers to think outside the box and bring in fresh perspectives to better understand and approach the problem (Martin, 2009).

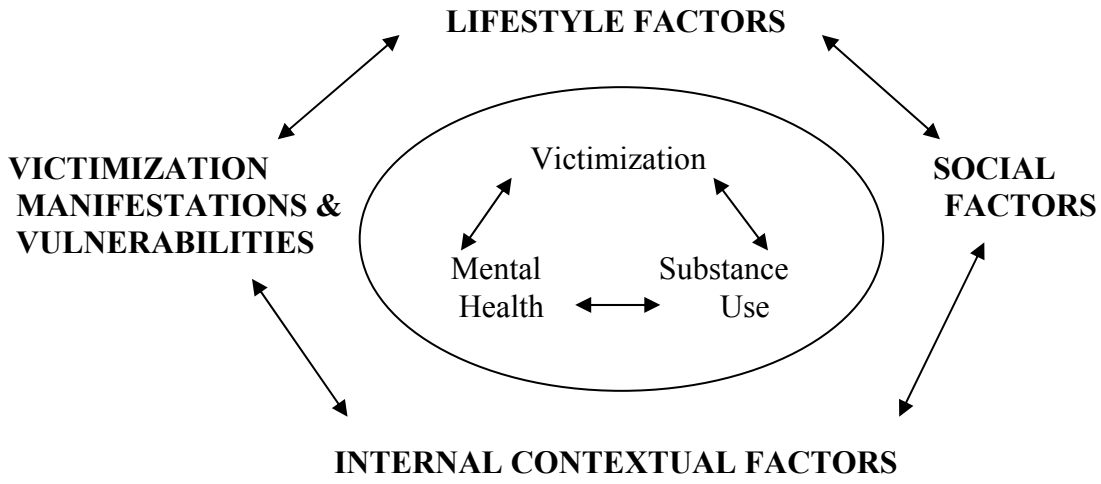
Widely Applied Victimization Theories

Two of the more popular theoretical frameworks used to approach victimization research have been lifestyle-exposure theory (Hindelang, Goddfredson, & Garofalo, 1978) and routine activities theory (Cohen & Felson, 1979). Both theories are considered "opportunity" theories, and put forth that crime results from opportunities being available as a part of everyday life (Cohen, Kluegel, & Land, 1981; Wilcox, Land, & Hunt, 2003). These theories have experienced a wide amount of empirical testing and empirical support in studies examining a variety of different types of crimes (e.g. Cass, 2007; Fisher et al., 2002; Fisher et al., 1998; Kennedy & Forde, 1990; Mustaine & Tewksbury, 1998, 1999, 2002; Sampson, 1987; Sampson & Lauritsen, 1990; Sampson & Wooldredge, 1987; Tseloni, 2000).

The routine activities approach and lifestyle-exposure theory – or some combination of the two – would be useful if trying to explain the criminal event. However, neither explains why

one might expect negative health consequences after being victimized to be different, depending on the perpetrator. Some researchers have proposed conceptual models useful in studying the contributing factors of victimization and health problems. For example, Logan et al. (2006) organized such a model for their book on the victimization of women, see Figure 2.1. While this proposed model by Logan et al. (2006) is excellent for the purpose of organizing the wide array of literature that details those factors contributing to victimization, it is not a theoretical model applicable to this current study where the main focus is on the victim-offender relationship and its relationship to negative health consequences.

Figure 2.1: Conceptual Model of Factors Contribution to Victimization, Mental Health, and Substance Use

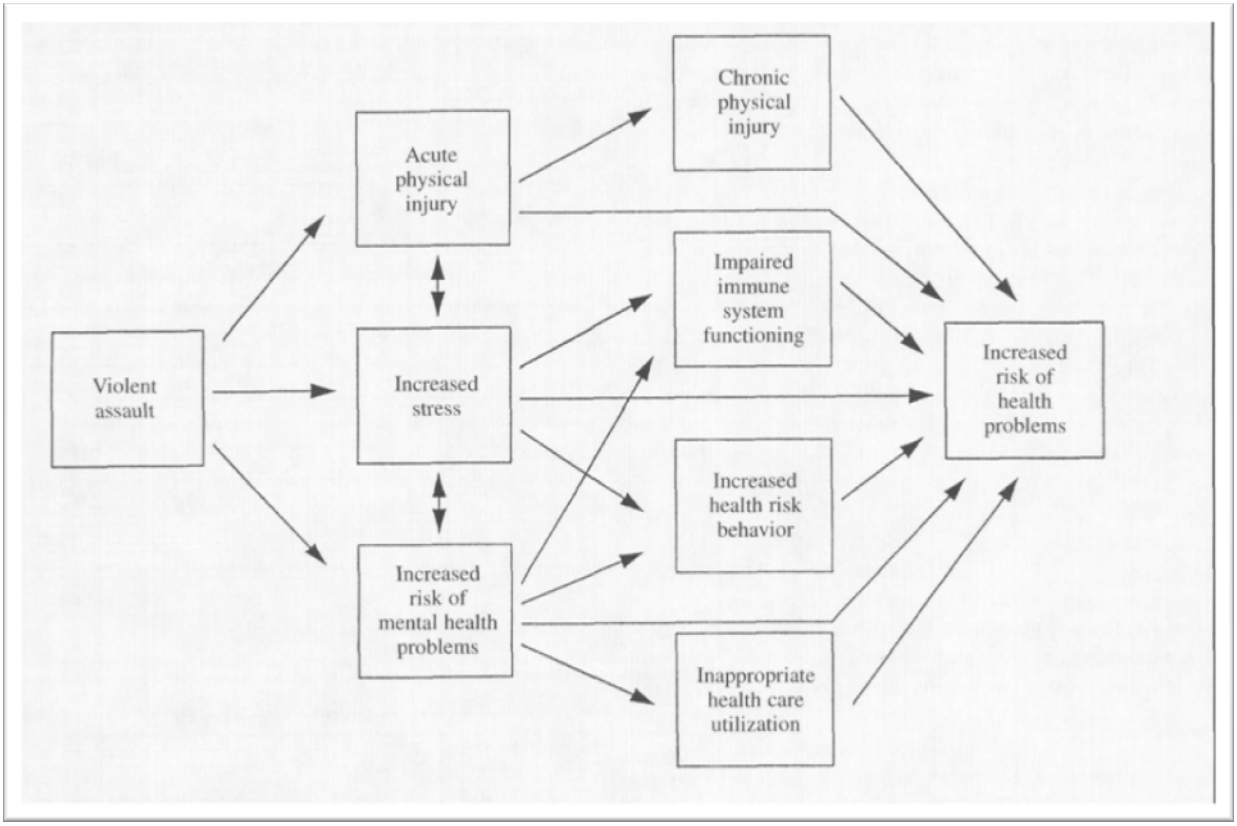


Source: Logan et al. (2006)

Other researchers have presented theoretical models which suggest possible mechanisms through which violence might affect women's health. Resnick et al. (1997) present such a model; see Figure 2.2. This model by Resnick and colleagues is of interest to this current study in that it focuses on how an increase in stress as a direct result of violent victimization and through physical injury and mental health problems. This elevation in stress can aggravate existing mental and physical health problems caused by the victimization, and increase the risk

of future negative health consequences. While strain theory will be detailed in the rest of this chapter, it is important to point out that while both this model by Resnick et al. (1997) and strain theory both have stress/strain predicting negative health consequences for victimization, strain theory offers a more fully developed rationale for why one would expect there to be negative health consequences following victimization. Also, this model has not been tested whereas strain theory has received much empirical scrutiny.

Figure 2.2: Theoretical Model of Violent Assault on Health Problems



Source: Resnick et al. (1997).

A large body of victimization research has also been conducted looking at health outcomes of violence against women, but much of it is does not incorporate a theoretical

framework into their analysis. For example, much research on violence against women is conducted by epidemiologists, whose concern is more on determining the factors leading to negative health outcomes as opposed to examining constructs a theory would suggest as important. With this said, what is known? The case has been made in this current research that violence against women is an important social issue and that it impacts women's psychological and physical health in multiple negative ways. However, if the underlying causal mechanism between violence and negative health is not fully understood, one cannot begin to explore what aspects of the violence victimization may affect women's health differentially.

Strain theory offers researchers a potential mechanism by which one might expect various victim-offender relationships to differentially affect women's health. The following section will discuss the roots of strain theory, and how current empirical research guided by strain theory almost universally ignores victimization as a source of stress or strain. It is this stress/strain which is caused by violent victimization that leads to negative health outcomes. This current study proposes that different victim-offender relationships predict differential levels of stress/strain, which in turn leads to differential negative health outcomes.

Roots of Strain Theory

Strain theory roots can be traced back to Merton's (1938) anomie/strain theory. Merton's strain theory explains how individuals who are not normally delinquent may become criminal. Stated simplistically, individuals without the means to reach their goals feel strain, and then either adapt to the strain in a criminal or non-criminal way. Many theorists extended Merton's original concept of strain. Cloward and Ohlin (1960) and Cohen (1955) both were interested in delinquent subcultures. Cloward and Ohlin (1960) sought to explain delinquency using both

illegitimate and legitimate opportunities, whereas Cohen (1955) used strain theory to explain the origin of deviant subcultures. Due to a lack of empirical support for strain theory in explaining delinquency and much criticism (see Hirschi, 1969), strain theory was mostly abandoned by criminologists in favor of control theory. This was, at least, the case until the 1980s when Robert Agnew's reformation of strain theory made it a testable theory in research again.

Agnew (1985, 1992) put forth his general strain theory (GST) which posits that stress or strain leads to an individual experiencing negative emotion, such as anger or frustration, and that individual either adapts criminally or conforms. Criminal actions result because there is a "pressure for corrective action" against the negative emotions that arise (e.g. fear, guilt, anger, frustration, depression), and can include general delinquency and offending, revenge or retaliation, and illegal drug use/abuse (Agnew, 2001, pg. 319). The three major sources of strain described by Agnew are: "1) strain as the actual or anticipated failure to achieve positively valued goals, 2) strain as the actual or anticipated removal of positively valued stimuli, and 3) strain as the actual or anticipated presentation of negatively valued stimuli" (pg. 74).

More recently, Agnew suggests that those types of strain that are "1) seen as unjust, 2) seen as high in magnitude, 3) associated with low social control, and 4) created some pressure or incentive for criminal coping" are more likely to lead to delinquency and criminal outcomes (2001, p. 343). Agnew identifies criminal victimization as a type of strain that is likely to result in criminal offending, as it frequently meets all four of the aforementioned criteria. Additionally, Agnew also discusses possible conditioning or intervening variables (e.g. social support, individual disposition to delinquency) that potentially impact the relationship between strain and negative emotions and delinquent outcomes.

There is much existing research that tests general strain theory; however, most of it does not use adult samples or look at adult victimization as a source of strain. Most commonly GST has been applied to adolescent children experiencing some source of strain (e.g. homelessness, peer delinquency) and uses some delinquent outcome (see Agnew, 2002; Agnew, Brezina, Wright & Cullen, 2002; Agnew & White, 1992; Aseltine, Gore & Gordon, 2000; Baron, 2004; Brezina, 1996; Carson, Sullivan, Cochran & Lersch, 2009; Hay, 2003; Hoffman & Cerbone, 1999; Hoffman & Miller, 1998; Hoffman & Su, 1997; Kaufman, 2009; Mazerolle, 1998; Mazerolle & Maahs, 2000; Paternoster & Mazerolle, 1994; Piquero & Sealock 2004, 2000). In some instances, college undergraduates have also been a popular group for which to test the utility of GST with (Mazerolle & Piquero, 1998, 1997; Sharp, Terling-Watt, Atkins, Gilliam & Sanders, 2001). It is important, though, to highlight some of the major findings in the GST literature, to illustrate what has been tested thus far and to demonstrate that previous empirical studies have all but ignored the victimization of adults as a source of major strain, even though Agnew (2001) explicitly names adult victimization has a viable source of strain.

There have been a number of studies which have found empirical support for the relationship between strain and a variety of delinquent outcomes (Agnew, 2002, Agnew et al., 2002; Agnew & White, 1992; Baron, 2004; Brezina, 1996; Hoffman & Cerbone, 1999; Hoffman & Miller, 1998; Hoffman & Su, 1997; Mazerolle, 1998; Mazerolle & Maahs, 2000; Mazerolle & Piquero, 1998, 1997; Paternoster & Mazerolle, 1994; Piquero & Sealock, 2004, 2000). The mediating effects of negative emotional consequences have received mixed support (see Brezina, 1996; Broidy 2001; Mazerolle, 1998; Piquero & Sealock, 2004), with the most frequently examined and supported negative emotion being anger (see Broidy, 2001; Gibson, Swatt & Jolicoeur, 2001; Jang & Johnson, 2003; Mazerolle & Piquero, 1997). Very little research has

been conducted examining other negative emotions, such as depression or anxiety, and the following section will discuss the studies that are the exception to this.

GST Empirical Research Neglects Victimization

Strain theory is ultimately a theory of offending, clearly not the focus of the current research. This current study is also not a test of strain theory. However, what are relevant to this research are some aspects of Agnew's general strain theory. Stressful events, ones caused by the absence of positively valued goals, positively valued stimuli, and the presence of negative and noxious stimuli, lead to negative health outcomes and affective states. Agnew argues that what an individual considers a stressful event is linked to if the individual consider the event as unfair (or unjust), severe (high in magnitude), and lacking supervision (low social control). There is very little empirical research examining this aspect of general strain theory, the link between stressful events and individual coping mechanisms that might often manifest themselves in negative health consequences and emotions.

There are two empirical studies, though, that are pertinent to the focus of this present study and will be discussed in the next two paragraphs. These two studies improve upon previous empirical research that examines victimization and negative health consequences because they use strain theory to guide their research and offer an explanation for why one might expect differential negative health outcomes. Hinduja (2007) studied the relationship between workplace violence and its effect on employee performance and well-being. Using a sample of 327 workers in the US, various types of covert and overt harassment were used as independent variables. The outcome measures included an array of aggressive negative emotions (e.g. feel anger, want to hurt those who hurt you) and passive negative emotions (e.g. feel exhausted or

weak, use alcohol/drugs). Findings from his research indicated that covert harassment (e.g. kept from getting a raise, denied training) significantly affects both passive and aggressive forms of negative emotional responses. This work is among the first to establish a link between a specific type of victimization – workplace harassment – and negative emotions. These findings support the notion that adult victimization leads to differential negative health outcomes and emotions, based on a variety of coping mechanisms available to the victim.

Using the GST framework, Swatt, Gibson, and Piquero (2007) sampled 940 Baltimore, Maryland police officers to examine the relationship between work-related strain and alcohol abuse. Strain was measured using a 9-item negative work-related events scale, while alcohol consumption was captured using two measures (drinker vs. nondrinker, and a "count" by those who reported being a drinker) (Swatt et al., 2007, p. 602). Negative affect was measured using two dimensions, anger and anxiety/depression, while two legitimate coping mechanisms were analyzed (social support and spiritual coping). Results showed support for a relationship between strain and alcohol consumption mediated by negative affect, as well as a positive and significant relationship between strain and anger and anxiety/depression, as predicted by Agnew's GST. Additionally, the relationship between social support and anger and anxiety/depression was negative and statistically significant, indicating those who had more social support were less likely to be very anxious, angry or depressed. The important contribution of this study is its support for the relationship, as specified by GST, between strain (police stress) and negative emotional responses, in an adult sample.

These two studies explore the link between strain and negative outcomes stemming from an individual's ability to cope after experiencing a stressful event. Findings from these studies suggest that individuals respond differently to stressful life events. The resulting negative health

consequences and emotions are often related to the individual's ability to cope with the stress. This current research contends that there are characteristics intrinsic to the victim-offender relationship that makes the violent victimization more or less stressful. Such characteristics may be related to the nature of the victim-offender relationship itself, such as physical proximity and level of intimacy. For example, a husband and wife relationship would involve close proximity and the possibility for violence to occur multiple times, as compared to a victimization committed by a stranger who would not have such access to the victim. Also, how stressful the victimization is would then lead to differing levels of negative health outcomes based on perpetrator type. The following section will outline the present research study and how some aspects of the GST framework will be applied.

GST in Present Study

What is clear from the extant literature testing Agnew's (1992, 2001) GST is that the majority of research has not been applied to adult samples, or considered adult victimization as a source of strain. This is despite Agnew advocating for such in his own writings. Even so, there seems to be an empirical case made for further testing the relationship between strain or stress brought about by victimization and negative health consequences and measures of wellbeing. Few studies have even attempted to find a relationship between stressful events and negative outcomes, so it remains an open question deserving further scrutiny.

Agnew (2001) proposed that adult victimization is likely to lead to criminal offending or delinquency when the victimization is seen as unjust, high in magnitude, associated with low social control, and creates pressure for criminal coping. The aspect of GST that is relevant in this present study is the notion that a stressful event, like victimization, does not create the same

level of strain for every victim. Negative coping, as manifested in negative health consequences, is related to how stressful the victim views the event. This differential level of strain experienced by the victim is a result of a variety of factors suggested by Agnew, such as how unjust the victimization is and the magnitude of the victimization.

So why would one expect there to be differences in health outcomes based on the victim-offender relationship? General strain theory, or at least an aspect of it, may potentially be the answer. While it seems practical to assume that there are differences in the stress/strain brought about by victimization depending on the victim-offender relationship, there has been no research located that specifically examines what these differences in victim-offender relationship are likely to be.

The type of victim-offender relationship might influence the severity or number of negative health outcomes experienced by the victim, through a variety of factors such as degree of trust, amount of contact, close proximity, or level of intimacy. One could say that a spouse-perpetrator is more intimate than a date-perpetrator, for example, but is a relative-perpetrator more violating of trust than an intimate partner? Also, does having a current or previous intimate relationship translate into more negative health outcomes for the victim? Does a stranger relationship violate perceptions of trust more so than being victimized by a boyfriend? The answers are unclear. However, general strain theory offers a potential theoretical explanation for why one might expect there to be differences in health outcomes depending on who perpetrates the crime, as each type of relationship most likely is associated with differing levels of "unjustness," "low social control," or "magnitude of severity."

CURRENT FOCUS

The purposes of the current study are twofold. First, this study will estimate the extent of violence against women by victim-offender relationship using the female portion of the National Violence Against Women Survey. Specifically, three crime types will be examined: 1) rape, 2) stalking, and 3) physical assault. This research will examine six different victim-offender relationships: 1) current spouse/ex-spouse, 2) current partner/ex-partner, 3) relatives, 4) dates, 5) acquaintances, and 6) strangers. No previous published research has examined these six types of victim-offender relationships across three types of violence in one study. Therefore, this study fills a current gap in knowledge as to providing a broader picture of violence against women, beyond just a single crime or perpetrator type. Also, the relevant empirical research reviewed in this dissertation has produced mixed results as to whether victim-offender relationships differentially affect negative health outcomes. For this reason, this research extends previous research through its examination of six perpetrator types and numerous health outcomes.

The second purpose of this current study is to examine the usefulness of employing the lens of strain theory to better understand the relationship between violence against women and health outcomes across different victim-offender relationships. Previous research on general strain theory has virtually ignored the theory's applicability to victimization research. This research extends the GST framework by examining criminal victimization as a source of strain. Specifically, this research examines the relationship between stressful events and negative outcomes, as inferred by GST. While two studies were published that examined stressful events in the form of police strain and workplace violence, no studies were located which examined adult criminal victimization and health outcomes. Therefore, this study extends the GST

framework and fills another gap in researchers' knowledge of the impact of victimization on women's health.

As already mentioned, previous empirical studies have reported mixed results when examining the relationship between perpetrator type and health outcomes. Some have reported that the victim-offender relationship does negatively influence health outcomes, while others have found no significant difference. Since the GST framework proposes which factors make an event more likely to produce negative coping and thus negative outcomes, it would be reasonable to hypothesize that certain aspects of the victim-offender relationship could result in to different negative health outcomes. Specifically, those victim-offender relationships that are seen as more unjust, higher in magnitude, and are associated with low social control could impact a victim's health more negatively. The following paragraphs further describe how each of these factors may influence negative emotions and negative health outcomes.

Individuals have an idea as to what is deserved, just, and fair. When there is an outcome that is perceived as unfair and undeserved, it creates a disjunction for individual (Agnew, 2001). This disjunction between what should happen and what actually does happen can create negative emotions, like anger and anxiety (Agnew, 1992). For example, if a woman is doing everything she can to prevent a sexual assault, such as walking home with friends or locking her doors, and yet she is still victimized, this can cause negative emotions. Or, as another example, people victimized by their relatives may be upset or angered as this is a direct violation of trust. The main point is that a victimization that is perceived as unfair or unjust can result in a victim experiencing negative emotions, which in turn could negatively affect their health.

Stressful events that are high in magnitude, or more severe in nature (e.g. involve injury or happen frequently), are also said to have a stronger negative impact on individuals. As the

severity of strain increases, it becomes more difficult for the victim to successfully cope (Agnew, 2001). Stressful events that happen frequently, over a considerable time period, or possibly may occur again might lead to more negative effects on health. For example, a wife who is physically assaulted by her husband on a weekly basis may perceive her victimization as high in magnitude (e.g. more severe, frequently occurring), as opposed to a victim who is physically assaulted only once, with almost no likelihood of it reoccurring. Therefore, if a victim perceives her victimization as a particularly stressful event, there is an increased likelihood that the victim will have difficulty successfully coping and experience negative emotions (e.g. anger or depression). The stress/strain produced by a severe violent victimization may then lead to more negative health outcomes.

Agnew (2001) argued that individuals low in social control, especially direct social control, may lack the necessary social support for successful coping. Specifically, low social control, low commitment, and low attachment all are associated with ineffective or criminal coping. While this concept may be more applicable to strain theorists looking at delinquency outcomes, how victims cope after victimization is very important. Those with high social control, as pointed out by Agnew (2001), typically have a working social support system, and the resources, both financial and emotional, to deal with stressful events. However, a lack of support and a decrease in investment in the laws and norms of society could manifest itself in negative emotions after victimization, like feeling helpless, or may even lead to drug or alcohol abuse. As it relates to the victim-offender relationship, a close relationship between victim and perpetrator may influence the availability of positive support. As an example, a victim's intimate relationship to a perpetrator (e.g. husband, partner) may keep the victim from establishing a positive support system to help them cope with the trauma of victimization.

Research Questions

To address the gaps in the existing violence against women research, the current project will use the National Violence Against Women Study, a large, national-level survey of 8,000 women, which contains multiple measures of violence against women, victim-offender relationships, and women's health outcomes. Measures included in this current research are grounded in previous empirical studies that have addressed the victim-offender relationship and health consequences of numerous types of violence against women using data from the NVAWS (see Slashinski, Coker, & Davis, 2003; Demaris & Kaukinen, 2005). This current project addresses the following research questions:

Research Question One: What is the prevalence of violence against women by victim-offender-relationship?

There have been many previous studies that have looked at different types of violent victimization and the victim-offender relationship, but none have looked at this number of victim-offender relationships over three types of crime. The NVAWS allows the current study to address the extent of violence against women using three types of violence and numerous meaningful categories of perpetrator types. The NVAWS is unique in that it allows for the study of numerous types of violence against women, as reported for each perpetrator type.

Research Question Two: What is the effect of the victim-offender relationship on a woman's psychological and physical health, and overall wellbeing?

Previous empirical research has been unclear as to whether the victim-offender relationship affects measures of wellbeing such as current health status, current depressive symptoms, and drug and alcohol abuse. The NVAWS asks respondents these questions about their current health, which will allow this study to analyze, within the different types of violence,

whether certain perpetrator types are more likely to have a negative effect on victim's wellbeing than other perpetrator types. It is hypothesized that there will be differences in psychological and physical health outcomes and overall wellbeing measures based on the victim-offender relationship.

GST Predictions about Victim-Offender Relationship

Given what Agnew's GST theory predicts about negative coping and emotional responses as a reaction to stressful or straining events, one can speculate about which victim-offender relationships will be more likely to lead to negative health consequences for the victim. That is, those victimizations committed by certain types of perpetrators: 1) that involve the victim perceiving they have been unfairly victimized, 2) are high in severity, and 3) where the victim lacks social control in the form of support, investment, and attachment will more likely lead to negative physical and psychological health consequences. It is thus hypothesized by this current study that marital, partner, relative, and stranger-perpetrated victimization will lead to more negative health consequences. Although these perpetrator types seem in stark contradiction to each other, for different reasons these victim-offender relationships at either end of the continuum may potentially lead to an increase in negative health consequences. The following paragraphs will discuss the rationale for this hypothesized relationship.

The first three types of victim-offender relationships – marital, partner, and relative – all involve a type of relationship where inherently the victim trusts the offender. This is either because of a current or previous romantic relationship, or because of a genetic, familial bond. In addition to this strong violation of trust, there is an increased likelihood of the victimization reoccurring as the victim either currently or formerly has or has had repeated contact with the

perpetrator. Also, perpetrators who the victim is either intimate with or related to may act to weaken social support surrounding the victim and degrade their investment in society and attachment to conventional societal norms, which speaks to the low social control aspect of strain theory. There is empirical support that exists that has found close, intimate relationships are more related to severity of the victimization (Koss et al., 1988) and increased sexual distress (Ullman & Siegel, 1993), Also, relative-perpetrator sexual assaults have been linked to more PTSD symptomology (Ullman et al., 2006).

Finally, the stranger perpetrator is also hypothesized to lead to the victim experiencing more negative psychological and physical health consequences as having someone violate an individual in an intimate, physical, or pervasive way strongly violates one's sense of safety. Also, being victimized by a stranger is inherently "unfair," as the victim did not do anything to provoke or inspire the victimization, as they did not have any knowledge of the perpetrator prior to the victimization. There is some research that has revealed findings to support this hypothesis. Multiple studies have found fear, anxiety, depression, and PTSD symptoms were greater in victims of stranger victimization than for other victim-offender relationships (Bownes, O'Gorman, & Sayers, 1991; Ellis et al., 1981; Ullman & Siegel, 1993). In addition, Koss et al. (1988) reported college women who were attacked by strangers experienced more violent attacks, which speaks to the severity of the incident. A study by Stermac et al. (1998) found that sexual assaults by intimates were similar in nature to those committed by strangers, and had greater violence and physical injury than acquaintance sexual assaults.

SUMMARY

This chapter has presented the groundwork for understanding why the victim-offender relationship may impact health outcomes after a violent victimization. The GST framework has been presented as a potential theoretical lens through which researchers may examine violent victimization and the negative health consequences of such violence in women. The next chapter will outline the methodology of this current research, and explain how the research questions developed in this chapter will be tested.

Chapter 3:

RESEARCH STRATEGY

As stated previously, the purpose of this dissertation is: 1) to estimate the extent of violence against women by victim-offender relationship, and 2) to employ an aspect of the GST framework to better understand the relationship between violence by different perpetrators and negative health outcomes. Previous empirical studies have not produced clear results when examining the relationship between perpetrator type and negative health outcomes, nor has it sought to explain why one would expect such differences in health outcomes based on the victim-offender relationship. The National Violence Against Women Study (NVAWS) allows for multiple types of violence against women to be examined, as well as served different victim-offender relationships. Therefore, unlike earlier research that has been mostly atheoretical (for exceptions see Campbell et al., 2009; Fletcher, 2009) or only examined one type of crime or a limited number of victim-offender relationships, this current study presents the opportunity to fill multiple gaps in knowledge that currently exist.

METHODS

This current study analyzed data from the National Violence Against Women Survey (NVAWS) conducted by Tjaden and Thoennes from November 1995 until May 1996[2]. The sample was generated via random-digit dialing (RDD) from households containing a telephone in the United States and District of Columbia. This process ultimately yielded 8,000 men and 8,000 women age 18 and older, with a response rate of 72.1 percent for women and 68.9 percent

[2] IRB Approval for this current research was not necessary, per University of Cincinnati IRB guidelines, as secondary data with no identifying information on the human subjects was used.

for men. Professional interviewers conducted the interviews, both in English and in Spanish. The average interview length in English was 25 minutes, and in Spanish was 32 minutes. Respondents were asked detailed questions about sexual assaults, physical assaults and stalking victimization, including questions about the victim-offender relationship and the nature of the victimization. Respondents were also asked about their sociodemographic characteristics, relationship history, and general physical and mental health. Multiple behaviorally specific questions were asked to screen each respondent to determine if they had experienced rape, stalking, and/or physical assault victimization. If a respondent indicated victimization had occurred according to survey criteria (discussed in detail later in this section), she was asked to answer questions in a perpetrator-based report. This report asked detailed questions about the perpetrator of each victimization, and then a series of questions about the incident(s) committed by each perpetrator.

Sample

One of the main advantages of the NVAWS is that it is a national-level study, drawing a representative sample of 8,000 men and 8,000 women. A second major advantage of this data set is that respondents are asked about each perpetrator identified as having committed the victimization, then asked a series of questions regarding the incident by that perpetrator. If the respondent, for example, was stalked by more than one perpetrator, then a report was filled out for each identified perpetrator. For the purposes of this study, only the female respondent data was examined. Similar to Slashinski et al. (2003), this current analysis only included women age 18 to 65 (n=6,790, 84.9% of total sample). Also, respondents who did not report their age,

Table 3.1 Sample Characteristics

Demographic Information	Number in Strata
Age	
18-25	943
26-35	1756
36-45	1868
46-55	1388
56-65	835
Current Marital Status	
Divorced/Separated	954
Widowed	221
Single	1175
Married	4440
Race	
White	5181
Non-White	1609
Educational Attainment at Interview	
< High School	613
High School Graduate	2299
Some College	2053
College Graduate	1825
Currently Employed	
Yes	4868
No	1922
Household Income at Interview	
< $20,000	1324
$20,000-$35,000	1151
$35,000-$50,000	1135
$50,000-$80,000	998
> $80,000	545
Health Insurance	
No Insurance	1065
Government	613
Private	5052
Don't Know/Refused	60

education, or marital status (n=51, 0.6% of total sample) were also excluded from the present analysis.

Sample demographic characteristics available from the NVAWS included: age, current marital status, ethnicity, current educational attainment, current employment status, current

household income, and type of health insurance coverage and are presented in Table 3.1. The sample had the following characteristics: over half the women were between the ages of 26 and 45 (53.4%), married (65.4%), white (76.3%), had at least a high school diploma (91.0%), and was currently employed (71.7%). A majority of respondents made less than $30,000 a year income (36.5%), and primarily has private health insurance (74.4%), as opposed to no insurance (15.7%) or government insurance (9.0%).

Measures of Violence

Rape

For this study, the victim-offender relationship will be examined within three types of violence against women that are available in the NVAWS: rape, stalking, and physical assault. Rape in the NVAWS was defined as "an event that occurred without the victim's consent, that involved the use or threat of force to penetrate the victim's vagina or anus by penis, tongue, fingers, or object, or the victim's mouth by penis" (Tjaden & Thoennes, 2000). This definition also includes both attempted and completed rapes. Screening questions in the NVAWS were adapted from the NWS (Kilpatrick et al, 1992) and included four behaviorally specific questions:

- *Has a man or boy ever made you have sex by using force or threatening to harm you or someone close to you? Just so there is no mistake, by sex we mean putting a penis your vagina.*
- *Has anyone, male or female, ever made you have oral sex by using force or threat of force? Just so there is no mistake, by oral sex we mean that a man or boy put his penis in your mouth or someone, male or female, penetrated your vagina or anus with their mouth.*
- *Has anyone, male or female, ever put fingers or objects in your vagina or anus against your will by using force or threats?*
- *Has anyone, male or female, ever attempted to make you have vaginal, oral, or anal sex against your will but intercourse or penetration did not occur?*

In this study, rape was operationalized to include vaginal or anal sex with penetration, penetration with objects, or oral sex. This operationalization of rape is similar to that used by the NCVS. The NVAWS definition of rape is also similar to most state legal definitions of rape, except that most states do not include attempts under the term rape. Respondents who were identified as rape victims were asked when the incident occurred, and could respond either with "in the past 12 months" or could answer how many years ago the victimization occurred. A total of 17.4 percent of the sample (n=1183) reported being a victim of rape.

Physical Assault

Physical assault was defined in the NVAWS as "behaviors that threaten, attempt, or actually inflict physical harm" (Tjaden & Thoennes, 2000). Physical assault screening questions were developed from Straus' (1979) Conflict Tactics Scale (CTS). The survey asked respondents about physical assault first as a child, but this study did not include childhood victimization in its estimation of the extent of physical assault. Specifically, the NVAWS included the following question to determine if physical assault had taken place:

- *[Physical assault as an adult]Not counting any incidents you have already mentioned, after you became an adult, did any other adult, male or female ever…*
    - *Throw something at you that could hurt?*
    - *Push, grab, or shove you?*
    - *Pull your hair?*
    - *Slap or hit you?*
    - *Kick or bite you?*
    - *Choke or attempt to drown you?*
    - *Hit you with some object?*
    - *Beat you up?*
    - *Threaten you with a gun?*
    - *Threaten you with a knife or other weapon?*
    - *Use a gun on you?*
    - *Use a knife or other weapon on you?*

In this current study, if a respondent answered "yes" to any of the above questions, and the victim was an adult at the time, a respondent was counted as a physical assault victim ($\alpha = 0.895$). Those respondents identified as physical assault victims were then asked when the physical assault occurred, and could respond either "in the past 12 months" or report how many years ago the incident had last taken place with each perpetrator. According to the NVAWS definition of physical assault as an adult, 31.5 percent of respondents (n=2143) reported experiencing a physical assault victimization.

Stalking

Stalking victimization in the NVAWS was defined as "a course of conduct directed at a specific person that involves repeated visual or physical proximity; nonconsensual communication; verbal, written or implied threats; or a combination thereof that would cause fear in a reasonable person (with *repeated* meaning on two or more occasions)" (Tjaden & Thoennes, 2000). To be classified as stalking, the pursuit behavior had to occur on more than one occasion. To screen for stalking, the following questions were asked:

- *Not including bill collectors, telephone solicitors, or other salespeople, has anyone, male or female ever…*
  - *Followed or spied on you?*
  - *Sent you unsolicited letters or written correspondence?*
  - *Made unsolicited phone calls to you?*
  - *Stood outside your home, school, or workplace?*
  - *Showed up at places you were even though he or she had no business being there?*
  - *Left unwanted items for you to find?*
  - *Tried to communicate in other ways against your will?*
  - *Vandalized your property or destroyed something you loved*?

Respondents who answered "yes" to any of the behaviorally explicit screening questions then were asked questions in a report for each perpetrator that had committed a stalking victimization. To be considered a stalking victim, respondents had to respondent yes to one of

the above stalking behaviors ($\alpha = 0.835$). Also, the pursuit behavior(s) had to occur on more than occasion. While many definitions of stalking include a certain fear threshold that must be met, one was not included in this analysis. Those respondents identified as stalking victims were asked when the most recent stalking behavior occurred by the identified perpetrator, either in the last 12 months or how many years ago. A total of 16.6 percent of the respondents (n=1127) were identified as experiencing a stalking victimization.

Independent Variable of Interest

Victim-Offender Relationship

The independent variable of interest is the victim-offender relationship, which has been conceptualized many different ways, often based upon what is available in a data set or into basic categories such as perpetrators who are known versus those who are strangers. Among those assailants who are "known," many studies have broken this category into subcategories such as intimate partners or friends/acquaintances. The NVAWS presents a unique opportunity for one to study violence against women, as an incident report is completed for each perpetrator of a rape, stalking, and physical assault victimization identified by the respondent.

In this current study, the victim-offender relationship is the main independent variable. Seven types of victim-offender relationships were examined, including: 1) current or ex-spouse, 2) current or ex-partner, 3) relative, 4) date, 5 acquaintance, 6) stranger, and 7) two or more perpetrators. These seven perpetrator types were chosen based on previous research that has identified various victim-offender relationships that may be associated with negative health outcomes. For example, work by Ullman and associates (1996; 2003) has focused on four types of perpetrators: 1) stranger, 2) acquaintance, 3) intimate (as in a husband or partner), and 4)

relative. Other studies, like that by Kilpatrick et al. (2007), examined a much broader array of perpetrator types including: 1) stranger, 2) (ex) husband, 3) (step) father, 4) boyfriend, 5) other relative, 6) friend, 7) classmate, and 8) other non-relative. The balance for this study was to find meaningful categories that were distinctly different from each other, but were well grounded in previous empirical work. It was also important to select categories of victim-offender relationships that would be different in terms of level of trust, intimacy, familiarity, as well as those that would offer a greater likelihood of the victimization reoccurring, to assess how appropriate Agnew's GST framework is in these three particular types of victimization research. In the multivariate analysis, the stranger-perpetrator category is treated as the reference category.

Control Variables

There are three categories of control variables used in this present study. The first set of control variables are demographic characteristics of the sample, which have been shown to be significantly related to victimization in previous empirical studies. The next set of control variables are those for frequency of victimization. It is possible that differential health outcomes may not be related to the victim-offender relationship, but rather to the "dosage" or frequency of victimization the victim experiences. Therefore, it is important to control for the frequency of the victimization. Finally, prior victimization variables are used as control variables. Previous research has shown that prior victimization is often related to future victimization. Thus, it is important to control for prior victimization in this current study.

Demographics

Previous research studies have commonly shown that particular demographic characteristics are often significant predictors of victimization (e.g. Fisher et al., 1998, Sampson,

1987). In deference to such findings, this current study used the available demographic information from the NVAWS as control variables. Race was a dichotomous variables (0 = Nonwhite, 1 = White), as was current employment status (0 = No, 1 = Yes). Age, current marital status, educational attainment at interview, household income at interview, and health insurance were all categorical variables that were transformed into dummy variables. Reference categories for these variables were chosen to match those chosen by Slashinski et al. (2003). Age and household income at time of interview both consisted of five categories (k = 5), and four dummy variables (k – 1) were created. Current marital status and educational attainment at time of interview consisted of four categories (k = 4), and three dummy variables (k – 1) were constructed. Health insurance at time of interview consisted of three categories (k = 3) and two dummy variables (k -1). See Table 3.2 for a summary of the demographic characteristic control variables.

Frequency of Victimization

An alternative argument could be made that the number of times a victimization occurs within a certain victim-offender relationship may be responsible for differing health outcomes. Therefore, there are three measures from the NVAWS that will be used in this current study to measure the number of times the victimization occurred by each perpetrator identified by the victim (Table 3.2). The first measure involves victims of rape, and refers to the number of times the victim was raped by each perpetrator. This measure is a simple count, and ranges from 1 (the victim was raped by the perpetrator one single time) to 80. The second measure is for physical assault, and refers to the number of times the victim was physically assaulted by each perpetrator. This measure is a simple count, and ranges from 1 (the victim was raped by the perpetrator one single time) to 76. Finally, respondents were asked in the screening section of

the report "how many different persons have ever stalked you?" Stalking is a crime which requires by definition multiple stalking incidents to occur, thus it would not be appropriate to ask how many times each perpetrator stalked the victim. Therefore, a count of how many perpetrators stalked the respondent during their lifetime would indicate the frequency of stalking victimization for the respondent, and the count ranged from 1 (single stalking perpetrator) to 10.

Prior Victimization

Victimization in childhood has been found to be a strong predictor of victimization as an adult, as childhood victimization has been found to elevate women's vulnerability to future victimization (Kessler and Magee; 1994; O'Keefe, 1998). As Table 3.2 shows, dichotomous variables (victim/nonvictim) were thus created to control for childhood victimization. Each of the prior victimization measures will be used in each respective type of crime model.

There were 12 screening questions asked about physical assault by a parent or guardian during childhood. These items were from the CTS (Straus, 1979). Responses to these 12 questions were summed (range 0-12), and those answering yes to 2 or more of those physical assault in childhood questions were considered victims of childhood physical abuse[3]. In the sample, 23.8 percent of respondents indicated they had been victims of childhood physical abuse.

The NVAWS also asked respondents who indicated they had been raped in their lifetime their age at the time of the first rape by that perpetrator. A dichotomous variable was created to measure if the respondent has been raped as a child. Those respondents indicating that they had been raped prior to the age of 18 were considered victims of childhood rape victimization. A total of 9.5 percent indicated they had been a victim of childhood rape victimization.

[3] Using a cutpoint of 2 or more for creating the childhood physical assault measure was chosen based on the measure created by Slashinski et al. (2003), who used such a cutpoint in their research.

Table 3.2: Control Variables in Present Study

Control Variables	Scale	Mean	S.D.	Range
Demographic Variables				
Age				
18-25	0 = No, 1 = Yes	.14	.35	0 – 1
26-35	0 = No, 1 = Yes	.26	.44	0 – 1
36-45	0 = No, 1 = Yes	.28	.45	0 – 1
46-55	0 = No, 1 = Yes	.20	.40	0 – 1
56-65 (REF)	0 = No, 1 = Yes	.12	.33	0 – 1
Current Marital Status				
Divorced/Separated	0 = No, 1 = Yes	.14	.35	0 – 1
Widowed	0 = No, 1 = Yes	.03	.18	0 – 1
Single	0 = No, 1 = Yes	.17	.38	0 – 1
Married (REF)	0 = No, 1 = Yes	.65	.48	0 – 1
Race				
White (REF)	0 = No, 1 = Yes	.76	.43	0 – 1
Nonwhite	0 = No, 1 = Yes	.24	.43	0 – 1
Educational Attainment at Interview				
< High School (REF)	0 = No, 1 = Yes	.09	.29	0 – 1
High School Graduate	0 = No, 1 = Yes	.34	.47	0 – 1
Some College	0 = No, 1 = Yes	.30	.46	0 – 1
College Graduate	0 = No, 1 = Yes	.27	.44	0 – 1
Currently Employed				
Yes (REF)	0 = No, 1 = Yes	.72	.45	0 – 1
No	0 = No, 1 = Yes	.28	.45	0 – 1
Household Income at Interview				
< $20,000	0 = No, 1 = Yes	.19	.40	0 – 1
$20,000-$35,000	0 = No, 1 = Yes	.17	.38	0 – 1
$35,000-$50,000	0 = No, 1 = Yes	.17	.37	0 – 1
$50,000-$80,000	0 = No, 1 = Yes	.15	.35	0 – 1
> $80,000 (REF)	0 = No, 1 = Yes	.08	.27	0 – 1
Health Insurance				
No Insurance	0 = No, 1 = Yes	.17	.37	0 – 1
Government	0 = No, 1 = Yes	.09	.29	0 – 1
Private (REF)	0 = No, 1 = Yes	.74	.44	0 – 1
Frequency of Victimization				
Number of Times Raped by Perpetrator	0 – 80	.61	3.29	0 – 80
Number of Times Physically Assaulted by Perpetrator	0 - 76	1.35	5.41	0 – 76
Number of Times Stalked in Lifetime	0 – 10	1.23	.63	0 – 10
Prior Victimization				
Raped Prior to Age 18	0 = No, 1 = Yes	.09	.29	0 – 1
Physically Assaulted Prior to Age 18	0 = No, 1 = Yes	.24	.43	0 – 1
Stalked Prior to Age 18	0 = No, 1 = Yes	.02	.14	0 – 1
Recency of Victimization				
Raped in Last 5 Years	0 = No, 1 = Yes	.03	.17	0 – 1
Physically Assaulted in Last 5 Years	0 = No, 1 = Yes	.09	.29	0 – 1
Stalked in Last 5 Years	0 = No, 1 = Yes	.08	.27	0 – 1

Similarly, the NVAWS also asked respondents who had reported being a victim of stalking sometime in their lifetime their age at the time of the first stalking incident. A dummy variable was created to measure if the respondent has been stalked as a child, that is, prior to age 18. There were 134 respondents, or 2.0 percent of the sample, who had met the definition of being stalked as a child before age 18.

Recency of Victimization

Another possible explanation for why there might be differences in the current negative health outcomes is that the violent victimization occurred recently (Slashkinski et al., 2003). In the NVAWS, respondents were asked in each type of crime section when the most recent time that type of crime occurred with the identified perpetrator. Respondents could answer either sometime in the last 12 months, or provide the exact number of years ago the most recent time occurred. As presented in Table 3.2, dichotomous variables (yes/no) that reflect whether the perpetrator committed the violence in the last five years versus more than five years ago were constructed for each type of crime.

Outcome Health Measures/Dependent Variables

Current Health

Several indicators of current health were measured in the NVAWS. There are six health outcome measures in this present study, which reflect the respondent's current psychological and physical health, as well as their use of drugs and alcohol (either legal or illegal). The current health outcome measures are based on questions asked of all respondents. As shown in Table 3.3, six current health measures were employed in this present study.

The first health indicator used is a measure of current physical health. The survey question in the NVAWS asked respondents: "in general, would you say your health is…?" This variable was then recoded into a dichotomous variable measuring current health status as fair or poor, compared to excellent, very good, or good health. Current poor health, as indicated by a fair or poor response by respondents, was indicated by 11.6 percent of respondents.

The second health indicator is current depression. The 8-item Depression Inventory used in the NVAWS is based on questions from the Short Form (SF) -36 Health Survey. These eight questions asked respondents about depressive symptoms they experienced in the past week, and were taken from the 13-items which make up the short form of the Beck Depression Inventory (BDI) (Beck & Beck, 1972). Scores ranged from 8 to 32 for the 8-item scale, and a cutpoint of ≥ 20 was used to measure significant depressive symptoms. This cut point is a bit more conservative than the cutpoint of > 16 as suggested by Beck and Beck (1972), although the same as is used in the research by Slashinski et al. (2003). According to this definition of depressive symptoms, 13.4 percent of the sample indicated they met this criterion.

Table 3.3: Health Outcome Measures in Present Study

Health Outcome Measure	Scale	Mean	SD	(n)	Percent
Current Health					
Current Poor Health	0 = No, 1 = Yes	.12	.32	785	11.6
Current Depression	0 = No, 1 = Yes	.13	.34	889	13.4
Current Substance Use					
Anti-Depressant Use	0 = No, 1 = Yes	.05	.23	367	5.4
Pain Medication or Tranquilizer Use	0 = No, 1 = Yes	.14	.35	980	14.4
Recreational or Illegal Drug Use	0 = No, 1 = Yes	.02	.14	140	2.1
Alcohol Use in Past 12 months	0 = No, 1 = Yes	.06	.25	437	6.4

The third health indicator is substance use. Multiple questions in the NVAWS asked respondents about their current drug use. Four measures of substance use are used in the current study. The first substance use measure is if they respondents currently used an anti-depressant. A total of 5.4 percent of respondents indicated current anti-depressant use. The second substance use measure was whether the respondent currently used pain medication or tranquilizers. There was 14.4 percent of the sample who currently used pain medication or tranquilizers. The third measure of substance use was whether the respondent currently used any recreational or illegal drugs, and 2.1 percent responded yes. Finally, respondents were asked about the amount of alcoholic drinks consumed in the last year. This measure of alcohol use in the NVAWS was recoded into a dichotomy, with respondents either consuming alcohol moderately or heavily (3 or more days a week alcohol is consumed) versus light alcohol use or never consuming alcohol at all. A total of 6.4 percent of respondents consumed alcohol at least 3 days a week.

STATISTICAL TECHNIQUES

NVAWS data was downloaded from the Interuniversity Consortium for Political and Social Research (ICPSR), which has a vast collection of data available for download. All analyses were conducted using Statistical Package for the Social Sciences (SPSS) version15.0 (Norusis, 2007). Consistent with the research by Slashinski et al. (2003), the data from the NVAWS were not weighted to maintain uniformity with other published estimates from researching using the NVAWS.

Bivariate Analyses

Bivariate analyses were conducted between the independent variables, as well as between the independent and dependent variables, and the results will be presented in the next chapter.

The independent variables for this study are both dichotomous and continuous. A special case of the Pearsonian correlation, point-biserial correlation (r_{pb}), is appropriate to use in this instance to measure the association (Chen & Popovich, 2002). The dependent variables are in the current study all dichotomous. Therefore, associations between dichotomous independent and dependent variables will be reported using another special case of Pearson's r, called phi (φ). Phi is appropriate to measure the relationship between two dichotomous variables (Chen & Popovich, 2002).

Multivariate Analyses

Each dependent variable for this current study, including those measuring current health status and health consequence outcomes is a dichotomy. Therefore, it is appropriate to use binomial logistic regression to explore the relationship between victim-offender relationship and each health outcome measure within types of violence. Logistic regression allows any type (e.g. continuous, discrete, dichotomous) of independent variables and the dependent variables are dichotomous (Tabachnick & Fidell, 2007). Binomial logistic regression, unlike ordinarily linear regression, does not assume the relationship between the independent variables and the dependent variable is linear.

In logistic regression, the impact of the independent variables is explained in terms of odds ratios or Exp(B). Thus logistic regression estimates the odds of an outcome occurring, and this is done through the application of maximum likelihood estimation after transforming the dependent variable into a logit variable the natural log of the odds of the dependent variable occurring or not (Pampel, 2000). The B, or the natural log of the odds radio (log-odds), is typically not reported because of the difficulty in interpreting the statistic. Therefore, after

estimating the logistical regression model, the odds ratio, or Exp(B), is typically reported, along with model fit statistics (e.g. -2 log likelihood, model chi-square), and standard errors.

The -2 log likelihood, or -2LL, has approximately a chi-square distribution, and is used to assess the significance of logistic regression, specifically reflecting the significance of the unexplained variance in the dependent variable (Menard, 2002). In general, as the model becomes better fit, the -2LL will decline in magnitude. The model chi-square is also a measure of model fit with a chi-square distribution, reflecting the amount of relationship between the variables that remains unexplained by a model (Menard, 2002). With the model chi-square, the larger the value the poorer the model fits the data. Psuedo-R^2 measures (e.g. Cox and Snell's R^2, Nagelkerke's R^2) are also often reported for logistic regression, although not to reflect goodness-of-fit, but rather to measure the strength of association.

If Exp(B) = 1, then the independent variable is said to have no effect on the health outcome measure. However, if Exp(B) < 1, then the independent variable is said to decrease the log-odds of the health outcome occurring. Results for this study will be discussed in terms of adjusted odds ratios (ΔOR). For this current study, due to the large number of significance tests being conducted simultaneously, the Bonferroni correction will be used in order to avoid committing type I errors (Miller, 1991). The Bonferroni correction essentially avoids spurious positives through lowering the alpha value, which in current study is the alpha level ($\alpha = 0.05$) divided by the number of significance tests ($k = 6$). Therefore, coefficients with p-values less than 0.0083 will be considered statistically significant, which means that one can reject the null hypothesis of no relationship between the victim-offender relationship and health outcome.

SUMMARY

Chapter 3 has presented the research strategy to be utilized in this current research. The methodology of the study has been described in detail, as well as the sample and characteristics. Independent and dependent variables were carefully described, and descriptive statistics were provided. Chapter 4 will provide the results of the statistical analyses, while Chapter 5 will discuss the study's results, limitations of this current study, and implications for future violence against women research.

CHAPTER 4

RESULTS

The objective of this study is to examine the relationship between the victim-offender relationship and negative health outcomes. The first section examines the percentage of women experiencing rape, physical assault, and stalking by the victim's relationship to the offender. Additionally, specific types of behaviors and tactics associated with each type of crime are presented by victim-offender relationship. These results help to answer the first research question, "what is the prevalence of violence against women by victim-offender relationship?" The second section will examine the bivariate relationship between victimization and health outcomes. This second section is important, as it will demonstrate that there is a significant relationship between victimization and health outcomes which demonstrates a further examination of the victim-offender relationship's effect on health outcomes is warranted. In addition, the bivariate relationship between the independent/control variables and negative health outcomes will be explored to better understand their association prior to the multivariate analyses conducted. Third, the multivariate logistic regression models are presented; each estimates the effects of the independent variables on each of the six dependent variables in the study, for each type of crime being examined.

EXTENT OF VICTIMIZATION

Lifetime Prevalence of Victimization across Victim-Offender Relationships

Rape

A total of 1,183 women (17.4%) experienced rape. Table 4.1 reports the lifetime prevalence of rape by type across the seven victim-offender relationships examined in the current study. The most common perpetrators of rape were an acquaintance (26.0%), a relative (23.6%) or a current/ex-spouse (21.2%). Across all victim-offender relationships, the most common type of rape is vaginal penetration, and the least common type was anal penetration. For example, current or ex-spouse perpetrators most commonly committed vaginal rape (86.9%), and were least likely to use anal penetration (30.2%).

Stalking

Table 4.2 presents the lifetime prevalence of stalking behaviors across the seven victim-offender relationships examined in this current study. A total of 1,127 women (16.6%) were victims of stalking. Perpetrators of stalking were mostly like to be current/ex-spouses (31.9%), strangers (25.6%), or acquaintances (25.4%). The most frequently identified stalking behaviors included: 1) made unsolicited phone calls (68.8%), 2) followed you (67.2%), 3) stood outside your home, school or workplace (57.9%), and 4) spied on you (49.9%).

Many different legal definitions include a fear threshold that must be attained before a pattern of stalking-related behaviors can officially be considered stalking. Included in Table 4.2 is the reported fear level of the respondent. Across each victim-offender relationship, over two-thirds of respondents reported being somewhat afraid or very afraid, as opposed to feeling no fear associated with the stalking experience. For example, 58.5 percent of victims reported being very afraid, 28.7 percent reported being somewhat afraid, and only 11.1 percent reported being not afraid.

Physical Assault

A total of 2,143 women (31.6%) were victims of physical assault. Table 4.3 illustrates the lifetime prevalence of physical assault tactics across the seven victim-offender relationships examined herein. Physical assault victims were most likely to be assaulted by a current/ex-spouse (55.3%), two or more perpetrators (16.5%), or aa current/ex-partner (14.1%). The most common types of assault behaviors exhibited by perpetrators included: 1) pushed, grabbed or shoved you (90.8%), 2) slapped or hit you (82.5%), and 3) pulled your hair (46.9%). The least common types of assaults were those where the perpetrator used a gun (9.3%) or some other type of weapon (11.6%).

Summary

The most common type of violence experienced was physical assault (31.6%), followed by rape (17.4%) and stalking (16.6%), among the NVAWS sample. This study specifically sought to examine the prevalence of violence by victim-offender relationship. For rape, the most common perpetrators were acquaintances (26.0%), relatives (23.7%) and current or ex-spouses (21.2%). Among stalking victims, current or ex-spouses were the most common perpetrator type (31.9%), followed by strangers (25.6%) and acquaintance (25.4%). For stalking, relatives were rarely the perpetrator (3.4%). Finally, for victims of physical assault, by far the most common perpetrator was a current or ex-spouse (55.3%), while relatives were the least common perpetrator (7.7%).

Table 4.1: Lifetime Prevalence of Rape by Victim-Offender Relationship (N = 1183) [a]

	Current or Ex- Spouse		Current or Ex-Partner		Relative		Date		Acquaintance		Stranger		2+ Perpetrators	
Type of Penetration	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Vaginal	218	86.9%	43	84.3%	215	76.8%	195	89.4%	248	80.5%	176	88.0%	133	84.7%
Oral	96	38.2%	23	45.1%	118	42.1%	66	30.3%	92	29.9%	69	34.5%	82	52.2%
Anal	76	30.2%	18	25.3%	39	13.9%	24	11.0%	29	9.4%	31	15.5%	47	39.9%
With Objects (vaginal, oral or anal)	76	30.2%	22	43.1%	152	54.3%	45	20.6%	108	35.1%	63	31.5%	72	45.9%
Total Sample Percentage	**251**	**21.2%**	**51**	**4.3%**	**280**	**23.7%**	**218**	**18.4%**	**308**	**26.0%**	**200**	**16.9%**	**157**	**13.3%**

[a]Totals do not add to 1183 because some perpetrators performed more than one type of penetration.

Table 4.2: Lifetime Prevalence of Stalking Behaviors by Victim-Offender Relationship (N = 1127)[a]

	Current or Ex- Spouse		Current or Ex-Partner		Relative[b]		Date		Acquaintance		Stranger		2+ Perpetrators	
	n	%	n	%	n	%	n	%	n	%	n	%		%
Stalking Behaviors														
Followed R	253	70.5%	81	70.4%	22	57.9%	142	75.5%	153	53.3%	106	36.8%	123	75.9%
Spied on R	192	53.5%	64	55.7%	21	55.3%	101	53.7%	119	41.6%	66	22.9%	92	56.8%
Stood outside R's home, school, or workplace	216	60.2%	80	69.6%	23	60.5%	114	60.6%	135	47.2%	84	29.2%	108	66.7%
Sent R unsolicited letters or other written correspondence	101	28.1%	43	37.4%	11	28.9%	62	33.0%	76	26.6%	34	11.8%	56	34.6%
Left unwanted items for R to find	80	22.3%	71	61.7%	8	21.1%	39	20.7%	56	19.6%	14	4.9%	40	24.7%
Made unsolicited phone calls to R	203	56.6%	0	0.0%	21	55.3%	121	64.4%	174	60.8%	185	64.2%	105	64.8%
Showed up at places R was even though he/she had no business being there	3	0.8%	49	42.6%	0	0.0%	2	1.1%	0	0.0%	1	0.3%	0	0.00%
Vandalized R's property	108	30.1%	16	13.9%	13	34.2%	42	22.3%	52	18.2%	23	8.0%	49	30.2%
Threatened R's pets	25	7.0%	5	4.3%	1	2.6%	9	4.8%	14	4.9%	4	1.4%	16	9.9%
Killed R's pets	12	3.3%	8	7.0%	1	2.6%	4	2.1%	5	1.7%	2	0.7%	6	3.7%
Threatened R or someone close to R	20	5.6%	0	0.0%	1	2.6%	15	8.0%	10	3.5%	6	2.1%	7	4.3%
Verbally abused R	3	0.8%	8	7.0%	0	0.0%	1	0.5%	1	0.3%	0	0.0%	1	0.6%
Other type of stalking	29	8.1%	71	61.7%	2	5.3%	11	5.9%	19	6.6%	1	3.8%	6	3.7%
Level of Fear														
Very Afraid	210	58.5%	59	51.3%	17	44.7%	76	40.4%	113	39.5%	120	41.7%	97	59.9%
Somewhat Afraid	103	28.7%	35	30.4%	12	31.6%	75	39.9%	117	40.9%	109	37.8%	49	30.2%
Not Afraid	40	11.1%	17	14.8%	9	23.7%	33	17.6%	52	18.2%	54	18.8%	15	9.3%
Total Sample Percentage	**359**	**31.9%**	**115**	**10.2%**	**38**	**3.4%**	**188**	**16.7%**	**286**	**25.4%**	**288**	**25.6%**	**162**	**14.4%**

[a]Totals do not add to 1127 because perpetrators performed more than one type of stalking behavior.

[b]Relative perepetrators are presented in this table, but for the multivariate analyses this category was removed because of the low number of cases.

Table 4.3: Lifetime Prevalence of Physical Assault Tactics by Victim-Offender Relationship (N = 2143)[a]

	Current or Ex- Spouse		Current or Ex-Partner		Relative		Date		Acquaintance		Stranger		2+ Perpetrators	
Specific Conflict Tactic	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Threw objects at respondent R	495	41.7%	126	41.7%	55	33.5%	93	32.2%	85	31.3%	59	23.9%	170	48.2%
Pushed, grabbed, or shoved R	981	82.7%	259	85.8%	115	70.1%	223	77.2%	210	77.2%	158	64.0%	317	89.8%
Pulled R's hair	529	44.6%	141	46.7%	62	37.8%	108	37.4%	97	35.7%	69	27.9%	190	53.8%
Slapped or hit R	938	79.1%	231	76.5%	114	69.5%	214	74.0%	159	58.5%	111	44.9%	279	79.0%
Kicked or bit R	320	27.0%	90	29.8%	35	21.3%	58	20.1%	69	25.4%	48	19.4%	134	38.0%
Choked or tried to drown R	360	30.4%	89	29.5%	34	20.7%	59	20.4%	34	12.5%	31	12.6%	105	29.7%
Hit R with object	367	30.9%	94	31.1%	45	27.4%	61	21.1%	51	18.8%	41	16.6%	123	34.8%
Beat up R	530	44.7%	140	46.4%	40	24.4%	94	32.5%	60	22.1%	56	22.7%	157	44.5%
Threatened R with gun	237	20.0%	59	19.5%	22	13.4%	48	16.6%	33	12.1%	80	32.4%	83	23.5%
Threatened R with other weapon	197	16.6%	57	18.9%	24	14.6%	45	15.6%	44	16.2%	65	26.3%	78	22.1%
Used a gun	106	8.9%	25	8.3%	9	5.5%	13	4.5%	13	4.8%	33	14.4%	31	8.8%
Used other weapon	117	9.9%	37	12.3%	13	7.9%	27	9.3%	19	7.0%	36	14.6%	50	14.2%
Total Sample Percentage	**1186**	**55.3%**	**302**	**14.1%**	**164**	**7.7%**	**289**	**13.5%**	**272**	**12.7%**	**247**	**11.5%**	**353**	**16.5%**

[a]Totals do not add to 2143 because some perpetrators used multiple assault tactics.

BIVARIATE RESULTS

Bivariate results will be presented in this section. Correlation is used to estimate the association between two variables, providing an estimate of both size and direction of the relationship. The Pearson product-moment correlation coefficient, *r*, is the most commonly cited measure of association, which ranges from -1.00 to +1.00 (Tabachnick & Fidell, 2007). Two types of correlations were estimated, for instances where at least one of the variables was discrete. This is necessary because when one computes a new dichotomous variable from an existing ordinal or continuous variable, the underlying continuity is changed. First, point biserial correlation (r_{pb}) will be used to determine the strength and direction between two variables, one of which is dichotomous and one of which is continuous. Phi coefficients (φ) will also be calculated as a measure of association when one variable of interest is nominal and the other is dichotomous.

The interpretation of the direction of correlation coefficients is relatively straightforward, but can be more difficult in regards to strength of the association because there is no commonly agreed upon determination of what constitutes a strong or weak relationship (Fox, Levin, & Shively, 2002). Correlation coefficients can range from -1.00 (perfect negative correlation) to +1.00 (perfect positive correlation). Correlations that are equal to zero represent no relationship between two variables. Although there is no general consensus in the social sciences for what constitutes a "strong" or "weak" association, Fox et al. (2002) have offered a general guide for determining strength of relationship where a 0.60 represents a strong correlation, a 0.30 represents a moderate correlation, and a 0.10 represents a weak correlation. If there is a negative (-) in front of the correlation coefficient, the relationship is negative. And positive correlations (+) represent a positive relationship. As an example, a -0.34 correlation coefficient demonstrates

Table 4.4: Correlation Matrix[a] for Rape

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Spouse	1.00											
(2) Partner	-.008	1.00										
(3) Relative	-.148***	-.069*	1.00									
(4) Date	-.161***	-.079**	-.224***	1.00								
(5) Acquaintance	-.200***	-.116***	-.208***	-.212***	1.00							
(6) 2+ Perps	.270***	.108***	.250***	.069*	.158***	1.00						
(7) Frequency	.160***	.056	.170***	-.059*	-.045	.195***	1.00					
(8) Prior	-.355***	-.135***	.336***	-.079**	.117***	-.146***	.029	1.00				
(9) Recency	.050	.099***	-.167***	.049	.014	-.045	.015	-.160***	1.00			
(10) Age	.183***	-.083**	.022	-.081**	-.096***	.024	.047	-.210***	-.330***	1.00		
(11) Divorced	.212***	.014	-.018	-.013	-.057*	.103***	.068*	-.141***	.034	.185***	1.00	
(12) Widowed	-.008	-.013	-.006	-.021	-.027	-.008	-.026	-.030	-.027	.166***	-.101***	1.00
(13) Single	-.167***	.014	-.047	.042	.100***	-.074*	-.071*	.075**	.264***	-.419***	-.277***	-.086**
(14) Nonwhite	-.074*	.007	.060*	-.017	.050	.013	-.032	.054	.121***	-.112***	.047	.073*
(15) HS Grad	.046	.033	.015	-.023	-.029	.017	.004	.018	-.005	.037	-.008	.023
(16) Some College	-.008	-.008	.014	-.012	.048	.004	-.012	.044	.026	-.093***	-.011	-.054
(17) College Grad	-.066*	-.017	-.086**	.094***	.020	-.019	.013	-.094***	-.073*	.078**	-.012	-.026
(18) Unemployed	.060*	.030	.036	-.069*	-.072*	.026	.009	.031	-.023	.151***	-.048	.025
(19) <$20K	.054	.024	.040	-.033	-.028	.061*	-.015	-.016	.163***	-.061*	.218***	.072*
(20) $20-35K	.006	-.020	.003	.042	.010	-.006	.051	.018	-.062*	-.030	.007	-.012
(21) $35-50K	-.016	.017	-.003	.022	.004	-.012	.043	.058*	-.023	-.012	-.050	.000
(22) $50-80K	-.020	.031	.024	.023	.034	.024	.002	-.026	-.057*	.050	-.158***	-.073*
(23) No Insurance	.044	.008	.013	-.059	-.005	.076**	.028	-.037	.087**	-.051	.110***	-.003
(24) Gov't Ins.	.058*	.048	.041	.045	-.051	.060*	.020	-.024	.087**	-.055	.092**	.084**

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

[a] All bivariate correlations involve at least one discrete variable, therefore Phi coefficients(φ) and point biserial coefficients (r_{pb}) are reported.

Table 4.4: Correlation Matrix[a] for Rape (cont.)

Variable	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(1) Spouse												
(2) Partner												
(3) Relative												
(4) Date												
(5) Acquaintance												
(6) 2+ Perps												
(7) Frequency												
(8) Prior												
(9) Recency												
(10) Age												
(11) Divorced												
(12) Widowed												
(13) Single	1.00											
(14) Nonwhite	.151***	1.00										
(15) HS Grad	-.032	-.025	1.00									
(16) Some College	.048	-.025	-.504***	1.00								
(17) College Grad	-.049	-.014	-.358***	-.418***	1.00							
(18) Unemployed	-.073*	.000	.092**	-.082**	-.147***	1.00						
(19) <$20K	.110***	.152***	.057	-.023	-.186***	.164***	1.00					
(20) $20-35K	-.020	-.016	.063*	.052	-.075**	-.040	-.295***	1.00				
(21) $35-50K	-.061*	-.065*	-.047	.038	.069*	-.079**	-.268***	-.220***	1.00			
(22) $50-80K	-.072*	-.086**	-.031	-.028	.140***	-.090**	-.247***	-.203***	-.184***	1.00		
(23) No Insurance	.058*	.054	-.013	.074	-.113***	.083**	.220***	-.007	-.083**	-.159***	1.00	
(24) Gov't Ins.	.088**	.086**	.024	-.057	-.106***	.247***	.278***	-.073*	-.139***	-.125***	-.188***	1.00

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

[a] All bivariate correlations involve at least one discrete variable, therefore Phi coefficients(φ) and point biserial coefficients (r_{pb}) are reported.

Table 4.5 Correlation Matrix[a] for Stalking

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Spouse	1.00											
(2) Partner	-.091**	1.00										
(3) Date	-.216***	-.099***	1.00									
(4) Acquaintance	-.295***	-.161***	-.207***	1.00								
(5) 2+ Perps	.215***	.152***	.044	.199***	1.00							
(6) Frequency	.118***	.107***	.142***	.010	.227***	1.00						
(7) Prior	-.018	-.026	.123***	-.005	.057	.039	1.00					
(8) Recency	-.144***	-.031	.014	.127***	.036	-.023	-.057	1.00				
(9) Age	.144***	-.108***	-.171***	-.056	.008	-.046	-.240***	-.352***	1.00			
(10) Divorced	.300***	.010	-.011	-.084**	.110***	.105***	-.148***	.032	.182***	1.00		
(11) Widowed	.027	-.022	-.004	-.046	.044	.052	-.003	-.039	.076*	-.080**	1.00	
(12) Single	-.216***	.115***	.140***	.057	.001	.030	.166***	.290***	-.453***	-.297***	-.065*	1.00
(13) Nonwhite	-.011	.048	.003	.028	.056	.055	.006	.123***	-.099***	.030	.088**	.145***
(14) HS Grad	.112***	.021	-.075*	-.100***	.008	.010	.031	.022	-.012	.030	.022	-.059*
(15) Some College	.020	.022	.013	.043	.008	.013	.011	.090**	-.076*	.014	-.022	.037
(16) College Grad	-.149***	-.093**	.062*	.078**	-.019	-.019	-.068*	-.120***	.099***	-.089**	-.026	-.005
(17) Unemployed	.012	.010	-.060*	-.034	-.002	-.044	-.044	-.052	.158***	-.048	-.028	-.095**
(18) <$20K	.104***	.084**	-.044	-.049	.057	.050	-.051	.152***	-.109***	.221***	.020	.120***
(19) $20-35K	.029	.005	.060*	.022	.026	.067*	.018	.038	-.053	.058	.052	-.003
(20) $35-50K	-.009	-.029	.024	-.045	-.019	-.014	.007	-.014	.044	-.024	.014	-.074*
(21) $50-80K	-.067*	-.012	-.028	.022	-.014	-.036	.009	-.101***	-.007	-.163***	-.058	-.024
(22) No Insurance	.061*	.023	-.030	.023	.040	.044	-.011	.117***	-.043	.125***	-.011	.027
(23) Gov't Ins.	.050	.087	.001	-.064*	.041	.032	.040	.035	-.083**	.054	.086**	.108***

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

[a] All bivariate correlations involve at least one discrete variable, therefore Phi coefficients(φ) and point biserial coefficients (r_{pb}) are reported.

Table 4.5: Correlation Matrix[a] for Stalking (cont.)

Variable	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) Spouse											
(2) Partner											
(3) Date											
(4) Acquaintance											
(5) 2+ Perps											
(6) Frequency											
(7) Prior											
(8) Recency											
(9) Age											
(10) Divorced											
(11) Widowed											
(12) Single											
(13) Nonwhite	1.00										
(14) HS Grad	-.041	1.00									
(15) Some College	.036	-.466***	1.00								
(16) College Grad	-.067*	-.422***	-.472***	1.00							
(17) Unemployed	.004	.088**	-.032	-.157***	1.00						
(18) <$20K	.117***	.128***	.002	-.231***	.156***	1.00					
(19) $20-35K	-.012	.012	.088**	-.104***	-.096***	-.259***	1.00				
(20) $35-50K	.001	-.025	.030	.053	-.046	-.263***	-.205***	1.00			
(21) $50-80K	-.063*	-.029	-.078**	.165***	-.115***	-.253***	-.197***	-.199***	1.00		
(22) No Insurance	.056	.066*	.042	-.151***	.115***	.241***	.052	-.056	-.163***	1.00	
(23) Gov't Ins.	.135***	.050	-.031	-.131***	.229***	.288***	-.067*	-.092**	-.108***	-.172***	1.00

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

[a] All bivariate correlations involve at least one discrete variable, therefore Phi coefficients(φ) and point biserial coefficients (r_{pb}) are reported.

Table 4.6: Correlation Matrix[a] for Physical Assault

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Spouse	1.00											
(2) Partner	-.251***	1.00										
(3) Relative	-.144***	-.021	1.00									
(4) Date	-.335***	-.105***	-.062**	1.00								
(5) Acquaintance	-.320***	-.122***	-.025	-.101***	1.00							
(6) 2+ Perps	.110***	.221***	.255***	.082***	.141***	1.00						
(7) Frequency	.183***	.045*	.013	-.047*	-.062**	.153***	1.00					
(8) Prior	.031	.069***	.112***	-.026	.027	.160***	.067**	1.00				
(9) Recency	-.121***	.018	.012	.027	.073***	-.082***	.007	-.021	1.00			
(10) Age	.330***	-.170***	-.030	-.184***	-.107***	.015	.038	-.006	-.420***	1.00		
(11) Divorced	.249***	-.017	-.060**	-.065**	-.078***	.049*	.063**	.012	.032	.127***	1.00	
(12) Widowed	.065**	-.014	.013	-.044*	-.041	.021	-.018	-.018	-.073	.170***	-.103***	1.00
(13) Single	.392***	.189***	.088***	.169***	.103***	-.004	-.062**	.008	.276***	-.427***	-.277***	-.080***
(14) Nonwhite	-.058**	.014	.007	-.006	.052*	-.043*	-.038	.032	.072***	-.101***	-.008	.055*
(15) HS Grad	.082***	-.009	.004	-.083***	-.033	.002	.030	-.041	.023	.014	.007	.037
(16) Some College	-.016	.017	-.022	.039	.034	.023	-.012	.011	.006	-.093***	.018	-.042
(17) College Grad	-.100***	-.029	.002	.071***	.009	-.030	-.040	.037	-.043*	.067**	.048*	-.028
(18) Unemployed	.043*	-.025	.065**	-.073***	.006	.034	.026	.041	-.046*	.160***	-.063**	.038
(19) <$20K	.028	.070***	.060**	-.006	-.005	.079***	.075***	-.009	.118***	-.065**	.198***	.077***
(20) $20-35K	.030	.015	.031	-.022	-.028	.010	.014	,923	.035	-.041	.063**	.004
(21) $35-50K	-.013	-.007	-.055*	-.003	.011	-.019	-.020	-.008	-.058**	-.002	-.071***	-.033
(22) $50-80K	-.005	-.029	.013	.005	.019	.013	-.023	.032	-.065**	.016	-.146***	-.069***
(23) No Insurance	.008	.029	.045*	-.034	.009	.029	.017	.035	.073***	-.068**	.037	-.003
(24) Gov't Ins.	-.039	.083***	-.005	.016	.034	.050*	.027	-.009	.081***	-.056*	.082***	.072***

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

[a] All bivariate correlations involve at least one discrete variable, therefore Phi coefficients(φ) and point biserial coefficients (r_{pb}) are reported.

Table 4.6: Correlation Matrix[a] for Physical Assault (cont.)

Variable	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(1) Spouse												
(2) Partner												
(3) Relative												
(4) Date												
(5) Acquaintance												
(6) 2+ Perps												
(7) Frequency												
(8) Prior												
(9) Recency												
(10) Age												
(11) Divorced												
(12) Widowed												
(13) Single	1.00											
(14) Nonwhite	.154***	1.00										
(15) HS Grad	-.032	-.020	1.00									
(16) Some College	.039	.000	-.510***	1.00								
(17) College Grad	-.016	-.076***	-.387***	-.392***	1.00							
(18) Unemployed	-.055*	.049*	.089***	-.099***	-.129***	1.00						
(19) <$20K	.099***	.132***	.105***	-.056**	-.178***	.155***	1.00					
(20) $20-35K	-.024	-.052*	.030	.067**	-.102***	-.053*	-.279***	1.00				
(21) $35-50K	-.055*	-.004	-.027	.012	.083***	-.069**	-.265***	-.214***	1.00			
(22) $50-80K	-.067**	-.078***	-.067**	.005	.147***	-.097***	-.234***	-.190***	-.180***	1.00		
(23) No Insurance	.065**	.021	.033	.019	-.098***	.108***	.206***	.012	-.079***	-.145***	1.00	
(24) Gov't Ins.	.116***	.144***	.038	-.051*	-.125***	.244***	.262***	-.063**	-.122***	-.115***	-.186***	1.00

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

[a] All bivariate correlations involve at least one discrete variable, therefore Phi coefficients(φ) and point biserial coefficients (r_{pb}) are reported.

a negative relationships and a +0.34 correlation coefficient represents a positive relationship, but both are considered moderately strong associations.

In Tables 4.4 (rape), 4.5 (stalking) and 4.6 (physical assault), the bivariate relationships between the independent variables and control variables are presented. The purpose of examining these relationships is to gain an understanding for how these variables are generally related. For example, if any two variables were strongly correlated, there may potentially be a problem with the two variables measuring the exact same construct (i.e. multicollinearity). As is illustrated in each of the three Tables, there does not appear to be any problematic associations between variables.

Violence and Health Outcomes

To examine the relationship between victim-offender relationship and health outcomes, one must first examine the relationship between violence and health outcomes. Specifically, one cannot expect there to be a relationship between perpetrator type and negative health outcomes if there is not a significant relationship between violence and health. Table 4.7 presents the bivariate analyses between type of victimization (i.e. rape, physical assault, and stalking) and the six current health outcomes examined in this study. Having experienced a physical assault is significantly related to all six health outcomes ($p \leq .001$). For both rape and stalking, victimization is significantly related to five of the six health outcome measures ($p \leq .001$), with the exception being current alcohol use. The bivariate correlations are all positive in direction, although generally show a significant, yet weak relationships.

Table 4.7: **Bivariate Relationship[a] between Type of Crime and Health Outcomes**

Health Outcomes	Rape	Stalking	Physical Assault
Current Poor Health	.084***	.044***	.063***
Current Depressive Symptoms	.113***	.086***	.088***
Current Anti-depressant Use	.122***	.074***	.098***
Current Pain Med/Tranquilizer Use	.116***	.078***	.131***
Current Recreational Drug Use	.075***	.069***	.075***
Current Heavy Alcohol Use	.009	.010	.040***

*** $p \leq 0.001$

[a] Health outcome variables and type of crime variables are dichotomous, therefore Phi coefficients(φ) are reported.

Independent Variables and Health Outcomes

Prior to conducting multivariate analyses, bivariate relationships were examined between the independent variables (and control variables) and the health outcome dependent variables to get a better idea as to how variables in this study are related to one another. Specifically, victim-offender relationship, frequency of victimization, prior victimization, and recency of victimization were all correlated with the six health outcome measures to better understand the direction of the relationship, as well as the strength. These bivariate relationships were examined for each type of crime, and are presented in Table 4.8 (rape), Table 4.9 (stalking), and Table 4.10 (physical assault). The results showed that no moderate or strong associations between the independent variables and the health outcomes. Therefore, those relationships that were weak in strength or better and significant, will be discussed in the following paragraphs. It is important to point out that across all three types of crime, even the strongest of the relationships would be considered very weak (Fox et al., 2002).

Rape

Victim-Offender Relationship

As presented in Table 4.8, rape victimization by a current or ex-spouse was significantly and positively related to current poor health ($\varphi = .072$, $p \leq .05$), current depression ($\varphi = .067$, $p \leq .05$), and current anti-depressant use ($\varphi = .132$, $p \leq .001$). Current or ex-partner perpetrators were positively associated with current pain medication or tranquilizer use ($\varphi = .070$, $p \leq .05$). Rape victimization by a date was negatively associated with current poor health ($\varphi = -.075$, $p \leq .01$) and current depression ($\varphi = -.078$, $p \leq .01$). Being raped by two or more perpetrators was positively related to current anti-depressant use ($\varphi = .088$, $p \leq .01$) and current pain medication or tranquilizer use ($\varphi = .086$, $p \leq .01$). Having been victimized by relatives and acquaintances were not significantly associated with any of the negative health outcomes.

Frequency of Victimization, Prior Victimization, and Recency of Victimization

Frequency of victimization, or in this case the number of times raped by the perpetrator, was positively related to current anti-depressant use ($r_{pb} = .120$, $p \leq .001$) and current pain medication or tranquilizer use ($r_{pb} = .073$, $p \leq .05$). Prior victimization (before age eighteen) was negatively associated with current anti-depressant use ($\varphi = -.095$, $p \leq .001$). The measure of recency of victimization, or whether the rape had occurred in the last five years, was positively associated with current illegal drug use ($\varphi = .109$, $p \leq .001$).

Stalking

Victim-Offender Relationship

As is shown in Table 4.9, stalking victimization by a current or ex-spouse was positively and significantly related to current anti-depressant use ($\varphi = .059$, $p \leq .05$) and current pain medicine or tranquilizer use ($\varphi = .072$, $p \leq .05$). Having been stalked by a date was negatively related to current pain medication or tranquilizer use ($\varphi = -.061$, $p \leq .05$), and positively related

Table 4.8: Bivariate Relationships between Independent/Control Variables and Victimization Variables (Rape)

	Health Outcomes					
Variables	Current Poor Health	Current Depression	Anti-Depressant Use	Pain Med/ Tranquilizer Use	Illegal Drug Use	Heavy Alcohol Use
Victim-Offender Relationship						
Spouse	.072*	.067*	.132***	.051	-.021	-.052
Partner	.012	-.009	-.011	.070*	-.005	.008
Relative	.022	.025	-.012	.031	.007	.012
Date	-.075**	-.078**	-.040	-.046	-.006	.016
Acquaintance	-.034	.048	-.001	.001	.061	.028
≥2 Perpetrators	.047	.044	.088**	.086**	.055	-.013
Frequency of Victimization						
# of Times Raped by Perpetrator	.011	.022	.120***	.073*	-.029	-.034
Prior Victimization						
Raped Prior to Age 18	-.047	-.040	-.095***	-.047	.044	.015
Recency of Victimization						
Raped in Last 5 Years?	-.024	.024	-.056	-.012	.109***	-.029
Control Variables						
Age	.147***	.004	.128***	.109***	-.150***	.087**
Marital Status						
Divorced/Separated	.064*	.008	.048	.056	-.036	.030
Widowed	.009	.076**	.060*	.042	.010	-.010
Single	-.041	.047	-.032	-.048	.148***	-.030
Nonwhite	.050	.093***	-.015	.064*	.073*	-.021
Educational Attainment						
High School Graduate	.053	.048	-.056	.025	-.051	-.034
Some College	-.010	-.063*	.011	-.013	.032	-.023
College Graduate	-.139***	-.083**	.045	-.020	-.019	.097***
Unemployed	.261***	.080**	.110***	.126***	.045	-.002
Household Income						
<$20,000	.200***	.126***	.014	.041	.077**	-.066*
$20,000-$35,000	-.028	-.058*	-.015	.012	-.012	.009
$35,000-$50,000	-.086**	-.039	.025	.027	-.018	.003
$50,000-$80,000	-.107***	-.051	.033	-.012	.029	.010
Health Insurance						
No Insurance	.086**	.037	-.047	-.003	.078**	-.054
Government Insurance	.175***	.101***	.093***	.123***	.058*	-.021

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

Table 4.9: Bivariate Relationships between Independent/Control Variables and Victimization Variables (Stalking)

	Health Outcomes					
Variables	Current Poor Health	Current Depression	Anti-Depressant Use	Pain Med/ Tranquilizer Use	Illegal Drug Use	Heavy Alcohol Use
Victim-Offender Relationship						
Spouse	.054	.048	.059*	.072*	-.038	-.017
Partner	.030	.049	-.047	.019	.033	.045
Date	-.027	-.023	-.023	-.061*	.062*	.063*
Acquaintance	-.011	-.030	-.030	.025	.001	.015
≥2 Perpetrators	.006	.035	.035	.057	.003	.046
Frequency of Victimization						
# of Times Stalked by Perpetrator	.017	.070*	.000	.062*	-.029	.005
Prior Victimization						
Stalked Prior to Age 18	-.046	.007	-.003	.050	.114***	.004
Recency of Victimization						
Stalked in Last 5 Years?	.004	.037	.005	.022	.061*	.020
Control Variables						
Age	.079**	-.001	.161***	.079**	-.114***	.082**
Marital Status						
Divorced/Separated	.070*	.039	.013	.031	-.084**	-.014
Widowed	-.034	.040	.006	-.015	.007	-.009
Single	.007	-.031	-.032	-.001	.205***	.015
Nonwhite	.101***	.061*	-.030	.039	.040	-.034
Educational Attainment						
High School Graduate	.060*	.108***	-.027	.034	-.045	-.046
Some College	.026	-.043	.020	.037	.031	-.013
College Graduate	-.160***	-.133***	.003	-.080**	-.017	.082**
Unemployed	.231***	.118***	.106***	.109***	.037	.013
Household Income						
<$20,000	.189***	.159***	.011	.062*	.058	-.036
$20,000-$35,000	-.032	-.002	-.035	-.005	.003	.008
$35,000-$50,000	-.022	-.037	.045	.032	-.011	.015
$50,000-$80,000	-.108***	-.104***	-.004	-.069*	.032	.024
Health Insurance						
No Insurance	.085**	.045	-.012	.035	.049	-.062*
Government Insurance	.201***	.130***	.066*	.121***	.056	-.019

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

Table 4.10: Bivariate Relationships between Independent/Control Variables and Victimization Variables (Physical Assault)

	Health Outcomes					
Variables	Current Poor Health	Current Depression	Anti-Depressant Use	Pain Med/ Tranquilizer Use	Illegal Drug Use	Heavy Alcohol Use
Victim-Offender Relationship						
Spouse	.061**	.035	.054*	.010	-.076***	.012
Partner	-.015	.008	-.030	.003	.065**	.011
Relative	.051*	.020	.055*	.074***	.028	.026
Date	-.046*	.006	-.010	-.028	.062**	-.004
Acquaintance	-.030	.006	.032	.035	.016	.003
≥2 Perpetrators	.028	.028	.064**	.068**	.061**	.052*
Frequency of Victimization						
# of Times Assaulted by Perpetrator	.065**	.067**	.033	.073***	.006	.038
Prior Victimization						
Assaulted Prior to Age 18	.037	.070***	.076***	.119***	.088***	.026
Recency of Victimization						
Assaulted in Last 5 Years?	-.016	-.005	-.064**	-.043*	.080***	-.022
Control Variables						
Age	.121***	-.001	.139***	.125***	-.128***	.060**
Marital Status						
Divorced/Separated	.055*	.007	.019	-.005	-.043*	.006
Widowed	.032	.060**	.056**	.019	.011	.011
Single	-.020	.036	-.038	-.007	.132***	.001
Nonwhite	.091***	.066**	-.056**	.052*	.065**	-.045*
Educational Attainment						
High School Graduate	.053**	.049*	-.015	.031	-.032	-.013
Some College	-.039	-.037	-.015	-.022	.029	.003
College Graduate	-.130***	-.101***	.025	-.044*	-.023	.046*
Unemployed	.218***	.064**	.109***	.152***	.027	.012
Household Income						
<$20,000	.177***	.110***	.017	.043*	.063**	-.029
$20,000-$35,000	-.018	-.038	-.010	.006	.010	.004
$35,000-$50,000	-.083***	-.050*	-.015	-.003	-.014	.030
$50,000-$80,000	-.072***	-.055*	.031	-.018	-.012	-.001
Health Insurance						
No Insurance	.069***	.059**	-.009	.008	.077***	-.017
Government Insurance	.207***	.062**	.047*	.089***	.027	-.024

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

to current illegal drug use (φ = .062, p ≤ .05) and current heavy alcohol use (φ = .063, p ≤ .05). Perpetration by a current or former partner, an acquaintance, or by two or more perpetrators was not significantly associated with any of the negative health outcomes.

Frequency of Victimization, Prior Victimization, and Recency of Victimization

Frequency of victimization was positively associated with current depression (r_{pb} = .070, p ≤ .05) and current pain medication or tranquilizer use (r_{pb} = .062, p ≤ .05). Rape victimization prior to age eighteen was negatively associated with current illegal drug use (φ = .114, p ≤ .001). Having been stalked in the last five years, or recency of the stalking victimization, was positively related to current illegal drug use (φ = .061, p ≤ .05).

Physical Assault

Victim-Offender Relationship

As illustrated in Table 4.10, perpetration by current or ex-spouse was positively related to current poor health (φ = .061, p ≤ .01), current anti-depressant use (φ = .054, p ≤ .05), and negatively related to current illegal drug use (φ = -.076, p ≤ .001). Partner perpetration was positively related to current illegal drug use (φ = .065, p ≤ .01). Having been assaulted by a relative was positively associated with current poor health (φ = .051, p ≤ .05), current anti-depressant use (φ = .055, p ≤ .05), and current pain medication or tranquilizer use (φ = .074, p ≤ .001). Perpetration by a date was negatively associated with current poor health (φ = -.046, p ≤.05), but positively associated with current illegal drug use (φ = .062, p ≤ .01). None of the negative health outcomes were significantly related to acquaintance perpetrators. Assault by two or more perpetrators was most consistently related to negative health outcomes. Having been assaulted by two or more perpetrators was positively related to current anti-depressant use (φ =

.064, p ≤ .01), current pain medication or tranquilizer use (φ = .068, p ≤ .01), current illegal drug use (φ = .061, p ≤ .01), and current heavy alcohol use (φ = .052, p ≤ .05).

Frequency of Victimization, Prior Victimization, and Recency of Victimization

The frequency of the physical assault was positively associated with current poor health (r_{pb} = .065, p ≤ .01), current depression (r_{pb} = .067, p ≤ .01), and current pain medication or tranquilizer use (r_{pb} = .073, p ≤ .001). Having been assaulted prior to the age of eighteen was positively related to four of the six negative health outcomes, including current depression (φ = .070, p ≤ .001), current anti-depressant use (φ = .076, p ≤ .001), current pain medication or tranquilizer use (φ = .119, p ≤ .001), and current illegal drug use (φ = .088, p ≤ .001). The recency of the physical assault (more recent assault occurred in last five years) was positively related to current illegal drug use (φ = .080, p ≤ .001), but negatively associated with current anti-depressant use (φ = -.064, p ≤ .01) and current pain medication or tranquilizer use (φ = -.043, p ≤ .05).

Summary

Overall, the bivariate analyses suggest that the victim-offender relationship potentially has usefulness in explaining rape, stalking, physical assault victimization. While designated as very weak in strength, the victim-offender relationships defined in this current study produced significant bivariate relationships (p ≤ .05), although not consistently across negative health outcomes. Across each of the three types of crime, the only victim-offender relationship that was not significantly associated with at least one type of negative health outcome was acquaintance. The bivariate analyses also demonstrated that the inclusion of frequency of victimization, prior victimization, and recency of victimization is warranted. For all three types

of crime examined, frequency, prior victimization, and recency all produced significant bivariate relationships ($p \leq .05$) for one or more negative health outcomes. To more fully understand the effects of these independent variables on the six measures of negative health, the following section will present the results from binary logistic regression models.

MULTIVARIATE RESULTS

Prior to conducting multivariate analyses and constructing models, it is imperative that one investigates the variables being entered into the models, to check for multicollinearity. Multicollinearity occurs when variables are too highly correlated, or in other words, are two comparable measures of the same thing (Tabachnick & Fidell, 2007). To test for multicollinearity, three methods will be employed as suggested by Menard (2002). These methods include the examination of correlations between independent values, as well as tolerance and variation inflation factor (VIF) statistics.

The first suggested method of checking for multicollinearity would be to examine a correlation matrix of the variables to be involved in the analyses, as was already done in Tables 4.4 (rape), 4.5 (stalking), and 4.6 (physical assault). Bivariate correlations above 0.90 would indicate multicollinearity (Tabachnick & Fidell, 2007). As already reported, none of the estimated bivariate relationships in the correlation matrix for the three types of crime meet the 0.90 threshold.

Another method of checking for multicollinearity involves the examination of tolerance and VIF statistics. Appendix 2 presents the Tolerance and VIF statistics for each type of crime examined in this current study. Tolerance values less than 0.10 are indicative of multicollinearity, although some sources would say tolerance values less than 0.20 should be

concerning (Menard, 2002). The VIF statistic, which reflects how much the variation is inflated, is typically considered to reflect a problem with multicollinearity when the value is over 10.0. As is shown in Appendix 2, the tolerance and VIF values do not suggest that multicollinearity is a problem with these data.

In binary logistic regression, the dependent variable must be dichotomous to estimate the logit models. Typically, one category of the dependent variable is being predicted and coded as "1", while the other category is used as a comparison, and coded as "0".
In this study, having the negative health outcome is coded as the higher category being predicted. This current study used binary logistic regression to estimate six models (one for each health outcome) for each type of crime being examined. Table 4.12 presents the results for rape, Table 4.12 presents the results for stalking, and Table 4.13 presents the results for physical assault.

In each table, logistic regression coefficients, standard errors, and odds ratios are reported. Logistic regression coefficients, or logit coefficients, estimate the change in the logit caused by a unit change in the independent variable. A positive or negative logistic regression coefficient indicates the independent variable increases or decreases the logit of the dependent variable. The odds ratio, or Exp(b) is also reported because interpreting coefficients is not intuitive. An odds ratio > 1.0 means the independent variable increases the logit and therefore increases the odds of having the negative health outcome. If the odds ratio = 1.0, then the independent variable has no effect on the negative health outcome. An odds ratio < 1.0 means the independent variable decreases the logit and decreases the odds of having the negative health outcome. As an example for the crime of rape in Table 4.12, the odds ratio for unemployment is 2.42 in the current poor health model, indicating that in the case of rape women who are unemployed are 2.42 times more likely to experience current poor health.

Also reported for each model are appropriate model fit statistics. The first model fit statistic presented is the -2 log likelihood (-2LL). The -2LL is a positive number, where a value of zero indicates perfect prediction of the outcome by the independent variable and larger values indicate worse prediction of the outcome (Menard, 2002). As explanatory variables are added to a model, the -2LL should decrease, approaching zero. The model chi-square (model χ^2) compares the expected and observed values to determine how well a researcher's predictions fit the data, reflecting the difference between the model with the explanatory variables and a constant-only model. As a test of the null hypothesis, a significant model χ^2 ($p \leq .05$) reveals a researcher's ability to reject the null hypothesis and conclude that the independent variables increase prediction of the dependent variable over a model with just the constant or without the independent variables (Menard, 2002). As a measure of effect size, the Nagelkerke R^2 is reported. The Nagelkerke R^2 can range from 0 to 1, and is the proportion of variation explained in the outcome measure (Nagelkerke, 1991).

When discussing the results from binary logistic regression, it is often the case that results are discussed in terms of adjusted odds ratios (ΔOR) and confidence intervals (Slashinksi et al., 2003). Adjusted odds ratios are simply the odds of a dichotomous outcome occurring, controlling for other possible contributions from other independent and control variables in the model being estimated. Confidence intervals are also reported, presenting a range of values within which lies the true adjusted odds ratio, with a certain degree of assurance. All confidence intervals reported in this current study are at the ninety-five percent level. If the adjusted odds ratio being presented is greater than 1.0, and the confidence interval does not contain 1.0, then one can reasonably assume with ninety-five percent confidence that the adjusted odds ratio for the variable of interest increases the likelihood of the negative health outcome occurring.

Multivariate results will be discussed largely based on the adjusted odds ratios and confidence intervals around these estimates, as is often the case in epidemiological and health research as well as how the results are presented by Slashinksi et al., (2003).

The following five sections will present the results of the multivariate analyses. The first section will examine the relationship between three types of violence and six negative health outcomes using binary logistic regression, without the inclusion of the victim-offender relationship in the models. This first section is important in establishing that violence against women has a significant effect on negative health. The second section will present results from the binary logistic regression for rape victimization, including six models – one for each negative health outcome. The third section will present results from the logistic regression for stalking, also with six models. It is important to note that the "relative" victim-offender relationship was removed from multivariate analyses (n = 38), due to the extremely limited number of cases across each dependent variable. The fourth section will also present results across six models for physical assault. This chapter will end with a summary of the results from the multivariate analyses.

Violence and Negative Health Outcomes

The focus of this current study is on how the victim-offender relationship is related to negative health outcomes in women across rape, stalking, and physical assault. However, prior to conducting such analyses it is essential to establish that there is a significant relationship between type of crime and negative health. In order to better answer this question, binary logistic regression was employed for each type of crime to estimate six models, one for each of the negative health outcome. The adjusted odds ratios and confidence intervals are presented in

Table 4.11 (rape), Table 4.12 (stalking), and Table 4.13 (physical assault). To demonstrate that the type of crime is significantly related to negative health, the models are estimated using exactly the same independent and control variables as were used in the logistic regressions estimating how the victim-offender relationship was related to negative health by type of crime.

Rape

Table 4.11 presents the multivariate analyses between rape victimization and six measures of current poor health. As is illustrated, rape victimization was significantly related to current poor health, current depression, current anti-depressant use, and current pain medication or tranquilizer use. Rape victimization significantly increased the odds of a woman currently using anti-depressants by over 3 times (ΔOR = 3.20, CI 95% = 2.41, 4.25). Rape victims were also twice as likely as nonvictims to report current poor health, current depression, and current pain medication or tranquilizer use. Rape victims did not significantly differ from non victims when it came to illegal drug use or heavy alcohol consumption.

Table 4.11 Rape and Negative Health Outcomes

Health Outcome	ΔOR[a]	(95% CI)
Current Health		
Current Poor Health	2.09	(1.63, 2.68)
Current Depression	2.04	(1.63, 2.54)
Current Substance Use		
Anti-Depressant Use	3.20	(2.41, 4.25)
Pain Medication or Tranquilizer Use	2.02	(1.63, 2.50)
Recreational or Illegal Drug Use	1.60	(0.94, 2.73)*
Alcohol Use in Past 12 months	0.93	(0.66, 1.02)*

[a]OR adjusted for frequency of victimization, prior victimization, recency, current age, marital status, race, educational attainment, employment status, household income, and health insurance.
*Not a significant result because confidence interval contains 1.0.

Stalking

The multivariate analyses between stalking and the six negative health outcomes are presented in Table 4.12. Stalking victims are about one and a half times more likely than nonvictims to experience current poor health, current depression, current anti-depressant use, and current pain medication or tranquilizer use. These relationships while significant are weak. Stalking victims were not significantly more likely than nonvictims to currently use recreational or illegal drugs, or experience heavy alcohol use.

Table 4.12 Stalking and Negative Health Outcomes

Health Outcome	ΔOR[a]	(95% CI)
Current Health		
Current Poor Health	1.44	(1.09, 1.91)
Current Depression	1.59	(1.24, 2.04)
Current Substance Use		
Anti-Depressant Use	1.66	(1.18, 2.33)
Pain Medication or Tranquilizer Use	1.31	(1.02, 1.66)
Recreational or Illegal Drug Use	1.74	(0.94, 3.21)*
Alcohol Use in Past 12 months	0.84	(0.58, 1.21)*

[a]OR adjusted for frequency of victimization, prior victimization, recency, current age, marital status, race, educational attainment, employment status, household income, and health insurance.
*Not a significant result because confidence interval contains 1.0

Physical Assault

Table 4.13 presents the results from the multivariate analyses between physical assault and the six negative health outcomes of interest in this current study. Stalking victims were not significantly more likely than nonvictims to experience current poor health. Stalking victims were over twice as likely to currently use anti-depressants, and were about one and a half times more likely to experience current poor health, current depression, currently use pain medication or tranquilizers, and heavily consume alcohol.

Table 4.13 Physical Assault and Negative Health Outcomes

Health Outcome	ΔOR[a]	(95% CI)
Current Health		
Current Poor Health	1.16	(0.95, 1.42)*
Current Depression	1.42	(1.18, 1.70)
Current Substance Use		
Anti-Depressant Use	2.04	(1.58, 2.62)
Pain Medication or Tranquilizer Use	1.74	(1.47, 2.06)
Recreational or Illegal Drug Use	1.79	(1.14, 2.80)
Alcohol Use in Past 12 months	1.36	(1.06, 1.74)

[a]OR adjusted for frequency of victimization, prior victimization, recency, current age, marital status, race, educational attainment, employment status, household income, and health insurance.
*Not a significant result because confidence interval contains 1.0

The Victim-Offender Relationship and Negative Health Outcomes

The next section will present results from three multivariate analyses, one for each type of crime examined in this present study. The results will be presented by type of crime, as was the case in previous sections of this current study. Results for the multivariate analyses were obtained using binary logistic regression, one for each of the six negative health outcomes, and presented in terms of regression coefficients, standard errors, and exponentiated coefficients or exp(b), which are also in this case with multivariate analyses, adjusted odds ratios (ΔOR).

It is appropriate to use the Bonferroni correction when there are a large number of significance tests being conducted simultaneously on the same set of data (Miller, 1991). In the case of the present study, it is important to avoid spurious positives by lowering the alpha value to account for the number of comparisons being made (Shaffer, 1995). The simplest way to apply the Bonferroni correction is to set the significance level equal to the alpha level (α) divided by the number of comparisons or significant tests (*n*). This new lower alpha level, which for the current study is α = .0083, will help guard against committing Type I errors.

Rape

Table 4.14 provides results for the crime of rape, across six models – current poor health, current depression, current anti-depressant use, current pain medication or tranquilizer use, current illegal drug use, and current heavy alcohol use. As shown, the victim-offender relationship did not significantly increase the odds of experiencing any of the six negative health outcomes.

Stalking

Table 4.15 presents results for the crime of stalking, across six models – current poor health, current depression, current anti-depressant use, current pain medication or tranquilizer use, current illegal drug use, and current heavy alcohol use. As was the case for the crime of rape, the victim-offender relationship did not significantly increase the odds of experiencing any of the negative health outcomes, with two exceptions. For the current heavy alcohol use model, partner perpetrators and date perpetrators both positively increased the odds of heavy alcohol use. As compared to being victimized by a stranger, the odds of being victimized by a partner was over 3 times higher (ΔOR = 3.29; CI 95% = 1.45, 7.47) and by a date nearly 2.8 times higher (ΔOR = 2.78; CI 95% = 1.39, 5.59).

Physical Assault

Table 4.16 provides results for the crime of physical assault, across six models – current poor health, current depression, current anti-depressant use, current pain medication or tranquilizer use, current illegal drug use, and current heavy alcohol use. It is important to note that the current heavy alcohol use model for physical assault was not significant. The victim-offender relationship was not found to be a significant predictor of negative health outcomes.

Frequency of Victimization, Prior Victimization, Recency of Victimization and Negative Health Outcomes

The purpose of this current study was to explore the hypothesis that the victim-offender relationship was at least partially responsible for the differential negative health reported by victims of rape, stalking, and physical assault. Other possible elements of being victimized that may potentially explain differences in negative health symptomology reported by victims may be related to the frequency of victimization, prior victimization, and recency of the victimization. As an example, having experienced a prior victimization may be more influential in increasing the odds of negative health than the victim-offender relationship. Thus, these three measures were included as variables in the multivariate analyses in order to establish their potential role in explaining negative health outcomes.

Rape

As was shown in Table 4.14, frequency of victimization was only significantly related to current anti-depressant use, although the increase in odds is incredibly small and the odds ratio is very close to one (ΔOR = 1.04; CI 95% = 1.01, 1.06). Having experienced rape victimization prior to the age of eighteen did not significantly increase the odds of any of the negative health outcomes. Similarly, having experienced a rape in the last five years did not significantly increase the odds in any of the six negative health outcome models.

Stalking

In Table 4.15, frequency of victimization did not significantly increase the odds in any of the six negative health outcome models. For the prior victimization variable, being stalked prior to the age of eighteen also did not significantly increase the odds in any of the six negative health outcome models. Having been stalked in the last five years increased the odds of currently

Table 4.14: Binary Logistic Regression Coefficients, Standard Errors, and Exponentiated Coefficients for Health Outcomes for Rape

Variables	Coefficient	Model 1: Current Poor Health S.E.	Exp(B)	Coefficient	Model 2: Current Depression S.E.	Exp(B)	Coefficient	Model 3: Current Anti-Depressant Use S.E.	Exp(B)
Victim-Offender Relationship									
Spouse	-0.15	(0.25)	0.86	0.40	(0.23)	1.49	0.48	(0.28)	1.62
Partner	0.00	(0.43)	1.00	-0.13	(0.40)	0.88	-0.42	(0.54)	0.65
Relative	-0.26	(0.27)	0.77	0.28	(0.25)	1.33	-0.20	(0.33)	0.82
Date	-0.42	(0.28)	0.66	-0.20	(0.25)	0.82	-0.31	(0.33)	0.73
Acquaintance	-0.14	(0.25)	0.87	0.50	(0.22)	1.65	0.11	(0.28)	1.11
More than 2 Perpetrators	0.37	(0.32)	1.45	-0.11	(0.29)	0.89	0.27	(0.36)	1.32
Frequency of Victimization									
# of Times Raped by Perpetrator	0.00	(0.01)	1.00	0.01	(0.01)	1.01	0.04*	(0.01)	1.04
Prior Victimization									
Raped Prior to Age 18	-0.16	(0.21)	0.85	0.18	(0.18)	0.71	-0.44	(0.24)	0.64
Recency									
Rape occurred in last 5 years?	-0.26	(0.29)	0.78	-0.34	(0.24)	0.84	-0.70	(0.37)	0.50
Controls									
Age	0.03*	(0.01)	1.04	-0.17	(0.01)	1.00	0.02	(0.01)	1.02
Marital Status									
Divorced/Separated	-0.14	(0.22)	0.87	0.00	(0.20)	0.93	0.29	(0.25)	1.34
Widowed	-0.99	(0.52)	0.37	-0.08	(0.39)	1.90	0.93	(0.48)	2.53
Single	-0.14	(0.27)	0.87	0.64	(0.22)	1.29	0.57	(0.31)	1.76
Nonwhite	0.26	(0.20)	1.30	0.35	(0.17)	1.42	-0.02	(0.24)	0.98
Educational Attainment									
High School Graduate	-0.25	(0.27)	0.78	-0.45	(0.24)	0.64	-0.14	(0.38)	0.87
Some College	-0.24	(0.27)	0.79	-0.81*	(0.25)	0.44	0.45	(0.37)	1.57
College Graduate	-1.04*	(0.34)	0.35	-0.93*	(0.28)	0.39	0.57	(0.40)	1.77
Unemployed	0.89*	(0.18)	2.42	0.17	(0.18)	1.19	0.82*	(0.23)	2.27
Household Income									
<$20,000	0.61	(0.23)	1.84	0.21	(0.21)	1.23	0.35	(0.31)	1.42
$20,000-35,000	0.07	(0.27)	1.07	-0.31	(0.24)	0.73	0.39	(0.33)	1.48
$35,000-50,000	-0.20	(0.31)	0.82	-0.07	(0.25)	0.93	0.70	(0.33)	2.00
$50,000-80,000	-0.57	(0.35)	0.57	-0.19	(0.27)	0.83	0.78	(0.34)	2.19
Health Insurance									
Unknown or No Insurance	0.39	(0.21)	1.47	0.07	(0.20)	1.07	-0.39	(0.29)	0.68
Government Insurance	0.71*	(0.25)	2.03	0.23	(0.24)	1.25	0.52	(0.31)	1.68
-2 Log-likelihood		935.65			1157.13			753.02	
Model $\chi 2$		158.34*			70.89*			87.00*	
Nagelkerke R^2		0.21			0.09			0.14	

* $p < .0083$

[1] Age is used in the models as a continuous variable

Table 4.14: Binary Logistic Regression Coefficients, Standard Errors, and Exponentiated Coefficients for Health Outcomes for Rape (con't)

Variables	Model 4: Pain Meds or Tranqs Coefficient	S.E.	Exp(B)	Model 5: Illegal Drugs Coefficient	S.E.	Exp(B)	Model 6: Heavy Alcohol Use Coefficient	S.E.	Exp(B)
Victim-Offender Relationship									
Spouse	-0.03	(0.23)	0.97	0.28	(0.52)	1.32	-0.38	(0.43)	0.69
Partner	0.60	(0.34)	1.82	-0.69	(0.87)	0.50	0.73	(0.61)	2.08
Relative	0.04	(0.23)	1.04	-0.03	(0.50)	0.97	0.40	(0.39)	1.49
Date	-0.16	(0.24)	0.85	-0.10	(0.49)	0.91	0.27	(0.38)	1.31
Acquaintance	0.09	(0.21)	1.09	0.32	(0.43)	1.38	0.41	(0.36)	1.50
More than 2 Perpetrators	0.32	(0.27)	1.38	0.95	(0.54)	2.59	-0.19	(0.50)	0.83
Frequency of Victimization									
# of Times Raped by Perpetrator	0.01	(0.01)	1.01	-0.05	(0.04)	0.95	-0.03	(0.03)	0.97
Prior Victimization									
Raped Prior to Age 18	-0.13	(0.18)	0.88	0.48	(0.37)	1.62	0.21	(0.29)	1.23
Recency									
Rape occurred in last 5 years?	0.00	(0.24)	1.00	0.51	(0.41)	1.66	0.28	(0.44)	1.32
Controls									
Age	0.02*	(0.01)	1.02	-0.06*	(0.02)	0.94	0.04*	(0.01)	1.04
Marital Status									
Divorced/Separated	0.13	(0.19)	1.13	0.22	(0.48)	1.24	0.45	(0.30)	1.57
Widowed	0.19	(0.40)	1.21	1.51	(0.86)	4.52	-0.26	(0.79)	0.77
Single	-0.02	(0.23)	0.98	0.93	(0.40)	2.54	0.15	(0.38)	1.16
Nonwhite	0.40	(0.17)	1.50	0.37	(0.32)	1.45	-0.18	(0.30)	0.84
Educational Attainment									
High School Graduate	0.22	(0.27)	1.25	-0.48	(0.54)	0.2	0.38	(0.57)	1.46
Some College	0.22	(0.27)	1.25	0.28	(0.49)	1.32	0.52	(0.57)	1.68
College Graduate	0.18	(0.30)	1.20	0.34	(0.59)	1.40	1.11	(0.58)	3.02
Unemployed	0.49*	(0.17)	1.63	0.76	(0.36)	2.14	0.18	(0.30)	1.20
Household Income									
<$20,000	0.26	(0.22)	1.29	1.18	(0.58)	3.26	-0.63	(0.39)	0.43
$20,000-35,000	0.47	(0.23)	1.61	1.29	(0.64)	3.64	-0.12	(0.34)	0.89
$35,000-50,000	0.65*	(0.24)	1.91	1.44	(0.68)	4.21	-0.31	(0.36)	0.73
$50,000-80,000	0.41	(0.26)	1.50	2.33*	(0.67)	10.23	-0.30	(0.37)	0.74
Health Insurance									
Unknown or No Insurance	0.07	(0.20)	1.07	0.96	(0.39)	2.62	-0.47	(0.38)	0.63
Government Insurance	0.72*	(0.23)	2.06	0.81	(0.47)	2.24	-0.15	(0.84)	0.86
-2 Log-likelihood		1215.65			349.83			559.55	
Model $\chi 2$		69.65*			76.80*			36.37	
Nagelkerke R^2		0.09			0.21			0.08	

* $p < .0083$

[1] Age is used in the models as a continuous variable

Table 4.15: Binary Logistic Regression Coefficients, Standard Errors, and Exponentiated Coefficients for Health Outcomes for Stalking

Variables	Model 1: Current Poor Health Coefficient	S.E.	Exp(B)	Model 2: Current Depression Coefficient	S.E.	Exp(B)	Model 3: Current Anti-Depressant Use Coefficient	S.E.	Exp(B)
Victim-Offender Relationship									
Spouse	0.31	(0.26)	1.36	0.03	(0.21)	1.03	0.54	(0.29)	1.70
Partner	0.17	(0.34)	1.18	0.18	(0.28)	1.20	-0.39	(0.49)	0.67
Date	0.22	(0.31)	1.25	-0.06	(0.26)	0.94	0.24	(0.35)	1.27
Acquaintance	0.35	(0.27)	1.42	-0.05	(0.23)	0.95	0.32	(0.30)	1.38
More than 2 Perpetrators	-0.34	(0.31)	0.71	0.07	(0.25)	1.07	0.24	(0.33)	1.28
Frequency of Victimization									
# of Times Stalked by Perpetrator	0.05	(0.11)	1.05	0.19	(0.10)	1.20	-0.01	(0.15)	0.99
Prior Victimization									
Stalked Prior to Age 18	-0.35	(0.36)	0.70	0.12	(0.27)	1.23	0.33	(0.38)	1.40
Recency									
Stalking occurred in last 5 years?	-0.12	(0.21)	0.89	0.19	(0.18)	1.21	0.55	(0.25)	1.74
Controls									
Age	0.03*	(0.01)	1.03	0.00	(0.01)	1.00	0.06*	(0.01)	1.06
Marital Status									
Divorced/Separated	0.05	(0.24)	1.06	-0.20	(0.21)	0.82	-0.15	(0.28)	0.86
Widowed	-1.77	(1.09)	0.17	0.13	(0.55)	1.14	-0.22	(0.84)	0.80
Single	0.27	(0.30)	1.31	-0.51	(0.26)	0.60	0.36	(0.36)	1.43
Nonwhite	0.46	(0.22)	1.58	0.19	(0.19)	1.21	-0.38	(0.30)	0.69
Educational Attainment									
High School Graduate	-0.23	(0.33)	0.79	-0.33	(0.30)	0.72	-0.18	(0.49)	0.84
Some College	-0.25	(0.33)	0.78	-0.78	(0.30)	0.46	0.20	(0.48)	1.23
College Graduate	-1.16*	(0.40)	0.32	-1.03*	(0.34)	0.36	0.13	(0.50)	1.14
Unemployed	0.85*	(0.21)	2.34	0.27	(0.19)	1.31	0.54	(0.26)	1.72
Household Income									
<$20,000	0.56	(0.28)	1.75	0.46	(0.24)	1.58	0.23	(0.35)	1.26
$20,000-35,000	0.14	(0.32)	1.16	0.08	(0.26)	1.09	0.09	(0.39)	1.09
$35,000-50,000	0.37	(0.31)	1.44	-0.04	(0.26)	0.96	0.63	(0.33)	1.87
$50,000-80,000	-0.35	(0.40)	0.70	-0.52	(0.31)	0.60	0.43	(0.36)	1.54
Health Insurance									
Unknown or No Insurance	0.37	(0.24)	1.45	0.00	(0.21)	1.00	-0.06	(0.32)	0.94
Government Insurance	0.94*	(0.28)	2.56	0.39	(0.25)	1.47	0.73	(0.36)	2.08
-2 Log-likelihood		778.234			1018.28			620.96	
Model $\chi 2$		128.94*			74.04*			59.57*	
Nagelkerke R^2		0.20			0.10			0.11	

* $p < .0083$

[1] Age is used in the models as a continuous variable

[2] Due to limited number of cases of stalking by a relative, relative-perpetrators were removed from these analyses.

Table 4.15: Binary Logistic Regression Coefficients, Standard Errors, and Exponentiated Coefficients for Health Outcomes for Stalking (con't)

Variables	Model 4: Pain Meds or Tranqs			Model 5: Illegal Drugs			Model 6: Heavy Alcohol Use		
	Coefficient	S.E.	Exp(B)	Coefficient	S.E.	Exp(B)	Coefficient	S.E.	Exp(B)
Victim-Offender Relationship									
Spouse	0.30	(0.21)	1.36	0.59	(0.49)	1.81	0.38	(0.36)	1.47
Partner	0.18	(0.28)	1.20	0.46	(0.56)	1.59	1.19*	(0.42)	3.29
Date	-0.29	(0.26)	0.75	0.80	(0.46)	2.22	1.02*	(0.36)	2.78
Acquaintance	0.27	(0.22)	1.30	0.26	(0.47)	1.30	0.45	(0.35)	1.57
More than 2 Perpetrators	0.08	(0.24)	1.08	-0.23	(0.52)	0.80	0.10	(0.35)	1.11
Frequency of Victimization									
# of Times Stalked by Perpetrator	0.16	(0.10)	1.17	-0.38	(0.26)	0.69	-0.10	(0.15)	0.90
Prior Victimization									
Stalked Prior to Age 18	0.65	(0.25)	1.92	0.99	(0.41)	2.69	0.43	(0.41)	1.54
Recency									
Stalking occurred in last 5 years?	0.28	(0.18)	1.32	0.21	(0.39)	1.23	0.63	(0.28)	1.88
Controls									
Age	0.03*	(0.01)	1.03	0.00	(0.02)	1.00	0.05*	(0.01)	1.05
Marital Status									
Divorced/Separated	-0.05	(0.20)	0.95	-0.70	(0.62)	0.50	-0.13	(0.33)	0.88
Widowed	-0.81	(0.69)	0.45	0.72	(1.17)	2.05	-0.13	(1.09)	0.88
Single	0.16	(0.25)	1.18	1.54*	(0.44)	4.66	0.42	(0.37)	1.52
Nonwhite	0.13	(0.19)	1.13	0.00	(0.38)	1.00	-0.35	(0.34)	0.71
Educational Attainment									
High School Graduate	0.31	(0.34)	1.37	-0.85	(0.62)	0.43	0.71	(0.79)	2.03
Some College	0.38	(0.34)	1.47	-0.23	(0.58)	0.79	0.94	(0.78)	2.55
College Graduate	0.07	(0.37)	1.08	-0.25	(0.66)	0.78	1.44	(0.79)	4.24
Unemployed	0.36	(0.19)	1.43	0.70	(0.40)	2.02	0.41	(0.31)	1.50
Household Income									
<$20,000	0.14	(0.24)	1.15	1.38	(0.61)	3.99	0.26	(0.42)	1.29
$20,000-35,000	0.15	(0.26)	1.16	1.32	(0.66)	3.74	0.37	(0.40)	1.45
$35,000-50,000	0.39	(0.24)	1.47	1.40	(0.68)	4.06	0.24	(0.37)	1.27
$50,000-80,000	-0.14	(0.28)	0.87	1.93*	(0.66)	6.85	0.28	(0.38)	1.33
Health Insurance									
Unknown or No Insurance	0.18	(0.21)	1.20	0.67	(0.42)	1.95	-0.81	(0.42)	0.45
Government Insurance	0.80*	(0.25)	2.22	0.35	(0.53)	1.42	-0.29	(0.48)	0.75
-2 Log-likelihood		1054.91			315.46			519.54	
Model $\chi 2$		62.44*			67.15*			44.50*	
Nagelkerke R^2		0.09			0.20			0.10	

* $p < .0083$

[1] Age is used in the models as a continuous variable

[2] Due to limited number of cases of stalking by a relative, relative-perpetrators were removed from these analyses.

Table 4.16: Binary Logistic Regression Coefficients, Standard Errors, and Exponentiated Coefficients for Health Outcomes for Physical Assault

Variables	Model 1: Current Poor Health Coefficient	S.E.	Exp(B)	Model 2: Current Depression Coefficient	S.E.	Exp(B)	Model 3: Current Anti-Depressant Use Coefficient	S.E.	Exp(B)
Victim-Offender Relationship									
Spouse	-0.08	(0.20)	0.93	0.34	(0.19)	1.40	0.43	(0.24)	1.54
Partner	-0.32	(0.25)	0.73	0.11	(0.22)	1.12	-0.04	(0.31)	0.96
Relative	0.28	(0.25)	1.32	0.17	(0.25)	1.19	0.59	(0.30)	1.81
Date	-0.21	(0.26)	0.81	0.36	(0.22)	1.43	0.46	(0.30)	1.58
Acquaintance	-0.39	(0.26)	0.68	0.29	(0.22)	1.33	0.66	(0.29)	1.93
More than 2 Perpetrators	0.10	(0.21)	1.10	-0.17	(0.20)	0.84	0.02	(0.25)	1.02
Frequency of Victimization									
# of Times Assaulted by Perpetrator	0.01	(0.01)	1.01	0.01	(0.01)	1.01	0.01	(0.01)	1.01
Prior Victimization									
Assaulted Prior to Age 18	0.21	(0.14)	1.24	0.39*	(0.12)	1.47	0.45	(0.16)	1.57
Recency									
Assault occurred in last 5 years?	0.06	(0.17)	1.06	-0.16	(0.15)	0.85	-0.14	(0.22)	0.87
Controls									
Age	0.03*	(0.01)	1.03	0.00	(0.01)	1.00	0.04*	(0.01)	1.04
Marital Status									
Divorced/Separated	0.04	(0.16)	1.05	0.00	(0.15)	1.00	0.17	(0.20)	1.18
Widowed	-0.43	(0.38)	0.65	0.63	(0.31)	1.88	0.62	(0.39)	1.86
Single	0.00	(0.23)	1.00	0.27	(0.19)	1.31	0.37	(0.28)	1.45
Nonwhite	0.36	(0.15)	1.43	0.18	(0.13)	1.20	-0.56*	(0.21)	0.57
Educational Attainment									
High School Graduate	-0.36	(0.20)	0.70	-0.46	(0.19)	0.63	-0.05	(0.29)	0.95
Some College	-0.47	(0.21)	0.63	-0.76*	(0.20)	0.47	0.09	(0.30)	1.10
College Graduate	-1.20*	(0.27)	0.30	-1.15*	(0.23)	0.32	0.25	(0.32)	1.28
Unemployed	0.64*	(0.15)	1.89	0.05	(0.14)	1.05	0.65*	(0.18)	1.91
Household Income									
<$20,000	0.52*	(0.19)	1.68	0.12	(0.16)	1.12	0.17	(0.25)	1.19
$20,000-35,000	0.18	(0.21)	1.19	-0.34	(0.19)	0.71	0.20	(0.26)	1.22
$35,000-50,000	-0.14	(0.25)	0.87	-0.28	(0.20)	0.76	0.18	(0.26)	1.20
$50,000-80,000	0.01	(0.27)	1.01	-0.29	(0.22)	0.75	0.52	(0.26)	1.68
Health Insurance									
Unknown or No Insurance	0.48*	(0.17)	1.61	0.19	(0.15)	1.21	-0.04	(0.22)	0.96
Government Insurance	1.05*	(0.19)	2.85	0.06	(0.19)	1.06	0.32	(0.26)	1.38
-2 Log-likelihood	1532.40			1884.69			1165.05		
Model $\chi 2$	242.68*			99.66*			99.57*		
Nagelkerke R^2	0.19			0.08			0.10		

* $p < .0083$

[1] Age is used in the models as a continuous variable

Table 4.16: Binary Logistic Regression Coefficients, Standard Errors, and Exponentiated Coefficients for Health Outcomes for Physical Assault (con't)

Variables	Model 4: Pain Meds or Tranqs			Model 5: Illegal Drugs			Model 6: Heavy Alcohol Use		
	Coefficient	S.E.	Exp(B)	Coefficient	S.E.	Exp(B)	Coefficient	S.E.	Exp(B)
Victim-Offender Relationship									
Spouse	-0.12	(0.16)	0.88	-0.29	(0.35)	0.75	0.05	(0.24)	1.05
Partner	0.01	(0.20)	1.01	0.17	(0.37)	1.18	0.14	(0.28)	1.15
Relative	0.40	(0.21)	1.48	-0.21	(0.44)	0.81	0.22	(0.31)	1.25
Date	0.04	(0.20)	1.05	0.39	(0.36)	1.48	0.05	(0.29)	1.05
Acquaintance	0.24	(0.20)	1.27	-0.26	(0.42)	0.77	0.08	(0.30)	1.09
More than 2 Perpetrators	0.12	(0.18)	1.13	0.62	(0.36)	1.86	0.32	(0.25)	1.37
Frequency of Victimization									
# of Times Assaulted by Perpetrator	0.01	(0.01)	1.01	0.00	(0.01)	1.00	0.01	(0.01)	1.01
Prior Victimization									
Assaulted Prior to Age 18	0.53*	(0.11)	1.70	0.84*	(0.25)	2.32	0.11	(0.17)	1.12
Recency									
Assault occurred in last 5 years?	0.02	(0.14)	1.02	0.30	(0.28)	1.36	0.08	(0.21)	1.08
Controls									
Age	0.03*	(0.01)	1.03	-0.05*	(0.02)	0.95	0.02	(0.01)	1.02
Marital Status									
Divorced/Separated	-0.08	(0.14)	0.93	-0.22	(0.37)	0.80	0.13	(0.21)	1.14
Widowed	-0.20	(0.33)	0.82	1.07	(0.68)	2.92	0.29	(0.47)	1.34
Single	0.19	(0.18)	1.21	0.45	(0.33)	1.57	0.44	(0.27)	1.55
Nonwhite	0.24	(0.13)	1.29	0.39	(0.26)	1.48	-0.32	(0.21)	0.73
Educational Attainment									
High School Graduate	0.03	(0.19)	1.03	-0.52	(0.41)	0.59	0.66	(0.40)	1.93
Some College	-0.06	(0.20)	0.95	-0.08	(0.39)	0.92	0.77	(0.40)	2.16
College Graduate	-0.22	(0.22)	0.80	-0.18	(0.47)	0.83	0.97	(0.41)	2.65
Unemployed	0.52*	(0.13)	1.69	0.35	(0.28)	1.42	0.22	(0.20)	1.25
Household Income									
<$20,000	0.16	(0.17)	1.17	0.73	(0.38)	2.07	-0.12	(0.26)	0.89
$20,000-35,000	0.28	(0.17)	1.32	0.76	(0.41)	2.13	0.06	(0.25)	1.06
$35,000-50,000	0.29	(0.18)	1.34	0.61	(0.46)	1.85	0.22	(0.24)	1.25
$50,000-80,000	0.19	(0.20)	1.21	0.75	(0.49)	2.12	-0.07	(0.28)	0.93
Health Insurance									
Unknown or No Insurance	0.04	(0.15)	1.04	0.73	(0.29)	2.07	-0.17	(0.23)	0.84
Government Insurance	0.41	(0.18)	1.50	0.14	(0.38)	1.16	-0.26	(0.31)	0.77
-2 Log-likelihood		2077.66			575.39			1148.99	
Model $\chi 2$		138.26*			94.60*			33.86	
Nagelkerke R^2		0.10			0.16			0.04	

* $p < .0083$

[1] Age is used in the models as a continuous variable

using anti-depressants by 1.7 times (ΔOR = 1.74; CI 95% = 1.07, 2.81), and the odds of current heavy alcohol use by 1.9 times (ΔOR = 1.88; CI 95% = 1.10, 3.23).

Physical Assault

As illustrated in Table 4.16, frequency of victimization did not increase the odds of experiencing any of the six negative health outcomes. Prior victimization increased the odds of experiencing three of the negative health outcomes: 1) current depression (ΔOR = 1.47; CI 95% = 1.16, 1.87); 2) current pain medication or tranquilizer use (ΔOR = 1.70; CI 95% = 1.37, 2.12); and 3) current illegal drug use (ΔOR = 2.32; CI 95% = 1.41, 3.81). The recency of victimization variable was not significantly related to any of the negative health outcomes.

SUMMARY

According to multivariate analyses, rape, stalking and physical assault take a negative toll on the victim. Rape and stalking victims have increased odds of experiencing current poor health, current depression, current use of anti-depressants, and current heavy alcohol consumption, as compared to nonvictims. Physical assault victims have increased odds of having current depression, as well as currently using anti-depressants, illegal drugs, pain medication or tranquilizers, and heavy amounts of alcohol.

The main objective of this current study was to examine the effect of the victim-offender relationship on negative health outcomes. A consistent pattern to emerge across all three types of crime and all six negative health outcomes was that overall the victim-offender relationship is not a significant predictor of negative health outcomes. These findings for the insignificant effect of the victim-offender relationship on negative health outcomes are not completely unexpected, as the literature review provided earlier in this current study cited multiple studies

which questioned whether a relationship between such variables even existed (Kilpatrick et al., 1997; Ullman and Siegel, 1993). Table 4.17 reviews the findings of previous research examining a relationship between victim-offender relationship and negative health outcomes, illustrating exactly how mixed previous findings have been.

Table 4.17: Summary of Previous Research on Relationship between Victim-Offender Relationship and Negative Health Outcomes

Study	Sample Size (n)	Was victim-offender relationship a significant predictor of negative health outcomes?
Rape/Sexual Assault[a]		
Frank et al. (1980)*	n = 50	No
Ellis et al. (1981)*	n = 27	Yes
Girelli et al. (1986)*	n = 41	No
Kilpatrick et al. (1987)*	n = 391	No
Koss et al. (1988)	n = 489	No
Thornhill & Thornhill (1990)*	n = 790	Yes
Ullman & Siegel (1993)*	n = 240	No
Stermac et al., (1998)*	n = 1162	Yes
Culbertson & Dehle (2001)*	n = 206	Yes
Demaris & Kaukinen (2005)	n = 7,770	Yes
Ullman et al. (2006)*	n = 1,084	Yes
Temple et al. (2007)*	n = 835	Yes

[a] Research on the link between victim-offender relationship and negative health has primarily been studied for the crime of rape/sexual assault.
*Not a national-level study.

Frequency of victimization, prior victimization, and recency were all included in the multivariate analyses as possible alternative predictors to the victim-offender relationship. For rape and stalking, none of these three variables consistently predicted negative health across the six models. For physical assault, prior victimization significantly increased the odds of experiencing negative health in four of the six models. Overall, these three variables – frequency of victimization, prior victimization, and recency – do not seem to explain negative health outcomes any more successfully or significantly than the victim-offender relationship.

Chapter 5 will summarize the findings as they relate to the research questions posed earlier in this current study. The extent of victimization, as found in this current study will be examined, as well as how the finding of a lack of a relationship between perpetrator type and negative health consequences actually is an important finding with meaningful consequences. Chapter 6 will bring to a close this dissertation, by discussing this research in terms of general strain theory, research limitations, and future implications.

Chapter 5

SUMMARY OF FINDINGS

This chapter will summarize the major findings of this current study. This chapter will also directly address the two research questions posed earlier: 1) what is the prevalence of violence against women by victim-offender relationship?, and 2) what is the effect of the victim-offender relationship on a woman's psychological and physical health, and overall well-being? In order to answer these research questions, results of this current study will be highlighted as relevant.

Prevalence of the Victim-Offender Relationship by Crime Type

The first research question guiding this current study sought to not only understand the extent of violence against women, but to understand the victim-offender relationship for three types of violence – rape, stalking, and physical assault. The NVAWS is unique in that respondents were asked questions detailing who perpetrated the type of violence being examined in each section of the survey. This allowed for the specific investigation of the prevalence of violence against women by victim-offender relationship. In this study, seven types of victim-offender relationships were examined: 1) current or ex-spouses, 2) current or ex-partners, 3) relatives, 4) dates, 5) acquaintances, 6) strangers, and 7) two or more perpetrators.

Rape

The most commonly reported type of perpetrator was an acquaintance (26.0%), followed by relatives (23.7%), current or ex-spouses (21.2%), current or ex-partners (18.4%), dates (18.4%), strangers (16.9%), and two or more perpetrators (13.3%). These findings are important

for several reasons. First, these findings indicate that rape is a significant problem across all victim-offender relationships, and that no particular victim-offender relationship can be ignored. Second, efforts that seek to address only one type of victim-offender relationship for rape, whether it is a spouse or an acquaintance, may miss out on other categories of offenders that may be equally as problematic for female victims. Also, efforts that are aimed at reducing certain types of perpetrated rape, for example intimate partner rape, may also have benefits for other victim-offender categories that are equally as prevalent.

Stalking

For stalking victimization, the relative-perpetrator type was removed from multivariate analyses because of the extremely low number of cases (n = 38, 3.4%), leaving a total of 1,127 perpetrated incidents. The most frequent perpetrators of stalking were current or ex-spouses (31.9%), strangers (25.6%) and acquaintances (25.4%). The least frequent perpetrator types were dates (16.7%), two or more perpetrators (14.4%), and current or ex-partners (10.2%). These findings indicate that women can be stalked by perpetrators that are relatively close to and know by the victim (e.g. a spouse), completely unknown to the victim (e.g. a stranger), or one in between on the "closeness" continuum (e.g. an acquaintance). It is also apparent that the crime of stalking includes experiencing multiple pursuit behaviors and actions, ranging from being followed or spied on all the way to having property vandalized or being threatened with some type of weapon or gun. There was no evidence found in this current study to support that certain victim-offender relationships were more or less associated with specific types of stalking behaviors, so this clearly may be an area for researchers to further investigate.

Physical Assault

Physical assault was by far the most common type of violence perpetrated in this current study (N = 2143). Over half the perpetrators identified by respondents were current or ex-spouses (55.3%). The category of two or more perpetrators made up 16.5% of the perpetrators, while current or ex-partners constituted 14.1%, dates 13.5%, acquaintances 12.7%, strangers 11.5%, and relatives 7.7%. Specific physical assault tactics were not significantly linked to certain perpetrator types, although this may be another area warranting further investigation. Overall, these findings clearly indicate that domestic physical assault is a large problem, and that programs specifically targeting spousal assault could be greatly beneficial in lowering the overall percentage of female physical assault victims.

Victim-Offender Relationship, Violent Victimization, and Negative Health Outcomes

The main focus of this current study was to examine the relationship between the victim-offender relationship and negative health outcomes. More specifically, the victim-offender relationship was offered as a potentially important predictor of whether or not a victim suffered negative health consequences as a result of violence. Numerous questions in the NVAWS were targeted at the respondents' current health and well-being, including questions about general health, mental health, and substance use. The NVAWS also contained very detailed questions about the perpetrator of the violence, and particularly their relationship to the victim. Thus, the NVAWS allowed for not only the examination of multiple types of victim-offender relationships, but it also contained several questions on the health of the respondent.

Rape

For victims of rape, the victim-offender relationship does not appear to significantly increase the odds of experiencing any of the six negative health outcomes (Table 4.14). When examining the relationship between being a rape victim (versus a nonvictim) and the six negative health outcomes, rape victimization is a significant predictor of current poor health, current depression, current anti-depressant use, and current pain medication or tranquilizer use (Table 4.11). Results indicate that while rape violence itself significantly increases the odds of four of the six negative health outcomes in this study, the victim-offender relationship does not appear to have an effect on negative health outcomes.

Stalking

Among stalking victims, the victim-offender was not shown to significantly affect the odds of experiencing negative health outcomes, except in the heavy alcohol use model (Table 4.15). Those victims stalked by a partner were 3.3 times more likely to heavily use alcohol (ΔOR = 2.78; 95% CI = 1.45, 7.47), and those victims stalked by a date were 2.8 times more likely to heavily use alcohol (ΔOR = 2.78; 95% CI = 1.39, 5.59). While the heavy alcohol use model was significant, the confidence intervals are fairly large due to a low number of respondents falling into those two categories. A question is then raised as to if this finding would have been significant had the sample size been larger. Again, an issue for researchers to further investigate.

As was also the case with rape victims, stalking victimization was significantly related to four of the six negative health outcomes – current poor health, current depression, current anti-depressant use, and current pain medication or tranquilizer use (Table 4.12). Once again, it

appears that while stalking victimization is related to an increase in the odds of experiencing negative health outcomes, the victim-offender relationship is not.

Physical Assault

As previously illustrated in Table 4.16, for those physically assaulted, the victim-offender relationship did not appear to significantly increase the odds of experiencing any of the six negative health outcomes. For physical assault victimization, being a victim significantly increased the odds of current depression and all four current substance use outcomes. It is not particularly surprising that physical assault did not increase the odds of currently experiencing poor health, because unless the victim has recently been assaulted, the signs of the assault are probably gone and the victim is healed. As was the case for rape and stalking victimization, it was found that while physical assault did lead to an increase in the odds of experiencing negative health outcomes, the victim-offender relationship did not have any significant effect.

Summary

Ultimately, the victim-offender relationship did not significantly predict negative health outcomes for any of the three types of crime. However, it was found that being a victim does increase the odds of experiencing many of the negative health outcomes explored in this current study. Between the models estimated with the victim-offender relationship and those that did not include the victim-offender relationship, the addition of these victim-offender variables did not increase prediction significantly over models examined that did not have the victim-offender variables entered. To determine this, models were run with and without the victim-offender variables, and the difference between the -2LL of the models with the perpetrators and the -2LL of the models without the perpetrators was not significant with the appropriate degrees of

freedom. Also, the overall percent correctly predicted did not increase with the addition of the victim-offender relationships in the models.

Frequency of Victimization, Prior Victimization, and Recency of Victimization

This study also examined the effect of the frequency of victimization, prior victimization, and recency of victimization on negative health outcomes. These three variables were included in the multivariate analyses to rule out other possible explanations of why victimization is positively related to negative health outcomes across types of violence. The frequency of victimization variable can be seen as a measure of dosage, or in other words, does the number of times a perpetrator commits a particular type of violence predict negative health. Victimization prior to the age of eighteen was also included in the multivariate analyses because previously existing literature has found prior childhood victimization to have a significant effect on future victimization (see Kessler and Magee; 1994; O'Keefe, 1998). Slashinski et al. (2003) examined recency as part of their study, therefore to further compare results the measure was added in this current study as well. The recency of victimization variable was created to examine the relationship between how recent the last violence was, and current health outcomes. The assumption is that more recent violence might have a stronger influence on current negative health

Rape

In general, frequency of victimization did not increase the odds of experiencing a negative health outcome, except in the case of current anti-depressant use. However, the odds ratio in this case was so incredibly close to one. Odds ratios equal to one mean that there is no change in the odds. Prior victimization did not have a significant effect across any of the

negative health outcomes. This was also the case for the recency variable. For the crime of rape, frequency of victimization, prior victimization, and recency were not generally significant predictors of negative health.

Stalking

Frequency of victimization was not a significant predictor of negative health in any of the six models. Prior victimization increased the odds of currently using pain medication or tranquilizers by almost 2 times, and of currently using illegal drugs by 2.7 times. The recency variable increased the odds of currently using anti-depressants and of heavily using alcohol by almost 2 times. Overall, while prior victimization and recency both had a significant effect on a few of the negative health outcomes, the effect was not consistent.

Physical Assault

The frequency of victimization variable had an effect on two of the negative health outcomes, current depression and current pain medication or tranquilizer use, but the odds were incredibly close to one. And odds ratio of one would indicate no change in the odds. Prior victimization was a fairly strong predictor of negative health, increasing the odds of four of the negative health variables (e.g. current depression, current anti-depressant use, current pain medication or tranquilizer use, current illegal drug use) by at least 1.5 times. As was the case with rape victimization, the recency variable did not significantly increase the odds of experiencing any of the six negative health outcomes. For the crime of physical assault, the prior victimization variable fairly consistently predicted an increase in the odds of experiencing negative health, while the frequency of victimization and recency were poor predictors.

Summary

This current study did not find evidence that frequency of victimization, prior victimization, or recency variables were more consistent and significant predictors of negative health than the victim-offender relationship. In fact, only in the case of prior victimization and negative health for physical assault victims were there a fairly consistent and significant increase in the odds. The final chapter of this current study will end with a discussion of how the findings relate to: 1) using general strain theory as a theoretical approach for victimization research, 2) the limitations of this study, and 3) future implications of this research.

Chapter 6

DISCUSSION

This chapter will first discuss the findings as they relate to the theoretical framework laid out in Chapter 3. Second, research limitations will be discussed. Third, the implications of this current study will be reviewed, as well as the applicability of strain theory to guide victimization research. Finally, this chapter will end with some ideas for future research, as well as observations on the field of violence against women as a whole.

General Strain Theory

It was hypothesized that general strain theory may be an appropriate lens through which to examine the relationship between the victim-offender relationship and strain theory. Agnew (2001) stated that victimization could be viewed as a type of strain because it is perceived as both unjust and traumatic, which would lead to negative emotions such as anger, depression, anxiety or frustration. While Agnew was focused on delinquency and criminal offending as frequently following such negative emotions, it is the first part of the theory which focuses on the relationship between strain and negative emotions that is of interest herein.

Victim-Nonvictim Effect on Negative Health Outcomes

Three multivariate analyses were conducted, one for each type of violent victimization. To examine if there was first a victim-nonvictim effect on six types of negative health outcomes, models were estimated using a victim variable and all of the independent and control variables except the victim-offender relationship. These analyses demonstrated that there was a fairly consistent, significant relationship between victimization and negative health outcomes, across

rape, stalking, and physical assault. As specificed by Agnew (2001), viewing victimization as a source of strain that would lead to negative emotions was generally supported by this current study.

Victim-Offender Relationship and Negative Health Outcomes

The main purpose of this current study was to examine the effect of the victim-offender relationship on a woman's psychological and physical health, as well as overall well-being. It was put forth that the victim-offender relationship may be responsible for differences in the strain brought about by victimization. Specifically, that different perpetrator types might be considered more straining to victims of violence based on these perpetrators physical proximity to the perpetrator, the trust inherent in the relationship, the level of intimacy between the victim and offender, and the amount of contact between the two. These different victim-offender relationships were viewed as potential significant predictors for negative health outcomes experienced by victims of rape, stalking, and physical assault.

Results from the multivariate analyses did not support the notion that the victim-offender relationship was a significant predictor of negative health in women victims of violence. In fact, in practically all models across three types of crime, the victim-offender relationship was consistently insignificant. So why did the victim-offender relationship not matter in terms of experiencing negative health outcomes, but yet being victimized regardless of by whom influenced negative health?

There are a couple of explanations for why the victim-offender relationship was not a significant predictor of negative health for victims of rape, stalking and physical assault. One possible explanation is that simply being victimized is stressful, unjust, and traumatic, irrespective of who is committing the victimization. In other words, strain is strain, and strain

has a negative effect on health regardless of the victim-offender relationship. A second explanation is there is some other element of a violent victimization that predicts negative health outcomes. For example, other studies have suggested and found empirical evidence that social support after violent victimization can mediate the relationship between victimization and negative health outcomes. Kimerling and Calhoun (1994) found that social support helped moderate both somatic symptoms and self-rated health perceptions. In other words, those women who had or perceived positive social support had fewer somatic symptoms and a more positive perception of their own health. Findings from a study of sexual assault victims similarly indicated supportive societal reactions led to a more successful adjustment following the victimization. Specifically, Ullman (1996) found that a victim had a more successful adjustment following a sexual assault if the victim was believed and if others listened to the victim's feelings. Research thus suggests that one or more forms of social support, such as the availability of friends and family or the positive support from a victim-help group, may potentially mediate the relationship between victimization and the occurrence of negative health consequences. This is a relationship that deserves further empirical scrutiny.

This study extends previous research by using a national-level study, examining three types of violence against women, and employing six different negative health outcomes. As evident by this study in conjunction with the previous studies illustrated in Table 4.17, the relationship that exists between the victim-offender relationship and negative health outcomes remains an open question, one deserving further scientific scrutiny. The next section explores other possible elements of victimization that may potentially predict negative health outcomes more successfully than the victim-offender relationship.

Frequency of Victimization, Prior Victimization, and Recency of Victimization

The effects of frequency of victimization, prior victimization, and recency of victimization were also examined in this current study. These three variables were important to examine in order to rule out possible explanations for why victims of violence reported negative health consequences. Also, each of these variables speak to different elements of a victimization that may make it more straining. For example, if a victim is raped repeatedly by a perpetrator, that may cause the victimization to be seen as more traumatic and higher in magnitude. Also, if an adult rape victim was also a childhood rape victim, that prior rape may make the victim feel they are unjustly being victimized again. Thus, prior victimization might be responsible for the strain felt by the victim. Finally, a more current rape may be more traumatic or vivid to the victim as opposed to a rape suffered decade before. Therefore, the recency of the victimization may be a source of strain to the victim.

Ultimately, these three variables did not have a consistent effect on negative health outcomes. It was possible that frequency of victimization, prior victimization, and recency of victimization might be better indicators of strain than the victim-offender relationship, in light of the victim-offender relationship having insignificant effects on negative health outcomes. However, given the inconsistent and generally insignificant effect these three variables had on six negative health outcomes over three types of crime, at least for the current data, it appears that the notion that such variables do not do a better job of predicting negative health was not supported.

While this study was not a test of general strain theory because there was no direct measure of strain, the belief that the victim-offender relationship may explain negative health outcomes in victims of three types of violence was not supported in this current study. Also,

alternative predictors of negative health – frequency of victimization, prior victimization, and recency of victimization – were not found to consistently and significantly predict negative health either. It is possible that victimization itself satiates the four sources of strain, as specified by Agnew (2001, 2002). However, this study suggests that another source of data from a survey containing questions detailing more specific elements of victimization may better answer speak to the issue.

Study Limitations

As with any study, there are limitations to this current study to address. The NVAWS sampled a large number of women, but only 61.7% agreed to be interviewed and completed the survey (Tjaden & Thoennes, 1998). As compared to other surveys like the NCVS and NWS, this participation rate is lower. The NVAWS was a telephone survey, so clearly any women living in a household without a telephone (6% of women) were excluded (Kilpatrick, 2002). Also, the length of the interview in the NVAWS was approximately twenty-five minutes, which may have contributed to respondent fatigue (Slashinski et al., 2003).

One of the biggest limitations of this current study is its inability to establish temporal order of the relationship between the independent variables and negative health outcomes. Respondents were asked whether they currently suffered from negative physical and mental health, as well as substance use. There is no way to determine if the negative health outcomes existed prior to the reported victimization, given the question wording of the survey. Conversely, the negative health consequences reported may not have been a result of the reported victimization. For example, the respondent may have used alcohol or illegal drugs, but these substances may have had nothing to do with being a victim of violence. Also, it is possible

that poor physical health or depression is a result of some other factor, such as genetics (Kendler et al., 1995). There is also the possibility that victims may have reported current negative health effects, but these were just temporary and caused by something obscure or fleeting. As an example, if the respondent was currently experiencing severe cold symptoms lasting a few weeks, such an illness may cause current poor health and even depression – but have nothing to do with being a victim of violence.

Along those same lines, it is possible that respondents did not accurately report current negative health outcomes. This may be the case for current substance use. The NVAWS was an anonymous and confidential survey; however, respondents may have underreported current substance use, for fear of punishment by law enforcement (even if they were told their responses would not be shared), judgment by the interviewer, or some other reason such as embarrassment. In addition, rating one's own current health is subjective; it is not a clinical diagnoses. As an example, one woman may feel her health is currently poor, but by another woman's standards that same health status may be seen as fair. So, self-report health status is still relative to one's perceptions, which are frequently based on factors such as age, educational attainment, and socio-economic status (CDC, 2006).

Underreporting or overreporting may also cause an issue with the data, in terms of measurement. Respondents were asked about each person who committed an act of violence against them. For those who have experienced multiple acts of violence by the same perpetrator, it is possible that not all incidents were reported (Slashkinski et al., 2003). There might have been issues with recalling violent acts, especially with respondents who had suffered either multiple types of violence, or the same type of violence repeatedly. Once again, there may be a potential problem with reporting due to anonymity. Even though the survey was completely

confidential, respondents still may have been hesitant to admit to acts of violence that occurred. Finally, it is possible that some of the respondents have been perpetrators of violence in other situations, or reciprocated the violence (Cascardi, Langhrichsen, and Vivian, 1992).

Research Implications

The finding, or lack thereof, that the victim-offender relationship does not significantly affect negative health outcomes is important for several reasons. First, the current research and other studies (see Frank et al., 1980; Kilpatrick et al., 1997; Ullman and Siegel, 1993) did not find a significant link between the victim-offender relationship and negative health outcomes, other studies have reported finding a significant link (see Culbertson & Dehle, 2001; Demaris and Kaukinen, 2005; Ullman et al., 2006)). This indicates a need for continued research in this area, as the question about how specific elements of violent victimization relate to negative health remain unanswered. Second, if the victim-offender relationship is not an important predictor of negative health consequences, than consideration needs to be given to other possible explanations. In this study, other explanations – frequency of victimization, prior victimization, and recency – were explored, yet did not consistently or significant explain negative health outcomes either.

If the victim-offender relationship does not have a significant impact on a victim's negative health, it is important to question if other factors related to the victimization may play a more important role in why victimization leads to negative health outcomes. Physical injury has been previously used as a negative health outcome measure, where it was found that certain perpetrator types are more likely to cause physical injury than others (Stermac et al., 1998). It is also possible that level of physical injury from a violent victimization is a significant predictor of

negative health outcomes. A more complete health history on each respondent would also be important to include in future analyses. The NVAWS has previous health history questions, but does not allow for the disentangling of whether chronic health conditions – mental or physical - occurred before or after a violent victimization.

Strain theory was utilized in this current study as a possible explanation for why the victim-offender relationship may cause differential health outcomes for victims of violence. The choice in using strain theory is important for many reasons. First, those who study violence against women typically draw from commonly used victimology theories such as lifestyle theory and routine activities theory. However, these theories were not applicable as the outcome measure in this current study was negative health, not victimization. Second, victimologists should consider broadening their use of theories in related fields, and not be limited to just a handful of victimization theories. Using strain theory to guide this current research was an attempt to think outside their "usual" theories and draw from a theory central to a different but related discipline – criminal justice.

Third, Agnew (2001, 2002, and 2006) has cited victimization as a possible source of strain. Existing research studies have even found some empirical success in using strain theory to guide research where victimization was considered the source of strain (Hinduja, 2007; Swatt et al., 2007). In this present study, it was argued that some victim-offender relationships would be more stressful than others, leading to differential negative health outcomes. The results reported in this study did not support this notion. However, it is possible that perhaps the four sources of strain noted by Agnew (2001) that would lead to more criminal outcomes and delinquency are sufficiently met by elements of the victimization itself, not the type of person perpetrating the violence.

This study makes numerous contributions to the field of violence against women. First, it examined the extent of three types of violent victimization by victim-offender relationship. Many studies have reported that violence against women is a social problem that needs addressing, but one cannot address the problem until we know more about the individual elements, such as who is committing the violence. Second, this study examined six offender-relationships, an improvement over previous research, which typically examined only intimate partners, known versus unknown perpetrators, or only a few categories of perpetrators such as intimates, strangers, and acquaintances. Third, this study extended a common criminological theory (i.e. strain theory) to the study of violence against women, in attempt to demonstrate its relevance or lack thereof to non-criminological research and outcomes.

The study of the differential occurrence of negative health outcomes as a result of victimization is a field that deserves much future empirical attention. Clearly there is room for improvement, both in collecting data which addresses the issue of temporal ordering and in developing more valid and reliable measures of prior health and health status directly following victimization. There is no consensus in the empirical findings as to how to operationalize within the victim-offender relationship and negative health outcomes, so this issue remains important.

With the widespread problem of violence against women, there are definite implications for victims, health professionals, and the criminal justice system. Victims of violence need to know what services are available in terms of seeking treatment in the aftermath of violence. Available options need to be clear and provided at the earliest time possible. Support from family, friends, health service providers, and law enforcement is essential in encouraging victims to report the violence, to seek help both psychologically and medically, and to communicate with those close to them. The cost of victimization to the victim is financial in terms of lost wages,

medical care, and psychological treatment – to name a few. There are personal costs, such as the loss of self-esteem, self-worth, and fear. There are still other costs such as fear of being labeled a victim, and victim blaming (White & Rollins, 1981).

Health professionals need to be prepared to deal with both the physical and psychological aftermath of victimization (Acierno et al., 1997). Doctors, nurses, and other emergency care personal need to be trained in how to appropriately tend to the needs of victims seeking medical help (Little, 2001). Counselors and psychologists need to be introduced to victims as soon as possible following the victimization. Assessing the situation and providing mental health care as soon as possible may help to prevent or lessen the psychological impact of victimization. Also, psychological care that is provided may prevent future violence from occurring or empower the victim to leave a situation where violence is commonplace.

For the criminal justice system, training law enforcement on how to interact with victims and be sensitive to their needs is essential in preventing further trauma to the victim. Law enforcement officers may potentially be the first to interact with a victim after violence, and how they deal with a victim might influence a victim's willingness to report violence and seek further help. Better organization between police, judges, and lawyers would also be beneficial in not only assisting victims, but in handling perpetrators (Elstein & Smith, 2000). Whether it is in rehabilitating perpetrators, or ensuring victim safety, better coordination in the criminal justice system could help decrease the occurrence of future violence.

Victimization does not occur in isolation. Violence against women is a large social problem that affects multiple facets of society. Clearly the overall goal is to reduce the occurrence of violence in the first place. Education is a good place to start, as it empowers women by promoting self-confidence and increasing social support (Jewkes, 2002). Education

also gives a woman the ability to better achieve economic autonomy. For children, setting a good parental example may be key in reducing violent victimization, especially since there is some evidence that witnessing parental violence can lead to those children becoming aggressive themselves (McCloskey and Lichter, 2003). Modeling good behavior on how to treat others across different settings – school, home, and workplace to name a few – would be a good start in preventing future violence. Providing focused and long-term support to victims and their families, instead of just to the victim, would also be beneficial. Violence against women will continue to be a major problem until society as a whole realizes the problem is not just the victim's problem, it is everyone's problem, regardless of the victim-offender relationship.

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APPENDICES

Appendix 1a: Tolerance and VIF Statistics for Rape

Variable	Tolerance	VIF
Spouse	0.563	1.776
Partner	0.844	1.185
Relative	0.495	2.019
Date	0.636	1.573
Acquaintance	0.563	1.778
2+ Perpetrators	0.559	1.790
Frequency	0.902	1.109
Prior	0.661	1.513
Recency	0.767	1.303
Age	0.644	1.552
Divorced/Separated	0.743	1.346
Widowed	0.399	1.112
Single	0.705	1.418
Nonwhite	0.922	1.085
Graduate HS	0.329	3.043
Some College	0.301	3.326
Graduated College	0.330	3.032
Unemployed	0.814	1.228
<$20,000	0.545	1.834
$20,000-$35,000	0.645	1.550
$35,000-$50,000	0.666	1.501
$50,000-$80,000	0.670	1.493
No Health Insurance	0.814	1.228
Gov't Health Insurance	0.746	1.340

Appendix 1b: Tolerance and VIF Statistics for Stalking

Variable	Tolerance	VIF
Spouse	0.595	1.680
Partner	0.776	1.288
Date	0.710	1.409
Acquaintance	0.639	1.565
2+ Perpetrators	0.747	1.338
Frequency	0.890	1.124
Prior	0.877	1.141
Recency	0.759	1.317
Age	0.642	1.558
Divorced/Separated	0.700	1.428
Widowed	0.931	1.074
Single	0.657	1.523
Nonwhite	0.925	1.081
Graduate HS	0.233	4.288
Some College	0.216	4.637
Graduated College	0.208	4.798
Unemployed	0.807	1.240
<$20,000	0.524	1.910
$20,000-$35,000	0.666	1.501
$35,000-$50,000	0.698	1.433
$50,000-$80,000	0.697	1.435
No Health Insurance	0.817	1.224
Gov't Health Insurance	0.756	1.322

Appendix 1c: Tolerance and VIF Statistics for Physical Assault

Variable	Tolerance	VIF
Spouse	0.429	2.330
Partner	0.616	1.622
Relative	0.763	1.311
Date	0.630	1.588
Acquaintance	0.628	1.591
2+ Perpetrators	0.636	1.573
Frequency	0.935	1.069
Prior	0.952	1.051
Recency	0.774	1.292
Age	0.627	1.594
Divorced/Separated	0.768	1.302
Widowed	0.916	1.091
Single	0.653	1.531
Nonwhite	0.924	1.082
Graduate HS	0.315	3.173
Some College	0.300	3.329
Graduated College	0.326	3.063
Unemployed	0.820	1.219
<$20,000	0.570	1.755
$20,000-$35,000	0.678	1.475
$35,000-$50,000	0.702	1.425
$50,000-$80,000	0.709	1.410
No Health Insurance	0.844	1.185
Gov't Health Insurance	0.757	1.322