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Abstract

Social support has been recognized as a protective factor associated with reduced intimate partner violence (IPV). A question that few studies have examined, however, is whether the effectiveness of social support on IPV is conditioned by the neighborhood in which it occurs. This study investigated whether the separate effects of support from friends and family members on partner violence were conditioned by neighborhood disadvantage. Results indicated that social support from family significantly reduced the prevalence and frequency of IPV, while support from friends was associated with higher frequencies of partner violence. Importantly, the effects of social support were contextualized by neighborhood disadvantage, with the impact of both forms of social support on IPV being diminished in neighborhoods characterized by higher levels of disadvantage.

The social context in which individuals live likely influences their everyday choices, perceptions, and overall behavior (Wikstrom & Loeber, 2000). Neighborhood factors that create one's social context can influence behavior in direct, indirect, and moderating ways (Aber, Gephart, Brooks-Gunn, & Connell, 1997). With regard to crime and victimization, most attention has focused on the direct effects of living in various kinds of neighborhood contexts, particularly poor or disadvantaged ones. Much of this research has demonstrated that neighborhood factors increase the likelihood of crime (e.g., homicide, assault, see Baumer, Horney, Felson, & Lauritsen, 2003; Sampson, Morenoff, & Raudenbush, 2005) and victimization (e.g., intimate partner violence, see Benson, Fox, DeMaris, & Van Wyk, 2003; Miles-Doan, 1998; Wright & Benson, 2011), even after relevant individual-level predictors such as age and race have been accounted for. Less research, however, has examined the *in*direct effects of neighborhoods on crime and victimization, with many of the studies in this area focusing on how neighborhoods influence parental behaviors, which then impact adolescent outcomes (Rankin & Quane, 2002; Simons, Gordon Simons, Burt, Brody, & Cutrona, 2005).

Still, even less research has considered the *moderating* or conditioning impact of neighborhoods on crime and victimization (Wilcox, Land, & Hunt, 2003; Wilcox, Madensen, & Tillyer, 2008). That is, few studies have examined the extent to which the relationship between individual-level predictors (e.g., race) and outcomes (e.g., crime or victimization) depends upon the neighborhood context in which an individual is embedded (Benson, Wooldredge, Thistlethwaite, & Fox, 2004). Regarding victimization in particular, then, examination of the potential moderating effects of neighborhood context can answer whether individuals with particular characteristics or individuals in certain situations become more or less vulnerable to crime when they live in certain types of neighborhood contexts.

In the case of partner violence, for example, social support from individuals outside of an intimate relationship has been recognized as an important protective factor against intimate partner violence (IPV) (Baumgartner, 1993; Klein & Milardo, 2000). In fact, Baumgartner (1993) has suggested that the likelihood of violence against a woman decreases as the amount of social support available to her increases. Thus, women who have friends or family members available for support seem to be better protected from victimization at the hands of their partner than women without such support systems.

A question that remains, however, is whether neighborhood context influences the impact of protective factors, such as social support, on this type of victimization. That is, do women become *less* protected from IPV victimization when they reside in certain types of neighborhoods, particularly disadvantaged ones? Thus far, most studies have examined neighborhood context, social support, and IPV separately, rarely focusing on the interplay between all three issues. This study attempts to address this shortcoming by examining whether the effect of social support on IPV is influenced by neighborhood disadvantage – that is, whether the impact of social support on IPV is stronger or weaker in certain types of neighborhoods or whether it protects women against victimization regardless of the social context in which it exists.

The Intersection of Neighborhood Disadvantage, Social Support, and Intimate Partner Violence

Social Support and Intimate Partner Violence

Social support may be related to a reduced risk of IPV for many reasons. House et al. (1988, p. 302) suggested that social support "refers to the positive, potentially health promoting or stress-buffering, aspects of relationships such as instrumental aid, emotional caring or concern,

and information. In essence, supportive relationships directly provide something that people need to stay healthy or to adapt to stress." Friends, family, or acquaintances may provide instrumental or expressive support to victimized women, which may help her to leave the relationship or cope with the victimization. Most studies in this area have used a combined measure of friends' and family support and have not distinguished between the two. When family members or friends provide instrumental support to a woman in need, they provide her with material – financial or some other form of tangible aide (e.g., advice, guidance) – that helps her to achieve a desired goal such as safety (Barrera & Ainlay, 1983; Cullen, 1994). Expressive support, on the other hand, encompasses affective aspects of a relationship, whereby the supportive party provides care, concern, trust, companionship, or other forms of intimacy or availability (e.g., affirming a woman's self worth and self esteem, listening to her private feelings, see Barrera & Ainlay, 1983; Cullen, 1994).

Support may also increase the likelihood that victimized women seek and receive help from others (e.g., Cullen, 1994). Browning (2002) found that social support influenced help-seeking behavior among abused women and noted that victimized women who reported having more friends were consistently more likely to tell someone about the violence they had experienced than women who reported having fewer friends. Women who receive social support from others outside of their intimate relationship may also have people to turn to for emotional, physical, or financial assistance in order to leave an abusive relationship (Van Wyk, Benson, Fox, & DeMaris, 2003). Friends or family members can provide safe alternative living arrangements or financial accommodations for a woman when she attempts to leave the relationship, and they may also give her advice on where to go or what services (advocacy, legal, or otherwise) she may be able to receive (Hadeed & El-Bassel, 2006; Moe, 2007). Social support from others can

also help victimized women better cope with ongoing abuse or better deal with the aftermath of abuse; the support received from others has been shown to reduce or mitigate problems which often result from violence in relationships, such as depression or anxiety (Coker et al., 2002). Receiving social support from others may also help to prevent partner abuse or make others aware of it. Stets (1991) suggested that having relationships with people outside of an intimate relationship increases the levels of social control that is exerted upon a couple, thus potentially deterring the abuse and increasing the likelihood that individuals outside of the relationship recognize the violence (see also Van Wyk et al., 2003). Once the violence becomes publically known, friends or family members may intervene to stop the violence. Additionally, social support from others may facilitate cultural attitudes regarding the disapproval of violence within a relationship (Stets, 1991; Van Wyk et al., 2003) – Van Wyk et al. (2003, p. 417) even suggested that friends can "shame abusive men into desisting from their violent behavior."

Although social support can be provided by different people (e.g., friends, family members, community members, etc.), most research regarding social support and IPV has focused on support from friends or family members. Recent ethnographic studies of women in violent relationships suggest that support from family and friends may affect partner violence in different ways (Agoff, Herrera, & Castro, 2007; Hadeed & El-Bassel, 2006). In particular, family ties which promote cultural norms that accept violence (e.g., members believe the husband has a right to exercise control against his wife) or promote traditional gender roles within the household (e.g., members believe that divorce is unacceptable) may not necessarily protect women against IPV (Agoff et al., 2007). On the other hand, women have suggested that their friends were helpful to them because they listened to her problems and provided childcare while she was involved in a violent relationship (Hadeed & El-Bassel, 2006). Thus, with regard to

partner violence, it is currently unclear whether social support from friends or family members are equally beneficial for women, but the emerging research suggests that it may be important to distinguish between the two when examining their effects on IPV.

Neighborhood Disadvantage, Social Support, and Intimate Partner Violence

As stated earlier, there is less research to date that examines the indirect and moderating effects of neighborhoods on victimization outcomes, particularly relative to the amount of research that assesses the direct effect of neighborhoods on victimization; most research on the indirect and moderating influences of neighborhoods has examined child and adolescent development and delinquency, as well as parental or family influences (e.g., Simons et al., 2005; Zimmerman & Messner, 2011). Sampson et al. (2002) suggested that neighborhoods may impact various outcomes through mechanisms such as social ties or interaction and informal social control. They noted that the level or density of social ties between neighbors as well as their frequency of interaction are important in linking social ties to outcomes, while informal control involves residents' willingness to intervene on problems and to supervise and monitor others' actions (see also Sampson, Raudenbush, & Earls, 1997). Similarly, Leventhal and Brooks-Gunn (2000) suggested that neighborhoods influence child and adolescent outcomes through parental and community relationships, particularly the support available to parents through these connections, as well as community norms and collective efficacy (Sampson et al., 1997), where residential socialization, informal supervision, and shared norms and values between residents, are key neighborhood components.

This study approaches the potential interaction between neighborhoods, social support, and IPV from the social ties and cultural perspectives outlined above. It is possible that, with regard to social support and partner violence, neighborhood disadvantage impacts the number and

quality of social ties that women in disadvantaged neighborhoods develop with their neighbors, and this may impact the support and supervision that is available or provided to her (an indirect effect); impacting the level of available support may then influence its protective effect on IPV. Additionally, drawing from the norms/cultural argument, neighborhood disadvantage may impact the cultural norms and beliefs of residents (Sampson & Wilson, 1995) that, if tolerant of violence between partners or the privacy of family matters, may diminish the effectiveness of social support in protecting women if and when it is available or provided (a moderating effect). I expand upon these expectations below.

First, disadvantage may decrease the *number* and *quality* of social ties that victimized women who reside in such neighborhoods develop with other people. Ross and Mirowsky (2009) found that neighborhood disorder, which often exists in disadvantaged and disorganized neighborhoods, increased social isolation among residents in part by increasing their mistrust of one another. Having fewer contacts simply may reduce the amount of social support a woman has at her disposal, or it may reduce the likelihood that she reaches out to others for help (Browning, 2002). It may also decrease the likelihood that others are watching out for her wellbeing, again making her more vulnerable to victimization. Likewise, neighborhood disadvantage may affect the quality of social ties that a woman develops within her neighborhood. Ross and Mirowsky (2009) speculated that the mistrust that neighborhood conditions breed among neighbors makes it difficult to cultivate supportive relationships within these areas, and Bursik and Grasmick (1993) noted that residential instability (which is often found in disadvantaged neighborhoods) also hinders the development of rich ties with others. It follows that a victimized woman may not feel close enough to her neighbors to confide in them

about her abuse, and she may be unlikely to solicit help from neighbors whom she does not trust (see also Turney & Harknett, 2010).

Second, neighborhood disadvantage may lead to social cultural isolation (Wilson, 1987), which could impact cognitive landscapes (Sampson & Wilson, 1995) regarding residents' tolerance of violence in these neighborhoods, as well as their willingness to intervene on interpersonal conflicts. This, in turn, may reduce the effectiveness of the support that a woman receives from others who reside in her neighborhood. Social cultural isolation can develop when there is a lack of social ties that exist between poor, underclass residents and middle-class residents. Wilson (1987) suggested that neighborhood conditions, such as concentrated disadvantage, prompt middle-class residents to move out of these areas whenever it becomes possible, leaving primarily the poor and lower-class residents to remain. Social isolation develops when the remaining residents are deprived of opportunities to observe conventional role models and learn mainstream values from them (Sampson & Wilson, 1995; Wilson, 1987). Kornhauser (1978) argued that social cultural isolation can lead to the attenuation of mainstream values, where mainstream culture, beliefs, and values are rarely demonstrated or observed by socially isolated residents, and this results in the disuse or withering away of mainstream values in those areas (see also Warner, 2003).

Thus, while mainstream society generally does not condone violence in relationships, and may perceive IPV as an issue worthy of intervening upon in order to stop the violence, residents in areas of concentrated disadvantage may be less exposed to individuals who hold these values and therefore may be less likely to adopt such beliefs (Wilson, 1987), though certainly this does not suggest that all residents in disadvantaged neighborhoods have counter value systems. In support of this, Sampson and his colleagues (Sampson & Bartusch, 1998; Sampson & Bean,

2006; Sampson & Wilson, 1995) found that disadvantage fostered cognitive landscapes that were more tolerant of violence in general; taking this a step further theoretically, disadvantage may also foster a culture that tolerates violence which occurs specifically within intimate relationships and is unwilling to step in to stop the violence. In short, disadvantaged neighborhoods with attenuated mainstream values may foster cognitive landscapes (Sampson & Wilson, 1995) whereby residents come to view violence between partners as somewhat acceptable (e.g., Sampson & Bartusch, 1998; Sampson & Bean, 2006; Sampson & Wilson, 1995) and/or private matters. As such, those neighborhood residents who are available to provide support to a victimized woman may be somewhat unwilling to get involved, or they may actually tolerate violence that occurs within a relationship more than they disapprove of it. Thus, their "support" may not necessarily be helpful in protecting a victim, especially if the neighbors are unwilling to provide support (e.g., "this is none of my business"), or they do not believe violence in relationships to be harmful (e.g., "fighting with your boyfriend/husband is not a big deal"), or if they minimize the problem (e.g., "that bruise is not very noticeable"). In these ways, neighborhood context may influence the relationship between social support and partner violence.

In the only study of neighborhood context, social support, and IPV to date, Van Wyk et al. (2003) found that neighborhood disadvantage increased the prevalence of IPV (a significant main effect) but became nonsignificant when examined alongside a multiplicative interaction term with social support. Further, they found that social support (i.e., contacts with others) was negatively related to partner violence in neighborhoods of low and medium disadvantage, but not in areas of high disadvantage. They concluded that women who live in disadvantaged areas *and* who have low levels of support are thus most at risk for being victimized by IPV.

Van Wyk and her colleagues provided an important initial step in understanding the influence of social support and neighborhood context on IPV. The current study builds upon their work in several ways. First, this study explores different measures of social support. While Van Wyk and others defined social support as contacts with and assistance from others (which could more accurately reflect social isolation than social support, see e.g., House et al., 1988), this study examines instrumental and expressive support, which are often cited as the two main dimensions of social support (Barrera & Ainlay, 1983; Cullen, 1994; House et al., 1988). Second, the current study will examine social support from friends and family members separately to determine whether they uniquely impact partner violence. Third, while Van Wyk et al. (2003) examined only the prevalence of IPV, this study examines both the prevalence and frequency of IPV as outcomes. Finally, this study utilizes hierarchical modeling techniques to estimate cross-level interactions between neighborhood disadvantage and the relationship between social support and partner violence. Such techniques have not previously been used to examine the impact of neighborhood characteristics on the relationship between social support and IPV outcomes.

The Current Study

Given previous research and the aforementioned theoretical linkages, the relationship between social support and IPV may depend in part upon the neighborhood context in which it exists. The current study explores this issue and examines three research questions and related hypotheses: a) what is the main effect of social support on IPV? It is expected that social support from family and friends will be negatively related to IPV prevalence and frequency; b) what is the main effect of neighborhood disadvantage on neighborhood rates of IPV, net of individual-level factors? It is expected that higher levels of neighborhood disadvantage will be associated

with higher levels of IPV, after individual-level correlates have been accounted for; and, c) if the relationship between social support and IPV varies across neighborhoods is this relationship moderated by neighborhood disadvantage? It is expected that the relationship between family and friends' social support and IPV will vary significantly across neighborhoods, and that concentrated disadvantage will diminish the main effect of each type of social support on IPV.

Method

Data

This study used data from the Project on Human Development in Chicago Neighborhoods (PHDCN; Earls, Brooks-Gunn, Raudenbush, & Sampson, 2002). The PHDCN collected data from 343 neighborhood clusters (NCs) in Chicago. The NCs were derived from 847 contiguous census tracts in the city. Each of the NCs comprises about 8,000 residents. From these NCs, data for the PHDCN were collected in several different components – data from the Community Survey, the Longitudinal Cohort Study, and the 1990 United States Census were used in this study to derive the measures described below.

Individual-level predictors of IPV were created from data collected during the first wave of the Longitudinal Cohort Study (LCS), between 1994 and 1997. From the 343 NCs described above, 80 were selected from which to sample respondents for the Longitudinal Cohort Study (LCS). The 343 NCs were grouped by seven categories of racial/ethnic composition (e.g., 75 percent or more African American) and three levels of socioeconomic status (e.g., high, medium, low); from these 21 strata, 80 NCs were selected via stratified probability sampling. The Longitudinal Cohort Study (LCS) sampled 6,226 children, adolescents, and young adults from within these 80 NCs and followed them over a period of seven years. During the LCS, the primary caregivers in the household were also interviewed. The primary caregiver was

considered to be the adult male or female who spent the most time taking care of the subject. Most (93.2 percent) of the primary caregivers in the original PHDCN were females. Young adult subjects of the LCS who were 18 years or older were also asked the same questions as the primary caregivers of younger children. Because this study is concerned with intimate partner violence against women in relationships, it focused only on female caregivers and female young adult subjects who reported being in a married, cohabiting, or dating relationship within the year prior to the PHDCN study. Hereafter, the subjects of this study (e.g., the female caregivers and young adult subjects) will be referred to as the respondents. The final sample included 4,645 respondents who reported being in a relationship during the year prior to the PHDCN study.[i]

Data for neighborhood disadvantage were abstracted from the 1990 United States Census. Recall that each neighborhood cluster was comprised of a number of contiguous census tracts. For this study, census tract information was matched with corresponding neighborhood clusters and census-derived information for each NC was calculated in order to measure the structural disadvantage of the 80 NCs in which the respondents resided. The matching process was conducted by staff at the Interuniversity Consortium for Political and Social Research (ICPSR) to ensure the confidentiality of the subjects of the PHDCN.

Measures

Table 1 describes the measures used in this study. All individual-level, or level-one, measures were provided by the female respondents and refer to their characteristics (e.g., female's age, etc) or characteristics of the couple (e.g., married, cohabiting, or dating).

Dependent Variables. The outcome variables examined in this study measured the prevalence and frequency of female IPV victimization. The measures of IPV were derived from the Conflict Tactics Scale (Straus, 1979) interview portion of the LCS. Respondents were asked how many

times during an argument with their partner in the past year their partner had: kicked, bit, or hit them with their fist; hit or tried to hit them with something; beat them up; choked them; threatened them with a knife or a gun; and used a knife or fired a gun. These acts of physical aggression are considered severe acts of violence (Straus, 1979; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The CTS interview (Straus, 1979) provides the response categories to the above questions as None, Once, Twice, 3 – 5 times, 6 – 10 times, 11 – 20 times, and 21 or more times.

The *prevalence of IPV* was defined as a dichotomous measure, indicating whether the female had ever been victimized by any of the above acts of severe violence at least once during the past year. In order to examine the *frequency of IPV*, this study coded the response categories to the above acts as 0 = *none*, 1 = *once*, 2 = *twice*, 3 = *3 – 5 times*, 4 = *6 – 10 times*, 5 = *11 – 20 times*, and 6 = *21 or more times* and followed conventional studies by summing the responses to each indicator of severe violence (e.g., Straus, 1979). Higher numbers on this variable indicate more frequent and varied types of severe victimization, both of which are important when capturing the amount of violence that occurs in a partnership. While Straus and his colleagues (Straus, 1979; Straus et al., 1996) have previously used the midpoints of these response categories (e.g., 0, 1, 2, 4, 8, 15, 20, 25) instead, this study coded the response categories as 0 – 6 in order to reduce the skew of the distribution. Supplemental analyses were conducted on a frequency measure using the midpoints of the response categories, and results are provided in Appendix A.

(Table 1 About Here)

Level-One Social Support and Control Variables. This study is concerned with females' victimization within intimate partnerships and thus focuses on female characteristics. *Social support from family* was a scale created through principal components analysis of five items

(Eigenvalue = 2.82; α = 0.79). Respondents were asked the degree to which each of the following statements were true: a) no matter what happens, I know that my family will always be there for me should I need them; b) my family lets me know they think I'm a worthwhile or valuable person; c) people in my family have confidence in me; d) people in my family help me find solutions to my problems; and e) I know my family will always stand by me. Responses were given from one to three on a likert-type scale ranging from "*not true*" to "*very true*" with higher numbers reflecting higher levels of support.

Similarly, *social support from friends* was a scale created through principal components analysis of six items (Eigenvalue = 2.76; α = 0.76). Respondents were asked the degree to which each of the following statements were true: a) when I'm with my friends I feel completely able to relax and be myself; b) I share the same approach to life that many of my friends do; c) when I go out to do things, I know that many of my friends would enjoy doing these things with me; d) I have at least one friend that I could tell anything to; e) I feel very close to some of my friends; and f) my friends would take the time to talk about my problems, should I ever want to. Responses were given from one to three on a likert-type scale ranging from "*not true*" to "*very true*" with higher numbers reflecting higher levels of support. The measures of support were intended to include aspects of both instrumental and expressive social support. For instance, family members provide instrumental support when they help the respondent find solutions to her problems (e.g., "People in my family help me find solutions to my problems") and they provide expressive support when they affirm her self-worth (e.g., "My family lets me know they think I'm a worthwhile or valuable person"). Likewise, the respondents' friends may be instrumentally supportive when they talk with her about her problems (e.g., "My friends would take the time to talk about my problems"), and they provide expressive support through

companionship and intimacy (e.g., "I feel very close to some of my friends") (Barrera & Ainlay, 1983; Cullen, 1994).

Measures relating to the female victim's age, race/ethnicity, substance abuse, educational attainment, employment status, household income, and relationship or cohabitation status were included in the analyses to avoid misspecification. These measures were chosen as they have been found to be related to partner violence (see, e.g., Bachman & Saltzman, 1995; Caetano, Schafer, & Cunradi, 2001; Holtzworth-Munroe, Bates, Smutzler, & Sandin, 1997; Rennison & Welchans, 2000). *Age* was the female's age in years. Two separate dichotomous variables, *Latina* and *African American*, tapped the race/ethnicity of the female, and Non-Latina White served as the reference category. *Substance abuse* was captured with a dichotomous variable (1 = *yes*, 0 = *no*), and indicates that drinking and/or drug use were reported to have caused problems with the female's health, family, or job, or resulted in encounters with the police. *Education* was an ordinal measure indicating the highest level of education reached by the female (1 = *less than high school*…, 3 = *more than high school*), while *unemployment* was a dichotomous measure indicating whether the female was unemployed (1 = *yes*, 0 = *no*). *Income* was an ordinal variable (1 = < *$5,000*; 2 = *$5,000-$9,999*; 3 = *$10,000-$19,999*…, 7 = > *$50,000*) denoting the total maximum personal or household income earned in the past year. *Living with significant other* was a dichotomous variable indicating whether the couple was dating and cohabiting, while *living with husband* was a dichotomous variable indicating whether the couple was married and living together (coded as 1 = *yes*, 0 = *no*). Not cohabiting served as the reference category.

Level-Two Neighborhood Concentrated Disadvantage. Based on research by Sampson and colleagues (1997), neighborhood concentrated disadvantage was created through principal components analysis of the neighborhood cluster census data described above, though the

analyses were conducted only on the 80 NCs examined in this study. *Concentrated disadvantage* included the percent of residents in a neighborhood cluster who were below the poverty line, receiving public assistance, African American, unemployed, younger than 18 years old, and living under female-headed households (Eigenvalue = 3.86; $\alpha = 0.70$).[ii] These variables have been suggested by previous researchers to be linked to or indicators of concentrated disadvantage (e.g., Sampson et al., 1997; Wilson, 1987).

Analytic Strategy

Hierarchical statistical modeling techniques (Raudenbush & Bryk, 2002) using HLM 6.08 (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004) software were used to estimate the separate and combined effects of individual- and neighborhood-level predictors on IPV. The prevalence of severe female IPV victimization was examined using a Bernoulli model and the frequency of IPV was examined using a Poisson model with a correction for over-dispersion in order to adjust for the skewed distribution (Raudenbush & Bryk, 2002).

The analysis proceeded in several stages. The first step for each bi-level model involved estimating an unconditional model to determine whether the variation in IPV between neighborhoods was significant as well as to estimate the amount of variation in IPV that existed at each level of analysis. These analyses revealed that the prevalence of IPV significantly varied across neighborhoods ($p < .001$; $\delta^2 = 0.94925$; $\tau = 0.24626$) as did the frequency of IPV ($p < .001$; $\delta^2 = 6.26862$; $\tau = 0.32921$). Intraclass correlation coefficients are not provided here because they are less informative when modeling nonlinear outcomes due to the heteroskedastic nature of the data (see Raudenbush & Bryk, 2002).The second step, the "random coefficients" models, involved the estimation of individual-level (level-one) predictors on each IPV outcome. This allowed for the examination of the significance and magnitude of those effects, as well as a

determination of which level-one effects differed significantly across neighborhoods ($p < .05$). Determination of whether the level-one relationships vary across neighborhoods is a necessary prerequisite for estimating cross-level interactions (i.e., whether the level-one slopes are influenced by neighborhood disadvantage). The level-one effects that did not vary across neighborhoods were "fixed" for all subsequent models (e.g., "intercepts-as-outcomes") described below, and are denoted in italics in Table 2. Allowing the level-one slopes to vary randomly in the level-one models is a more rigorous test of the contextual effects because such predictors could account for some variation in the neighborhood level of IPV that might otherwise be explained by neighborhood predictors. All level-one predictors were grand mean-centered in order to adjust for the between-neighborhood variation in IPV which was explained by the compositional differences of neighborhoods, as well as to aide in the interpretation of the coefficients and intercept terms.

The third step, the "intercepts-as-outcome" models, examined the main effects of neighborhood disadvantage on the outcomes at level two. This step also allowed all fixed and varying level-one predictors to influence IPV before the effect of neighborhood disadvantage was estimated. Thus, this model allowed for the estimation of neighborhood effects on neighborhood IPV outcomes after individual-level effects had been controlled.

The last stage of the analysis, the "slopes-as-outcomes" models, examined the effect of neighborhood disadvantage on the level-one *slopes* of social support from family and friends and IPV (i.e., the relationships between family or friends' social support and IPV). These models examined whether differences in neighborhood disadvantage coincided with significant differences in the effects of social support on each IPV outcome (i.e., cross-level interactions).

Results

Table 2 displays the level-one random coefficients models, while Table 3 presents the level-two effects (main effects and cross-level interactions) on each IPV outcome.[iii] Recall that the sample sizes for each unit of analysis are different: level-one included 4,645 females, while level-two included 80 neighborhood clusters; therefore, different criteria ($p < .05$ versus $p < .10$) were used for significance tests at the individual and neighborhood levels of analysis, respectively. Multicollinearity was not a problem for any models presented, with tolerance values $\geq .48$ (see Allison, 1999).

The individual-level results in Table 2 show some similar predictors for both the prevalence and frequency of IPV. Importantly, receiving social support from family members was related to both a lower likelihood of being victimized by IPV and a lower frequency of it. Thus, receiving social support from family members appeared to be an important factor which protected women from being victimized by their partners (see also Stets, 1991; Van Wyk et al., 2003). Contradictory to expectations, however, social support from friends was related to *higher* frequencies of IPV, though it was not significantly related to the prevalence of partner violence.

The remaining predictors of each IPV outcome were consistent with the prior research. The results of this study demonstrated that older women as opposed to younger women and those who lived in higher income households were less likely to be victimized by partner violence, both in terms of the prevalence and frequency of IPV. Women who were not married but who reported living with their significant other were more likely to be victimized and experienced more frequent victimization than women who were in a relationship but not cohabiting with their partner. Finally, women with higher levels of education (versus lower educational attainment) were significantly less likely to be victimized by their partners (frequency model only). Non-

significant level-one variables across both models included race, substance abuse, unemployment, and living with one's husband.

Table 2 also depicts the level-one effects on IPV that varied across neighborhoods; this portion of the analyses addressed whether the magnitude of the effect of certain variables, such as social support, on each IPV outcome was stronger in some neighborhoods versus other neighborhoods. The results revealed that the effects of all variables except African American status varied significantly across neighborhoods for the prevalence of IPV, and all variables except age, African American, and substance abuse varied across neighborhoods for the frequency of partner violence. That the relationships between family support and friends' support on the prevalence and frequency of IPV varied across neighborhoods meant that the influence of each depended in part on the neighborhood context in which it was situated.

(Table 2 About Here)

Turning to the neighborhood-level effects, Table 3 demonstrates that the main effect of neighborhood disadvantage on the prevalence and frequency of IPV was positive and significant. That is, higher levels of concentrated disadvantage were associated with higher prevalence and frequency rates of partner violence against women, net of individual-level controls for each type of behavior. These results are similar to those of other recent neighborhood analyses of IPV (Benson et al., 2003; Lauritsen & Schaum, 2004; Wright & Benson, 2010, 2011) which show that neighborhood characteristics such as disadvantage maintain direct relationships with partner violence levels.

The slopes-as-outcomes models, or tests for cross-level interactions, which are also presented in Table 3, investigated whether neighborhood disadvantage moderated the effects of social support from family and social support from friends on each IPV outcome. In essence, the tests

for cross-level interactions examined the impact of neighborhood concentrated disadvantage on the *relationships* between each social support measure and each IPV outcome across neighborhoods. The "social support from family slope" reflects the overall effect of social support from family members on each outcome across all 80 neighborhood clusters. The impact of concentrated disadvantage on the between-neighborhood variation in those relationships is presented below the slope estimates; the results of the tests for cross-level interactions between concentrated disadvantage and the relationship between friends' social support and IPV follow the same pattern. The results of these analyses indicated that disadvantage did not condition the relationship between family social support and the prevalence of IPV. Such results suggest that the impact of social support from family members on the likelihood of partner violence was the same regardless of the level of disadvantage in the neighborhoods in which social support was received. As was hypothesized, however, concentrated disadvantage significantly (albeit modestly) diminished the effect of social support from family members on the frequency of IPV. In other words, the negative main effect of family social support became somewhat *weaker* as neighborhood disadvantage increased (i.e., the negative slope between family social support and the frequency of IPV became less steep in neighborhoods of higher disadvantage). Hence, the results suggest that in neighborhoods of higher disadvantage, women may be less protected from frequent victimizations of IPV when they receive social support from their families than they would be if they resided in less disadvantaged neighborhoods.

The test for the cross-level interaction between disadvantage and the relationship between friends' social support and the prevalence of IPV was not significant, again suggesting that the influence of friends' support on the likelihood of partner violence was the same regardless of the neighborhood level of disadvantage in which the support was extended. However, the test for the

cross-level interaction between neighborhood disadvantage and the relationship between social support from friends and the frequency of IPV was significant, suggesting that disadvantage also exerted a tempering or diminishing effect on this relationship. These results therefore indicate that the harmful influence of friends' support on the frequency of IPV became less damaging in areas of higher disadvantage. That the effect of social support on IPV would be diminished in areas of greater disadvantage was expected and is consistent with the theoretical arguments provided above – however, it was not expected that the main effect of social support from friends would be related to higher frequency levels of IPV and this finding makes the interpretation of the conditioning impact of disadvantage more complex. Taken together, though, the results of the tests for cross-level interactions contained in Table 3 indicated that the influence of social support, regardless of who it came from, became *less* important when neighborhood disadvantage was considered.

(Table 3 About Here)

Discussion

This study examined questions related to the main effects of social support on IPV, the main effect of concentrated disadvantage on partner violence rates, and whether the effect of social support on IPV was impacted by neighborhood disadvantage. It was expected that higher levels of social support from friends and family members would be associated with less victimization among women, that disadvantage would increase partner violence, and that disadvantage would diminish the main effects of social support on IPV. The results of this study warrant the consideration of three main findings.

First, this study found that receiving social support from family members was related to a lower likelihood of being victimized by IPV as well as lower frequency levels of victimization.

Thus, consistent with previous research (e.g., Barrera & Ainlay, 1983; House et al., 1988) as well as the expectations of this study, support from family members was an important protective factor for females. It was also expected that support from friends would protect women in violent relationships as well, but the results suggested otherwise. In fact, this study found that social support from friends was related to higher frequencies of partner violence, though it was not significantly related to the prevalence or likelihood of partner violence.

One possible explanation of the positive effect of social support from friends could be due to shared attitudes between the violent couple and their friends which may condone the use of violence in relationships, or which may adhere to the belief that partner violence is a private matter that should not be intervened upon. That is, since couples tend to socialize with other like-minded friends (e.g., Caspi & Herbener, 1990), their friends' support may not necessarily be violence-inhibiting, or willingly provided. Socializing with other violence-prone or violence-condoning friends could potentially make the violence which occurs in a relationship seem normative to a victimized woman; indeed, her friends may even downplay the negative aspects of violence and encourage her to stay in the relationship (Agoff et al., 2007). That the social support from friends scale included items such as "I share the same approach to life that many of my friends do" supports this contention. It could also be that the family and friends support scales tapped into different types of support. Although each support scale included both instrumental (e.g., "people in my family help me find solutions to my problems;" "I have at least one friend that I could tell anything to") and expressive (e.g., "my family lets me know they think I'm a worthwhile or valuable person;" "I feel very close to some of my friends") forms of support, the family support scale arguably may include more instrumental types of support while the friends' support scale may include more expressive forms of support. The results, then, could

suggest that instrumental forms of support (those given primarily by family in this study) may be more important protective factors for women than expressive or emotional forms of support. As mentioned previously, theory suggests that both instrumental and expressive support would be helpful to victimized women for various reasons (Cullen, 1994; House et al., 1988), but future research may want to explore which form of support is more helpful to victims of partner violence in particular. Finally, there is also a very real possibility that there is too much "slippage" between the theoretical construct of support from friends and the actual measure used in this study. That is, although friends may in theory support women in emotional, physical, and financial ways to help her leave an abusive situation, the measure employed in this study does not and cannot speak to these specific issues, given the nature of secondary data.

Certainly, however, the positive impact of social support from friends was unexpected and is somewhat difficult to account for. That social support from friends did not reduce IPV frequency levels against females, as studies suggest it should (e.g., Agoff et al., 2007; Hadeed & El-Bassel, 2006), indicates that this issue is not fully understood. As such, future research should examine the various ways in which family versus friends may influence violence within intimate relationships, and should seek to examine more specific and relevant measures of support when possible.

The second main finding of the current investigation relates to the direct impact of neighborhood context on IPV. It was anticipated that after controlling for individual-level correlates, neighborhood disadvantage would increase the prevalence and frequency of IPV. The results presented confirm this relationship and support a growing body of literature which indicates that neighborhood characteristics do indeed influence the violence that occurs behind closed doors (Benson et al., 2003; Van Wyk et al., 2003; Wright & Benson, 2010, 2011). This

study also contributes to the somewhat smaller literature in this area by examining neighborhood influences on the *frequency* of IPV. It has been suggested that disadvantage may increase partner violence by hindering the formation of social ties between residents, increasing stress among couples who live there, and fostering social isolation which inhibits the transmission of values that disapprove of violence within relationships – all of which can leave women more vulnerable to violence from their partners (Wright & Benson, 2011). The results of this study indicate that neighborhood disadvantage may also impact the frequency of IPV in similar ways as it does the likelihood of violence. It should be noted, however, that the impact of disadvantage on the frequency of IPV was somewhat more modest than its impact on the prevalence of IPV. Future research should consider how and why these differences exist.

Perhaps the most important finding of this study involved the indirect and moderating impact of neighborhood disadvantage on the relationship between social support and partner violence. This study examined whether disadvantage impacted IPV by weakening the protective nature of social support. The results indicated that the effect of social support on IPV was indeed contextualized in that its impact on partner violence appeared to be *diminished* in more disadvantaged areas. When social support functioned as a protective factor against IPV (when it came from family members), its effect was weakened in areas of higher disadvantage, whereas when social support exacerbated violence (when it came from friends), its effect was also weakened in areas of higher disadvantage. These findings may suggest that *support simply becomes less relevant in disadvantaged areas,* since the relationships between social support and the frequency of IPV drifted towards zero under these circumstances. Such a conclusion is certainly plausible, given the theoretical linkages above. It is possible that disadvantage indirectly impacts the relationship between social support and IPV by reducing the amount of

social support available to a woman in a given area or moderates the relationship by reducing the effectiveness of the support when it is available to her; it is conceivable that these neighborhood effects are, at least in some ways, beneficial in instances where the support exacerbates violence, whereas the effects are negative when the support acts as a buffer against violence. For instance, because of the distrust that neighborhood disadvantage breeds among residents (Ross & Mirowsky, 2009), victimized women who reside in disadvantaged neighborhoods may have fewer social ties with other residents, or the relationships they develop may be less supportive – both of which could reduce the protective nature of social support on partner violence. If, on the other hand, social support is associated with higher levels of victimization (as it was in the case of friends' support), perhaps fewer social ties with these friends and a weaker quality of those relationships would be beneficial and essentially buffer victimized women from those people who would otherwise exacerbate their victimization. These explanations are speculative at this point; future research should consider these issues in order to further understand the interplay between friends and partner violence within neighborhood context.

Further, neighborhood disadvantage may reduce the effectiveness of social support by increasing social cultural isolation (Wilson, 1987) which can then lead to attenuated mainstream values (Kornhauser, 1978; Warner, 2003) where the resulting cognitive landscapes (Sampson & Wilson, 1995) may be less willing to help or intervene and possibly are more tolerant of violence that occurs within intimate partnerships. Hence, if a woman is embedded within an area where cultural norms believe IPV to be a private matter, neighbors may be less willing to provide support to her; further, if their cultural norms tolerate violence within relationships, the support she receives from those around her may not be effective in protecting her from victimization. Although these precise mechanisms by which disadvantage may impact the

relationship between social support and IPV were not examined here, they are plausible and well-grounded expectations that future research should consider.

Theory aside, the results of this study suggest that services for the prevention of and response to IPV, as well as support services for victims of IPV, should be strategically placed in areas of disadvantage. For instance, domestic violence shelters, counseling services, and services for children exposed to domestic violence should be strategically located in disadvantaged areas. Further, police officers patrolling such areas should understand how to best respond to partner violence and should be knowledgeable about the services available around the neighborhood (Wright & Benson, 2011). Support services, such as centers for legal or financial advice or temporary and affordable housing assistance for victimized women, should also be placed in such locations. Given that social support from friends was associated with higher levels of partner victimization, we suggest that these support services prioritize fostering support from family members before that of friends.

Despite the meaningful results presented here, there are a few limitations which should be mentioned. First, the data come from one major urban area, the city of Chicago, and it is unknown if the impact of neighborhood disadvantage on the relationship between social support and IPV reported here would be evident in other areas. The neighborhood disadvantage scale also included several indicators of disadvantage but did not examine their independent and unique effects on IPV; this may be a fruitful area for research to examine in the future. Additionally, the sample consisted of predominantly young, minority, and disadvantaged female participants. This is both a strength and a weakness, since this study was concerned with the effects of social support and disadvantage on IPV rates. However, it is unknown if the results would be replicated among more affluent and less diverse individuals; future research may also

want to consider this issue. This study also focused solely on male violence and female victimization within relationships and therefore potentially misses a significant portion of the violence that occurs within the household. It may be important to examine the total household violence instead of only female victimization to garner more generalizable results. It is again worth noting that the measures of social support from both family and friends are less than ideal. Measures tailored specifically to supporting a victim of partner violence would be more informative than those employed here. Finally, because this study measured social support and IPV cross-sectionally, it is possible that victims experiencing IPV seek out more assistance from others (thereby increasing social support following IPV), and not the other way around. Endogeneity problems such as this could impact both the individual- and neighborhood-level results found here. In fact, the findings regarding the positive relationship between friends' support and IPV frequency may best be explained by this sort of reverse causation. Longitudinal data with more specific measures of support are clearly needed to increase the confidence in the results presented here. Given these limitations, these results should be taken with caution.

Overall, the results presented in this study indicate that the effect of social support (regardless of who it comes from) on IPV generally becomes less relevant in neighborhoods of higher disadvantage. This is a particularly disturbing finding given that support from family members is an important protective factor against partner violence. The results confirm Van Wyk et al.'s (2003) earlier conclusion that women at-risk for experiencing IPV (those living in disadvantage) are even more at risk for such violence because the support they get from others is not as effective at protecting them in certain types of neighborhoods. This is problematic because it suggests that neighborhood conditions not only directly impact the occurrence of partner

violence against a female, but they may also detrimentally influence some of the protective factors which have been found to alleviate IPV.

Table 1. Descriptive Statistics

	$\bar{x}$	Standard Deviation	Minimum	Maximum
Dependent Variables				
Prevalence of IPV	0.15	0.36	0.00	1.00
Frequency of IPV	0.66	2.31	0.00	30.00
Level-One Independent Variables				
Social support from family	0.00	1.00	-4.83	0.62
Social support from friends	0.00	1.00	-3.08	1.08
Age	31.96	8.62	15.00	82.38
Latina	0.46	0.50	0.00	1.00
African American	0.33	0.47	0.00	1.00
Substance abuse	0.03	0.17	0.00	1.00
Education	1.97	0.93	1.00	3.00
Unemployment	0.49	0.50	0.00	1.00
Income	3.95	1.94	1.00	7.00
Living with significant other	0.16	0.37	0.00	1.00
Living with husband	0.57	0.49	0.00	1.00
Level-Two Independent Variable				
Concentrated disadvantage	0.00	1.00	-1.59	2.42

Note: Descriptive statistics are based on 4,645 respondents within 80 neighborhood clusters

Table 2. Random Coefficients Models Predicting IPV

	Prevalence of IPV		Frequency of IPV	
	β	*SE*	β	*SE*
Intercept	-1.42**	0.03	-0.48**	0.08
Level-One Independent Variables				
Social support from family	-0.17**	0.03	-0.33**	0.03
Social support from friends	0.07	0.04	0.11*	0.05
Age	-0.01**	0.00	*-0.03***	*0.01*
Latina	-0.18	0.10	-0.34	0.20
African American	*0.17*	*0.10*	*0.03*	*0.20*
Substance abuse	0.22	0.21	*-0.13*	*0.22*
Education	-0.09	0.04	-0.22**	0.06
Unemployment	0.06	0.07	0.04	0.10
Income	-0.06**	0.02	-0.15**	0.03
Living with significant other	0.24*	0.11	0.53**	0.12
Living with husband	-0.04	0.10	-0.01	0.12
χ^2	88.82***		137.92***	
δ^2	0.68990		2.93888	

Note: Results are based on 4,001 respondents within 80 neighborhood clusters
Note: Italicized coefficients did not vary significantly across neighborhood clusters
*$p < .05$ **$p < .01$ (2-tailed)

Table 3. Level-Two Effects (Level-One Intercepts and Slopes as Outcomes)

	Prevalence of IPV		Frequency of IPV	
	β	*SE*	β	*SE*
Main Effects				
IPV Intercept	-1.41***	*0.03*	-0.49***	*0.08*
Concentrated disadvantage	0.10**	*0.04*	0.14*	*0.08*
Cross-Level Interactions				
Social support from family slope	-0.17***	*0.03*	-0.35***	*0.03*
Concentrated disadvantage	0.03	*0.03*	0.05*	*0.03*
Social support from friends slope	0.07*	0.04	0.16***	*0.05*
Concentrated disadvantage	-0.01	*0.04*	-0.16***	*0.04*
χ^2	86.94**		136.68**	
τ	0.17932		0.31324	

Note: Analyses based on 80 neighborhood clusters
*$p < .10$ **$p < .05$ ***$p < .01$ (2-tailed)

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Appendix A. Frequency of IPV, Derived from Midpoints of CTS Response Categories

	Frequency of IPV	
	β	*SE*
Level-One Effects (Random Coefficients Model)		
Intercept	0.22**	0.10
Social support from family	-0.41***	0.05
Social support from friends	0.06	0.07
Age	*-0.02***	*0.01*
Latina	-0.46*	0.23
African American	*-0.17*	*0.23*
Substance abuse	*-0.24*	*0.22*
Education	-0.25***	0.07
Unemployment	0.00	0.14
Income	-0.12***	0.04
Living with significant other	0.49***	0.17
Living with husband	-0.10	0.15
χ^2	114.03***	
δ^2	5.33963	
Level-Two Effects (Level-One Intercepts and Slopes as Outcomes)		
Main Effects		
IPV Intercept	0.19*	0.11
Concentrated disadvantage	0.10	0.09
Cross-Level Interactions		
Social support from family slope	-0.43***	0.04
Concentrated disadvantage	0.07*	0.04
Social support from friends slope	0.12*	0.07
Concentrated disadvantage	-0.19***	0.06
χ^2	114.44***	
τ	0.46949	

Note: Level-one results are based on 4,001 respondents within 80 neighborhood clusters; level-two results are based on 80 neighborhood clusters
Note: Italicized coefficients did not vary significantly across neighborhood clusters
*$p < .10$ **$p < .05$ ***$p < .01$ (2-tailed)

[i] 1,028 cases were excluded because the respondent was not involved in a relationship during the previous year and an additional 553 were excluded because the respondent was male. Through listwise deletion in the multivariate models, an additional 644 cases were lost due to missing data.

[ii] Zero on this scale indicates "average disadvantage" instead of "no disadvantage."

[iii] Controlling for the main effects of concentrated immigration and residential stability did not change the substantive results of concentrated disadvantage and are therefore not reported. Concentrated disadvantaged continued to directly impact IPV prevalence and frequency levels, and continued to exert significant cross-level interactions on the relationship between family and friend support on the frequency of IPV.