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FAMILY AND EMPLOYMENT CONSEQUENCES OF INTIMATE PARTNER

VIOLENCE: A LONGITUDINAL ANALYSIS

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ABSTRACT

In this report, we examine how being violently victimized by an intimate partner influences the chances that a woman divorces or separates and moves; changes employment; or is re-assaulted by an intimate partner.[1] Previous research suggests that a high proportion of divorced women had previously experienced marital violence (see: Bowlus and Seitz 2002), and that violent partners interfere with women's employment. Thus, it is crucial to consider the ways intimate partner violence is associated with marital dissolution and changes in a woman's employment trajectory. We also consider the ways these consequences are influenced by injuries resulting from the violence and by the victim's self-defensive and help-seeking behaviors during and following the assault. Recognizing exposure reduction and retaliation effects as competing predictions, we assess whether women who attempt to reduce their exposure to violence are more or less likely than other victims of partner violence to be re-victimized.

Victims' experiences and characteristics are compared to those of non-victims as well as other crime victims. Through these comparisons we assess the extent to which intimate partner violence uniquely affects individual lives to determine if certain marital and employment outcomes are unique to victims of intimate partner violence.

Using the 1996-1999 longitudinally linked files of the National Crime Victimization Survey, a nationally representative data set, we are able to examine the

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[1] We combine the transition from married to divorced and married to separation into one category because separation is often a precursor to divorce, and we are only looking at changes within a six month period. The divorce process usually takes longer.

impact of intimate partner violence in a way that has heretofore been impossible. This research expands the understanding of the ways women are affected by violence over time. It also provides insight into the role of victim's agency, revealing how actions taken at the time of assault affect later household and employment consequences, and the chances of a repeat assault.

Results suggest that victims of intimate partner violence are indeed more likely to divorce and move out of their homes than are other women (both victims and non-victims). Additionally, such victims more often transition out of the labor force. Help seeking and self-defense are only sometimes influential in these outcomes. Finally, our results suggest that self-defense increases the risk of repeat assault while exiting the labor force is protective against repeat assault.

This project has direct policy relevance, as it suggests how exposure to key community resources, such as legal and medical services, could affect victims. The findings may suggest ways to improve interventions to enhance victims' opportunities for positive life outcomes. Additionally, future research can be better designed to target specific intervention points.

EXECUTIVE SUMMARY

Violence perpetrated against women by their male intimate partners was
historically considered acceptable practice. Later, although it was not overtly accepted,
many viewed it as a family matter and it became a hidden taboo. After years of feminist
activism and cultural changes, partner violence has become a topic on which there is
much concern and public discourse, including policy debates. Many have attempted to
document the prevalence of intimate partner violence, and some have examined its
immediate consequences. Yet, little research addresses the months and years following
assault. Little is known about how partner violence affects women's work and
domesticity. We also know very little about whether intervening authorities or a
woman's own actions at the time of assault influence the stability (or instability) of her
home life, employment patterns, and the risk of more assaults from an intimate partner.
This project makes a first step toward filling this void.

This project uses the 1996-1999 National Crime Victimization Survey, a
nationally representative, longitudinal data set, to compare the labor force, mobility and
divorce consequences of women victimized by their partners with those for other
victimized and non-victimized women. Thus, while this research focuses on intimate
partner violence, it also illustrates the consequences for women who are victimized by
other perpetrators. By linking responses to key questions over time, we estimate how
incidents of intimate partner violent victimization relate to important changes in women's
lives: 1) residential mobility and/or separation, and 2) employment changes.

Despite the interrelationships between the different types of family violence, this study is limited in scope to men's aggression toward their partners. Women's violence toward men should be understood differently than male violence, because it is qualitatively different. It is more often perpetrated in self-defense (Kurz 1993; Morse 1995) and less often results in injury (Straus and Gelles 1990a; Zlotnick, Kohn, Peterson, and Pearlstein 1998). Thus, we limit our analyses to women's victimization.

Research suggests that the institutions battered women are likely to first encounter, the legal and medical systems, have typically been insufficient (or outright neglectful). We test whether seeking help through these channels improves the victim's work and family life and reduces the likelihood of a subsequent assault. By gaining insight into the consequences of intimate partner violence, we see how men's physical dominance can adversely influence women and families.

Some limited research has been conducted to examine employment changes resulting from partner violence. It generally shows that women's employment suffers following violence perpetrated by an intimate partner (Byrne, Resnick, Kilpatrick, Best, and Saunders 1999; Lloyd 1997; Riger, Ahrens, and Blickenstaff 2000). Additional research explores how violence influence changes in household composition. For example, Dugan (1999) makes a compelling case to consider residential mobility as a response to recent criminal victimization. Her findings show that individuals victimized within a mile of to their homes are more likely than others to move. Others have examined how employment and marital outcomes may be related to repeat assault. Some argue that employment may be a means of escaping violent relationships (Dugan, Nagin, and Rosenfeld 1999; Farmer and Tiefenthaler 1997; Rogers 1999a). Others suggest

ending a marriage as a way of reducing intimate partner assault (Bowlus and Seitz 2002; Byrne et al. 1999; Sanchez and Gager 2000).

These studies are typically plagued by at least one of three primary shortcomings: first, they rely upon non-representative samples of women; second, they examine only victims of intimate partner violence without comparing them to others (or they neglect to distinguish between different types of victimization altogether); and/or third, they measure only one point in time, inherently missing important changes that can only be measured over time.[2] By using the longitudinally linked National Crime Victimization Survey (NCVS), we overcome these problems, as the NCVS is a nationally representative sample of victims and non-victims. It is constructed from repeated interviews, every six months, over a three-year period.

Further, the current project expands upon a key premise of previously NIJ funded research that states that policies and resources designed to decrease exposure between partners in a violent relationship will most effectively reduce the rate at which intimates kill their partners (Dugan, Nagin, and Rosenfeld 2003). If this "Exposure Reduction Hypothesis" were true, we would expect that women who seek help through the medical and police establishments to have reduced chances of subsequent assault. That is *if* these establishments responsibly responded to the victims (i.e., by inquiring about injuries, providing referral services, etc.).

Dugan, et al. (2003) also raise the competing "Retaliation Hypothesis" which states that a victim's help-seeking behavior could actually entice her abuser to retaliate.

They find empirical support that suggests that women who seek intervention could face

retaliation, particularly if their exposure to violence is not entirely reduced. In fact,

several scholars have indicated that men intensify their violence when women attempt to

exit relationships. (Browne 1987; Ellis 1992; and Mahoney 1991; see also Riger, et al.

2000).

This project addresses three primary research questions (and two secondary

questions):

1. Are intimate partner violence victims more likely than other women
   (including victims and nonvictims) to divorce or move out of their home
   within six months of a reported assault?

   - Do injury, self-defense, and help seeking influence the chances that a
     victim divorces or separates, moves alone, or that her household
     moves?

2. Are intimate partner violence victims more or less likely than other women to
   leave or enter the labor force within six months of a reported assault?

   - Do injury, self-defense, and help seeking affect the likelihood of
     changes in victims' labor force status?

3. What factors are associated with reports of repeat assault?

Data and Methods

We address these questions by using the longitudinal data of the National Crime

Victimization Survey (NCVS), which is the largest nationally representative data set on

criminal victimization in the U.S. It is administered to a sample of households by the

U.S. Census Bureau, and is sponsored by the Bureau of Justice Statistics. Its purpose is to

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[2] The relevant research that accounts for victims and non-victims and uses nationally representative data

gather information about criminal victimization directly from the victims. Thus, the data include incidents not reported to the police. The NCVS is a collection of individual interviews conducted with the residents of a sample of roughly 50,000 housing units that are interviewed every six months for three years.

To address the first research question, we model household disruption as an outcome, which includes marital dissolution and residential mobility. Because disruption could appear differently depending on marital status, we estimate models separately for those married and those who are not married at the time of the interview. We run competing risks models to simultaneously examine the likelihood of four outcomes: the woman separates or divorces, she moves out of the household, the entire household moves, or no change occurs in the six months following interview (between the current time t and time t+1). These models include predictors such as the woman's victimization history, demographic and interview characteristics.

It is less straightforward to model the dissolution of relationships for unmarried women. The NCVS data provides no information on whether unmarried and unrelated persons who live together are also intimately involved. Also, many women reside apart from their boyfriends. While not ideal, we model the likelihood that the respondent moves (alone or with her household), rather than staying in her home. These models include the same predictors found in the married models.

To address the second research question, we use discrete-time event history models to examine the effects of violence on longer-term work-related transitions: entry

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studies only intimate partner homicide. It fails to address what happens in cases that fall short of death.

into and exit from the labor force. We limit the sample to include only those women who

are unemployed at the interview for the entry model and employed at the interview for

the exit model. Thus, a woman can transition from one model to the next after her

employment has changed.

The secondary research questions for 1 and 2 are addressed by re-analyzing each

of these models on the sub-set of victims of violence by any perpetrator. In addition to

the factors from the primary models, we also estimate how these outcomes are influenced

by the circumstances and behavior that occurred during the incident such as the victim's

injuries, self-defense by the victim and her help-seeking behavior. The models also

control for other important incident characteristics such as weapon use and drug/alcohol

use by the perpetrator.

Finally, we address the third research question by modeling violence for all

women who have already reported at least one incident of intimate partner violence. This

model includes labor force outcomes, marital dissolution, and incident characteristics as

independent variables and controls for the demographic and interview characteristics

included in the above models. Thus, we are able to test whether these exposure reducing

strategies actually reduce the likelihood of more violence, or whether they increase it.

Before summarizing the findings, we first note that despite its benefits, the NCVS

has several limitations. It does not ask respondents about their crime victimization

histories or any other aspect of their lives prior to survey onset. Thus, all models are

censored to the beginning of the survey period. This could make victims of partner

violence appear as non-victims, which would bias our findings for intimate partner

victimization toward zero. The survey omits some special populations such as homeless

and institutionalized populations. Evidence suggests that some of the institutionalized such as those incarcerated or living on military bases experience higher rates of intimate partner assault (Dugan and Castro 2004; Heyman and Neidig 1999; Richie 1996). Without these victims we cannot assess their outcomes making our sample *less* victimized than a truly representative sample. Additionally, the NCVS likely includes a broad distribution of violence that include domestic disputes that not threatening to either partner. On the other extreme are the rarer cases of severe violence that could turn lethal because the former is more common than the latter, the NCVS sample likely over-represents non-threatening violence, diluting our results toward zero. Also potentially contributing to this bias is underreporting: some victims will not disclose their assaults on national surveys and thus appear as nonvictims. Finally, since the NCVS only interviews respondents who live at the sampled addresses, we are unable to assess employment outcomes and the risk of subsequent assault for those who move from the sampled addresses.

Results

The answer to our first research question is a resounding "yes." Married victims of intimate partner violence appear to be more likely than other married women to divorce or experience household moves. Unmarried partner violence victims are more likely than other women to move. Additionally, they are more likely to move than are other violent crime victims. However, the only evidence that a violent crime victim's actions during an assault influence domestic outcomes is with unmarried victims. Unmarried victim's self-defensive actions are slightly related to a higher likelihood that

they move. Additionally, their calls to the police following an intimate assault are associated with marginally lower odds of moving.

Our findings addressing the second research question suggest that crime victimization is indeed associated with a woman's entry into the labor force. However, investigating all women, we find victims of intimate partner violence have patterns that look more like those of non-victims than those of other victims. Yet, when analyses are restricted to victims of violent crime, recent intimate partner victimization does, indeed, show up as a risk factor for entering the labor force. Thus, it appears when compared to all who were violently victimized, those whose assaults were perpetrated by a partner are the most likely victims to seek employment after an assault. This is not surprising, given that they may need to find work as part of a strategy for becoming more independent of a violent partner. Few incident characteristics are associated with entering the labor force. The important exception is having been injured to the extent that medical care was sought. Both seeking medical help and entering the labor force may represent a victim's agency toward ending the violence. These models also revealed that demographic characteristics are less important in predicting victim's labor force entries than they are for the total sample of all women.

The findings for labor force exits reveal that victimization history has little influence on an employed woman's odds of leaving work. Additionally, we find a violent crime victim's experiences and actions at the time of assault do not matter.

Finally, in response to our third research question, we find important associations between an intimate partner violence victim's responses to assault and her likelihood of being re-victimized by an intimate. Actions taken in self-defense appear to increase the

risk of sustaining a later assault, while exiting the labor force decreases those odds. Also,

we find that a victim's own help-seeking behavior seems to have no effect on her chances

of re-victimization, yet when others call the police and/or when arrests are made future

violence appears to be deterred.

Our analyses offer more straightforward support for the hypothesis of

"retaliation" than for "exposure reduction," since self-defense seems to lead to more, not

less, violence. However, when someone other than the victim initiates the reduction in

exposure, such as when another calls the police or when the police make an arrest, the

"exposure reduction" hypothesis is supported.

In sum, our findings do suggest that violent crime victimization and intimate

partner violence, specifically, are important predictors of changes in household

composition and employment status. While our findings are not surprising, they provide

empirical documentation previously unavailable. Further research is needed to examine

the mechanisms behind these changes and to consider the full nature and history of

intimate partner victimization. We need to conduct studies that follow a nationally

representative sample of women, even if they move, in order to track the longer-term

consequences of violence.

While our results provide no cut and dry policy recommendations, they do

suggest important roles for the police and medical establishments. Had these institutions

been administering effective intervention to protect women from their violent partners

and help improve their lives, we would have found consistent significant patterns of

effectiveness throughout all models.

FAMILY AND EMPLOYMENT CONSEQUENCES OF INTIMATE PARTNER VIOLENCE: A LONGITUDINAL ANALYSIS

INTRODUCTION

Violence against women by their male intimate partners has gone from acceptable practice to a hidden taboo, to a topic on which there is much public discourse, policy and concern. Yet, little is known about its affects upon women's work and family lives. Many have attempted to document the prevalence of intimate partner violence, and some have examined the short-term consequences. However, with the exception of homicide studies (the most extreme consequence), little research addresses the months and years following assault. We know very little about the role played by intervening authorities or how a woman's own actions at the time of assault influence her likelihood of divorce or residential mobility, labor force trajectory and the risk of subsequent assault. This project makes a first step toward filling this void.

Research Findings on the Extent and Nature of Intimate Partner Violence

Table 1 describes previous studies that have examined the prevalence of intimate partner violence using nationally representative data. It shows information on the sample, the time frame, the study design/methods and the prevalence rates. Klaus and Rand (1984) found very low rates in the 1973-1981 waves of the National Crime Survey. Several factors are cited as reasons. For instance, the context of a crime survey makes it unlikely that incidents not normally considered criminal are reported. Interview privacy, though desired, was not always attainable; and shame may prevent many from disclosing

their experiences. It is also worth noting that this study took place prior to the redesign which added better probes about assaults by an intimate (see Bachman and Taylor 1994). Rennison (2003) computed more current rates using the redesigned National Crime Victimization Survey (NCVS). The 2001 NCVS rates are presented in Table 1. Although these rates are much higher than those found by Klaus and Rand, they are still substantially lower than those found by other surveys. Note, however, that these studies did not link a woman's interviews to assess victimization over the entire three year interview period. Rather, all of the interviews in a twelve-month period were analyzed. Hence, the rates represent a snapshot of victimization in a fairly narrow window and often include two interviews with the same respondent. As a hypothetical example, let us assume that an interview period had only one woman who was interviewed twice. If she only reported intimate partner victimization at one of her interviews, the other interview would appear to be reported by a non-victim (despite her victimization within the year surrounding that interview), inflating the proportion of non-victims from zero to 0.5. Alternatively, if that woman reported victimizations during both interviews in the twelve-month period, she would be counted twice, but the proportion of victims would remain at one. In general, because it is highly unlikely that a woman reports being victimized during each interview, the actual proportion of women who were victimized will be higher than the proportion of interviews in which the respondent discloses an incident. Finally, these rates were computed using bounded NCVS interviews. That means that respondents had a concrete reference to the previous interview and were less likely to report on incidents prior to the 6-month window inquired about (ICPSR) Thus, it is not surprising that the rates are lower than those found in other, unbounded surveys.

[Table 1 About Here]

Morse (1995) analyzed data from four waves of the National Youth Survey. Her results for heterosexual married or cohabiting couples indicate high prevalence of intimate partner assault within the past year: ranging from a rate of 54.5% of couples when respondents were between 18-24 years old (and a smaller proportion were in married/cohabiting relationships) to 32.4% by the time respondents reached their late twenties to early thirties. Morse attributes this change (as well as the discrepancy between the rates she found and rates from other studies) to the age range of the sample, varying from one at which violence peaks to one at the start of its decline. Morse found that rates for severe violence were drastically lower, ranging from 25.5% in the first wave analyzed to 15.8% in the last wave (Data Not Shown in Table 1). In the Morse data, rates of any female perpetrated violence and of severe female perpetrated violence were higher than those of male perpetrated violence across the years. However, as discussed below, Morse (1995) carefully addresses gender differences in the nature, context and consequences of assault.

Straus, Gelles and Steinmetz found that in 1975, 16% of all married/cohabiting couples in the National Family Violence Survey (NFVS) reported one or more assaults during the year (Straus et al. 1990b). In a 1985 follow up study, the rate was similar at 15.8%. Straus and Gelles (Straus and Gelles 1990a) claim that partner violence is underreported and conclude that their numbers represent a lower bound on actual incidence of assault.

Despite this claim, Straus and Gelles (1990a) find higher rates of intimate partner violence than do other researchers (see Table 1). However, their numbers are not directly

comparable because they refer only to those currently residing with an intimate partner, the group most "at risk" of intimate partner assault.

Tjaden and Thoennes (2000b) used similar survey techniques to examine the prevalence of intimate partner assault among all adults. They found much lower rates, 1.5% of women and 0.9% of men reported violent victimization by an intimate in the past year. When analyses were restricted to married/cohabiting couples of the opposite sex (Tjaden and Thoennes 2000a:151), findings remained similar: 1.4% of women and 0.8% of men "reported being raped, physically assaulted, and/or stalked by a current or former marital/opposite-sex cohabiting partner in the 12 months preceding the survey." Tjaden and Thoennes (2000a) discuss how their findings differ from those of Straus and Gelles (1990a) and highlight the possibility that differences in survey presentation and analytic categorization explain the differential rates found in each study.[3] Additionally, Tjaden and Thoennes use a modified version of the Conflict Tactics Scale employed by Straus and Gelles, as well as other survey instruments.

Lower rates are also found by Zlotnick, et al. (1998), who studied married and cohabiting couples in the National Survey on Families and Households (NSFH), suggesting that Straus and Gelles (1990a) have relatively unique findings and that actual rates are either much lower or people are generally far more reticent about this topic. The

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[3] If a male or female respondent reports a victimization in the National Family Violence Resurvey, it is also counted as a perpetration for the opposite sex when rates are tabulated in Straus and Gelles' analyses (Tjaden and Thoennes 2000a). However, given findings that men and women report differently (see, for example:Bohannon et al. 1995), it may not be valid to combine these reports, as doing so may inflate estimates. This would partially explain why Straus and Gelles (1990a) find much higher prevalence rates among married and cohabiting couples than do other researchers.

context or presentation of the Straus and Gelles (1990a) survey may have invited greater disclosure.

Regardless of which study is considered, there is no doubt that intimate partner violence against women remains a pervasive and persistent social problem. Not only do those victimized by an intimate (rather than by a stranger) more often tend to experience repeated violence by the same perpetrator, but, also, intimate partner violence has declined at a slower rate than other types of violence (see: Rennison and Welchans 2000; Rennison 1999). Further, it is likely that societal factors are complicit in maintaining the problem. It is therefore essential for social scientists to pursue the issue. In addition to its prevalence, spousal violence often implies underlying family dysfunction and is often an indicator of other types of family violence (McCloskey, Figueredo and Koss 1995: 1241, 1256). For example, "fathers who batter their wives are more likely to hurt their children" (McCloskey et al. 1995: 1256). McCloskey et al. found that children from violent homes are at greater risk both within and outside the family. Specifically, those with fathers that battered their mothers were more likely to be incestuously abused (McCloskey et al. 1995: 1246). Analyzing woman battering is essential so that proper intervention and prevention policies can be established to protect the victimized women and their children and to improve the welfare of families.

Research Agenda

This project uses a nationally representative, longitudinal data set to compare the labor force, mobility and divorce consequences for women victimized by their partners with those for other victimized and non-victimized women. Thus, while this research

focuses on intimate partner violence, it also illustrates the consequences for women who are victimized by non-intimates. By linking responses to key questions over time, we estimate how incidents of intimate partner violence relate to important changes in women's lives: 1) residential mobility and/or separation, and 2) employment changes. Figure 1 illustrates the main relationships we test. We examine how intimate partner violence (A) leads to household disruption and employment consequences (B). We additionally consider how these outcomes are affected by women's injuries and help-seeking behavior at the time of the incident (C). Finally, we address how intimate partner violence victims' characteristics and family and employment consequences affect the likelihood of a subsequent act of partner violence (D).

[Figure 1 About Here]

Relevant Research Findings

Focus on Intimate Partner Violence Against Women

Despite the interrelationships between the different types of family violence, this study is limited in scope to men's aggression toward their female partners. Women's violence toward men should be understood differently than male violence, as women's aggression toward men is qualitatively different than men's violence against women.

Although some find similar rates of perpetration by men and women or higher rates of female perpetration (see, for example: Moffitt, Caspi, Rutter, and Silva 2001; Morse 1995; Straus and Gelles 1990a), not all research supports the finding that men and

women engage in violence similarly.[4] Tjaden and Thoennes (2000a), using the National Violence Against Women Survey conducted in 1995-1996, find that women were more likely than men to report having experienced rape, physical assault, and stalking by a husband or opposite sex cohabiting partner. They also find differential rates of help seeking. Women reporting that they were physically assaulted were more likely than men to "report that they had been injured, received medical treatment, received mental health counseling, lost time from work, and sought justice-system interventions as a result of their most recent victimization" (Tjaden and Thoennes 2000a:155).

Even in cases where women are aggressive towards their intimate partners, research suggests women are more likely to act in self-defense (see Kurz 1993:258), if not in response to direct physical threat (perhaps in reaction to emotional assault). Additionally, women are more likely to experience physical injury as a result of spousal violence than are men, a finding supported by the National Family Violence Resurvey (Straus and Gelles 1990a). Using the National Survey of Families and Households, Brush (1990:63) finds that although men and women were about equally likely to engage in violence, when women were aggressive toward their husbands they "were more likely than men to report that they were injured in the course of disagreements with their partners" (see also Zlotnick et al. 1998). Morse (1995) found that both women and men were more likely to report that either both partners or men, rather than women, initiated

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[4] There is an interesting debate in the literature regarding women's violence toward their male intimates. Moffit et al. (2001) argue that women's violence may be more easily forgotten by men and thus less often reported than is male violence unless specific probes are included in the survey. This could explain why some studies show higher rates of male perpetrated assault. On the other hand, Morse (1995) contends that women's violence goes against the role expectations for women and so even minor aggression is likely to be remembered as violence, thus inflating the rates of female perpetrated violence in some surveys.

fights among couples who reported violence. This suggests that perhaps women, more often than men, were acting in self-defense. Further, she found that women who had been abused were more likely than men to live in fear of their partner. Also, women were more likely to incur injuries from their partner's violence than were men. Note, however, that some research does challenge this claim. Specifically, work done by Moffitt, et al. (2001) on the Dunedin Longitudinal Study out of New Zealand finds very high rates of both male and female violence and suggests that women do respond violently to male violence, but that an antisocial history is also predictive of female (and male) violence net of their partner's violence. Further, factors such as individual attitudes toward aggression and involvement in other crime are predictive of violence. Thus there is some evidence that self defense is not the only explanatory factor in female perpetrated violence.

In sum, because of the greater likelihood that women's violence is perpetuated in self-defense and because of women's greater chance of experiencing an injury at their partner's hand, men's violence against their female intimate partners is different than women's violence against male intimates. It would thus be unwise to analyze male and female perpetrated assaults within the same framework and so our scope is limited to violence perpetrated against women. History and culture have allowed and even encouraged the violent victimization of women by their male partners and continued gendered inequities enable men to continue assaulting the women in their lives.[5]

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[5] For an opposing viewpoint, see Felson (2002).

The Criminological and Societal Response to Intimate Partner Violence

America is characterized by persistent gender inequality. Violence is but one means some men use to control women and maintain their dominance (see: Schecter 1982). For example, Van Natta (2001) views the normative gender system as a factor in all types of intimate violence since it sets the stage for inequitable power dynamics. She elaborates that ending domestic violence is linked to adjusting unequal power relationships: "As long as individuals are unable to obtain the means to live, some of us will be profoundly vulnerable to abuse, we will have few options to escape violence if we are victimized, and we will be more likely to be oppressed as human property" (Van Natta 2001:32). Empirically, Felson and Messner (2000) found that violent husbands are more likely to use threats to control their wives than are other perpetrators of violence-- including female perpetrators of violence against their male partners. They suggest this as evidence of the husbands' attempts at controlling their wives.

While male violence against intimates represents one extreme of male control, it is both a result and indicator of a society that supports women's lesser status. This is echoed by Morse (1995), who found that women who had been abused were more likely than such men to live in fear of their partner.

Feminists typically see spousal violence as an expression of the inequality that exists between men and women. They believe that violence is used as an instrument of male control over women and that it will continue so long as women maintain a lower status within society (Kurz 1993: 253, 257-261).[6] Further, "feminist researchers point out

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[6] An alternative hypothesis is retaliation. There is some evidence that as women's status increases at the

that both historically and recently, major institutions have permitted and condoned the use of physical abuse by husbands to control wives" (Kurz 1993:259). There is abundant evidence that the state has often supported or overlooked spousal abuse. Sheffield's (1999:55) discussion of sentences imposed on male batterers illustrates how attitudes infringe upon judicial decisions:

> In 1981 a Kansas judge suspended the fine of a convicted assailant on the condition that he buy his wife a box of candy. In 1984 a Colorado judge sentenced a man to two years on work release for fatally shooting his wife five times in the face. Although the sentence was less than the minimum required by law, the judge found that the wife had "provoked" her husband by leaving him. In 1987 a Massachusetts trial judge scolded a battered woman for wasting his time with her request for a protective order. If she and her husband wanted to "gnaw" on each other, "fine," but they "shouldn't do it at taxpayers' expense." The husband later killed his wife, and taxpayers paid for a murder trial.

In the first two examples, the severity of a male's perpetrated violence against his wife is minimized by the justice system that is supposed to protect. In the last example, a judge dismisses a woman's concerns for her safety at home, implicitly supporting her husband's right to assault her. Ford's (1983) work on Marion County, Indiana suggests there were systematic problems within the criminal justice system including a lack of consistency in cases involving battered women. They could not rely upon the criminal justice system for protection.

While dramatic changes have since taken place within the criminal justice system, many women are still not receiving the help and support that they need. Further, women are still being revictimized by the men from whom they have sought protection. A severe recent example occurred in March of 2002. A woman in Maryland was killed by her

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macro-level, so does the rate at which women are killed by their intimates (Dugan et al. 1999:205).

partner "24 hours after second-degree assault and threatened arson charges against him were dropped when he promised in County District Court that he would stay away from his wife" (Family Violence Prevention Fund 2003). In this case, the offender had a history of domestic assault. Hence, feminists implicate a society that condones and accepts violence in the problems of spousal abuse.

While male violence against intimates represents one extreme of male control, it is both a result and indicator of a society that supports women's lesser status. Cultural factors implicitly (and sometimes explicitly) promote men's use of violence. For example, Crenshaw (1993) links the ways women of color are represented in the media to how they are often perceived: violent portrayals legitimize violence against women. There is also empirical evidence supporting the idea that violence in the media may increase men's acceptance of violence against women. Malamuth and Check (1981) showed that exposure to films showing positive consequences of violence against women increased men's acceptance of such violence.

Research suggests that the institutions battered women are likely to first encounter, the legal and medical systems, have typically been insufficient (or outright neglectful). We seek to better understand whether seeking help through these channels improves the victim's work and family life and reduces the likelihood of a subsequent assault. Further, by understanding the consequences of intimate partner violence, we will show how men's physical dominance can adversely influence women and families.

Limitations of Prior Research

Little research has addressed the consequences of intimate partner violence experienced by women. Exceptions are studies of injury (see Brush 1990; Dobash, Dobash, Wilson, and Daly 1992; Morse 1995; Tjaden and Thoennes 2000a; Zlotnick et al. 1998), and the long-term effects of violence on mental health (i.e. Gleason 1993; Saunders 1994). Past research on injury has typically used injury as a dependent variable to show how men and women suffer differently from intimate partner violence. These studies firmly establish that women, more than men are likely to be hurt. While this research justifies analyzing women and men separately, it stops short of considering the consequences injuries have on women's lives (e.g. effects upon employment). To our knowledge no current research investigates how sustaining an injury impacts the likelihood of being revictimized by one's partner.

Earlier research on help seeking behavior has examined the problematic nature of the medical and legal services encountered by victims. The medical system has historically treated women's injuries without intervening or identifying women experiencing intimate partner violence and the legal system does not always offer desired protection and intervention (see: Dworkin, 1993; Martin, 1995; Stark, Flitcraft, and Frazier 1979; Warshaw, 1993).

Similarly, limited research examines family and employment changes resulting from partner violence. Existing studies are typically plagued by at least one of three primary shortcomings: first, they rely upon non-representative samples of women (or fail to distinguish between different types of victimization); second, they examine only victims of intimate partner violence without a comparison group; and/or third, they

measure only one point in time.[7] By using the longitudinally linked National Crime Victimization Survey (NCVS), we overcome these problems, as the NCVS is a nationally representative sample of victims and non-victims. It is constructed from repeated interviews, every six months, over a three-year period. Below we describe the relevant research and discuss its limitations.

Employment Outcomes

Within the sociological literature, there is a large body of research on women's employment, the gendered nature of the labor market, and the effects of female employment on the family. Research efforts include examining the gender wage gap (see, for example: Blau and Kahn 1992) and considering the nature and extent of occupational sex segregation and the "glass ceiling" (see, for example: Cotter, DeFiore, Hermsen, Kowaleski, and Vanneman 1997; Jacobs 1989; Petersen and Morgan 1995). Others have evaluated maternal labor force participation, including the wage penalty of motherhood (see, for example: Bianchi 2000; Budig and England 2001; Klerman and Leibowitz 1999); and studied the division of household labor as women's time is increasingly devoted to market work (see, for example: Bianchi, Milkie, Sayer, and Robinson 2000) (Brines 1994; Lennon and Rosenfield 1994; South and Spitze 1994). Some have examined the role of female labor force participation in expanding women's autonomy and power within the household (see, for example: Blumstein and Schwartz 1991). As Blau, Ferber and Winkler (1998), for example, recognize, economic dependency within

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[7] The relevant research that accounts for victims and non-victims and uses nationally representative data studies only intimate partner homicide, but does not address what happens in cases that do not end in

marriage often means divorce is not a viable option for women. This research is most relevant to our current project.

While we do not compare women's and men's labor force experiences, we address women's labor force responses to incidents of intimate partner violence and consider how entrances or exits from the labor force influence the risk of subsequent assault. Further, we explore how women's employment trajectories are influenced by their own actions at the time of assault and how their employment influences their likelihood of subsequent assault.

Some scholars have linked violent victimization to negative employment outcomes. For example, Lloyd (1997) examined the effects of intimate partner violence on women's employment and found that rather than curtailing employment, women experience downward occupational mobility. Her work shows the importance of considering consequences beyond the short-term losses in days of work and pay after a violent incident. She concludes that intimate partner violence is associated with a higher likelihood of unemployment, more jobs (of shorter duration), and more health problems.

Lloyd (1997:157) also found evidence that violent partners often played a role in women's employment outcomes: "Some women detailed men's attempts to influence whether they worked, and recounted their partners' efforts to control and intimidate them."

Similarly, Riger t al. (2000) found that women whose partners attempted to prevent them from going to work were more likely to quit or lose their job. Also women

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death.

whose partners interfered with their participation at work were more likely to miss workdays. Forty-six percent of the women in their sample were explicitly forbidden to work by the abuser (although the vast majority of these women did work). Eighty-five percent of the employed women missed work because of intimate partner violence or psychological abuse and 52% had to quit or were fired because of it (Riger et al. 2000:167).

Lloyd's (1997) sample was not nationally representative, but rather a random sample of mostly lower income women in the Chicago area. Thus, it is unclear whether the same effects can be generalized to women at higher income levels (who may have more resources to exit violent relationships). Her analysis is also limited to bivariate associations making it difficult to conclude that the abuse "caused" work displacement. The Riger, et al. (2000) study is similarly limited, as it focuses only on shelter residents in the Chicago area. It is likely that victims who are not in shelters have different experiences than those in the shelter population and there may be geographical variations.

Byrne, Resnick, Kilpatrick, Best, and Saunders (Byrne et al. 1999) also found evidence that violent victimization may negatively influence a woman's career trajectory. They (1999:364) examined changes in women's employment status after a violent crime and found that "women who experienced a new assault were more likely to be unemployed than women who did not experience a new assault." This is suggestive of a link between victimization and exit from the labor force; however, their analysis only considers movement from being employed to unemployed and does not examine other changes in labor force participation. It is also limited by the aggregation of violent crime by all offenders. Others research also suggests a linkage between violent intimate partner

victimization and labor force participation. Using nationally representative data from Canada, Bowlus and Seitz (2002) found that women previously victimized by an intimate were less likely to be employed; yet, they do not find evidence of a direct link between employment and abuse and suggest the difference is because of other differences between victimized and nonvictimized women (i.e., nonvictimized women tend to be better educated).

Dugan et al.'s (1999) premise that female victims seek employment to finance the departure from violent relationships suggests an alternative hypothesis. This research supports the possibility that violent victimization could actually enhance a woman's commitment to the labor force. Victims may seek employment after the onset of violence, as a means to gain independence from an abusive partner. Suggestive evidence is provided by Rogers' (1999b) analysis of nationally representative 1980 and 1988 longitudinal data which suggests that increased marital discord (measured through three items including marital instability, relationship problems and marital conflict) increases the likelihood that unemployed wives will enter the labor force. Even if abused women stay in the relationship, such resources could provide them with greater bargaining power. Indeed, Farmer and Tiefenthaler's (1997) findings suggest that increased income decreases violence experienced by women in abusive relationships.

Other scholars reverse the order of causality, examining how female labor force participation may affect violent victimization. Parker and Toth (1990) found that states with higher rates of female labor force participation also have higher rates of intimates killing one another, suggesting that women's employment may increase partner violence. However, their analysis is not at the individual level and they rely on cross-sectional data

possibly confounding the direction of causality. Without knowing the temporal ordering of events, they cannot assess whether intimate partner violence induces women to work more often to escape their partner, or whether women are killed because they work.

Other studies found that the role women's employment played in her chances of being victimized by her partner is related to her partner's work status. MacMillan and Gartner (MacMillan and Gartner 1999) show that women's employment lowered their risk when their partners were also employed, but increased her their risk when their partners were unemployed.

Marital Dissolution

Research evidence suggests that across time and place, women have used divorce as a nonviolent means of ending threatening relationships (Erchak and Rosenfeld 1994; Gillis 1996; Levinson 1996). Sievens (2003) found that women in violent marriages faced great obstacles in obtaining divorce in colonial America even as laws were changing to allow such marital dissolution at the woman's request. As divorce becomes more prevalent and socially acceptable, it is likely that this option becomes increasingly viable in the eyes of victims. Despite the increased availability and acceptance of divorce, many women today opt to stay in violent marriages, often because they are dependent upon their abuser.[8] Indeed, Bowlus and Seitz (2002) found that the likelihood of divorce was substantially higher in violent marriages than nonviolent marriages (74% of marriages with high severity abuse, 30% of marriages with low severity abuse and 14%

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[8] It is important to note, as well, that exiting a violent marriage does not necessarily end the violence perpetrated by the husband (Browne 1995; see: Sev'er 1997).

of nonabusive marriage) ended in divorce. Further, they found that spouses in violent marriages have very different characteristics than those in nonviolent marriages and are much more likely to divorce. They also found that women with higher educational attainment and without children are both more likely to work and more likely to divorce, suggesting the importance of constraints and opportunities.

Sanchez and Gager (2000) also found that nonviolence is associated with lower odds of marital dissolution in their study of the National Survey of Families and Households. (see, also: DeMaris 2001) This suggests that violence is associated with divorce.

Zlotnick et al. (1998) use the National Survey of Families and Households (NSFH) to show that unmarried, cohabiting couples are more likely to have been physically victimized than are married couples. This could suggest that violent cohabiters are less likely to transition into marriage. Perhaps as more violent marriages dissolve, the pool of potential dating partners includes more violent individuals. This is suggested by Dugan, et al. (1999:192), who discuss the possibility that declines in the rate of first marriage may be linked to "greater selectivity among would-be spouses."

One of the few studies that directly addresses marital dissolution following intimate partner violence found a positive relationship. Using the three waves of the National Women's Study, a national study that included an oversample of women aged 18 to 34, Byrne, et al. (1999) found that those women experiencing rape or physical assault were more likely than their peers to divorce between the first and third waves of the survey. This study is only suggestive because it combines violent victimization by intimate partners with other types of violent events. Thus, caution must be taken before

-18-

drawing conclusions about the effects of marital violence on marital dissolution. Further, the study only examines bivariate relationships and therefore fails to control for important demographic characteristics that could be related to both violence and separation.

Residential Mobility

There are several possible reasons why a victimized woman would choose to leave her home. Most directly, a woman may move if she is being violently victimized in her home. Or, perhaps the entire family may relocate to protect a daughter from a violent boyfriend. Additionally, if a marriage dissolves, both partners may be forced to move since the marital household could be too costly for either to maintain independently. Few scholars have addressed the role of intimate partner violence in women's residential mobility decisions. By considering this outcome, we hope to better understand some of the complex factors that may result in a move. We recognize that intimate partner violence is only one of a nexus of factors associated with mobility. Victims may move for other reasons (even to stay with an abusive partner who needs to move for a job).

Dugan (1999) makes a compelling case to consider residential mobility as a response to recent criminal victimization. Her findings show that individuals victimized within a mile of to their homes are more likely to move than others. However, these findings are not generalizable to victims of partner violence as her study intentionally excludes those cases. Further, since she investigated household moves instead of individual moves, her methods failed to detect victims who moved while the rest of the household remained. In this project, we explicitly examine individual moves and compare victims of intimate partner violence to other crime victims. It is likely that the

moving decisions of victims of intimate partner violence are very different, given the danger within rather than outside of the home and their inter-dependence with the perpetrator.

Intervening Factors

We also explore the roles of injury, self-defensive actions at the time of assault and contact with the legal and medical systems immediately following assault. In fact, these outcomes may influence the relationship between intimate partner violence and marital dissolution, residential mobility and employment changes.

For instance, those with injuries may be more likely to restrict their activity and hence become more dependent upon their partners, it is possible that they will suffer greater employment consequences and be less likely to separate from their partners. Alternatively, the injury can serve as a "wake-up call" leading women to exit the relationship. Browne (1987) found that victims of intimate partner violence who killed their partners often did so after escalation in violence, to levels that had not been experienced before. Injuries may be one level of escalation that pushes some victims to leave their partners.

Prior research on self-defense was conducted within the context of who precipitated the violence. Scholars have found that women are more likely than men to assault their intimates in response to partner-precipitated violence (see: Kurz 1993; Morse 1995). However, the extant research neglects to explore how a woman's self-defensive actions influence change in her family, employment, or risk of future assault.

Much research has examined victims' contact with police and medical establishments. Some have evaluated the ability of police and medical establishments to detect and intervene in intimate partner violence. For example, Stark, et al. (1979) discuss how the medical establishment 'fails' battered women. In their study of women at a large urban hospital, they found that the battered woman does not fit into the model of diagnosable diseases: "…the patient's persistence, the failure of the cure, and the incongruity between her problems and available medical explanations lead the provider to label the abused woman in ways that suggest she is personally responsible for her victimization" (461). Indeed, the researchers found that many doctors do not even ask women how they were injured and whether they have injuries that are not obvious. Further, the treatment battered women received for their injuries was often inappropriate.

Such concerns were echoed in Warshaw's (1993) research at an urban emergency room in a training hospital. She reviewed female charts for a two-week period and searched for indications of abuse. The sample includes 52 cases where women were obviously purposefully injured. Warshaw found detection and intervention lacking and that personnel were not receptive to the special needs of battered women. For example, victim's clues often went ignored and doctors did not tend to elaborate on information collected by the nurses. Additionally, in most cases (78%), doctors did not ask about the relationship to the perpetrator. Stark et al. (1979) view the system as contributing to the problem. They see radical change as essential for advancing women in society and ending domestic abuse. Among their ideas are woman-centered networks that empower her in times of need.

Other scholars have considered how police intervention might affect women victimized by intimates. Some recognize inherent biases within the legal system. Ferraro (1993) explicitly points to race, class, and sexuality privileges inherent in the legal system, and challenges the demonization of individual men rather than considering the societal roots of domestic abuse. She critiques the ways in which legal services and protections are offered to victims and questions the ways inherent gender, class, sexuality, and racial biases may play into the treatment victims receive.

Another theme is that the legal system does not adequately consider the gendered nature of assault. Ferraro (1993) notes that gender-neutral language ignores the differential context in which male and female violence tends to take place. She cites incidents where women who phoned police wound up being the ones arrested, since officers do not always see the gendered nature of family conflicts and notes: "When police arrest women for defending themselves against battering, the abusers are provided social support for initiating and justifying violence" (169).

Many express concern that individual victims' needs are not adequately considered. Bowman (1992) critiques making it mandatory for the police to arrest in domestic violence cases since there is no evidence that such policies deter future violence, or that it is necessarily the response that women want. Ferraro (1993:173) also questions the effectiveness of mandatory arrest and prosecution policies and emphasizes that "…women are the best experts on their own lives." She cites evidence that allowing victims to drop charges actually decreases recidivism.[9] Bowman emphasizes the

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[9] It is, however, possible that dropping charges reduces the likelihood not of assault, but of reporting assault

importance of the entire response to domestic assault, beginning with a call to police and extending through prosecution and aid to victims. While she realizes some women may find it empowering to have their abusers arrested, others may not want this response, favoring a different response from police, and may be reluctant to call the police if they fear their spouse will be arrested. Bowman clearly indicates the need for more research that considers women's needs. She ultimately calls for a response that will prosecute offenders and provide support for their victims.

Researchers have specifically addressed the influence of arrest policies on intimate partner violence. The most notable are a series of arrest experiments beginning with one by Sherman and Berk (Sherman and Berk 1984) who examined spouse assaults in Minneapolis. Their findings suggest that arrest was more effective in decreasing the prevalence of assault than were either offering advice or ordering the perpetrator away for eight hours. This finding influenced policy-makers to institute mandatory arrest policies in many jurisdictions. Similarly, Berk and Newton (1985) examine the police records of a county in Southern California. Their results also suggest that arrests are associated with fewer new incidents of wife assaults, particularly among those most likely to be arrested. They cannot determine if this is because assaults go down or reporting declines. Further, evidence regarding the effectiveness of arrest is mixed and some replication studies found opposite results, particularly when looking at the unmarried and unemployed (see, for example: Berk, Campbell, Klap, and Western 1992; Pate and Hamilton 1992). However Dugan (2003), using the yearly (not longitudinally

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to the police.

linked) files of the NCVS data finds evidence to suggest that laws may actually reduce the number of spousal violence assaults (and have little influence on assaults by boy/girlfriends).

Finally, there is empirical evidence that suggests that women victimized by an intimate partner have different help-seeking patterns than those assaulted by non-intimates. In her study of the 1993 Canadian Violence Against Women Survey, Kaukinen (2002) found that those assaulted by a spouse or cohabiting partner were more likely than those victimized by a dating partner, another known offender or a stranger to either seek little or no help or to seek substantial help (by telling family and friends *and* notifying a formal agency). Such victims were least likely to disclose to personal networks alone. Kaukinen's findings suggest that assault by a spouse or cohabiting partner may most often be concealed but "once the process of disclosure is initiated, women victimized by spousal offenders may no longer be able to conceal or normalize the violent actions of their abuser" (Kaukinen 2002:28-29).

Repeat Assault

One of the most severe consequences a woman may experience following intimate partner assault is re-victimization. Johnson's (1995) categorization of intimate partner violence indicates that severe male violence used to control women is linked to future assaults escalating in severity. It is important to examine the extent of repeat assault given the potential consequences (injury, death) and to identify the factors that increase or decrease risk. By linking NCVS respondents over time, we are able to detect

subsequent assaults by an intimate.[10]

Previous research using 1978-1982 data from the National Crime Survey found a high rate of repeat assault within six months of the first (Langan and Innes 1986). Further, 37% of the married, divorced and separated victims who reported the incident to police cited concerns about future violence. Lower rates of repeat assault were found by Rand and Saltzman (2003) who analyzed recurrent intimate partner violence in the 1992-1999 NCVS. Most victims (72%) reported only 1 intimate partner victimization in the six months prior to interview.[11] Note, however, that both of these studies are limited because they ignore the repeated interviews of each woman. Thus, for example, if a woman reported being victimized during the first interview and then again during the third, their findings would report the content of those interviews as victimizations of two different women without repeated incidents. By using longitudinally linked files, we are able to link women over multiple interviews and capture recurrent victimization over a longer period of time.

Johnson (2003) analyzed data from a nationally representative sample of Canadian women. Her findings "suggest that a continuation of assaults on wives is predicted by the frequency of previous assaults, the youth of male perpetrators, living in a common-law relationship, the duration of the union [shorter unions imply greater risk], and higher education for female victims" (Johnson 2003:75). Further, she found that a male partner's attempts to limit the woman's access to family income and restrict access

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[10] While we are able to detect whether the respondent was once again violently victimized by an intimate, we are unable to conclude whether it was the same perpetrator as the initial incident.
[11] Note that series victimizations were counted as only 1 victimization in the Rand and Saltzman study

to social networks elevated the risk of later assault. This might suggest that if a male partner wants to limit a woman's access to income and thus force her to leave the labor force, her risk of repeat assault may be elevated.

Competing Hypotheses: Exposure Reduction or Retaliation

This research expands upon a key premise of previously NIJ funded research that states that policies and resources designed to decrease exposure to violent partners will most effectively reduce the rate at which intimates kill their partners (Dugan et al. 2003). If this "Exposure Reduction Hypothesis" were true, we would expect that women who seek help through the medical and police establishments to have reduced chances of subsequent assault. That is *if* these establishments responsibly responded to the victims (i.e., by inquiring about injuries, providing referral services, etc.).

Dugan, et. al (2003) also raise the competing "Retaliation Hypothesis" which states that a victim's help-seeking behavior could actually entice her abuser to retaliate. They find empirical support that suggests that women who seek intervention may face retaliation, particularly if their exposure to violence is not entirely reduced. Further, several scholars have indicated that men intensify their violence when women attempt to exit relationships. (Browne 1987, Ellis 1992, and Mahoney 1991, see also Riger et al. 2000).

(2003). Thus, they inherently under count repeated incidents of violence.

Research Questions

Having reviewed the above literature, it becomes immediately apparent that data limitations confine our knowledge in this area. The data set we constructed allows us to address questions whose answers require information on the same women over time. There are three primary research questions that this project addresses:

1. Are intimate partner violence victims more likely than other women (including victims and nonvictims) to divorce or move out of their home within six months of a reported assault?

   - Do injury, self-defense, and help seeking influence the chances that a victim divorces or separates, moves alone, or that her household moves?

2. Are intimate partner violence victims more or less likely than other women to leave or enter the labor force within six months of a reported assault?

   - Do injury, self-defense, and help seeking affect the likelihood of changes in victims' labor force status?

3. What factors are associated with reports of repeat assault?

METHODOLOGY

Data

Although data collection began in 1973, additional probes were added in 1992 to elicit responses about violence perpetrated within the family, thus making the survey better suited to study intimate partner violence. (For discussion of the redesign, see Bachman and Taylor 1994) We use data collected from 1996 to 1999 and linked longitudinally by Marshall DeBerry of the Bureau of Justice Statistics. Census Bureau

changes in the survey design and sampling procedure preclude construction of a longitudinal file prior to 1996 (Bureau of Justice Statistics 2002) and longitudinally linked data are not available past 1999. The data include 50,115 women.

This study uses the longitudinal data of the National Crime Victimization Survey (NCVS). The NCVS is the largest nationally representative data set on criminal victimization in the U.S. It is administered to a sample of households by the U.S. Census Bureau, and is sponsored by the Bureau of Justice Statistics. Its purpose is to gather information about criminal victimization directly from the victims. Thus, the data include incidents not reported to the police. The NCVS is a collection of individual interviews conducted with the residents of a sample of roughly 50,000 housing units that are interviewed every six months for three years. The first interview at the housing unit is conducted in person, while the follow-up interviews are generally done over the telephone. If a household moves, the new occupants of the housing unit are interviewed in subsequent waves. That is, the NCVS is a longitudinal sample of housing units rather than a longitudinal sample of individuals or households who are followed as they move.

Because the NCVS is a general crime survey, it is well suited for comparing victims of intimate partner violence to victims of other types of crime. The survey gathers detailed information on all recent criminal victimizations reported by each household member over the age of 12. Because the NCVS provides information about the relationship of perpetrator to victim, and the circumstances following the event, it is possible to distinguish intimate partner violence and to estimate how the victim's behaviors influence future consequences. Further, by linking the file over time, we are

able to compare responses from earlier interviews with those in later interviews to determine how victimization shapes changes in women's lives.

The unit of analysis in the proposed study is the woman. We examine a woman's victimization pattern and the subsequent changes in her life for the period that she is followed in the survey (up to three years). We estimate outcome differences between victims of intimate partner violence and 1) victims of other violence 2) victims of non-violent (property) crime, and 3) non-victims (when appropriate). However, the primary focus is on the ramifications sustained by victims of intimate partner violence. Appendix A details the crimes included under violent and other crimes. Note that we also include break-ins and intended forcible entries under intimate partner violence, because these crimes represent likely intentions of violence since current and former partners either have access or would not be in the home unless they are hoping to assault or harass their current or former partner.

Variables

Following is an overview of the variables we use in our analyses. For further details on survey questions, variable construction, and handling of missing data please refer to Appendices B and C. For descriptive statistics, across woman-interviews, on each of the variables, see Appendix D.

Dependent Variables:

Exiting the Relationship is captured through a series of variables. Divorce is measured as a transition from being married to being divorced or separated at the following interview (This variable will only be used for interviews where the woman

reports being married.) Individual residential mobility represents a move by an individual woman since the previous interview, while other members of the household remain at the address, which is suggestive of marital dissolution. This is indicated when a household is interviewed, but an individual woman is not and it is reported that she has moved. A more ambiguous indicator is when the entire household has moved between interview period t and interview t+1. A fourth option is that there is no indication of divorce or household disruption and it is, therefore, assumed that the marriage remained intact. These four categories will be combined into one categorical dependent variable for many analyses. A version of the marital dissolution variable is included in a model predicting subsequent assault. It refers to a marital dissolution since last interview and is coded (0) for those unmarried at t-1. This model also includes a dummy coded variable to indicate a missing value on marital dissolution.

Employment Consequences are captured through several variables. We illustrate how when we measure employment for victims and non-victims in Figure 2. If a woman was victimized between time t and time t+1, her status change is coded based upon whether or not she reported being employed at the time of the first crime incident (reported at t+1) and comparing that to whether or not she was employed at time t+1. Non-victims are coded according to their employment status at time t and time t+1. We use victims' status at incident because 60 percent of intimate partner violence victims were not interviewed prior to their first reported assault, but we have available their (retrospective) report of employment status at the time of assault. For those moving from being unemployed to being employed we assume entry into the labor force. For those employed and later reporting they are unemployed, we code an exit from the labor force.

Both of these variables are included as predictors in a subsequent assault model. Those employed at prior interview (nonvictims) or first assault (victims) are coded (0) for the entering the labor force variable in these models, while those unemployed are coded (0) on leaving the labor force. Missing values on each are coded (0) and missing indicators are also included in the model.

[Figure 2 About Here]

Subsequent Intimate Partner Violence is an indicator of whether or not a subsequent intimate partner assault occurred during the interview period. It is coded (1) for any interview period with more than 1 reported assault and for interviews with any reported assault after previously reported assault(s).

Primary Independent Variables:

Recent and previous victimizations capture all reported crime incidents during or prior to the current interview. For each interview period, we construct variables to tally the number of reported victimizations over the past six months for four types of offenses: 1) violence perpetrated by an intimate, 2) violence by a known offender, violence by an unknown offender, and 4) nonviolent crime (see Appendix A). We construct two indicators for each crime type, recent and previous victimization. A recent victimization refers to the number of victimizations in the past 6 months reported in the current interview. Previous victimization is measured by the average number of victimizations reported for the 6 months before each interview prior to the current interview. Figure 3 provides an example of how each is constructed. The first line shows the actual number of reported victimizations. Note that this hypothetical woman was not interviewed during time 2. At time 3, recent number of victimizations is 1, the number reported at

that interview. Her average prior intimate partner victimization is 1 per six months (2

total prior incidents/2 prior completed interviews). The average number of incidents

reported at time 0 is set to 0 since there was no prior time point to report. Note that since

she was not interviewed at time 2, this interview is excluded from analyses.

[Insert Figure 3 About Here]

We also constructed an average of *intimate partner violence episodes to date*.

This is the average number of intimate partner incidents reported prior to subsequent

assault. It is constructed the same way as described above, except that if there are no

previous intimate partner assaults, then we count the first current assault. For most

models, we use the recent and previous measures of intimate partner assault described

above. However, we use this variable in the models predicting subsequent assault, as it

includes information about the first assault reported at interview, if there are no previous

assaults. Thus, it combines information about assault history and current assault.

Sometimes multiple incidents are collected under one incident. These are termed

series incidents and the NCVS collects information about them collectively. Such

incidents represent a minimum of 6 incidents of similar type for which a respondent

cannot recall sufficient information to report on them separately. To be conservative, we

assign series incidents a value of 6 in the tally of incidents, given the extreme range of

reported series events.

<u>Intervening Variables:</u>

Self-Defense during the course of a crime incident is recorded through responses

to two survey questions: "Did respondent use or threaten to use physical force against the

offender?" and "Who was the first to use or threaten to use physical force - you, the offender, or someone else?" It is coded (1) if the respondent used or threatened physical force and the perpetrator was the first to do so during any crime incident prior to interview. For the subsequent assault models, this variable is coded (1) for any reported use of self-defense during an intimate partner assault prior to a current, subsequent assault. Thus, it is coded (1) in cases where self defense was used during an incident reported in a prior interview, or if there were no prior assaults, during the first assault reported at current interview.

Injury following violent crime is captured by responses to the survey question: "What were the injuries you suffered, if any? Anything else?" asked about all crime incidents reported. It is a binary variable coded (1) if a respondent experienced any physical injury as a result of violent victimization prior to interview.[12] For the subsequent assault models, this variable is coded (1) for any reported injury during an intimate partner assault prior to a current, subsequent assault.

Seeking medical attention is a binary variable coded (1) if a woman injured during any violent incident reported to date and received medical attention for any of her injuries. Victims were asked: "Were you injured to the extent that you received any medical care, including self treatment? Where did you receive this care? Care received at the scene of the incident or at home/neighbor's/friend's is excluded so that this variable represents actually seeking help from a medical establishment. This variable is coded (1)

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[12] The NCVS does not collect information about psychological trauma or other emotional injury.

for any reported medical attention for injuries incurred during an intimate partner assault prior to a current, subsequent assault for the subsequent assault models.

Victim notifying the police is an indicator variable coded (1) if a victim reports that she contacted the police following at least one victimization during or before the interview period.[13] For the subsequent assault models, this variable is coded (1) if she notified the police after an intimate partner assault prior to a current, subsequent assault.

Control Variables:

We control for several *demographic characteristics*. *Age* is measured in years. We assign the age recorded at a woman's first interview for that interview and increment it by 0.5 year (six months) each following interview.

Race is coded into five indicator variables by examining responses to race and Hispanic origin questions on the survey. The five categories available are white, non-Hispanic; black, non-Hispanic; Hispanic; Asian, non-Hispanic; and Native American, non-Hispanic. Respondents are assigned the race reported during their first interview. Missing values are assigned to a separate category, race missing, which will be included in regression models. For some of the models with small sample sizes, we combine racial groups. White, non-Hispanic is the reference category in multivariate analyses.

Educational attainment is collected in years and recoded into three categories: less than 12 years, 12 years, and more than 12 years. Missing values are assigned the value at preceding interview if it matches the value at subsequent interview. Remaining missing cases are classified as zero for both education measures and dummy coded as

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[13] Note that this variable represents only calls to the police made by victims. We also include a control

missing education in the model. High school graduates with no college education are the
reference group.

Low-income households include those that report a family income of less than
$15,000 annually. The second captures the other tail of the distribution. *High-income*
households are recorded as having family incomes of more than $75,000 annually.
Women who fail to report their family income during any given interview may have
reported income in an earlier or later interview. In these cases we assign the average
reported income across the prior and subsequent interview periods. Remaining missing
cases are assigned a value of 0 for all of the income variables and recorded as a 1 for a
dummy variable indicating *missing income*.

Marital status is measured by three indicator variables: married,
divorced/separated, and single (never married or widowed). Those missing on marital
status are assigned the value reported at the prior interview if that value matches the
value at the subsequent interview and coded (1) on an imputation flag. This imputation is
done after the divorce/separation variable is coded so that there is no imputation on that
dependent variable. An indicator is included for those whose marital status is unknown
and cannot be determined by the surrounding interviews.

Indicators are also included to capture whether or not a respondent was *employed*
during the two weeks prior to interview. Missing values on employment status are
assigned to (0), if a respondent reported that she had not worked at all in the past six
months (a separate survey question). Otherwise, those missing information on

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variable indicating police contact by another person in our models run on victims of violent crime.

employment status are assigned the value at prior interview if it matched the value at next interview. Note that the latter imputation is done after the employment change variables are constructed so that it does not affect the dependent variables. An indicator is included for those whose employment status is unknown and cannot be determined by the surrounding interviews.

Student status is an indicator variable coded (1) if a respondent reports that he/she was attending school at the time of interview. Missing values for student status are assigned the value at prior interview if it matched the value at next interview. Remaining missing cases were assigned (0) and a missing flag was created.

Tenure is an indicator of the number of months a respondent reports having lived at the address. It is calculated by assigning the age recorded at a woman's first interview for that interview and incrementing it by six months each following interview. Missing values are assigned the mean value for the sample of all women and an imputation flag is created.

Home Ownership is coded (1) if a respondent reported that the household owned or was in the process of purchasing the home. Missing values are imputed to the value at prior interview if it matches the value at subsequent interview.

Respondents living in *multiple unit* dwellings during their first interview are coded (1) for all interviews. Those in *public* housing during the first interview are coded (1) for all interviews. Missing values on multiple unit and public housing residences are coded (0) and missing indicators are constructed. If a residence was considered *urban* at first interview, that value is assigned for all subsequent interviews.

Household composition is captured through three variables. *One adult* households contain only one person over age 12 in the home; *two adult* households are the omitted category; *many adult* households are comprised of at least three adults; and *number of children* is a count of those under age 12.

We also control for three *interview characteristics*. First, we include the household's *interview period*, which indicates how long the address has been in the sample. Second, it is noted whether or not the interview was conducted by *proxy*, (i.e., someone other than the intended respondent). And finally, in models predicting subsequent assault, where telescoping bias is likely, we control for the first, *unbounded* interview. Five incident characteristics are also included in models run on victims only. *Police notification* is an indicator variable coded (1) if someone other than the victim contacted the police following any victimization prior to interview.[14] *Arrest* is coded (1) if the respondent reports that she knows of any arrests or charges brought as a result of any crime incident prior to interview. *Weapon use* is coded (1) for affirmative responses to the question: "Did the offender have a weapon such as a gun or knife, or something to use as a weapon, such as a bottle or wrench?" for any incident occurring prior to interview. A perpetrator is considered being *under the influence* if a victim says s(he) was using drugs or alcohol at the time of any assault reported to date of the interview. Finally, a *series* flag is created to indicate if any of the victim's recent or prior

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[14] For the subsequent assault models, these variable are coded (1) for any reported police contact by someone else, arrest, weapon use, perpetrator under the influence, and series incident during or following an intimate partner assault prior to a current, subsequent assault.

victimizations were part of a series incident. In the subsequent assault models, we control

for one additional characteristic: whether or not the *offender did this before*.

Methods

In Figure 1, we illustrate the conceptual model for this project. The statistical

models are designed to assess the ways incidents of intimate partner violence (A) affect

exiting the relationship (divorce/separation/residential mobility) and employment status

changes (B). We also consider how intervening variables, including a measure of the

immediate consequence of intimate partner violence (injury), and measures of women's

agency (help seeking behavior) moderate the relationships (C). Finally, we examine how

the consequences of intimate partner violence (B) relate to the likelihood of repeated

violence (D). Each of the outcome variables is described below and in Appendix B.

Our analyses compare victims of intimate partner violence to four other groups of

women: 1) victims of violence by a non-intimate, known offender, 2) victims of stranger

violence, 3) victims of non-violent crimes, and 4) non-victims. Thus, we are able to

disentangle the effects of a violent victimization by an intimate from those of

victimization, more generally. Further, because we can link interviews of the same

woman over time, we can distinguish ongoing patterns of violence from "one-time"

incidents by examining each woman's reports of violence across interviews. Our models

include both a count of current victimizations and an average of prior victimizations. This

allows us to investigate whether the extent of violence is an important predictive

dimension across outcomes.

All analyses also consider variations by race/ethnicity and social class and other demographic and interview characteristics. In models where we investigate only victims, we also control for incident characteristics such as whether a weapon was used.

We estimate parameters for the dependent variables characterized in Boxes B and D of Figure 1. Table 2 lists the dependent variables (outcome), the key predictors, the specific sample, and the modeling structure. Following is a brief description of these models. Our unit of analysis in all models is the individual woman.

To address the first research question, we model household disruption which includes marital dissolution and residential mobility (Table 2, Models 1 and 2). Because disruption could appear differently depending on marital status, we estimate models separately for those married and those who are not married at each interview. Model 1 in Table 2 shows the specifications for the married respondents. We run competing risks models to simultaneously examine the likelihood of four outcomes: the woman separates or divorces, she moves out of the household, the entire household moves, or no change occurs in the six months following interview (between the current time t and time t+1). Thus, the models are actually stacked multinomial logistic regressions with four possible outcomes, where each line of data is a woman interview. They include predictors such as the woman's victimization history, demographic descriptions, and interview characteristics (as collected at time t). Since we have no information after the survey period ends, all models are right censored.

[Table 2 About Here]

The NCVS data provides no information on whether unmarried and unrelated persons who live together are also intimately involved. Also, many women reside apart

from their intimate partners. Therefore, it is not possible to accurately predict relationship dissolution for unmarried women. Also, since many unmarried women live alone, an individual move is also a household move. Thus, for these women we use a stacked logistic model to estimate the dichotomous outcome of moving (versus staying in the household) during in the six months following an interview. We choose the discrete-time model over a continuous model because the specific dates of household disruption are not included in the NCVS. Covariates in model 2 are the same as those in model 1. We estimate the hazard rate, or conditional probability that a woman moves by time t+1, given that she was in the sample in time t.

To address the second research question, we use discrete-time event history models to examine the effects of violence on longer-term work-related transitions: entry into and exit from the labor force (Table 2, Models 3 and 4). Since each of these outcomes is dichotomous, we estimate the models using logistic. We limit the sample to include only those women who are unemployed at the interview for the entry model and employed at the interview for the exit model. Thus, a woman can transition from one model to the next after her employment has changed.

As described above and in Figure 2, respondents' employment status is measured at the time of the incident for victims and during interview t for non-victims. Using those definitions, entry into the labor force is defined as a transition from being unemployed at that measurement to being employed in time t+1. Similarly, exit from the labor force is coded when an employed respondent at measurement reports being unemployed at time t+1. Also estimated in these models are the impact of a woman's victimization status and demographic and interview characteristics. While most of these variables remain

constant over interview periods, we follow the measuring schema shown in Figure 2.

Because we only have this data during interview periods (and not at the time of the

incident) and because 60 percent of all victims were interviewed for the first time after

their first incident, we measure these other variables for victims and non-victims at time

t+1.

We rely on discrete-time event history modeling because the survey excludes the

dates when employment changed. The data is censored at both ends, since we have no

information on employment prior to time 0 or after time 6. Hazard models account for

right censoring and we addressed the nature of error due to left censoring above.

To address the secondary research questions for 1 and 2, we re-analyzed models 1

through 4 on the sub-set of violence victims.[15] We estimate how the ramifications of

partner violence are influenced by self-defense, the help-seeking behavior described in

Appendix C and injuries. The models also controls for important incident characteristics

that likely influence the outcomes (e.g. weapon use, drug/alcohol use by the perpetrator).

We compare estimates between victims of intimate partner violence, victims of violence

perpetrated by another known offender, and victims of stranger violence.

Finally, to address the third research question, models predicting subsequent

violence by an intimate (Table 2, Model 5) are estimated for all women reporting at least

one incident of intimate partner violence.[16,17] It is important to note here that the

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[15] For analyses of violent crime victims, we include all woman-interviews for crime victims from the time
of first violent crime victimization on. Thus, a woman reporting her first violent crime victimization at
time 3 is included from time 3 on even if no further victimization is reported. (Prior to time 3, we have no
evidence that she is a victim.)
[16] Our subsequent assault models include victims of intimate partner violence from the interview they first
report an assault until they exit the sample.

perpetrator of the subsequent attack may be different from the earlier offenders. Due to

data limitations, in most cases, we are unable to verify whether the second partner is the

same as the first. Thus, we estimate the probably that a victim was violently attacked by

a partner during the current interview period, provided that the she has already been

assaulted by a partner (not necessarily the same one) while participating in the survey.

Since this outcome is dichotomous, we use logistic regression. A subsequent assault is

also noted, by definition, if a woman reports multiple intimate partner violent

victimizations during the survey period. Since details are reported for each incident

(including the date), we are able to discern the characteristics that distinguish the initial

victimization from the subsequent assault. However, this level of detail is missing if the

incident is part of a series. Because 8.5 percent of the victims report at least one set of

series events, we rely on the discrete time event history modeling to predict the likelihood

that a victim of intimate partner violence was assault again by an intimate within the six

months prior to interview. An additional model [not shown in Table 2] includes

divorce/separation and labor force status changes as independent variables to test whether

these outcomes influence a victim's likelihood of being violently victimized again by an

intimate.

All models in Table 2 are weighted with the person weight provided by the

Bureau of Justice Statistics. Also, due to competing predictions, all statistical tests are

two-tailed.

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[17] Since these models are restricted to those who report at least one incident of intimate partner violence,
we do not compare these estimates to those for victims of other crime types or nonvictims.

Data Limitations

Left Censoring

Since we have very little information about women's lives prior to the first interview, the data is inherently left censored. Thus, women who were victimized only before to the survey period began will appear as non-victims in the data. Left censoring will *never* make non-victims appear as victims. Left censoring will likely have its greatest impact early in the survey period for women who were victimized just before entry. If intimate partner victimization does, indeed, impact marital, moving, or employment outcomes, these women will appear to be non-victims suffering from such consequences. Thus, any true impact will be biased toward zero.

Sample Constraints

Although the NCVS is a nationally representative sample of U.S. addresses, there are certain populations that are excluded from the survey. These include the homeless and institutionalized populations including incarcerated individuals and those living on military bases. Evidence suggests that incarcerated women have more violent histories with their intimate partners compared to women in general For example, Dugan and Castro (2004) found that women incarcerated in Baltimore, MD (urban, mostly Black) had a substantially higher rate of violent victimization (47.08% for six months) than did women in the NCVS (1.40% for six months). Also, they found that the risk and protective factors are quite different for these two groups. For example, for women in general, intimate partner assaults are more common by husbands within the general population, yet incarcerated women are more often assaulted by a non-marital partner. Additionally, Richie (1996) studied a group of women incarcerated at Riker's Island and found that

battered women often resorted to violence either directly or indirectly as a result of their assault. African American battered women's criminal activities "were seen by them as responses to violence or the threat of violence in their intimate relationships" (1996:127). While Black women were often trapped in a cycle of criminal activity *and* in violent relationships, the white battered women in her sample often used criminal activity as a means of exiting a violent relationship. If intimate partner violence victimization is associated with criminal activity and increases the risk of incarceration, national surveys that exclude incarcerated populations *will* produce deflated estimates of the prevalence of such violence.

Without direct empirical evidence, some prior research strongly suggests that women living on military bases also have a higher risk of intimate partner violence (Brannen and Hamlin, 2000; McCarroll, 1999; Miller and Veltkamp, 1993). According to McCarroll et al. (1999:81), enhanced risk factors among this population include "separation from family, frequent moves, unexpected deployments, and the dangers of military life, including the possibility of service-connected death or injury through accidents, and other causes of morbidity and mortality." Hence, the unique stressors of military life likely increase the risk of domestic violence. In fact, Brannen and Hamlin (2000:169) indicate: "Several studies have suggested that military families experience higher levels of aggression than families in the civilian sector because the military either attracts aggressive men or that the culture and training promote aggression." Similarly, Miller and Veltkamp (1993:767) assert that both "the family and a multigenerational transfer of abuse experienced prior to service" and "the exposure to violence within the military" are risk factors among military personnel. Shupe, et al. (1987:67) describe "a

heavy emphasis on the masculinity and aggressiveness that research on civilians has found to be an important component of male violence toward women ." They link the military culture, generating and reinforcing these ideals, to prior research, but fail to detail specific findings.

Other studies have directly measured the extent of intimate partner violence in the military. While the rates are not always directly comparable with those of other studies, tend to produce higher rates than those found for their civilian samples (Heyman and Neidig 1999; Murdoch and Nichol 1995; see also: Cronin 1995).[18] Heyman and Neidig (1999) critique studies (i.e. Bohannon, Dosser, and Lindley 1995; Cronin 1995; Griffin and Morgan 1988) comparing military and civilian rates of spousal violence claiming that these studies are not always representative of the civilian and Army families, and do not typically control for demographic differences between the two populations. Their study is an attempt to remedy this. Heyman and Neidig focus exclusively on abuse perpetrated by husbands against their wives. In the early 1990s, the Conflict Tactics Scale was administered to a random sample of military personnel at 47 Army posts. Heyman and Neidig compared prevalence rates in the sample of Army respondents to comparable civilians in the 1985 Family Violence Survey.[19] Controlling for age and race (factors demonstrated to affect the likelihood of abuse), they found insignificant differences in men's reports of moderate husband-to-wife assault, but significantly higher rates of severe husband-to-wife assault in the Army sample. Women in the Army sample reported

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[18] Studies of the military are often limited to the current partner or only to spousal assault and not other contexts of intimate partner violence.

[19] Their sample varied across demographic variables from 30,426 to 31,157. The civilian sample they

higher rates of both moderate and severe assault victimization. When comparing the Army sample to the general sample, the Army has consistently higher rates. The authors suggest this may be due to selectivity into the Army: those with risk factors for spousal abuse may be more likely to volunteer for service.

While the evidence is not definitive, there are convincing reasons to believe that those incarcerated or living on military bases have more experiences with intimate partner violence than the general population. Thus the NCVS omits at least two very important populations with above average victimization rates. Therefore, we can only generalize our findings to non-institutionalized U.S. population over age 12 who live in addressed residences.

Patriarchal Terrorism or Common Couple Violence?

Johnson (1995) distinguishes two types of intimate partner violence: patriarchal terrorism and common couple violence. He notes that many feminists have identified a type of violence perpetrated by men to control women. This violence is frequent and escalates in severity and is almost exclusively perpetrated by men on women who typically do not fight back. He terms this type of violence against women "patriarchal terrorism." Johnson also explains that this terminology only describes a small subset of partner violence. Those working from the family violence perspective detail a dramatically different picture of intimate partner violence. Their work illustrates that in many relationships, the violence is as equally likely to be perpetrated by the female as the male. Unlike patriarchal terrorism, "common couple violence" does not tend to escalate

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determined was comparable (they excluded unmarried and unemployed persons) was 3,044 respondents.

over time. Johnson contends that national surveys are more likely to uncover the more frequent common couple violence while shelter and agency based studies are more likely to reveal the more rare patriarchal terrorism. The NCVS is designed to record all incidents of attack, regardless of how inconsequential it may seem to the respondent. In fact, the survey explicitly probes the respondent to recollect incidents committed by someone they know such as a relative or family member and asks for reports of all incidents even if the respondent does not consider it a crime. (Bureau of Justice Statistics 2002). Thus, the data used here is likely to include "common couple violence" that is unlikely to lead to changes in marital status, residence, or employment. Therefore, biases due to this issue, will be towards zero.

Underreporting

A large problem with any survey data is the respondents' failure to disclose specific incidents. This may be exacerbated here because terrorized women may be likely to hide the assaults out of shame or fear. This is an issue in all studies that attempt to capture incident of partner violence. Schwabe and Kaslow (1984:128) explain:

> Even if we had a reliable objective definition and a consensus on how to measure violence, we still would face the problem of getting family members to report the incidents. No one likes to talk about unpleasant or embarrassing private events. There is also the fear that the identified abuser will retaliate with further assaults.

Further, some victims may hide their experiences out of fear of being blamed. Dworkin (1993:238) describes the experiences of some women: "If you try to say you have been hurt and by whom and you point to visible injuries and are treated as if you made it up or as if it doesn't matter or as if it is your fault or as if you are worthless, you become afraid to say anything."

While all surveys suffer from disclosure bias, other data sets produce much higher rates of intimate partner violence than those reported in the NCVS (see Table 1). These differences are likely due to the following reasons. First, the NCVS is a general crime survey that is collected in a formal, rapid manner by government officials. Thus specific probes encouraging respondents to disclose acts perpetrated by an intimate are likely to be lost in the barrage of questions. The context of discussion about crime more broadly may not trigger responses about acts that are seen as very personal in nature and may not be viewed as crimes (see, for example: Tjaden and Thoennes 2000a). Second, while many studies of intimate partner violence ask about the history of violence over the life course, the NCVS refers only to a maximum of three and a half years. Thus, we would expect rates to be lower. Finally, the denominator or the intimate partner violence rate includes all women regardless of whether they are intimately involved with a potential perpetrator—thus deflating the true rate. It is not possible to determine the number of women who were truly at risk (since the NCVS only has detailed information on marriage, but not dating relationships). However, the sample ranges in age from 12-90.[20] While, the current study retains all women for analyses, it is likely that those in the younger and older years are not partnered.

Since the data will include women who were truly victimized but appear as non-victims, this type of measurement error will result in estimate biased toward zero.

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[20] Respondents over age 90 are coded as 90.

Mobility

Since the NCVS samples addresses and not individuals or households over time,
we are concerned that non-random residential mobility will affect the findings. For
instance, violence may occur and be followed by a victim may move immediately after
the incident and prior to the next interview. This would appear as if a non-victim moved,
biasing our estimates towards zero. Further, when victims of intimate partner violence
move out and leave our sample, we are unable to record their marital or labor force
outcomes. If these women have the most extreme labor force outcomes or are most likely
to divorce, any findings will be biased toward zero. Finally, mobility limits our ability to
track subsequent assaults, censoring our data prematurely.

While each of these constraints place limits upon the generalizability of our
results and tends to bias our estimates towards zero, this project is important and worth
pursuing. Very little is known about the consequences of intimate partner violence and
this is the first opportunity to examine a nationally representative data set that follows
victims over time. This work has the potential to yield indicative findings and is valuable
in identifying important areas for further investigation. Additionally, we carefully
interpret findings and information, in tandem with what has already been shown in the
literature, to inform policy and research debates about how violence affects women's
lives.

Small Proportion of Victims

Of the 50,115 women, 0.91 percent or 458 report at least one assault by an
intimate partner. The small proportion of victims raises at least one concern. Any
measurement error will have a magnified effect upon findings. That is, if a woman

misreports being violently victimized by an intimate when she was not, our estimates

would be inflated (see: Cook and Ludwig 1998). However, after a respondent reports

being victimized, she is asked a series of detailed questions that would be difficult to

answer consistently had the incident not occurred. Staff is then able to adjust for

erroneous reports. A more likely scenario is that the respondent underreports actual

events, which would bias the analyses toward zero. We expect that this bias will offset

any inflation due to misreported claims, thus the magnitudes of significant findings will

be conservative.

RESULTS

Household Disruption

We estimated four sets of competing risks models to analyze household

disruption. Table 3 presents the relative risk ratios from two stacked multinomial

regression models run on women married at the time of the interview. The first is from

the sample all married women, while the second is restricted to married violent crime

victims. The first model is broken down into three contrasts: becoming divorced or

separated relative to remaining married and living in the same home, moving out of the

household as opposed to staying, and the entire household moving versus staying in the

home. The second model was initially run using those three contrasts, but we found that

very few of the victims moved without the rest of the household. To reduce the

instability if the model, we grouped the individual movers with those who divorced or

separated. This is discussed below.

[Table 3 About Here]

We turn first to the findings for the demographic variables for the full sample of women to demonstrate that the model is producing reasonable findings. Older married respondents are less likely to end their marriage or move away from their home (alone or with their household). Those with low income are more likely than others to have a change in household (either through a break-up or move). Employed, married women are more likely to end their marriage but less likely to move without the household. Since these women are more financially able to support themselves independent of their husband's income, it makes sense that they are more likely than others to divorce. Another sensible finding is that those who own their homes, rather than rent, are less likely to move the entire household, while those in multiple unit dwellings are significantly more likely to move with their households.

We now turn to our primary independent variables, victimization history. To facilitate comparisons, we present the odds ratios for these variables in Figure 5. The axis is set at one, so that upward bars denote that the variable increases the odds of marital dissolution or moving, and downward bars signify a decrease. The graph presents the results for both the entire sample, and for the sample of spousal violence victims. First, we find that those married women with a history of intimate partner assault(s) have a significantly higher risk of marital dissolution than other married women, while those who have recently been assaulted by an intimate are more likely than other married women to move the entire household (not necessarily together).[21] This suggests that

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[21] Unfortunately, small cell sizes precluded us from estimating how intimate partner violence influences

married victims of intimate partner violence do attempt to reduce their exposure to violent husbands. Having said that, we must caveat that household moves could represent mobility with the violent spouse, instead of a break-down of the family.

[Figure 5 About Here]

Victims of non-violent crime also appear to have a higher risk of ending their marriage or moving their household than do other victimized and non-victimized married women. It is surprising, however, that non-intimate victimization is only weakly associated with mobility, given previous research suggesting property crime victimization does influence household moving decisions (Dugan 1999).

The second set of findings is drawn from the sample of married women who reported being a victim of at least one crime. As mentioned above, we initially produced the same contrasts for this sample, but found that relatively few married women moved from the address unless the entire household also moved. Instead of reporting unstable results, we combined the lone movers with those women whose marriage ended. We chose this strategy because it seems more likely that victims who move without their households (i.e., their husbands) make better proxies for troubled marriages than eventual household moves.

In this model, we no longer find an influence of intimate partner violence on marital dissolution, suggesting that victimized women (regardless of type of victimization) have similar divorce patterns. However, we do still find that women who

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individual moves.

were recently victimized by their husbands are significantly more likely than other victims to have the entire household move, suggesting possible divorce.[22]

Turning to the demographic variables for the sample of victims, we see that they appear to be less important compared to those from the general sample. While age is still negatively related to ending a marriage, it is no longer significantly associated with moving. Married low-income respondents no longer have an elevated risk of marital dissolution or moving.[23] Finally, we find no evidence that any of the incident-specific characteristics play a role in whether the victim remains married or at the same residence.

Table 4 presents odds ratios from the stacked logistic models predicting whether the unmarried respondents moved by the following interview for both the full sample of respondents and the subset of violent crime victims only. As mentioned above, we combined individual moves with household moves since many unmarried women live alone blurring the distinction between the two.

[Table 4 About Here]

We first examine the results for the demographic characteristics for the full sample and find that many have the anticipated effects. For example, similar to what we find for the married respondents, age and home ownership are associated with lower odds of moving. With the exception of Native Americans, who are more likely to move, we find that unmarried minority women are less likely to move than their white counterparts. Additionally, unmarried women who are employed have a higher risk of moving. This is

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[22] There is also weak evidence to suggest that compared to other victims, nonviolent crime victims are more likely to end their marriage, but less likely to move the entire household

[23] However, weak evidence suggests that married victims in high-income families are now more likely to

also the case for those who attend school, those who live in a multiple unit dwelling and/or earn a low income—all groups who may be considered less stable (i.e., more mobile). The findings also show that the longer the responded lived at that address, the smaller the chance is that she will move. Also, unmarried public housing residents are less likely to move. Those unmarried women who live alone are more likely to stay where they are, whereas those who live with other adults are more likely to move. Finally, compared to white women, Native American women are more likely to move, whereas black, Hispanic, and Asian women have lower odds of residential mobility.

Having established that the findings for the demographic characteristics make sense, we have more faith that the model accurately predicts the impact of victimization on moving for unmarried women. We find evidence that unmarried victims of violent crime are more likely than those not violently victimized to move within six months of the incident report. Specifically, those recently victimized by an intimate partner have 1.24 times the odds of moving per incident relative to those not recently victimized by an intimate. This suggests that unmarried victims of partner violence use mobility as a method to reduce their exposure to violence. Additionally, we find that recent violent victimization by a stranger increases the risk of moving. Having a history of violence by a non-intimate (either known or unknown) also increases the chance that a single woman will move. Finally, when a single woman is victimized by a property crime her chances of moving, sooner or later, increase. These findings are more aligned with Dugan's

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divorce/separate.

(1999) results that found a pattern of moving after crime victimization than were our findings for married women.

Turning to our second model, restricted to victims of violent crime, we continue to find that those unmarried women recently victimized by an intimate are significantly more likely than other violent crime victims to move. Those victims whose perpetrators were strangers also tend to move, but usually after more than a six month period.[24] Additionally, those victims of violent crime who contacted the police may be more likely to remain in their current home.

Turning to the demographic characteristics, we see that many of the associations for victims are similar to those of the general population of unmarried women. Age, black, Native American, attending school, home ownership, public housing, and living alone act as they did in the first model. However, we now find that Hispanic victims are more likely to move than whites. Finally, victims living in the city and those unmarried victims who were previously married move less.

Entering/Exiting the Labor Force

Figure 4 illustrates the bivariate findings by following the employment patterns of all intimate partner violence victims on a probability tree. Of the 458 victims in the sample, we know the employment status of 445 at both the first incident and the following interview. Of these women, 305 were employed at the first incident, the remaining 140 were not. Just over ten percent of those employed left the labor force by

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[24] This model also weakly suggests that women who were injured are more likely to move.

the following interview. Of those not employed at the time of the first incident, 20% entered the labor force.

[Figure 4 About Here]

Table 5 presents the odds ratios for the discrete hazard models predicting entry into the labor force. The first model is run on all interviews where women previously reported that they were not employed (at prior interview, or at first reported crime incident for victims). The second model repeats the first on victims of violent crime. In addition to all of the variables from the first model, it includes the intervening measures and incident specific controls. We begin our discussion by focusing on the first model for all females in the sample.

[Table 5 About Here]

It is worth noting up front is that the control variables act as expected. Older women are less likely to enter the labor force (since the odds ratio of *Age* is less than one). This estimate is likely capturing the patterns of retired older women who are unlikely to re-enter the labor market. The findings also show that non-working Hispanic and Asian women are less likely than non-working white women to enter the labor force. Also not surprising, unemployed women with less education are less likely to enter the labor force, while those with at least some college are more likely. Many employers use education as a hiring standard. Similarly, low income, unemployed women are less likely to enter the labor force than those of moderate means. Also, non-working married women are less likely than their single counterparts to start working. In contrast, non-working divorced women are more likely to become employed. Since married women can often rely on their spouse's income for support, employment is less crucial than to the

single women. Whereas divorced and separated women may find it necessary to work to replace income lost when the marriage dissolved.

Another expected finding is that those not working and attending school are less likely to transition into the labor force. They generally have less time available to work. Also, those non-working women who reside at their address longer are less likely to enter the labor force. Longer time at residence is likely indicative of stability, thus, all other factors equal, those living in their homes longer may have less need to seek employment. Residing in a multi-unit dwelling slightly increases the odds of a labor force entry. Perhaps these respondents are mostly renters who have a higher need to regain employment. Another indicator of transient, less stable housing may be reflected in households with multiple adults. Non-working women in these homes have higher odds of entering the labor force. In contrast, when these women live with more children they are less likely to enter the labor force. Having children makes it costly to work, given the expense of childcare. Another very strong finding (that is expected) is that if the non-working respondent previously reported that she did work, she is more likely to regain employment before exiting the survey period. Since these women only recently became unemployed, they are more likely to be heavily engaged in a job search.

The above findings demonstrate that the model is behaving as expected. With this in mind, we now turn to our key predictors: victimization. This model provides no evidence that being victimized by an intimate partner significantly influences the likelihood that a woman will enter the labor force. This non-finding is especially intriguing because the other results also show that when a non-working female is violently victimized by another offender (or is the victim of nonviolent crime) she is

highly unlikely to enter the labor force. Thus, whatever prevents unemployed victims from entering the labor force within six months of the incident appears to have no impact if the perpetrator was an intimate.

The findings in the second model that conditions on women who were violently victimized at least once have similar patters with a few notable exceptions. When these women are victimized by someone other than their partner, their chances of immediately entering the labor force remains the same instead of decreases.[25]

The findings for race differ in the sample of violent crime victims compared to the total sample of women. This is not surprising since the racial distribution of victims differs dramatically from the distribution of all women (Dugan and Apel 2003). Also, note that the dramatic drop in the sample makes it impossible to retain high counts in all racial and ethnic categories. Not enough Asian women were victimized to allow the models to estimate an "Asian" effect. Thus, we would not expect to see the same findings for race. Having said that, black, non-working victims of violent crime are only half as likely as white victims to enter the labor force. Hispanic and Native American women are dramatically more likely to begin work. Many of the conditions that seem to predict whether a non-working woman entered the labor force failed to do so for victims of violent crime. A victim's educational attainment surprisingly has no influence on her odds of entering the labor force. Also divorced victims are no more likely to enter the labor force than are single victims. Finally, attending school, living in multi-unit

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[25] There is weak evidence that a non-working victim of intimate partner violence is likely to enter the labor force within six months of being assaulted by her partner (OR = 1.42, p< 0.10). Weak evidence also suggests that a victim with a history of stranger violence is likely to enter the labor force.

dwellings (or public housing), and living with a large number of adults, have no effect on victim's chances of a entering the labor force. These null findings could suggest that the condition of having been violently victimized is more important than the typical background characteristics in predicting a transition into the labor force.

Turning to the intervening variables, we find that having been injured enough to seek medical attention (and therefore seeking that attention) is associated with three times the likelihood of entering the labor force. This is the only action at the time of the victimization that seems to predict labor force entry. Self-defense, injury, and a victim's notification to the police have no significant impact. Perhaps a victim needs employment to finance the costs of seeking medical assistance. Or, perhaps victims of intimate partner violence who seek medical help experience a "wake-up call" making apparent the precariousness of their situation. Seeking employment may be the first step to gaining independence from the abuser. Finally, if the medical profession is screening for victims of domestic violence, perhaps by interacting with the medical profession, a victim may have more opportunities opened to her. The other significant finding reveals that non-working victims of series violence are dramatically less likely to enter the labor force. Such repeat violence likely interferes with life, making it difficult to add any additional responsibility.

In Table 6, we display the odds ratios generated from the models for exiting the labor force. Like Table 5, it contains two models: one using the sample of all women employed at the time of interview (first incident for victims) and one using the sub-sample of violent crime victims.

[Table 6 About Here]

As expected, the findings generated from the sample of all women produce control variable estimates that make sense. These findings are consistent with those for labor force entries shown in Table 5. Older employed respondents are more likely to exit the labor force (i.e., retire). Employed women with less education more often stop working while those with more than a high school degree more often remain employed. Low income employed women leave the labor force at higher rates than their peers in middle-income homes. Divorced employed women are more likely than single women to remain in the labor force. Employed students are more likely to stop working.   Those workers who have lived in their home longer are more likely to exit the labor force. Employed women living in public housing are more likely to leave their job. Living alone decreases the likelihood that a working woman will leave the labor force. Yet, living with more than one other adult increases the likelihood that she exits the labor force. Each child in the home decreases the odds that an employed woman leaves her job. Having been unemployed in an earlier interview increases the likelihood that a woman will again be unemployed before leaving the sample.

However, there are some findings that could not be anticipated from the early labor force entry findings. The racial and ethnic characteristics are barely significant and differ from those in Table 5.[26] Working Native American women are more likely than whites to leave their job.

These analyses strongly suggest that a working woman's history of violent victimization has no effect upon her odds of exiting the labor force. However, they do

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[26] Weak evidence suggests that employed black women are less likely than employed white women to exit

suggest that if she suffers from a property crime she will is less likely than other (victimized and nonvictimized) women to leave the labor force within the next six months. We find, though, that her chances of leaving increase over time.

The victimization estimates remain null when we limit the sample to only those employed women who have suffered from violence, indicating that victims of intimate partner violence do not differ from other violent crime victims. Additionally, the effect of age reverses for these women. Older working victims of violence are less likely to exit the labor force than younger victims. Further, while race and education were more important in the victim models for entering the labor force, they appear to be irrelevant to a working victim's decision to exit the labor force. Also, attending school, length of residence at the current address, living in public housing, living with more than one other adult and interview period are not significant predictors of victim's labor force exits.

Finally, it appears that any action taken by the working victim at the time of the incident is unrelated to her decision to leave the labor force. We find no influence of self-defense, injury or help seeking on the odds of a labor force exit. The only incident characteristic that seems relevant is a history of weapon use against the victim. Those women ever victimized with a weapon are 1.74 times more likely to exit the labor force than are other violent crime victims.

Repeat Assault

Our final model estimates how different intermediate behaviors and characteristics affect the likelihood that an intimate partner victim is re-victimized. Table

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the labor force.

7 displays the distribution on the four primary intermediate variables: self-defense, injury, medical care, and police contact. Nearly a quarter of all victims reported at least one repeated assault. When we compare the distribution of characteristics for victims who only suffered from one assault with those who were re-victimized, we find little difference. The only distinguishing feature is that those with only one assault were more likely to have personally contacted the police (50% versus 39%). This suggests that police notification may be associated with a lower likelihood of subsequent assault. Perhaps this relationship is direct where the police intervention stopped further assaults. However, this could also be a selection effect whereby those who respond against the violence (i.e., call the police) are also more likely to get themselves out of harm's way.

[Table 7 About Here]

The general distributions of the remaining characteristics are as follows. Relatively few victims, 11% and 14%, acted in self-defense during the first assault. Nearly half of the victims reported an injury following the first reported assault. Similarly, nearly half of those injured sought medical help. Also worth noting is that those who reported a subsequent intimate partner assault were significantly less likely to have left the labor force after their first assault [Data Not Shown]. This suggests that by leaving the labor force, the victims may effectively escape the violence. Perhaps by leaving the labor force a woman is forced into a more traditional role, no longer threatening her partner's sense of security reducing his need to resort to violence to control her. Alternatively, it could signify a short-term strategy to change her life so that she can better escape a violent relationship.

The NCVS also includes questions about whether the victim was previously victimized by the same offender. While this only discloses information about acts committed by the same person, the information can be used to indicate known victimizations before the respondent entered the survey period. By tabulating this variable we see that 42% of those we considered "one time" victims had actually been assaulted by the same partner before. This reinforces our concern that our findings are likely biased toward zero. We also find that 41% of those with subsequent victimizations were assaulted by the same assailant prior to the survey reference period. We control for an offense by the same offender in the below multivariate models.

Additionally, the findings in Table 7 compare victims regardless of when they first reported an assault. Since those who report their first assault in a later interview have relatively less time to be re-victimized compared to those who report one earlier, one might expect higher rates of subsequent assault for those reporting a first assault earlier. Thus, our multivariate models also control for the interview period.

In Table 8, we present the odds ratios from the multivariate stacked logistic model predicting a subsequent intimate partner assault within six months prior to interview. It includes all of the controls, incident characteristics, our labor force changes and marital dissolutions and is restricted to those interviews reporting at least one prior or current incident of intimate partner violence. This model surprisingly shows that a larger number of previous intimate partner assaults is associated with a *lower,* not higher, likelihood of reporting a subsequent assault. Specifically, each prior intimate partner assault is associated with having about a quarter the odds of repeat assault. However, women who were previously violent victimization by another known person or were recently a victim

of property crime are at substantially higher risk of a repeat assault by an intimate. None of our intervening variables have significant effects upon the chances of repeat assault, with the exception of self-defense. Those who defend themselves from their perpetrator have an increased likelihood of subsequent assault. Although this is only marginally significant, it could indicate a retaliatory effect. Our other, non-findings for the intervening variables suggest that sustaining an injury and a victim's actions at the time of or immediately following assault have virtually no influence on whether or not she is assaulted again by an intimate. Thus, when the victim has contact with the medical system or calls to the police, she does not seem to be either increasing or decreasing her safety.

Turning to our employment and marital consequences of intimate partner violence, we find that by leaving the labor force, a victim decreases her odds of being re-assaulted. However, we also find that by entering the labor force a victim does not significantly alter her risk of being assaulted again by an intimate. As mentioned above, exiting the labor force could either represent attempts to appease the abuser or signify the beginning stages of a strategy to exit the violent relationship. Another important null finding is that those victims who recently ended their marriage appeared to be no more (and no less) likely than other women to be re-assaulted.

Other interesting findings are that blacks are far less likely than whites to sustain a subsequent assault, while Hispanics are at far greater risk. Those victims living in public housing are more likely to be re-assaulted. Having more adults in the home increases risk, while children seem to protect victims from re-assault. Perhaps the presence of children makes women more safety-conscious so that the children are not exposed to

violence. Also, as expected, those whose first assault was later in the survey period reported fewer repeat assaults, and those reporting during a bounding interview were more likely to report repeated assaults.

Finally, the findings for the incident control variables indicate that the victim is less likely to be subsequently assaulted if the offender used a weapon during an earlier assault. Perhaps the threat of a weapon motivated the victim to better protect herself from dangerous intimate. We also find in this set of results that the chances of re-assault are also reduced if the police were previously contacted by a third party following an earlier intimate partner assault. Re-assault is also less likely if the victim's perpetrator was arrested after an earlier assault. These latter two findings suggest that contact with the police can protect the victim. Yet, this raises an important question as to why the police seemed to have no effect when the victim calls the police herself. It suggests that calls by others are taken more seriously by the police.

If the perpetrator was under the influence of drugs or alcohol during an earlier incident, the woman is more than twice as likely to report at least one subsequent assault. This is consistent with literature that links alcohol and drug dependency with the perpetration of intimate partner violence (see: Crowell and Burgess 1996). Those who previously experienced intimate partner violence as a series of incidents had 174 times the odds of being assaulted again compared to those without a series assault.[27] This is the least surprising finding since by definition, a series assault represents at least six incidents—thus the victim is by definition, a repeat victim. Having said that, the findings

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[27] This strong finding is not unexpected, as by definition, series assaults represent six or more similar

also show that those who reported that the perpetrator had done something similar in the past are at lower risk of repeat assault. This is an unexpected finding since those women are also, by definition, repeat victims (although they are not coded as such).

Results

This project contributes substantially to our understanding of how intimate partner violence impacts women's lives. We begin by describing the basic characteristics of the women and the changes they go through after being attacked by their partners. Because to date, most of what we know about these women's experiences relies on cross-sectional or localized, non-representative studies, our project takes the first step toward understanding the patterns of changes women generally experience after violence.

We guided this research by asking whether victims are inclined to reduce their exposure to the intimate perpetrator after an incident. We then consider whether those choices actually do lead to reduced violence (hypothetically, because they worked), or if they entice more violence (hypothetically, because the perpetrator retaliated against her actions). We approached these general concepts by asking three, more specific, questions:

1. Are intimate partner violence victims more likely than other women to divorce or move out of their home within six months of a reported assault?

2. Are intimate partner violence victims more or less likely than other women to leave or enter the labor force within six months of a reported assault?

3. What factors are associated with reports of repeat assault?

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incidents. There is already evidence of ongoing violence and this finding suggests that it persists.

We also considered how a victim's injuries and actions at the time of (or immediately following) assault influenced all three outcomes.

The answer to our first research question is a resounding "yes." Married victims of intimate partner violence are more likely than other women to divorce or move. We also found that unmarried victims of partner violence, including those who live with an intimate[28], are indeed more likely to move fairly quickly after their boyfriends attack them. This appears to be a common coping strategy for the unmarried woman, because she is also more inclined to move if she is violently victimized by a stranger or even if she is a victim of property crime. We also find that very few actions that a married victim takes during or immediately after the incident influences her choice to move. However, if an unmarried woman calls the police, she appears less likely to move. Perhaps she feels that the police will provide enough protection making her move unnecessary. However, we found that if she was injured during the event, she is more likely to move. This could be a wake-up call to the dangers of remaining in her home. In sum, it does, indeed, appear as if the victim of partner violence will leave the relationship through divorce or moving to reduce her exposure to the perpetrator.

Our findings fail to provide such a clear-cut answer to the second research question. We find no evidence that working women are any more or less likely to leave their jobs after violence. We do, however, find evidence that unemployed victims of crime are less inclined to find a job within six months of the incident. However, the exception to this rule is for those victims who have an intimate relationship with their

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[28] The NCVS does not allow us to determine if respondents cohabit with an intimate partner.

perpetrator. In fact, their patterns look more like those for non-victims. This changes

when we restrict the analysis to only victims of violent crime. Given that the

unemployed woman is a victim of violent crime, if her perpetrator was her boyfriend or

husband, she is marginally more likely to find a job fairly soon after the incident.

Perhaps she is finding work as part of a strategy for becoming more independent of (and

less exposed to) her violent partner. We also found that when the unemployed victim

was injured to the extent that she sought medical care, she was more likely to find a job.

Both seeking medical help and entering the labor force could represent a victim's agency

toward reducing her exposure to violence.

Finally, our third research question was designed to determine whether exposure

reduction leads to less or more violence. The results are mixed. It appears that if a

victim acts in self-defense, she may be setting herself up for later attacks. While we

cannot be certain that the latter attacks are from the same perpetrator, if they are, this

would be strong evidence that he is retaliating against her self-defensive actions. We

unexpectedly found evidence that some victims who *increase* their exposure to their

partner could actually be *decreasing* their chances of further perpetration. It seems that

those working women who leave the labor force after an attack are protected from further

attacks. We clearly cannot draw strong conclusions about this method of protection

without knowing the specific contexts of those women who leave their jobs. We have no

idea whether the victim is, indeed, spending more time with her perpetrator, or whether

she is preparing to make a larger break from home. While we find no direct evidence that

a victim's own exposure-reducing behavior affects on her chances of re-victimization,

when others act to reduce her exposure, such as others' calls to police and arrests, her

chances of re-victimization drops. This suggests that policies implemented to reduce a victim's exposure to the perpetrator may improve her safety.

In sum, our analyses offer more straightforward support for retaliation effects than for exposure reduction (unless, of course, others reduce the exposure for the victim of intimate partner violence). However, there are limitations of this project that need to be acknowledged. Since this is a victimization study, we have no information on the perpetrator's motives. Further, we cannot be sure that subsequent assault was perpetrated by the original offender. While we suspect this is true, further studies are necessary to disaggregate motives and test whether or not subsequent assaults are indicative of retaliatory violence.

We also find that violent crime victimization and intimate partner violence, in particular, are important predictors of changes in household composition and employment status. While we speculate that these changes were done to reduce the victim's exposure to violence, further research is needed to more specifically examine the reasons behind these changes. Our research represents an important contribution to extant findings. Future research can improve on our work by integrating the explicit nature and entire history of intimate partner victimization for each woman. Studies should also continue to follow a nationally representative sample of women, even if they move. This way, we will learn more about the longer-term consequences of violence.

While these findings fall short of providing cut and dry policy recommendations, they do suggest important roles for the police and medical establishments. If, indeed, victims' lives improve when outsiders help them, then the medical and criminal justice systems should continue to direct their efforts toward assisting victims. Additionally,

education programs could let the public know that they are protecting the victim by calling the police during a domestic dispute. Null findings from many of our models suggest that these institutions can do more to aid battered women. Additionally, the finding that self-defensive actions increase a woman's risk of subsequent intimate partner assault suggests that we need to pay more attention to all victims of partner violence. Women who choose not to use shelters may be more likely to attempt to deal with the violence on their own. These same women may also avoid calling the police, heightening the chances that they will rely exclusively on self-defensive behaviors. This strongly implies that any efforts to protect women who are actively resisting the violence in their lives may be beneficial.

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Appendix A: Classification of Crimes

Violent Crimes

1 Completed Rape
2 Attempted Rape
3 Sexual Attack with Serious Assault
4 Sexual Attack with Minor Assault
5 Completed Robbery with Injury from Serious Assault
6 Completed Robbery with Injury from Minor Assault
7 Completed Robbery without Injury
8 Attempted Robbery with Injury from Serious Assault
9 Attempted Robbery with Injury from Minor Assault
10 Attempted Robbery without Injury
11 Completed Aggravated Assault with Injury
12 Attempted Aggravated Assault with Weapon
13 Threatened Assault with Weapon
14 Simple Assault Completed with Injury
15 Sexual Assault without Injury
16 Unwanted Sexual Contact without Force
17 Assault without Weapon without Injury
18 Verbal Threat of Rape
19 Verbal Threat of Sexual Assault
20 Verbal Threat of Assault

Intimate Partner Violence includes any violent crime incident (1-20) and burglaries/attempted forcible entries (31-33) perpetrated by a spouse, ex-spouse, boy/girlfriend or ex-boy/girlfriend.

Violent Victimization by another known offender includes any violent victimization (1-20) perpetrated by non-intimate relatives, friends/former friends, roommates/boarders, schoolmates, neighbors, or other nonrelated, identifiable individuals.

Violent Victimization by a stranger includes any violent victimization (1-20) perpetrated by someone unknown to the victim.

Nonviolent Crime Victimization includes any other crimes (21-41) perpetrated by anyone *except* burglaries/attempted forcible entries (31-33) perpetrated by a spouse, ex-spouse, boy/girlfriend or ex-boy/girlfriend.

Other Crimes

Personal Theft

21 Completed Purse Snatching
22 Attempted Purse Snatching
23 Pocket Picking (completed only)
24 Completed Personal Larceny without Contact Less than $10
25 Completed Personal Larceny without Contact $10 to $49
26 Completed Personal Larceny without Contact $50 to $249
27 Completed Personal Larceny without Contact $250 or greater
28 Completed Personal Larceny without Contact Value NA
29 Attempted Personal Larceny without Contact

Household Crimes

31 Completed Burglary, Forcible Entry
32 Completed Burglary, Unlawful Entry without Force
33 Attempted Forcible Entry
34 Completed Household Larceny Less than $10
35 Completed Household Larceny $10 to $49
36 Completed Household Larceny $50 to $249
37 Completed Household Larceny $250 or Greater
38 Completed Household Larceny Value NA
39 Attempted Household Larceny
40 Completed Motor Vehicle Theft
41 Attempted Motor Vehicle Theft

Source: Bureau of Justice Statistics (2000)

Appendix B: Dependent Variables

Theoretical Constructs	Survey Question(s)	Operationalization
Outcome Variables		
Exiting the Realtionship		
Marital Dissolution	Marital Status THIS/LAST Survey Period	Married in t; Divorced/Separated in t+1: Yes/No
Individual Residential Mobility	Reason for Noninterview	Move between t and t+1: Yes/No
Household Mobility	Household Composition Code; Household Number	Move between t and t+1: Yes/No
Employment Consequences		
Movement into/out of the Labor Force	Did you have a job at the time of the incident?, then in subsequent waves: Did you have a job or work at a business last week? (Do not include volunteer work or work around the house.) Did you have a job or work at a business during the last 6 months? Did that (job/work) last 2 consecutive weeks or more?	Entry into/Exit from the labor force between incident/t and t+1: Yes/No
Subsequent Victimization	Multiple Intimate partner Assaults During a Survey Period or Reported Incident(s) of Intimate Partner Violence Reported in a follow up panel of the NCVS.	Subsequent Assault: Yes/No

Source: Bureau of Justice Statistics (2000)

Note: Missing values for dependent variables were not imputed.

Appendix C: Independent and Intervening Variables

Theoretical Constructs	Survey Question(s)	Operationalization	Treatment of Missing Data
Independent Variables			
Victimizations[a]			
Recent Crime Variables	Reported Incident(s) of Intimate Partner Violence at t, Violence by Other Known Offender at t, Violence by a Stranger at t, and Nonviolent Crime Victimization at t.	Count for Each Type of Victimization Reported in t	
Previous Crime Variables	Reported Incident(s) of Intimate Partner Violence prior to t, Violence by Other Known Offender prior to t, Violence by a Stranger prior to t, and Nonviolent Crime Victimization prior to t.	Average for Each Type of Victimization Reported Prior to t.	
Intervening Variables			If no evidence, then assigned 0.
Self-Defensive Actions at the Time of	Did respondent use or threaten to use physical force against the offender? Who was the first to use or threaten to use physical force - you, the offender, or someone else?	Self Defense: Yes/No	
Injury following Intimate Partner	What were the injuries you suffered, If any? Anything else?	Indicator, Coded (1) if injuy sustainbed after any Intimate Partner Violence Incident reported in t, else (0).	
Injured and Sought Medical Attention for Injuries	Were you injured to the extent that you received any medical care, including self treatment? Where did you receive this care? Anywhere else?	Indicator, Coded (1) if medical attention sought for injuries resulting from intimate partner violence reported in t, else (0). Care received at the scene or at home.a friend's/ neighbor's is excluded since it does not represent seeking help via the medical establishment.	
Victim Notified the Police follow	Were the police informed or did they find out about this incident in any way? How did the police find out about it?	Indicator, Coded (1) if the victim notified the police after an incident of Intimate Partner Violence reported in t, else (0).	

Appendix C: Independent and Intervening Variables (continued)

Theoretical Constructs	Survey Question(s)	Operationalization	Treatment of Missing Data
Demographic Characteristics			
Age	Age last Birthday (Allocated)	Age in years.	For all women, began at Woman's first interview. Incremented by 0.5 year at each subsequent interview.
Race			For all women, assigned race at all interviews the value reported at first interview. Category "missing" created for remaining missing cases.
White, non-Hispanic	Reported Race/Hispanic Origin at First Interview	Indicator, Coded (1) if reported race is white, else (0).	
Black, non-Hispanic	Reported Race/Hispanic Origin at First Interview	Indicator, Coded (1) if reported race is black, else (0).	
Hispanic	Reported Race/Hispanic Origin at First Interview	Indicator, Coded (1) if reported race is Asian, else (0).	
Asian, non-Hispanic	Reported Race/Hispanic Origin at First Interview	Indicator, Coded (1) if reported race is Native American, else (0).	
Native American, non-Hispanic	Reported Race/Hispanic Origin at First Interview	Indicator, Coded (1) if reported race is Hispanic, else (0).	
Education	What is the highest grade or year of regular school ... has ever attended?)		If missing at t and value at t-1=value at t+1 then value at t=value at t-. Only works for missing values t1-t5. Category "missing" created for remaining missing cases.
Less than 12 Years		Indicator, Coded (1) for less than 12 years of education, else (0).	
12 Years		Indicator, Coded (1) for 12 years of education, else (0).	
More than 12 Years		Indicator, Coded (1) for more than 12 years of education, else (0).	
Household Income	Household Income collected in 14 categories.		If missing at t and value at t-1=value at t+1 then mean of t-1 value and t+1 value. Only works for missing values t1-t5; imputation flag created. Category "missing" created for remaining missing cases.
Low Income		Indicator, Cided (1) if less than $15,000, else (0).	
High Income		Indicator, Cided (1) if greater than $75,000, else (0).	

Theoretical Constructs	Survey Question(s)	Operationalization	Treatment of Missing Data
Marital Status[b]	Marital status THIS survey period		If missing at t and value at t-1=value at t+1 then mean of t-1 value and t+1 value. Only works for missing values t1-t5; imputation flag created. Category "missing" created for remaining missing cases.
Married		Indicator, Coded (1) if married, else (0).	
Divorced		Indicator, Coded (1) if divorced/separated, else (0).	
Single		Indicator, Coded (1) if single, else (0).	
Employment Status[b]	Did you have a job or work at a business last week? Did you have a job or work at a business during the last 6 months?	Indicator, Coded (1) if employed at t, else (0).	If missing and status at t-1 was the same as at t+1, coded that value. Only works for missing values t1-t5; imputation flag created. Category "missing" created for remaining missing cases.
Student Status	Attending school	Indicator, Coded (1) if student at t, else (0).	If missing at t and value at t-1=value at t+1 then value at t=value at t-1. Only works for missing values t1-t5; imputation flag created. Category "missing" created for remaining missing cases.
Tenure	How long have you lived at this address? (months) How long have you lived at this address? (years)	Months at Address.	For all women, Converted Reports at Each time period to months by multiplying years by 12 and adding months. Beginning with first report, incremented by 6 months. Mean value assigned to misisng values and imputation flag created.
Home Ownership	Tenure (Allocated)	Indicator, Coded (1) if own home, else (0).	If missing at t and value at t-1=value at t+1 then value at t=value at t-1. Only works for missing values t1-t5.
Multiple Unit Dwelling	Number of Housing Units in Structure	Indicator, Coded (1) if multiple unit dwelling, else (0).	Assigned multiple unit dwelling status at all interviews the value reported at first interview.
Public Housing	Public Housing (Yes/No)	Indicator, Coded (1) if public housing, else (0).	Assigned public housing status at all interviews the value reported at first interview.
Urbanicity	Land Use	Indicator, Coded (1) if urban, else (0).	Assigned urbanicity at all interviews the value reported at first interview.

Theoretical Constructs	Survey Question(s)	Operationalization	Treatment of Missing Data
Household Composition			
Lone Adult Household	Indicator of only one household member 12 years of age and over	Indicator, Coded (1) if only one adult, else (0).	Imputation Not Necessary.
Many Adult Household	Indicator of more than two household members 12 years of age and over	Indicator, Coded (1) if more than two adults, else (0).	Imputation Not Necessary.
Number of Children	Number of household members under 12 years of age (0-9)	Count	Imputation Not Necessary.
Employment Stability			
Proportion of Previous Interviews not Employed			
Proportion of Previous Interviews Employed			
Interview Characteristics			
Interview Period	Created based upon year and quarter, panel and rotation group	Range is 1-6.	
Interview Conducted Via Proxy	Type of Interview	Indicator, Coded (1) if proxy interview, else 0.	
Unbounded Interview	First Interview with Woman	Indicator, Coded (1) if interview is the first with the respondent interview, else 0.	
Incident Characteristics			If no evidence, then assigned 0.
Police Notification by Someone Other than the Victim	Were the police informed or did they find out about this incident in any way? How did they find out about it?	Indicator, Coded (1) if someone other than the victim contacted police, else 0.	
Perpetrator Arrested	As far as you know, was anyone arrested or were charges brought against anyone in connection with this incident?	Indicator, Coded (1) if arrest/charges, else 0.	
Weapon Use	Did the offender have a weapon such as a gun or knife, or something to use as a weapon, such as a bottle or wrench?	Indicator, Coded (1) if weapon used, else (0).	
Perpetrator Under Influence of Drugs/Alcohol	Was the offender drinking or on drugs, or don't you know?	Indicator, Coded (1) if perpetrator was under the influence, else (0).	
Series Incident[a]	6 or more similar incidents about which the respondent cannot recall enough individual detail to distinguish.	Indicator Coded (1) to indicate at least one series incident, else (0).	
Intimate Partner Offender Did This Before	Was this the only time this offender committed a crime or made threats against you or your household? Were all, some, or none of these [series] incidents done by the same person(s)?	Indicator Coded (1) to indicate offender acted more than once, else (0).	

Source: Bureau of Justice Statistics (2000)

[a]Series incidents are counted as six incidents, the minimum number required to be considered a series.

[b]Employment and Marital Status were only imputede after constructing the dependent variables.

Note: Not all variables are in all models. For example, marital dissolution models are limited to those married at t; marital status is not included in these models.

Appendix D: Weighted Descriptive Statistics on All Variables

	All Women	Violent Crime Victims	Intimate Partner Violence Victims
	Mean /Percent (Standard Deviation)	Mean /Percent (Standard Deviation)	Mean /Percent (Standard Deviation)
Dependent Variables			
Exiting the Relationship			
Divorce	0.40%	0.59%	1.14%
Individual Residential Mobility	1.85%	3.63%	3.75%
Household Mobility	4.14%	6.71%	9.86%
Employment Consequences			
Entry into the Labor Force	5.77%	6.27%	5.52%
Exit From the Labor Force	5.65%	6.53%	7.09%
Subsequent Intimate Partner Assault	--	--	11.26%
Independent Variables			
Victimizations			
Recent Intimate Partner Violence	0.01	0.15	--
	(0.13)	(0.68)	
Previous Intimate Partner Violence	0.00	0.09	0.59
	(0.08)	(0.44)	(0.58)
Recent Violence by Other Known Offender	0.01	0.25	0.04
	(0.15)	(0.76)	(0.24)
Previous Violence by Other Known Offender	0.01	0.18	0.03
	(0.11)	(0.55)	(0.14)
Recent Violence by a Stranger	0.01	0.19	0.01
	(0.12)	(0.60)	(0.12)
Previous Violence by a Stranger	0.01	0.14	0.01
	(0.08)	(0.39)	(0.09)
Recent Nonviolent Crime Victimization	0.08	0.24	0.29
	(0.35)	(0.71)	(0.84)
Previous Nonviolent Crime Victimization	0.06	0.19	0.24
	(0.24)	(0.52)	(0.70)
Intervening Variables			
Self-Defense	--	10.07%	12.82%
Injury	--	29.50%	45.47%
Injured and Sought Medical Attention for Injuries	--	6.97%	9.71%
Victim Notified the Police	--	40.41%	49.04%
Demographic Characteristics			
Age	42.3	32.16	31.77
	(19.48)	(15.23)	(10.71)
Race			
White, non-Hispanic (Reference/Omitted Category)	73.61%	73.23%	71.20%
Black, non-Hispanic	12.76%	15.14%	18.54%
Hispanic	9.69%	9.22%	6.89%
Asian, non-Hispanic	3.36%	0.87%	0.88%
Native American, non-Hispanic	0.39%	1.38%	2.42%
Race Missing	0.19%	0.16%	0.07%
Education			
Less than 12 Years	17.28%	20.26%	12.33%
12 Years (Reference/Omitted Category)	24.77%	20.30%	23.17%
More than 12 Years	29.02%	27.57%	27.26%
Education Missing	28.92%	31.87%	37.24%
Household Income			
Low Income	18.45%	24.63%	34.46%
High Income	11.86%	9.60%	5.43%
Income Imputed	0.59%	0.72%	0.94%
Income Missing	14.46%	9.66%	10.36%
Marital Status			
Married	49.68%	29.22%	16.67%
Divorced	12.15%	22.65%	47.74%
Single	37.66%	47.89%	35.42%
Marital Status Imputed	0.33%	0.18%	0.40%
Marital Status Missing	0.51%	0.24%	0.17%
Employed	51.62%	56.46%	70.44%
Employed Imputed	4.89%	8.90%	1.69%
Employed Missing	7.68%	12.87%	2.19%
Attending School	7.49%	10.31%	12.05%
Attending School Imputed	2.51%	4.77%	0.91%
Attending School Missing	4.46%	8.00%	1.24%
Tenure	123.57	83.30	61.76
	(140.12)	(100.15)	(79.09)
Tenure Imputed	0.32%	0.21%	0.47%
Home Ownership	69.32%	56.64%	48.07%
Multiple Unit Dwelling	24.07%	29.68%	33.48%
Multiple Unit Dwelling Missing	0.07%	0.17%	0.21%
Public Housing	2.28%	4.29%	4.15%
Public Housing Missing	68.68%	54.94%	46.71%
Urbanicity	73.66%	77.61%	75.82%
Household Composition			
Lone Adult	16.89%	21.03%	36.41%
Many Adults	37.99%	44.52%	34.00%
Number of Children	0.55	0.77	1.01
	(0.93)	(1.08)	(1.13)
Proportion of Prior Interviews Employed	0.37	0.44	0.52
Proportion of Prior Interviews Not Employed	0.30	0.24	0.20
Proportion of Prior Interviews Married	0.39	0.26	0.19
Proportion of Prior Interviews Not Married	0.35	0.55	0.57
Interview Characteristics			
Interview Period	3.00	3.41	3.34
	(2.00)	(1.97)	(2.06)
Interview Conducted Via Proxy	3.61%	2.29%	1.11%
Unbounded Interview	--	--	24.21%
Incident Characteristics			
Police Notification by Someone Other than the Victim	--	25.11%	15.18%
Perpetrator Arrested	--	16.62%	26.09%
Weapon Use	--	24.82%	17.83%
Perpetrator Under Influence of Drugs/Alcohol	--	28.25%	42.21%
Series Incident	--	6.05%	7.14%
IPV Offender Acted Before	--	--	40.01%
Sample Size (Woman Interviews)	166,523	5,801	1,155

[a]Valid N refers to the number of woman interviews.

Note: Intervening and Incident Variables refer to those used in models run on all violent crime victims/all intimate partner violence victims. For all violent crime victims, they refer to any incident prior to current interview; for intimate partner violence victims, they ref

Figure 1: Analytical Model

(A)
Current and
Past Intimate
Partner
Violence

(B)
Exiting the Relationship
Employment Consequences

Control
Variables

(C)
Self-Defense
Injury
Police Notification
Medical Intervention

Race/
Ethnicity

(D)
Subsequent Intimate Partner
Violence
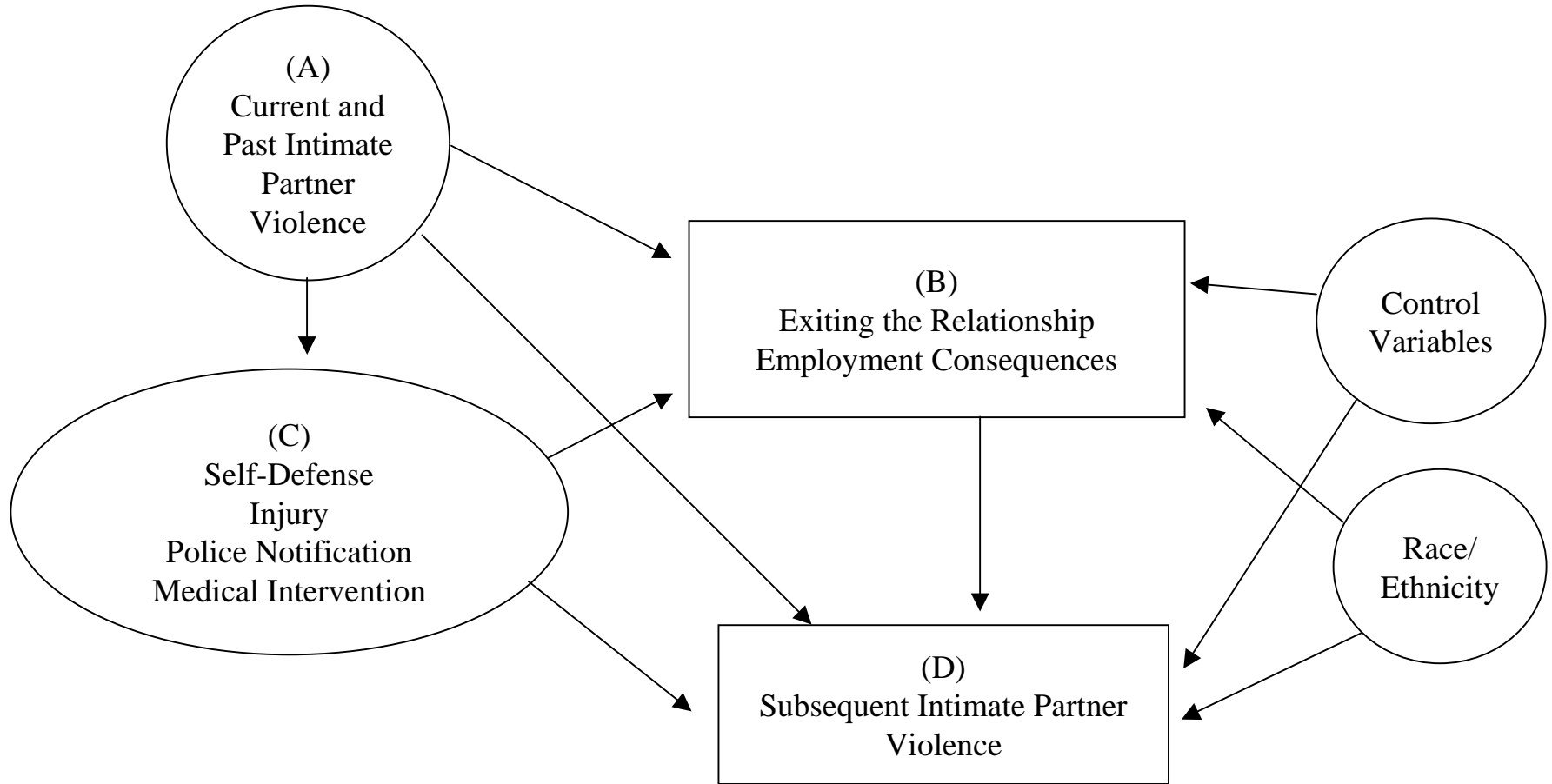
Figure 2: Coding of Employment Status Change

	t	Incident	t+1

Victim between t and t+1

+   **X**   **X***

Non-victim between t and t+1

X   **X***

X = measure employment

* =Collection of Race, Class, Demographic Characteristics, Interview Characteristics

+Note that 60% of intimate partner violence victims are missing information at t because they report an assault during their first interview.

Figure 3: Coding of Recent and Previous Assault

Example: Coding of Intimate Partner Victimization for a Hypothetical Victim

	t0	t1	t2	t3	t4	t5	t6
Number of IPV Incidents Reported	2	0	.	1	0	1	0

		t0	t1	t2	t3	t4	t5	t6
Coding of Recent and Previous IPV	Recent:	2	0	0	1	0	1	0
	Previous:	0	2	1	1	1	0.75	0.80

Figure 4: A Quick Look at Employment Consequences (Weighted)

At First Incident

At Following Interview

458 Victims

Incomplete
2.9%
N=13

Known Status
97.1%
N=445

Not Employed
32.1%
N=140

Employed
67.9%
N=305

Not Employed
79.5%
N=111

Employed
20.6%
N=29

Not Employed
10.4%
N=30

Employed
89.6%
N=275

Entered Labor Force
(Support for Exposure
Reduction Hypothesis)

**Left Labor
Force**

Note: Ns are from unweighted frequencies;
percentages are weighted.
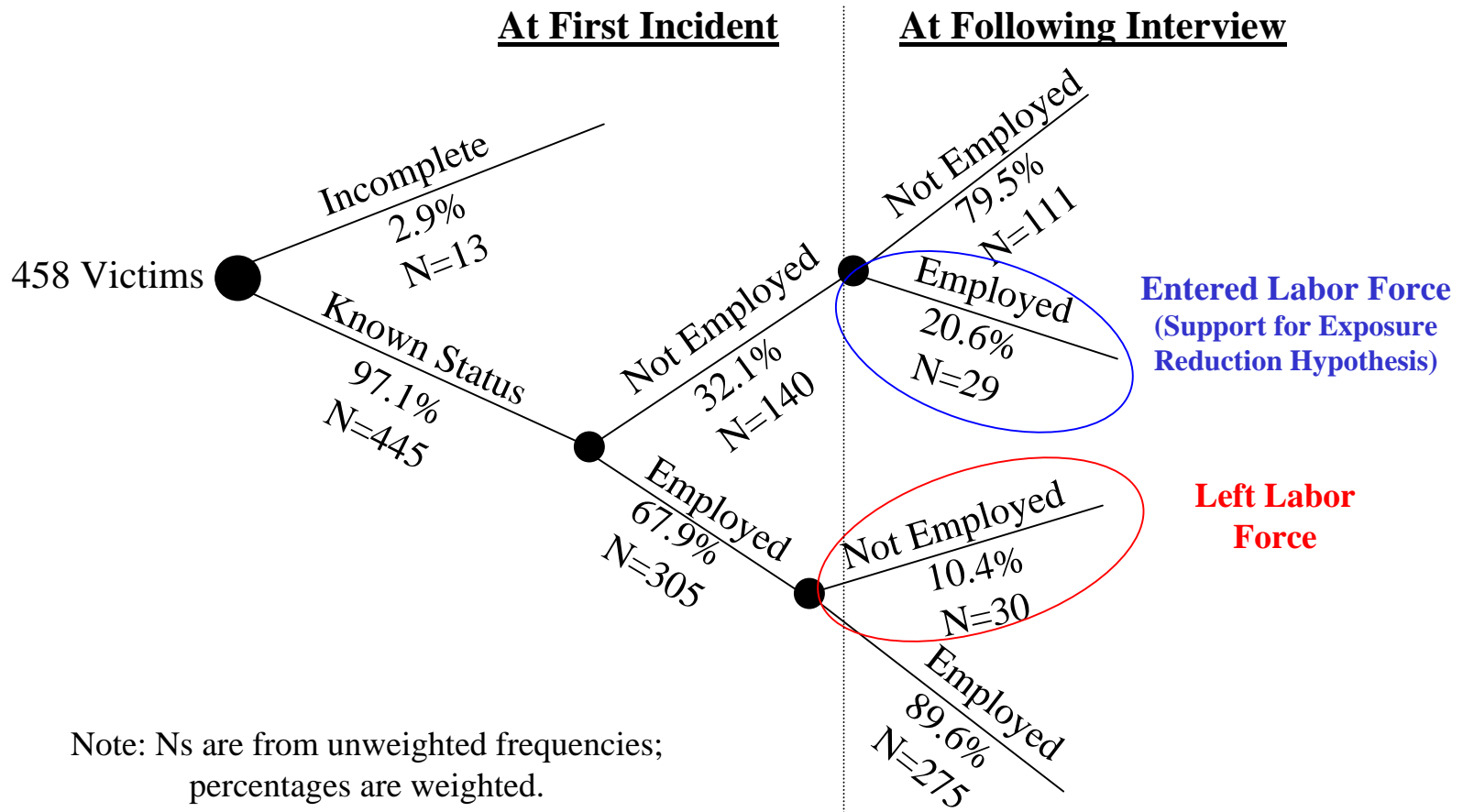
Figure 5: Relative Risk Ratios of Victimization on Marital Dissolution/Residential Mobility Among Married Women

Table 1: Previous Findings from Nationally Representative Samples on the Prevalence of Intimate Partner Violence

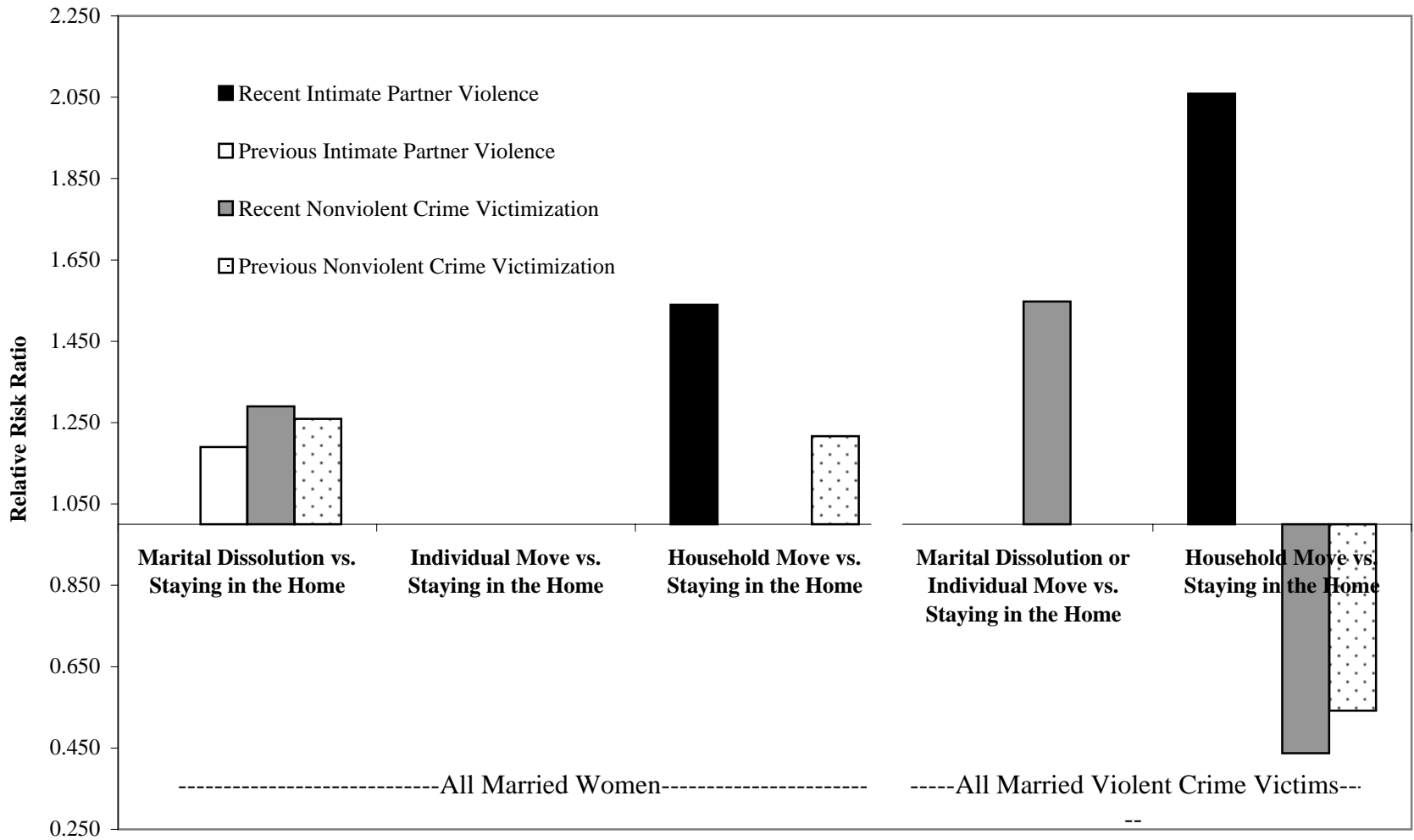| Researchers	Sample	Type of Report (Past 6 months, Past Year, Lifetime, etc.)	Study Design/ Methods	Prevalence Findings
Klaus and Rand (1984)	1973-1981 National Crime Survey	Past 6 Months	Crime Survey	Average yearly victimization rates calculated for violence perpetrated by a spouse or ex-spouse. Overall rate: 0.15% (0.02% for men and 0.27% for women).
Morse (1995)	1983, 1986, 1989 and 1992 waves of the National Youth Survey (longitudinal)	Preceeding 12 Months	"Structured, face-to-face, confidential interviews"	Percent of married or cohabiting respondents reporting any couple violence: 1983(sample age=18-24): 54.5% (Male Perpetrated: 36.7%, Female Perpetrated: 48.0%) , in 1986 (sample age=21-27): 45.9% (Male Perpetrated: 31.4%, Female Perpetrated: 41.4%), in 1989 (sample age=24-30): 39.8% (Male Perpetrated: 27.9%, Female Perpetrated: 35.0%), in 1992 (sample age=27-33): 32.4% (Male Perpetrated: 20.2%, Female Perpetrated: 27.9%).
Rennison (2003)[a]	2001 National Crime Victimization Survey	Past 6 Months	Crime Survey	0.3% of U.S. population aged 12+ reported at least one incident of intimate partner assault: 0.5% of women and 0.09% of men.
Straus, et al. (Straus and Gelles 1990b)	1975 National Family Violence Survey (2,146 Adults)	Past Year		16.0% of married/cohabiting couples experienced violence; 12.1% of husbands were violent and 11.6% of wives were violent.
Straus and Gelles (1990a)[b]	1985 National Family Violence Resurvey (6,002 Households)	Past Year	Conflict Tactics Scale	15.8% of married/cohabiting couples experienced violence; 11.3% of husbands were violent and 12.1% of wives were violent.
Tjaden and Thoennes (2000b)	1995-1996 National Violence Against Women Survey: Nationally Representative Survey of 16,000 (8,000 men and 8,000 women)	Lifetime and past 12 months	Telephone Survey About "Personal Safety"	Lifetime: Nearly 25% of women, 7.6% of men raped/physically assaulted; Past 12 months: 1.5% of women, 0.9% of men raped/physically assaulted.
Zlotnick, et al. (1998)	1987-1988 Married/Cohabiting Respondents to the National Survey of Families and Households	Past Year	Survey	3.2% of couples reported physical victimization without injury (3.4% of women, 2.9% of men); 1.1% of couples reported physical victimization with injury (1.6% of women, 0.6% of men).

[a]Rennison's report presents rates for 1993-2001. In 1993, the overall rate of intimate partner violence was 0.58% (0.16% of men and 0.98% of women reported violent victimization by an intimate. In 1994, the overall rate was 0.55% (0.17% for men and 0.91% for women). In 1995, the overall rate was 0.49% (0.11% for men and 0.85% for women). In 1996, the overall rate was 0.47% (0.14% for men and 0.78% for women). In 1997, the overall rate was 0.43% (0.10% for men and 0.75% for women). In 1998, the overall rate was 0.48% (0.15% for men and 0.78% for women). In 1999, the overall rate was 0.35% (0.11% for men and 0.58% for women). In 2000, the overall rate was 0.28% (0.08% for men and 0.50% for women).

[b]Rates presented for the 1985 survey are based upon computations by Straus and Gelles (1990) that are based upon a subsample that is comparable to the 1975 sample. Divorced/separated respondents are excluded as are cases from state, Black and Hispanic oversamples. Further cases of violence measured in 1985 but not 1975 are excluded. However, the rates for 1985 are similar without these exclusions: 16.1% of couples report any violence in the past year; 11.6% of husbands were violent as were 12.4% of wives.

Table 2: Multivariate Models

Outcome	Categories of Key Predictors	Sample	Model
Model 1: Marital Dissolution/Woman's Move/Household Move(/No change)	Marital Dissolution/Individual Move/Household Move$_{t+1}$ = f(Recent and Prior Victimizations$_t$ Race$_t$, Class$_t$, Demographic Characteristics$_t$, Interview Characteristics$_t$, Incident Characteristics[a])	All Wives Living with their Husband at Time t	Modelled as Competing Risks
Model 2: Individual or Household Move	Individual/Household Move$_{t+1}$ = f(Recent and Prior Victimizations$_t$, Race$_t$, Class$_t$, Demographic Characteristics$_t$, Interview Characteristics$_t$, Incident Characteristics[a])	All Unmarried Women at Time t	Discrete Time Event History
Model 3: Entry into the Labor Force	Entry into the Labor Force$_t$ = f(Recent and Prior Victimizations$_t$, Race$_t$, Class$_t$, Demographic Characteristics$_t$, Interview Characteristics$_t$, Incident Characteristics[a])	All Women Unmployed at Time t	Discrete Time Event History
Model 4: Exit from the Labor Force	Exit from the Labor Force$_t$ = f(Recent and Prior Victimizations$_t$, Race$_t$, Class$_t$, Demographic Characteristics$_t$, Interview Characteristics$_t$, Incident Characteristics[a])	All Women Employed at Time t	Discrete Time Event History
Model 5: Subsequent Intimate Partner Violence	Subsequent Assault$_{t+1}$ =f(Race, Class, Demographic Characteristics, Interview Characteristics, Incident Characteristics[a])	All Intimate Partner Violence Victims from Time of First Victimization	Discrete Time Event History

[a]Separate Models are run to assess the role of incident characteristics. These models are restricted to victims of violent crime and all of their interviews from the time of first victimization are included.
Note: Appendix C details each of the variables in the indicated categories.

Table 3: Relative Risk Ratios from Multinomial Logistic Regression Models Predicting Marital Dissolution and Residential Mobility

	All Women Married at t			All Violent Crime Victims Married at	
	Marital Dissolution vs. Staying in the Home	Individual Move vs. Staying in the Home	Household Move vs. Staying in the Home	Marital Dissolution or Individual Move vs. Staying in the Home	Household Move vs. Staying in the Home
Victimizations					
Recent Intimate Partner Violence	1.190	N/A	1.540 **	0.988	2.059 *
Previous Intimate Partner Violence	3.857 *	N/A	0.995	1.411	1.679
Recent Violence by Other Known Offender	0.377	0.809	1.058	0.305	1.067
Previous Violence by Other Known Offender	1.212	1.197	0.920	1.005	0.974
Recent Violence by a Stranger	1.314	0.848	1.120	1.106	1.062
Previous Violence by a Stranger	1.097	0.776	0.656	0.693	0.653
Recent Nonviolent Crime Victimization	1.290 **	1.148	1.027	1.548 #	0.437 *
Previous Nonviolent Crime Victimization	1.259 #	0.541	1.217 *	1.097	0.542 #
Intervening Variables					
Self-Defense	--	--	--	0.472	2.168
Injury	--	--	--	0.920	0.696
Injured and Sought Medical Attention for Injuries	--	--	--	1.266	0.408
Victim Notified the Police	--	--	--	1.027	0.737
Demographic Characteristics					
Age	0.969 ***	0.957 ***	0.976 ***	0.944 *	0.982
Race					
White, non-Hispanic (Reference/Omitted Category)	--	--	--	--	--
Black, non-Hispanic	1.154	0.962	0.711 ***	1.468	1.793
Hispanic	0.795	1.156	0.870 *	0.391	0.854
Asian, non-Hispanic	0.583 *	0.953	0.683 ***	8.012	N/A
Native American, non-Hispanic	N/A	2.032	0.876	N/A	0.383
Race Missing	0.877	3.666	0.169	N/A	N/A
Education					
Less than 12 Years	1.146	1.202	1.071	2.936 #	3.691 #
12 Years (Reference/Omitted Category)	--	--	--	--	--
More than 12 Years	0.824 #	1.021	1.323 ***	0.705	1.461
Education Missing	0.953	2.026 ***	1.301 ***	0.475	0.974
Household Income					
Low Income	1.829 ***	1.763 **	1.214 **	2.421	0.728
High Income	0.818	0.674 #	1.111	2.361 #	2.223
Income Imputed	1.266	N/A	N/A	N/A	N/A
Income Missing	1.064	1.269	0.876 #	1.327	1.744
Employed	1.795 ***	0.656 **	0.941	1.507	1.508
Employed Imputed	0.461	0.753	0.651	N/A	N/A
Employed Missing	1.439	1.448	1.480	N/A	N/A
Attending School	1.237	1.672 *	0.829 #	0.532	0.339
Attending School Imputed	1.190	N/A	0.489	N/A	N/A
Attending School Missing	1.844	N/A	2.762 **	N/A	N/A
Tenure	0.999 *	0.998 #	0.996 ***	0.997	0.993 *
Tenure Imputed	1.428	2.482	1.232	N/A	95.107 **
Home Ownership	0.751	0.530	0.057 ***	0.240	0.260
Multiple Unit Dwelling	0.896	1.376	1.490 ***	0.568	3.367
Multiple Unit Dwelling Missing	N/A	N/A	N/A	N/A	N/A
Public Housing	1.493	0.246	0.525 **	N/A	0.791
Public Housing Missing	1.169	2.214 #	3.888 ***	2.377	0.549
Urbanicity	1.050	1.467 *	1.279 ***	1.445	1.891
Household Composition					
Lone Adult	9.171 ***	N/A	1.923 ***	8.373 *	0.468
Many Adults	1.489 ***	6.586 ***	0.779 ***	1.772	1.262
Number of Children	1.071	1.019	1.038 #	0.896	1.448 *
Proportion of Prior Interviews Not Married	6.619 ***	2.335 *	1.196	1.565	1.560
Interview Characteristics					
Interview Period	1.035	0.984	1.042 **	1.260 #	1.085
Interview Conducted Via Proxy	1.595	4.953 ***	1.319 #	7.576 *	N/A
Incident Characteristics					
Police Notification by Someone Other than the Victim	--	--	--	0.923	1.087
Perpetrator Arrested	--	--	--	0.797	1.102
Weapon Use	--	--	--	0.626	0.430
Perpetrator Under Influence of Drugs/Alcohol	--	--	--	0.861	1.219
Series Incident	--	--	--	0.866	3.074
Sample Size (Woman-Interviews)		62,010		1272	

N/A indicates that the cell size was too small to produce reliable estimates.

#p<0.10, *p<0.05, **p<0.01, ***p<0.001, two-tailed tests

Table 4: Odds Ratios from Logistic Regression Models Predicting Individual or Household Moves

	All Women Unmarried at t	All Violent Crime Victims
	Moving vs. Staying in the Home	Moving vs. Staying in the Home
Victimizations		
Recent Intimate Partner Violence	1.235 ***	1.301 **
Previous Intimate Partner Violence	1.000	1.098
Recent Violence by Other Known Offender	1.059	1.041
Previous Violence by Other Known Offender	1.151 #	1.201
Recent Violence by a Stranger	1.196 *	1.164
Previous Violence by a Stranger	1.533 **	1.573 **
Recent Nonviolent Crime Victimization	1.071 *	1.022
Previous Nonviolent Crime Victimization	1.102 *	1.031
Intervening Variables		
Self-Defense	--	1.060
Injury	--	1.268 #
Injured and Sought Medical Attention for Injuries	--	0.984
Victim Notified the Police	--	0.777 #
Demographic Characteristics		
Age	0.979 ***	0.974 ***
Race		
White, non-Hispanic (Reference/Omitted Category)	--	--
Black, non-Hispanic	0.692 ***	0.654 **
Hispanic	0.835 ***	1.415 #
Asian, non-Hispanic	0.732 ***	0.350
Native American, non-Hispanic	1.486 *	3.703 ***
Race Missing	0.472 *	N/A
Education		
Less than 12 Years	0.907 #	1.209
12 Years (Reference/Omitted Category)	--	--
More than 12 Years	1.053	1.392
Education Missing	1.174 ***	1.486
Household Income		
Low Income	1.105 **	1.111
High Income	1.021	1.005
Income Imputed	N/A	N/A
Income Missing	1.072	1.408 *
Employed	1.076 *	0.960
Employed Imputed	0.949	1.184
Employed Missing	0.322 ***	0.226 ***
Attending School	1.344 ***	1.455 *
Attending School Imputed	1.284 *	1.047
Attending School Missing	1.002	1.327
Tenure	0.997 ***	0.998
Tenure Imputed	1.303	0.785
Home Ownership	0.262 ***	0.245 ***
Multiple Unit Dwelling	1.218 ***	1.205
Multiple Unit Dwelling Missing	3.115 ***	1.194
Public Housing	0.678 ***	0.498 *
Public Housing Missing	2.145 ***	1.933 *
Urbanicity	0.945	0.770 #
Household Composition		
Lone Adult	0.767 ***	0.738 *
Many Adults	1.370 ***	1.206
Number of Children	1.031 #	1.023
Proportion of Prior Interviews Married	0.984	0.368 #
Interview Characteristics		
Interview Period	1.015	0.985
Interview Conducted Via Proxy	1.303 ***	0.885
Incident Characteristics		
Police Notification by Someone Other than the Victim	--	1.135
Perpetrator Arrested	--	0.841
Weapon Use	--	1.177
Perpetrator Under Influence of Drugs/Alcohol	--	0.946
Series Incident	--	0.613
Sample Size (Woman-Interviews)	62,182	3,072

N/A indicates that the cell size was too small to produce reliable estimates.

#p<0.10, *p<0.05, **p<0.01, ***p<0.001, two-tailed tests

Table 5: Odds Ratios from Stacked Logistic Regression Models Predicting Labor Force Entry

	All Women Not Employed at t	All Victims Not Employed at t
Victimizations		
Recent Intimate Partner Violence	0.868	1.422 #
Previous Intimate Partner Violence	1.031	1.115
Recent Violence by Other Known Offender	0.617 ***	0.967
Previous Violence by Other Known Offender	1.042	1.491
Recent Violence by a Stranger	0.439 ***	0.949
Previous Violence by a Stranger	1.024	3.177 #
Recent Nonviolent Crime Victimization	0.489 ***	0.850
Previous Nonviolent Crime Victimization	1.026	1.094
Intervening Variables		
Self-Defense	--	1.212
Injury	--	0.754
Injured and Sought Medical Attention for Injuries	--	2.954 **
Victim Notified the Police	--	0.779
Demographic Characteristics		
Age	0.953 ***	0.952 ***
Race		
White, non-Hispanic (Reference/Omitted Category)	--	--
Black, non-Hispanic	1.001	0.468 *
Hispanic	0.885 *	0.566
Asian, non-Hispanic	0.556 ***	N/A
Native American, non-Hispanic	1.231	3.491 *
Race Missing	0.918	7.964 *
Education		
Less than 12 Years	0.724 ***	0.764
12 Years (Reference/Omitted Category)	--	--
More than 12 Years	1.224 ***	1.750
Education Missing	1.329 ***	2.217 *
Household Income		
Low Income	0.676 ***	0.312 ***
High Income	1.033	1.705
Income Imputed	1.338 #	N/A
Income Missing	0.976	
Marital Status		
Married	0.904 *	0.576
Divorced	1.472 ***	1.487
Single (Reference/Omitted Category)	--	--
Marital Status Imputed	1.052	N/A
Marital Status Missing	0.708	N/A
Attending School	0.891 *	1.260
Attending School Imputed	0.708	2.502
Attending School Missing	1.007	0.784
Tenure	0.999 ***	0.999
Tenure Imputed	0.266	N/A
Home Ownership	0.893	0.851
Multiple Unit Dwelling	1.085 #	1.531
Multiple Unit Dwelling Missing	1.134	N/A
Public Housing	0.802 *	1.141
Public Housing Missing	0.979	1.418
Urbanicity	1.015	0.990
Household Composition		
Lone Adult	0.929	0.746
Many Adults	1.203 ***	0.749
Number of Children	0.853 ***	1.090
Proportion of Prior Interviews Employed	30.416 ***	2.454 *
Interview Characteristics		
Interview Period	0.879 ***	0.861 *
Interview Conducted Via Proxy	0.636 ***	0.724
Incident Characteristics		
Police Notification by Someone Other than the Victim	--	1.018
Perpetrator Arrested	--	0.987
Weapon Use	--	0.974
Perpetrator Under Influence of Drugs/Alcohol	--	1.119
Series Incident	--	0.023 **
Sample Size (Woman-Interviews)	45,704	769.000

N/A indicates that the cell size was too small to produce reliable estimates.
#p<0.10, *p<0.05, **p<0.01, ***p<0.001, two-tailed tests

Table 6: Odds Ratios from Stacked Logistic Regression Models Predicting Labor Force Exit

	All Women Employed at t	All Victims Employed at t
Victimizations		
Recent Intimate Partner Violence	0.913	0.889
Previous Intimate Partner Violence	0.925	1.092
Recent Violence by Other Known Offender	1.001	1.108
Previous Violence by Other Known Offender	1.046	1.053
Recent Violence by a Stranger	0.957	1.034
Previous Violence by a Stranger	0.955	0.501
Recent Nonviolent Crime Victimization	0.748 ***	1.118
Previous Nonviolent Crime Victimization	1.125 **	1.039
Intervening Variables		
Self-Defense	--	1.272
Injury	--	0.849
Injured and Sought Medical Attention for Injuries	--	1.051
Victim Notified the Police	--	0.943
Demographic Characteristics		
Age	1.011 ***	0.966 **
Race		
White, non-Hispanic (Reference/Omitted Category)	--	--
Black, non-Hispanic	0.921 #	0.762
Hispanic	1.085	1.195
Asian, non-Hispanic	0.955	N/A
Native American, non-Hispanic	1.458 #	2.704
Race Missing	1.306	N/A
Education		
Less than 12 Years	1.492 ***	1.405
12 Years (Reference/Omitted Category)	--	--
More than 12 Years	0.888 **	1.148
Education Missing	1.351 ***	1.721 *
Household Income		
Low Income	1.665 ***	2.711 ***
High Income	1.004	0.551
Income Imputed	1.081	N/A
Income Missing	1.168 ***	1.324
Marital Status		
Married	0.966	0.854
Divorced	0.655 ***	0.635 #
Single	--	--
Marital Status Imputed	1.309	N/A
Marital Status Missing	0.811	N/A
Attending School	1.509 ***	0.729
Attending School Imputed	0.972	N/A
Attending School Missing	1.678 *	0.714
Tenure	1.001 ***	1.001
Tenure Imputed	0.584	N/A
Home Ownership	0.860	0.718
Multiple Unit Dwelling	0.997	0.950
Multiple Unit Dwelling Missing	2.454	N/A
Public Housing	1.445 ***	1.253
Public Housing Missing	1.011	1.106
Urbanicity	1.006	1.122
Household Composition		
Lone Adult	0.772 ***	0.668
Many Adults	0.949 #	0.919
Number of Children	1.192 ***	1.303 **
Proportion of Prior Interviews Not Employed	12.117 ***	2.306 **
Interview Characteristics		
Interview Period	0.909 ***	0.987
Interview Conducted Via Proxy	1.965 ***	4.638 *
Incident Characteristics		
Police Notification by Someone Other than the Victim	--	1.048
Perpetrator Arrested	--	1.012
Weapon Use	--	1.743 **
Perpetrator Under Influence of Drugs/Alcohol	--	1.327
Series Incident	--	0.667
Sample Size (Woman-Interviews)	55,310	1493.000

N/A indicates that the cell size was too small to produce reliable estimates.
#p<0.10, *p<0.05, **p<0.01, ***p<0.001, two-tailed tests

Table 7: Characteristics Associated with Intimate Partner Assault Report(s) (Weighted)

	One Assault	First of Multiple Assaults
Number of Victims (Unweighted)	343	115
Percent of Victims	75.2%	24.9%
Self-defense	10.5%	14.4%
Injury	47.5%	50.1%
Injured and Sought Medical Attention for Injuries	9.3%	11.6%
Police Contact	50.3%	39.1% *

#p<0.10, *p<0.05, **p<0.01, ***p<0.001, two-tailed tests

Table 8: Odds Ratios from Stacked Logistic Regression Models Predicting Subsequent Intimate Partner Assault

Victimizations	
Previous Intimate Partner Violence	0.253 ***
Recent Violence by Other Known Offender	1.063
Previous Violence by Other Known Offender	4.267 #
Recent Violence by a Stranger	1.618
Previous Violence by a Stranger	6.434
Recent Nonviolent Crime Victimization	1.749 ***
Previous Nonviolent Crime Victimization	0.963
Intervening Variables	
Self-Defense	1.904 #
Injury	1.291
Injured and Sought Medical Attention for Injuries	1.641
Victim Notified the Police	1.142
Employment Consequences	
Entered the Labor Force	0.961
Entered the Labor Force Missing	N/A
Left the Labor Force	0.311 #
Left the Labor Force Missing	N/A
Marital Dissolution	1.557
Marital Dissolution Missing	N/A
Demographic Characteristics	
Age	0.956 **
Race	
White, non-Hispanic (Reference/Omitted Category)	--
Black, non-Hispanic	0.402 *
Hispanic	2.405 *
Asian, non-Hispanic	N/A
Native American, non-Hispanic	0.917
Race Missing	N/A
Education	
Less than 12 Years	0.956
12 Years (Reference/Omitted Category)	--
More than 12 Years	0.991
Education Missing	2.966 **
Household Income	
Low Income	0.766
High Income	0.564
Income Imputed	N/A
Income Missing	0.283 **
Marital Status	
Married	1.332
Divorced	1.651
Single	--
Marital Status Imputed	N/A
Marital Status Missing	N/A
Employed	0.807
Employed Imputed	N/A
Employed Missing	0.374
Attending School	1.412
Attending School Imputed	N/A
Attending School Missing	2.080
Tenure	1.002
Tenure Imputed	1.534
Home Ownership	0.732
Multiple Unit Dwelling	1.583
Multiple Unit Dwelling Missing	0.979
Public Housing	3.015 #
Public Housing Missing	2.414
Urbanicity	0.841
Household Composition	
Lone Adult	1.158
Many Adults	1.944 *
Number of Children	0.781 #
Interview Characteristics	
Interview Period	0.773 **
Interview Conducted Via Proxy	N/A
Unbounded Interview	4.719 ***
Prior IPV Incident Characteristics	
Police Notification by Someone Other than the Victim	0.480 #
Perpetrator Arrested	0.414 *
Weapon Use	0.426 *
Perpetrator Under Influence of Drugs/Alcohol	2.647 ***
Series Incident	173.827 ***
Offender Acted Before	0.231 ***
Sample Size (Woman-Interviews)	1,118

N/A indicates that the cell size was too small to produce reliable estimates.

#p<0.10, *p<0.05, **p<0.01, ***p<0.001, two-tailed tests