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Child Abuse and Neglect and Intimate Partner Violence Victimization and Perpetration: A Prospective Investigation

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Abstract

This paper describes the extent to which abused and neglected children report intimate partner violence (IPV) victimization and perpetration when followed up into middle adulthood. Using data from a prospective cohort design study, children (ages 0–11) with documented histories of physical and sexual abuse and/or neglect ($n = 497$) were matched with children without such histories ($n = 395$) and assessed in adulthood ($M_{age} = 39.5$). Prevalence, number, and variety of four types of IPV (psychological abuse, physical violence, sexual violence, and injury) were measured. Over 80% of both groups—childhood abuse and neglect (CAN) and controls—reported some form of IPV victimization during the past year (most commonly psychological abuse) and about 75% of both groups reported perpetration of IPV toward their partner. Controlling for age, sex, and race, overall CAN [adjusted odds ratio (AOR) = 1.60, 95% CI [1.03, 2.49], physical abuse (AOR = 2.52, 95% CI [1.17, 5.40]), and neglect (AOR = 1.64, 95% CI [1.04, 2.59]) predicted increased risk for being victimized by a partner via physical injury. CAN and neglect also predicted being victimized by a greater number and variety of IPV acts. CAN and control groups did not differ in reports of perpetration of IPV, although neglect predicted greater likelihood of perpetrating physical injury to a partner, compared to controls. Abused/neglected females were more likely to report being injured by their partner, whereas maltreated males did not. This study found that child maltreatment increases risk for the most serious form of IPV involving physical injury. Increased attention should be paid to IPV (victimization and perpetration) in individuals with histories of neglect.

Keywords

Child abuse; neglect; sexual abuse; intimate partner violence; victimization; perpetration; physical injury

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Introduction

Intimate partner or domestic violence (IPV) continues to be a serious problem in the United States and internationally. It is estimated that more than a third of women (35.6%) and more than a quarter of men (28.5%) in the United States experience rape, physical violence, and/or stalking by an intimate partner in their lifetime (Black et al., 2011). Estimates from the National Family Violence Surveys indicate that approximately 1 out of 6 couples experience IPV annually (Schafer, Caetano, & Clark, 1998). The medical care, mental health services, and lost productivity costs associated with IPV have been estimated to be more than \$8.3 billion (Max, Rice, Finkelstein, Bardwell, & Leadbetter, 2004).

Another form of family violence, child maltreatment, also represents a major public health concern in the United States and abroad (Gilbert et al., 2009). In the United States in fiscal year 2010, approximately 3.3 million children were referred to child protection service agencies for suspected maltreatment, and about 695,000 children were determined by state and local child protective service agencies to be victims of maltreatment. About 1,560 children died as a result of child abuse or neglect in 2010 (U.S. Department of Health and Human Services, 2011).

This paper examines the extent to which experiencing abuse or neglect in childhood increases a person's risk for intimate partner violence perpetration and victimization in adulthood. Numerous studies have reported a relationship between child abuse and neglect (CAN) and the perpetration of IPV. Using data from the Toledo Adolescent Relationships Study, Swinford, DeMaris, Cernkovich, and Giordano (2000) found that child abuse (measured by exposure to harsh physical discipline) predicted IPV. In another study controlling for early family violence, Linder and Collins (2005) found that individuals exposed to child abuse were at risk for IPV in romantic relationships. In one of the few prospective studies to examine this relationship, Ehrensaft and colleagues (2003) found that childhood physical abuse was the best predictor of perpetrating partner violence as well as injury to the victim, but that the effect was due to other factors, including exposure to partner violence between parents. Although White and Widom (2003) found that CAN was a significant predictor of perpetration of IPV in adulthood, other researchers have questioned the relationship between experiencing abuse as a child and subsequent spouse abuse (Herrera & McCloskey, 2003; O'Leary & Jouriles, 1993; Simons, Wu, Johnson, & Conger, 1995).

In their meta-analysis of the research literature on the intergenerational transmission of spouse abuse, Stith et al. (2000) concluded that the findings suggest a "weak-to-moderate relationship between growing up in an abusive family and becoming involved in a violent marital relationship" (p. 640), with an overall effect size of .16 across 30 studies. More than 10 years later, Capaldi, Knoble, Shortt, and Kim (2012) concluded that the "findings indicate a low-to-moderate significant association of child abuse and neglect with later IPV" (p.247), based on their systematic review of risk factors for intimate partner violence that included the role of child abuse. Capaldi and colleagues also cautioned that these findings are "generally over-reliant on retrospective reports" (p.247).

Studies have also examined whether child abuse is associated with increased risk for being victimized in the context of partner violence (Cappell & Heiner, 1990; Feerick, Haugaard, & Hien, 2002; McKinney, Caetano, Ramisetty-Mikler, & Nelson, 2009; Mihalic & Elliott, 1997; Murphy, 2011; Renner & Slack, 2006; Renner & Whitney, 2012; Seedat, Stein, & Forde, 2005; Simons, Johnson, Beaman, & Conger, 1993). Many of these studies have focused on childhood sexual abuse as a risk factor IPV victimization. For example, Renner and Slack (2006) found that childhood physical and sexual abuse predicted IPV victimization, controlling for demographic and other childhood factors. One recent systematic review of data from the East Asia and Pacific Region reported that children who had been sexually abused had a threefold increase in risk of IPV victimization later in life (Fry, McCoy, & Swales, 2012). In studies of civilian women (Caetano, Ramisetty-Mikler, & Field, 2005) and female enlisted soldiers married to civilian men (Forgey & Badger, 2010), women reporting severe bi-directional IPV were more likely to endorse a child sexual abuse history. In a large nationally representative Canadian sample, childhood sexual abuse was associated with later IPV victimization for women and men, although the relationship was stronger for women than for men (Daigneault, Hebert, & McDuff, 2009). In contrast, a study of young adults participating in the National Longitudinal Study of Adolescent Health found no relationship between reports of sexual abuse and partner violence (Renner & Whitney, 2012), and another study involving adult methadone users found that forceful child sexual abuse or sexual abuse by a family member was not associated with an increased risk of later IPV (Engstrom, El-Bassel, & Gilbert, 2012).

Thus, findings on the extent to which exposure to violence in childhood increases a person's risk for IPV in adulthood are not always consistent. Part of the problem for these contradictory findings may be related to a number of issues that Stith et al. (2000) note that make studying the intergenerational transmission of spouse abuse complex. The first issue concerns potentially different effects of witnessing violence compared to experiencing violence as a child. Although much of the existing literature focuses on children who witness violence between parents, a number of studies suggest that the consequences of these two childhood experiences may differ (Cappell & Heiner 1990; Dunlap, Golub, Johnson, & Wesley, 2002; Mihalic & Elliott, 1997; Moffitt & Caspi, 1999; Simons & Johnson, 1998). In this paper, we focus exclusively on the experience of abuse and neglect in childhood and its impact on risk for intimate partner violence in adulthood.

The second issue raised by Stith et al. (2000) and relevant here is the extent to which children growing up in violent homes are at risk for becoming perpetrators and/or victims of intimate partner violence. As noted, there is some support for each of these outcomes, with some studies showing increased risk for perpetration of partner violence and others showing increased risk for IPV victimization.

Third, there is some reason to expect that rates and patterns of victimization and perpetration may vary by gender and that the link between childhood abuse and subsequent partner violence perpetration and victimization may be manifest differently in males and females (Langhinrichsen-Rohling, Neidig, & Thorn, 1995; Mihalic & Elliott, 1997; Stith et al., 2000). Downey, Feldman, Khuri, and Friedman (1994) suggested that the consequences of child abuse may parallel gender differences in the expressions of psychopathology, with

maltreated boys being more likely to externalize their pain and suffering and becoming perpetrators of violence, whereas maltreated girls more likely to internalize their pain (Friedrich, Urquiza, & Beilke, 1986) and become attached to men who victimize them and increase their risk of IPV victimization in the process (Carmen, Ricker, & Mills, 1984; Jaffe, Wolfe, Wilson, & Zak, 1986; Widom, 1989b). In their meta-analysis, Stith et al. (2000) predicted that there would be gender differences in socialization experiences, based on the rationale that where men are socialized to be aggressive and to use violence to settle arguments and conflicts (Sugarman & Frankel, 1996), this is not the case for women. The results of their meta-analysis provided support for their hypothesis, with males from violent homes being more likely to be perpetrators of spouse abuse ($d = .21$) compared to women from violent homes ($d = .11$).

Studies that have investigated whether there are gender differences in these relationships are few and have also produced mixed results. Women who grow up in violent families have been reported to be at increased risk to become victims of spouse abuse (Cappell & Heiner 1990; Dumas, Margolin, & John, 1994). However, the majority of studies report a link between family of origin violence and men's perpetration of marital violence (Barnett, Miller-Perrin, & Perrin, 1997; Delsol & Margolin, 2004). For example, it is estimated that males who report experiencing family violence are 3–10 times more likely to engage in partner violence than males without such histories (Gover, Kaukinen, & Fox, 2008; Lawson, 2008; Murphy, Meyer, & O'Leary, 1993; Straus, Gelles, & Steinmetz, 1980). Dumas, Margolin, and John (1994) found that abused boys were at higher risk for perpetrating IPV as adults than girls. However, Magdol, Moffitt, Caspi and Silva (1998) reported similar developmental antecedents for male and female perpetrators of IPV, but the link between abuse history and IPV perpetration was stronger for females. Capaldi and Clark (1998) also found that childhood family experiences were more predictive of female than male perpetration of IPV. Using data from the Seattle Social Development Project, Herrenkohl et al. (2004) found that child abuse was a predictor of IPV for men, but for females, the relationship was moderated by the quality of the relationship to the partner. White and Widom (2003) found that both males and females with documented histories of childhood abuse and/or neglect reported significantly higher rates of ever hitting or throwing things at a partner, ever hitting or throwing first, and ever hitting or throwing first more than once in young adulthood, compared to controls without such histories.

Understanding these relationships is further complicated because CAN and IPV are correlated with socioeconomic status (Fang & Corso, 2008; Kruttschnitt, McLeod & Dornfeld 1994; Straus & Gelles, 1990). This is particularly true for assessing partner violence, because rates of IPV vary by demographic characteristics (Cunradi, Caetano, & Schaefer, 2002; Field & Caetano, 2004; Gelles, 1993; Rennison & Rand, 2003). Low socioeconomic status has also been associated with higher rates of marital conflict and divorce (Conger, Ge, Elder, Lorenz, & Simons, 1994). Thus, children from economically disadvantaged homes may be more likely than other children to be exposed to less stable marital models. Matching for social class is important because it is theoretically plausible that any relationship between CAN and later outcomes is confounded or explained by social class differences (Adler et al., 1994; Bradley & Corwyn, 2002; Conroy, Sandel, &

Zuckerman, 2010; MacMillan et al., 2001; Widom, 1989b). Studies that lack groups from comparable backgrounds make it difficult to establish the effect of child abuse on later behaviors, independent of the impact of socio-economic disadvantage.

Drawing firm conclusions from these studies is also problematic for a number of other reasons. Many of the studies are cross-sectional in design and, therefore, there is ambiguity in interpreting study findings, because information on outcomes was collected at the same time as information about the predictor (child maltreatment). Most studies have relied on retrospective self-reports of childhood victimization, raising questions about the reliability and validity of such measures (Henry, Moffit, Caspi, Langley, & Silva, 1984; McCauley et al., 1997; Ross, 1989; Squire, 1989). IPV offenders may inaccurately report a history of prior abuse in order to justify their current behavior (Romans, Martin, Anderson, O'Shea & Mullen, 1995). Studies have often used only one indicator of IPV or a few questions, potentially yielding an incomplete assessment of IPV. Finally, since males and females are not distributed equally across different types of abuse and neglect (i.e., more females are sexually abused), gender differences in these relationships may be confounded with the type of maltreatment.

The Present Study

The present study has several advantages. First, the prospective longitudinal design of this study allows for determination of the correct temporal sequence of the variables of interest. We trace long-term outcomes for individuals with documented histories of childhood physical and sexual abuse and neglect and a matched control group. Second, we use documented cases of childhood maltreatment that minimizes potential problems with reliance on retrospective self-reports and avoids problems of recall of abuse and neglect. Third, we include more than one type of abuse and/or neglect and males and females. Fourth, we use a clear operational definition of CAN. Fifth, we utilize multiple indicators of IPV (prevalence, number, and variety) so that we can examine the extent of IPV comprehensively. Finally, because we recognize the bidirectional nature of these IPV relationships, we examine both IPV victimization (partner to participant) and perpetration (participant to partner).

The purpose of this research is to examine whether abused and neglected children report higher levels of intimate partner violence (victimization and perpetration) in adulthood than a matched control group and whether there are differences in these relationships by gender. Specifically, we address three basic questions:

- a. Are individuals with documented histories of CAN at increased risk for intimate partner violence victimization and perpetration (prevalence, number, and variety) in adulthood compared to matched controls?
- b. Are individuals with histories of childhood physical abuse (i.e., those who experienced physical violence as children) more likely to be violent toward their partner than matched controls (perpetration), based on the theory that harsh discipline or physical abuse increases the probability that children will grow up to behave aggressively toward family members?

- c. Are there gender differences in the relationships between childhood maltreatment and IPV in adulthood? That is, are females with documented histories of CAN more likely to be victims of IPV in adulthood than matched female controls? Are abused and neglected males more likely to perpetrate IPV in adulthood compared to matched male controls?

Method

Design and Participants

The data used here are from a large research project based on a prospective cohort design study in which abused and/or neglected children were matched with non-abused and nonneglected children and followed prospectively into young adulthood (Widom, 1989a). This study was begun using archival records to define both child abuse and neglect and control groups. Abuse and neglect cases were drawn from the records of county juvenile and adult criminal courts in a metropolitan area in the Midwest during the years 1967 through 1971.

The rationale for identifying the abused and neglected group was that their cases were serious enough to come to the attention of the authorities. Only court-substantiated cases of child abuse and neglect were included. Abuse and neglect cases were restricted to those in which the children were 11 years of age or less at the time of the abuse or neglect incident. Excluded from the sample were court cases that represented: (a) adoption of the child as an infant; (b) *involuntary* neglect only, usually resulting from the temporary institutionalization of the legal guardian; (c) placement only; or (d) failure to pay child support.

A comparison group of children who did not have documented cases of abuse and/or neglect was established, with matching on the basis of sex, age, race, and approximate family socioeconomic status during the time period under study (1967 through 1971). It is difficult to match exactly for social class because higher income families could live in lower social class neighborhoods and vice versa. The matching procedure used here is based on a broad definition of social class that includes neighborhoods in which children were reared and schools they attended. Similar procedures, with neighborhood school matches, have been used in studies of people with schizophrenia (Watt, 1972) to match approximately for social class.

Children who were under school age at the time of the abuse and/or neglect were matched with children of the same sex, race, date of birth (+/- 1 week), and hospital of birth through the use of county birth record information. For children of school age, records of more than 100 elementary schools for the same time period were used to find matches with children of the same sex, race, date of birth (+/- 6 months), and class in elementary school during the years 1967–1971. Overall, there were matches for 73% of the abused and neglected children.

The cohort design involves the assumption that the major difference between the abused and neglected and comparison group is in the abuse or neglect experience. Since it is not possible to randomly assign subjects to groups, the assumption of equivalency for the groups

is an approximation. Official records were checked and any proposed comparison group child who had an official record of child abuse or neglect ($n = 11$) was eliminated and a replacement child was substituted. The number of individuals in the control group who were actually abused, but not reported, is unknown. The control group may also differ from the abused and neglected individuals on other variables associated with abuse or neglect.

Of the 1,575 persons in the original sample, 1,307 subjects (83%) were located and 1,196 interviewed (76%) during 1989–1995. Of the people not interviewed, 43 were deceased (prior to interview), 8 were incapable of being interviewed, 268 were not found, and 60 refused to participate. There were no significant differences between the follow-up sample ($n = 1,196$) and the original sample ($N = 1,575$) in terms of demographic characteristics (male, White, poverty in childhood census tract, or current age) or group status (abuse/neglect vs. comparison group). At the first interview, the sample was an average of 29.2 years old (range: 19.0–40.7; $SD = 3.8$) and included 582 females (49%). Based on self-reports of race/ethnicity, 61% of participants were White, non-Hispanic, 33% African American, 4% Hispanic, 1.5% American Indian, and less than 1% Pacific Islander or other. The median occupational level (Hollingshead, 1975) for the group was semi-skilled workers, and only 13% held professional jobs. The mean highest level of school completed for the sample was 11.5 years ($SD = 2.2$).

Of the 1,196 individuals interviewed during 1989–1995, 93% ($n = 1,117$) were located and 896 (75%) interviewed a second time during 2000–2002. Of the people not interviewed, 37 were deceased, four were incapable of being interviewed, 79 were not found, and 180 refused to participate. Comparison of the present sample ($n = 896$) to the earlier interview sample from 1989–1995 ($n = 1,196$) indicated no significant differences in terms of percent White, male, abused and/or neglected, or mean current age. The mean age for the current sample at the second interview was 39.5 ($SD = 3.5$; range: 30–47). Approximately half the sample was female (51.2%) and about two-thirds White, non-Hispanic (60.9%).

The sample in the current analysis represents individuals who reported having a current romantic or intimate partner at the time of the second interview (2000–2002). Of the 892 participants in this wave of the study, 194 reported having no current partner and information was missing for 6 people, resulting in an analysis sample of 692. We conducted a multivariate analysis of selection to determine whether the sample with a current partner ($n = 692$) was similar to the total interview sample ($n = 892$), using group (CAN and type of CAN vs. control), age, race, and sex to predict partner status (1 = *not partnered*, 0 = *partnered*). We found that there were significantly fewer males who reported having a current partner than females (adjusted odds ratio [AOR] = 0.69, 95% CI [0.50, 0.96], $p = .03$) and significantly more White, non-Hispanics who reported having a current partner than Blacks and Hispanics (AOR = 0.44, 95% CI [0.32, 0.62], $p < .000$). However, participants with and without a current partner did not differ in terms of group (abuse/neglect vs. control), type of abuse/neglect, or age.

Procedures

Respondents were interviewed in person both times, usually in their homes, or, if the respondent preferred, another place appropriate for the interview. The interviewers were

blind to the purpose of the study, to the inclusion of an abused and/or neglected group, and to the participants' group membership. Similarly, the subjects were blind to the purpose of the study. Subjects were told that they had been selected to participate as part of a large group of individuals who grew up in the late 1960s and early 1970s. Institutional Review Board approval was obtained for the procedures involved in this study and subjects who participated signed a consent form acknowledging that they understood the conditions of their participation and that they were participating voluntarily. For those individuals with limited reading ability, the consent form was read to the person and, if necessary, explained verbally.

Measures and Variables

Child abuse and neglect—Childhood physical and sexual abuse and neglect were assessed through review of official records processed during the years 1967 to 1971. Physical abuse cases included injuries such as bruises, welts, burns, abrasions, lacerations, wounds, cuts, bone and skull fractures, and other evidence of physical injury. Sexual abuse charges varied from relatively non-specific charges of "assault and battery with intent to gratify sexual desires" to more specific charges of "fondling or touching in an obscene manner," rape, sodomy, incest, and so forth. Neglect cases reflected a judgment that the parents' deficiencies in childcare were beyond those found acceptable by community and professional standards at the time. These cases represented extreme failure to provide adequate food, clothing, shelter, and medical attention to children. Although the cases for most of the children in this sample involved only one type of abuse or neglect, approximately 10% of the abused and neglected group had experienced more than one type. Specific types of abuse and neglect refer to individuals who experienced any physical abuse, any sexual abuse, and any neglect, to reflect the fact that some may have experienced more than one type. Though the child maltreatment literature recognizes psychological maltreatment as an important type of childhood abuse (Hart, Brassard & Karlson, 1996), the cases studied here were processed during the late 1960s and early 1970s when psychological maltreatment was not recognized as a distinct form and, thus, it is not included here.

Intimate Partner Violence (IPV)—We assess victimization (partner to respondent) and perpetration (respondent to partner) and, in addition to the more traditional forms of physical violence, sexual violence, and threats, we also include conflict and aggression that is not physical in nature (that is, verbal aggression or psychological coercion). The 41-item assessment of IPV was composed of items from several different measures, including the Partner Conflict Tactics Scale (Moffitt et al., 1997), Conflict Tactics Scale (Straus, 1990), Psychological Maltreatment of Women Inventory (Tolman, 1989), and National Violence against Women survey (Tjaden & Thoennes, 2000). The IPV measure included four subscales reflecting psychological abuse, sexual violence, physical violence, and questions about the extent to which the person experienced physical injury as a result of actions by the partner. Information was obtained about the participant's behavior toward his/her partner (perpetration) as well as the partner's behavior toward the respondent (victimization). The psychological abuse scale consisted of 18 (victimization) and 17 (perpetration) items reflecting *dominance-isolation* and *verbal-emotional abuse* (Tolman, 1989) and other coercive behaviors, e.g., tried to make you feel crazy. Internal consistency for the

psychological abuse scale was acceptable [$\alpha = .92$ (victimization) and $.86$ (perpetration)]. The physical violence scale consisted of 15 items from the CTS [$\alpha = .92$ (victimization) and $.87$ (perpetration)]. Sexual violence was assessed with two items, (e.g., using threats (but not physical force) to make you have sex and physical force to make you have sex), and a positive response for either was considered sexual violence. Six injury questions asked the participant: “Because of something your partner did to you (or you did to your partner)”, e.g., you had a sprain, bruise, or small cut; a broken bone from a fight; or passed out from a hit on the head [$\alpha = .82$ (victimization)) and $.61$ (perpetration)]. Reliability for the overall 41-item (victimization) and 40-item (perpetration) IPV scale was $.96$ (victimization) and $.92$ (perpetration). [One item was accidentally omitted in the perpetration version.]

Participants were asked how many times you or your partner committed the different acts during the past 12 months. The number of times the behaviors occurred were assessed on a 6-point scale ranging from 1 (*once or twice*) to 5 (*more than 20 times*), and an option of *never* (0) was also included. We use three measures (prevalence and number and variety of IPV acts) to describe victimization and perpetration overall and for each of the subscales. First, we report prevalence, where perpetration (yes/no) and victimization (yes/no) indicated the presence of any type of IPV assessed (psychological abuse, physical violence, sexual violence, or injury). The second scoring strategy (number of IPV acts) compared the summed scores for each scale for each participant. However, a potential weakness of this approach is that a few reports of extreme violence may skew the results inappropriately. Finally, the third scoring strategy focused on the *variety* of IPV acts. This was recommended by Moffitt et al. (1997) and represents the number of different types of intimate partner violence acts reported.

Control variables—Age in middle adulthood, gender, and race/ethnicity were included as control variables. Race/ethnicity was coded 1 for *White, non-Hispanic* and 0 for *Black, Hispanics and other non-Whites*. Gender was coded 1 for *females* and 0 for *males*.

Data Analysis

Effects were computed separately for CAN on IPV victimization and perpetration. All analyses controlled for age, sex, and race. Logistic regression was used to determine the relationship between CAN and the prevalence (dichotomous) indicator of intimate partner violence overall and type of IPV. Adjusted odds ratios (AOR) and 95% confidence intervals (CI) are reported for these analyses. For these logistic regressions, we report effect size for the overall model and Nagelkerke R Square, a measure of improvement in prediction due to the variables in the model. Analyses of covariance (ANCOVAs) were used to test for mean differences between the abuse/neglect and control groups on continuous measures of IPV (number and variety of IPV acts). We report means, standard errors, F statistics, partial eta squared, and adjusted R-squared. Partial eta squared, the proportion of total variability attributable to maltreatment excluding the variance explained by the control variables, is a measure of effect size for the independent variable (CAN). Analyses were conducted for CAN overall and for each type of abuse or neglect compared to the control group. Additional logistic regressions and ANCOVAs were conducted with males and females separately and included tests to determine whether there was a significant gender by group

(CAN) interaction. The number of participants varied slightly in each analysis due to missing data. Statistical significance was set at 0.05 and SPSS version 18.0.2 was used for all analyses.

Results

Victimization: Prevalence, Number, and Variety of Intimate Partner Violence Acts

Table 1 presents our findings with regard to the prevalence of IPV victimization for the CAN and control groups and for the specific types of abuse and neglect. The first important finding to note is the high rate of reported past year victimization (83%–85%) for both abuse/neglect and control groups in the sample. Second, in terms of prevalence of IPV victimization, there were surprisingly few significant differences between the groups (abuse/neglect versus control) in terms of psychological abuse, physical violence, and sexual violence. However, significantly more of the abuse/neglect group overall reported being injured because of actions by their partner ($OR = 1.60$, 95% CI [1.03, 2.49], $p < .05$) compared to controls. When examining specific types of CAN, individuals with documented histories of physical abuse ($OR = 2.52$, 95% CI [1.17, 5.40], $p < .05$) and neglect ($OR = 1.64$, 95% CI [1.04, 2.59], $p < .05$), but not sexual abuse, reported greater risk of being injured by actions taken by a partner compared to controls.

Table 2 shows the number of IPV victimization acts (any IPV, psychological abuse, physical violence, sexual violence, and injury) reported by participants that reflected their partner's behavior toward them. These results show that abused and neglected individuals as a group reported a significantly higher mean number of victimization acts of psychological abuse compared to controls (11.06 vs. 8.06, $p = .002$). When looking at specific types of CAN, this pattern was found only for individuals with histories of neglect (11.15 vs. 8.12, $p = .003$), but not for physical or sexual abuse.

Table 2 also shows our results for the variety of IPV acts of victimization reported being used by the partner toward participants. Overall, abused and neglected individuals reported being victimized by a greater variety of IPV acts (psychological abuse [4.68 vs. 3.88, $p = .01$] and injury [0.30 vs. 0.19, $p = .05$]) than controls. Compared to controls, individuals with histories of neglect also reported being victimized by a greater variety of IPV acts of psychological abuse (4.73 vs. 3.90, $p = .01$) and a greater variety of types of injury (0.29 vs. 0.20, $p = .08$), although the latter did not reach custody levels of significance.

Perpetration: Prevalence, Number, and Variety of Intimate Partner Violence Acts

Table 3 presents our results for the perpetration of IPV during the past year by individuals with histories of abuse and/or neglect and matched controls. In terms of prevalence, there is one significant difference: individuals with histories of neglect reported causing more injury to their partner than matched controls (AOR = 1.69, 95% CI [0.99, 2.88], $p < .05$). There was also a nonsignificant trend for the abuse/neglect overall to report higher likelihood of causing injury to partner (AOR = 1.58, 95% [0.94, 2.66], $p < .10$).

Table 4 shows our results for the number and variety of IPV acts reported that were perpetrated by participants in the current study. There were no significant differences

between the CAN and control groups in terms of number of IPV acts perpetrated, although there were two non-significant trends. The CAN group overall reported a slightly higher number of IPV acts ($p < .10$) and the physical abuse group reported a slightly higher number of IPV acts that resulted in injury to their partner ($p < .10$). Compared to controls, individuals with histories of childhood abuse and/or neglect did not report perpetration of a greater variety of IPV acts (see Table 4).

Gender Differences in the Relationship between Child Abuse and Neglect and IPV Victimization and Perpetration

We did not find any significant CAN by gender interactions for IPV victimization or perpetration (see Table 5). However, because we had proposed directional hypotheses regarding gender differences, we examined these relationships for males and females separately. These results showed that females with documented histories of CAN reported a significantly higher risk of being injured by a partner (prevalence), but did not differ from controls on other indicators. There were no differences between CAN and control males on these indicators of IPV perpetration and victimization.

Discussion

We examined the extent to which CAN predicts an increased risk for subsequent victimization and perpetration of IPV using a prospective design that followed up these individuals into adulthood. In some respects, these findings provide support for the hypothesis of an intergenerational transmission of spouse abuse, although in other respects, these new findings are contrary to prior research. However, several design characteristics of this study differ from most of the existing literature on the topic and may it somewhat difficult to make direct comparisons with prior research. The current study represents findings from a 30-year follow-up of a group of children with documented cases of physical abuse and sexual abuse and neglect and a matched control group.

Compared to a nationally representative sample (Tjaden & Thoennes, 2000), we found higher rates of IPV victimization in both groups (CAN and control) in our study. Adults who had documented histories of child abuse and/or neglect were more likely to report having been victimized in the form of injury by an intimate partner compared to controls, as well as having experienced a wider variety of types of injury. This finding is consistent with a large body of research linking child abuse to later victimization (Feerick, Haugaard, & Hien, 2002; McKinney, Caetano, Ramisetty-Mikler, & Nelson, 2009; Murphy, 2011; Renner & Whitney, 2012; Seedat, Stein, & Forde, 2005). Given that we only asked about IPV during the past year and that our sample was restricted to only those individuals who reported being a current relationship (assuming that people with more past conflictual relationships might have been less likely to be currently partnered), one might have expected lower rates of IPV. On the other hand, these individuals are part of a larger study in which participants have been found to be at increased risk for violence in general (Maxfield & Widom, 1996; Widom, 1989b).

A distinctive characteristic of this study is our ability to prospectively examine the link between specific types of CAN and types of IPV in adulthood. We found an increase in risk

for IPV victimization for individuals who as a child had been physically abused or neglected, but, surprisingly, not for those who had been sexually abused. Furthermore, compared to controls, the risk conferred with childhood physical abuse was for injury only, not for the other types of IPV.

Our findings reveal that childhood neglect increases a person's vulnerability to IPV victimization in adulthood, something that has previously been little recognized. These results also showed that adults with documented histories of childhood neglect were at increased risk for a greater number and variety of acts of psychological abuse and a greater variety of IPV acts of physical violence from an intimate partner, compared to matched controls. We did not find these results for individuals with a history of childhood physical and sexual abuse. Because the sample sizes for these two groups were substantially smaller than for the neglect group, one might expect that the lack of added risk was due to low power. However, inspection of the odds ratios indicates that these findings are not simply the result of lower power, but a smaller (and not significant) effect size. We believe that these new results call attention to the need to consider the impact of childhood neglect on relationship violence victimization. One might speculate that the absence of the basic needs of food, clothing, shelter or medical attention characterized by neglect not only leads to other negative consequences (Gilbert et al., 2009), but also interferes with a person's ability to enter into non-abusive intimate partner relationships. Speculating from one recent Dutch study that reported a link between emotional dysregulation and childhood abuse that depended on the co-occurrence of neglect (Nederlof, Van der Ham, Dingemans, & Oei, 2010), it is possible that childhood neglect may lead to greater emotion dysregulation which, in turn, renders a person more vulnerable to being victimized by IPV leading to injury. Drawing on the work of Dutton and colleagues (Dutton, 2003; Godbout, Dutton, Lussier, & Sabourin, 2009), it is also possible that childhood neglect disrupts the child's attachments to parental figures and this leads to insecure adult attachment styles and, ultimately, marital violence in an attempt to control the partner and prevent threats of abandonment.

A long-standing controversy has been whether childhood maltreatment conveys risk of later IPV for both men and women. According to a recent national survey in the United States, more women than men report some form of IPV victimization (28.5% vs. 3.6%, respectively) and 1/3 of women report experiencing multiple forms of victimization compared to men, for whom 92% report experiencing only physical IPV victimization (Black et al., 2011). As noted in the introduction, previous research has yielded mixed findings. In the current study, we found only one significant type of IPV where women with documented histories of child abuse and/or neglect reported more IPV victimization (in the form of injury) compared to female controls, but did not find differences between maltreated and control men. There were no other gender differences in risk of IPV perpetration or victimization, based on comparison of CAN and control males or females, respectively, for specific types of IPV (psychological abuse or physical or sexual violence).

Although our findings generally corroborate prior literature linking CAN to subsequent risk for IPV victimization, we found that it is the occurrence of injury, rather than the occurrence of other forms of IPV, that is predicted by a childhood history of abuse and neglect. We can only speculate, but it is possible that another component of this study design may have

influenced these findings. Because of the matching procedures, the control and abuse/neglect groups were similar on approximate social class in childhood and both groups were skewed toward the lower end of the socioeconomic spectrum. Therefore, it is possible that the stresses associated with lower socio-economic status and the lack of resources faced by many of our participants might outweigh an independent effect of having a history of childhood abuse and/or neglect. This may be one reason we only found differences between the CAN and control groups in terms of IPV injury. It is also possible that the control group experienced violence in childhood that did not result in a court case.

Our findings highlight the need to examine potential explanations for why childhood abuse and neglect increase risk for IPV that results in injury. Adverse consequences of childhood abuse/neglect, such as posttraumatic stress disorder and symptoms (Krause, Kaltman, Goodman, & Dutton, 2006; Widom, 1999) and the development of ineffective coping strategies (Krause, Kaltman, Goodman, & Dutton, 2008) may help explain why childhood abuse is linked to IPV injury victimization and perpetration, but not to the mere occurrence of IPV. One implication of our findings is that it may be useful to attend to what contributes to IPV escalation to the point of injury, rather than on the prediction of IPV occurrence per se, especially among groups for whom the base rate is high.

Our results showed that only individuals who were neglected as children – but not those who were physically or sexually abused - were more likely to injure an adult intimate partner (perpetration). We also did not find that child abuse and neglect predicted differences in risk of IPV perpetration for specific types of IPV acts (psychological abuse, physical or sexual violence) nor did child abuse history lead to differential risk for IPV perpetration when considering males and females separately. These results differ considerably from what has been reported in the existing literature, where studies often report high rates of childhood abuse in men who batter (McKinney et al., 2009) and more recently for bi-directional IPV for both males and females (Renner & Whitney, 2012) However, most existing studies collect information about childhood experiences of violence retrospectively and many focus on male IPV perpetrators. Few studies have examined the effects of childhood neglect (vs. childhood physical or sexual abuse) on IPV perpetration, retrospectively or prospectively. These differences may in part account for differences in findings between this study and others.

Limitations

Although this study has numerous strengths, like any single study, several caveats are necessary. The findings of the current study are based on cases of childhood abuse and neglect drawn from official court records and, thus, most likely represent the most extreme cases processed in the system (Groeneveld & Giovannoni, 1977). This means that these findings are not generalizable to unreported or unsubstantiated cases of child abuse and neglect (Widom, 1989b). Because these official cases are skewed toward the lower end of the socioeconomic spectrum, these findings cannot be generalized to abuse and neglect that occurs in middle- or upper- class children and their families. Consequences of childhood abuse and neglect for middle- or upper- class children may be different from children in the current study (Widom, 2000). The current findings also represent the experiences of children

growing up in the late 1960s and early 1970s in the Midwestern part of the United States. It is possible that children maltreated at a later time may manifest different consequences. Studying partner violence at one point in time is also limited to a snapshot of one point in the lives of these individuals (in this case, the past 12 months). Therefore, we do not know whether the current partner violence represents a pattern of the individual's relationships over time or whether it only represents the current partner. Relatedly, we only asked the partner violence questions to individuals with a current spouse or romantic partner and, thus, do not know about the people in the sample who might have had abusive or non-abusive partners in the past but who are no longer with those partners. On the other hand, the focus on past year IPV would have minimized the reporting of violence and yet we found high rates. One might also have expected better partner relations (lower rate of IPV) in these individuals in current relationships, assuming that people in problematic relationships (higher levels of IPV) would have separated or divorced or never married and would not be represented here. It is clear that there are numerous questions that have been raised by these findings that warrant further study.

Future research should expand on these findings to test some of the theoretical explanations that have been offered explain the intergenerational transmission of spouse abuse and should continue the research that others have begun to examine potential mechanisms that may lead abused and neglected children to be at increased risk of IPV. The current findings reveal high rates of IPV in the entire sample. Over 80% of adults with documented histories of CAN and matched controls reported some form of intimate partner violence victimization during the past year and almost three-quarters reported some form of perpetration of IPV toward their partner. Future research should examine factors that might account for these high rates in both maltreated and control groups. Our findings suggest that IPV perpetration and victimization is quite common in both groups assessed here and, thus, the children growing up in these families will be at risk for negative consequences for their own healthy development.

These new results show that 30 years after their childhood experiences, abused and neglected children are at increased risk for psychological abuse and injury in the context of IPV. To our knowledge, these are the first results to show that neglected children are at increased risk for perpetrating IPV as an adult and causing physical injury, although the increase in risk is not as great as for IPV victimization. From a clinical perspective, these new findings suggest that increased attention needs to be paid to IPV (victimization and perpetration) in individuals with histories of neglect. Individuals with histories of neglect might benefit from efforts to enable them to better handle conflict in their relationships so that the arguments and disagreements do not reach the level of injuring their partner.

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Table 1
Prevalence of Past Year Intimate Partner Violence Victimization (Partner to Participant) by Group (Abuse/Neglect versus Control) and Type of Abuse/Neglect

| Group | Type of IPV | Control (N=315) | | Abuse/Neglect (N=375) | | AOR | 95% CI | Nagelkerke R Square |
|----------------|-------------------|-----------------|------|-----------------------|-----------|-----|--------|---------------------|
| | | % | % | % | % | | | |
| Abuse/Neglect | Any | 83.2 | 84.5 | 1.14 | 0.76–1.73 | | | .05 |
| | Psychological | 82.5 | 83.3 | 1.08 | 0.72–1.62 | | | .05 |
| | Physical violence | 25.6 | 27.6 | 1.12 | 0.80–1.56 | | | .03 |
| | Sexual violence | 4.2 | 7.0 | 1.68 | 0.84–3.34 | | | .03 |
| | Injury | 12.1 | 17.4 | 1.60* | 1.03–2.49 | | | .07 |
| Physical Abuse | Any | 83.2 | 83.9 | 1.11 | 0.51–2.44 | | | .05 |
| | Psychological | 82.5 | 82.1 | 1.02 | 0.48–2.18 | | | .06 |
| | Physical | 25.6 | 26.8 | 1.09 | 0.57–2.11 | | | .04 |
| | Sexual | 4.2 | 3.6 | 0.90 | 0.20–4.14 | | | .01 |
| | Injury | 12.1 | 21.4 | 2.52* | 1.17–5.40 | | | .10 |
| Sexual Abuse | Any | 83.2 | 77.6 | 0.89 | 0.42–1.91 | | | .06 |
| | Psychological | 82.5 | 77.6 | 0.93 | 0.44–2.00 | | | .06 |
| | Physical violence | 25.6 | 22.4 | 0.99 | 0.47–2.09 | | | .02 |
| | Sexual violence | 4.2 | 6.1 | 1.18 | 0.31–4.47 | | | .03 |
| | Injury | 12.1 | 12.2 | 1.21 | 0.46–3.20 | | | .07 |
| Neglect | Any | 83.2 | 85.3 | 1.19 | 0.76–1.84 | | | .05 |
| | Psychological | 82.5 | 83.8 | 1.09 | 0.71–1.67 | | | .05 |
| | Physical violence | 25.6 | 28.3 | 1.14 | 0.79–1.63 | | | .03 |
| | Sexual violence | 4.2 | 7.2 | 1.77 | 0.87–3.59 | | | .03 |
| | Injury | 12.1 | 18.1 | 1.64* | 1.04–2.59 | | | .07 |

Note: AOR= adjusted odds ratio, controlling for age, sex, and race/ethnicity; CI = confidence interval; Nagelkerke pseudo R Squared = a measure of improvement in the model used over the null model with no independent variables.

* p<.05

*** p<.01

Table 2
 Past Year Number and Variety of Acts of Intimate Partner Violence Victimization (Partner to Participant) by Group (Abuse/Neglect versus Control) and Type of Abuse/Neglect

| Group | Type of IPV | Number of IPV Acts | | | | | Variety of IPV Acts | | | | |
|----------------|-------------------|--------------------|------------|-----------|--------|------------------|---------------------|-----------------|-----------|-------------------|------------------|
| | | Control (315) | | CAN (375) | | Partial η^2 | Control (315) | | CAN (375) | | Partial η^2 |
| | | M + SE | M + SE | M + SE | M + SE | | F | AR ² | F | AR ² | |
| Abuse/Neglect | Any | 9.59+0.98 | 13.15+0.90 | .01 | 7.19** | .02 | 4.75+0.32 | 5.91+0.30 | .01 | 6.98** | .04 |
| | Psychological | 8.06+0.71 | 11.06+0.65 | .01 | 9.63** | .03 | 3.88+0.22 | 4.68+0.20 | .01 | 7.30** | .05 |
| | Physical violence | 1.11+0.26 | 1.49+0.24 | .002 | 1.17 | .01 | 0.63+0.10 | 0.86+0.09 | .004 | 2.71 | .02 |
| | Sexual violence | 0.11+0.05 | 0.19+0.04 | .002 | 1.24 | .001 | 0.05+0.02 | 0.09+0.02 | .004 | 2.44 | .004 |
| | Injury | 0.31+0.08 | 0.44+0.08 | .002 | 1.38 | .01 | 0.19+0.04 | 0.30+0.04 | .01 | 3.72 [†] | .02 |
| Physical Abuse | Any | 9.53+0.94 | 10.95+2.23 | .001 | 0.34 | .01 | 4.73+0.30 | 5.53+0.71 | .003 | 1.06 | .04 |
| | Psychological | 8.02+0.64 | 8.78+1.52 | .001 | 0.21 | .03 | 3.87+0.20 | 4.15+0.48 | .001 | 0.29 | .05 |
| | Physical violence | 1.11+0.26 | 1.46+0.61 | .001 | 0.29 | .00 | 0.63+0.09 | 0.98+0.22 | .01 | 2.18 | .01 |
| | Sexual violence | 0.12+0.05 | 0.18+0.11 | .001 | 0.29 | .00 | 0.05+0.02 | 0.06+0.04 | .000 | 0.02 | .00 |
| | Injury | 0.31+0.09 | 0.53+0.21 | .003 | 0.97 | .00 | 0.19+0.04 | 0.34+0.09 | .01 | 2.59 | .02 |
| Sexual Abuse | Any | 9.61+0.94 | 12.24+2.43 | .003 | 1.00 | .02 | 4.72+0.30 | 5.51+0.78 | .002 | 0.88 | .03 |
| | Psychological | 8.04+0.66 | 10.55+1.71 | .01 | 1.85 | .03 | 3.85+0.21 | 4.35+0.53 | .002 | 0.76 | .04 |
| | Physical violence | 1.14+0.25 | 1.16+0.65 | .000 | 0.00 | .003 | 0.63+0.09 | 0.82+0.23 | .002 | 0.55 | .004 |
| | Sexual violence | 0.12+0.04 | 0.16+0.11 | .000 | 0.82 | .01 | 0.05+0.02 | 0.06+0.04 | .000 | 0.06 | .003 |
| | Injury | 0.32+0.09 | 0.38+0.22 | .000 | 0.06 | .01 | 0.20+0.04 | 0.28+0.10 | .002 | 0.74 | .02 |
| Neglect | Any | 9.65+0.97 | 13.23+0.99 | .01 | 6.67** | .03 | 4.78+0.32 | 5.93+0.32 | .01 | 6.42** | .04 |
| | Psychological | 8.12+0.71 | 11.15.72 | .01 | 8.99** | .04 | 3.90+0.22 | 4.73+0.22 | .01 | 7.05** | .05 |
| | Physical violence | 1.12+0.26 | 1.52+0.26 | .002 | 1.17 | .00 | 0.64+0.10 | 0.84+0.10 | .003 | 2.07 | .01 |
| | Sexual violence | 0.11+0.04 | 0.17+0.04 | .001 | 0.80 | .001 | 0.05+0.02 | 0.09+0.02 | .004 | 2.49 | .01 |
| | Injury | 0.31+0.08 | 0.43+0.08 | .002 | 1.11 | .01 | 0.20+0.04 | 0.29+0.04 | .01 | 3.05 [†] | .02 |

Note: CAN = child abuse and/or neglect; M = mean; SE = standard error; F = F statistic; AR² = adjusted model R².

[†] p < .10;

**
p < .01

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Table 3
Prevalence of Past Year Intimate Partner Violence Perpetration (Participant to Partner) by Group (Abuse/Neglect versus Control) and Type of Abuse/Neglect

| Group | Type of IPV | Control (315) | | Abuse/Neglect (317) | | AOR | 95% CI | Nagelkerke R Square |
|----------------|---------------------|---------------|------|---------------------|------------|-----|--------|---------------------|
| | | % | % | % | % | | | |
| Abuse/Neglect | Any | 75.2 | 74.3 | 0.94 | 0.66–1.34 | | .03 | |
| | Psychological abuse | 74.0 | 73.5 | 0.97 | 0.69–1.36 | | .03 | |
| | Physical violence | 19.8 | 20.9 | 1.06 | 0.72–1.54 | | .02 | |
| | Sexual violence | 1.0 | 1.9 | 1.90 | 0.48–7.48 | | .07 | |
| | Injury | 8.3 | 12.1 | 1.58 [†] | 0.94–2.66 | | .08 | |
| Physical Abuse | Any | 75.2 | 71.4 | 0.83 | 0.43–1.57 | | .03 | |
| | Psychological | 74.0 | 71.4 | 0.90 | 0.47–1.70 | | .03 | |
| | Physical violence | 19.8 | 17.9 | 0.92 | 0.44–1.93 | | .01 | |
| | Sexual violence | 1.0 | 1.8 | 2.59 | 0.24–28.00 | | .23 | |
| | Injury | 8.3 | 8.9 | 1.33 | 0.47–3.77 | | .10 | |
| Sexual Abuse | Any | 75.2 | 73.5 | 1.06 | 0.52–2.15 | | .03 | |
| | Psychological abuse | 74.0 | 71.4 | 1.02 | 0.51–2.03 | | .02 | |
| | Physical violence | 19.8 | 24.5 | 1.22 | 0.59–2.54 | | .01 | |
| | Sexual violence | 1.0 | 2.0 | 1.26 | 0.12–12.87 | | .18 | |
| | Injury | 8.3 | 6.1 | 0.90 | 0.25–3.28 | | .07 | |
| Neglect | Any | 75.2 | 73.7 | 0.89 | 0.62–1.29 | | .04 | |
| | Psychological abuse | 74.0 | 72.7 | 0.92 | 0.64–1.33 | | .04 | |
| | Physical violence | 19.8 | 20.4 | 1.01 | 0.68–1.51 | | .03 | |
| | Sexual violence | 1.0 | 1.6 | 1.69 | 0.40–7.20 | | .04 | |
| | Injury | 8.3 | 13.2 | 1.69 [*] | 0.99–2.88 | | .07 | |

Note: AOR= adjusted odds ratio, controlling for age, sex, and race/ethnicity; CI = confidence interval; Nagelkerke R Square = a measure of improvement in prediction due to the variables in the model.

[†] p<10;

* p<05.

Table 4

Past Year Number and Variety of Intimate Partner Violence Perpetration (Participant to Partner) by Group (Abuse/Neglect versus Control) and Type of Abuse/Neglect

| Group | Type of IPV | Number of IPV Acts | | | | Variety of IPV Acts | | | | | |
|----------------|------------------------|--------------------|-----------|---------------------|--------------------------|---------------------|-----------------|---------------|--------|---------------------|--------------------------|
| | | Control (315) | M + SE | Abuse/Neglect (377) | Partial eta ² | F | AR ² | Control (315) | M + SE | Abuse/Neglect (377) | Partial eta ² |
| Abuse/Neglect | Any | 5.45+0.56 | 6.71+0.52 | .004 | 2.73 [†] | .02 | 3.02+0.23 | 3.50+0.21 | .003 | 2.36 | .03 |
| | Psychological abuse | 4.59+0.40 | 5.46+.37 | .004 | 2.56 | .02 | 2.44+0.16 | 2.73+0.14 | .003 | 1.86 | .02 |
| | Physical violence | 0.66+0.17 | 0.96+0.16 | .002 | 1.54 | .02 | 0.43+0.08 | 0.56+0.07 | .002 | 1.45 | .02 |
| | Sexual violence | 0.03+0.02 | 0.04+0.02 | .000 | 0.11 | .002 | 0.01+0.01 | 0.02+0.01 | .002 | 1.19 | .002 |
| | Injury | 0.17+0.05 | 0.27+0.04 | .003 | 1.99 | .02 | 0.14+0.03 | 0.20+0.03 | .003 | 1.74 | .02 |
| Physical Abuse | Any | 5.35+0.53 | 5.89+1.27 | .000 | 0.15 | .00 | 2.99+0.22 | 3.08+0.51 | .000 | 0.03 | .01 |
| | Psychological violence | 4.53+0.38 | 4.58+0.90 | .000 | 0.00 | .00 | 2.43+0.15 | 2.41+0.36 | .000 | 0.00 | .004 |
| | Physical violence | 0.63+0.16 | 0.88+0.38 | .001 | 0.34 | .02 | 0.42+0.07 | 0.44+0.16 | .000 | 0.02 | .01 |
| | Sexual violence | 0.03+0.02 | 0.03+0.04 | .000 | 0.01 | .01 | 0.01+0.01 | 0.02+0.01 | .002 | 0.57 | .01 |
| | Injury | 0.17+0.05 | 0.40+0.12 | .01 | 3.19 [†] | .02 | 0.14+0.03 | 0.21+0.07 | .002 | 0.82 | .02 |
| Sexual Abuse | Any | 5.44+0.53 | 6.39+1.37 | .001 | 0.42 | .00 | 3.00+0.22 | 3.62+0.57 | .003 | 1.06 | .002 |
| | Psychological abuse | 4.55+0.38 | 5.30+0.98 | .001 | 0.50 | .00 | 2.42+0.15 | 2.82+0.40 | .003 | 0.91 | .003 |
| | Physical violence | 0.68+0.16 | 0.91+0.42 | .001 | 0.27 | .01 | 0.44+0.07 | 0.59+0.18 | .002 | 0.65 | .01 |
| | Sexual violence | 0.03+0.02 | 0.01+0.04 | .001 | 0.29 | .01 | 0.01+0.01 | 0.02+0.02 | .000 | 0.07 | .01 |
| | Injury | 0.17+0.04 | 0.17+0.11 | .000 | 0.00 | .003 | 0.14+0.03 | 0.20+0.08 | .001 | 0.45 | .01 |
| Neglect | Any | 5.47+0.56 | 6.64+0.56 | .004 | 2.19 | .03 | 3.04+0.23 | 3.45+0.23 | .003 | 1.59 | .03 |
| | Psychological abuse | 4.61+0.40 | 5.46+0.40 | .004 | 2.23 | .02 | 2.46+0.16 | 2.70+0.16 | .002 | 1.20 | .03 |
| | Physical violence | 0.66+0.17 | 0.91+0.17 | .002 | 1.01 | .02 | 0.43+0.08 | 0.53+0.08 | .001 | 0.90 | .02 |
| | Sexual violence | 0.03+0.02 | 0.04+0.02 | .000 | 0.14 | .00 | 0.01+0.01 | 0.02+0.01 | .001 | 0.83 | .00 |
| | Injury | 0.18+0.04 | 0.25+0.04 | .002 | 1.52 | .02 | 0.14+0.03 | 0.20+0.03 | .003 | 1.72 | .02 |

Note: M = mean; SE = standard error; F = F value; AR² = adjusted model R².

[†] p < .10

Table 5
 Past Year Prevalence of Intimate Partner Violence by Group (Abuse/Neglect versus Control) and Gender

| | Victimization | | | | Perpetration | | | | | |
|-------------------|---------------|-----------------|-------|-----------|---------------------|-----------|-----------------|------|-----------|---------------------|
| | Control % | Abuse/Neglect % | AOR | 95% CI | Nagelkerke R Square | Control % | Abuse/Neglect % | AOR | 95% CI | Nagelkerke R Square |
| Males | N=159 | N=165 | | | | N=159 | N=167 | | | |
| Any IPV | 86.8 | 90.3 | 1.52 | 0.75–3.06 | .07 | 77.4 | 74.9 | 0.89 | 0.53–1.49 | .04 |
| Psychological | 86.2 | 89.2 | 1.41 | 0.72–2.77 | .06 | 6.1 | 73.7 | 0.89 | 0.54–1.49 | .04 |
| Physical violence | 29.9 | 29.4 | 0.98 | 0.60–1.60 | .05 | 18.5 | 18.4 | 1.01 | 0.57–1.78 | .01 |
| Sexual violence | 3.2 | 4.9 | 1.59 | 0.50–5.00 | .04 | 0.0 | 1.8 | NA | NA | .13 |
| Injury | 15.9 | 17.8 | 1.20 | 0.66–2.20 | .08 | 10.2 | 14.1 | 1.53 | 0.76–3.05 | .07 |
| Females | N=156 | N=210 | | | | N=156 | N=210 | | | |
| Any IPV | 79.5 | 80.0 | 1.01 | 0.60–1.70 | .01 | 43.1 | 73.8 | 1.00 | 0.62–1.61 | .03 |
| Psychological | 78.8 | 78.6 | 0.96 | 0.58–1.59 | .01 | 71.8 | 73.3 | 1.04 | 0.65–1.67 | .03 |
| Physical violence | 25.0 | 29.5 | 1.30 | 0.79–2.14 | .02 | 22.4 | 25.2 | 1.10 | 0.66–1.81 | .02 |
| Sexual violence | 5.1 | 8.6 | 1.77 | 0.75–4.19 | .02 | 1.9 | 1.9 | .92 | 0.20–4.26 | .11 |
| Injury | 8.3 | 17.1 | 2.29* | 1.16–4.51 | .06 | 6.4 | 10.5 | 1.65 | 0.75–3.63 | .07 |

Note: AOR= adjusted odds ratio, controlling for age and race/ethnicity; CI = confidence interval; Nagelkerke R Square = a measure of improvement in prediction due to the variables in the model; NA = Not applicable (one cell is empty).

* p<.05.