

6-12-2017

# Neighborhoods and Intimate Partner Violence Against Women: The Direct and Interactive Effects of Social Ties and Collective Efficacy

Emily M. Wright

*University of Nebraska at Omaha, emwright@unomaha.edu*

Marie Skubak Tillyer

*University of Texas at San Antonio*

Follow this and additional works at: <https://digitalcommons.unomaha.edu/criminaljusticefacpub>

Part of the [Criminology Commons](#)

---

## Recommended Citation

Wright, Emily M. and Tillyer, Marie Skubak, "Neighborhoods and Intimate Partner Violence Against Women: The Direct and Interactive Effects of Social Ties and Collective Efficacy" (2017). *Criminology and Criminal Justice Faculty Publications*. 54.  
<https://digitalcommons.unomaha.edu/criminaljusticefacpub/54>

This Article is brought to you for free and open access by the School of Criminology and Criminal Justice at DigitalCommons@UNO. It has been accepted for inclusion in Criminology and Criminal Justice Faculty Publications by an authorized administrator of DigitalCommons@UNO. For more information, please contact [unodigitalcommons@unomaha.edu](mailto:unodigitalcommons@unomaha.edu).

Footer Logo

**Neighborhoods and Intimate Partner Violence against Women: The Direct and Interactive Effects of Social Ties and Collective Efficacy**

This study examines the impact of several indicators of neighborhood social ties (e.g., residents' interactions with each other; residents' ability to recognize outsiders) on intimate partner violence against women (IPV) as well as whether neighborhood collective efficacy's impact on IPV is contingent upon such ties. This study used data from 4,151 women (46% Latina, 33% African American, 17% Caucasian, on average 32 years old) in 80 neighborhoods from the Project on Human Development in Chicago Neighborhoods. We estimated a series of random effects hierarchical Bernoulli models to assess the main and interactive effects of neighborhood social ties and collective efficacy on minor and severe forms of IPV against women. Results indicate that certain neighborhood social ties are associated with *higher* rates of minor forms of IPV against women (but not severe forms of IPV), and collective efficacy **does not appear to** influence IPV against women, regardless of the level of individual or neighborhood social ties. Unlike street crime, collective efficacy **does not significantly** reduce IPV against women, even in neighborhoods with strong social ties that may facilitate awareness of the violence. In fact, perpetrators of minor IPV may enjoy some protective benefit in communities with social ties that make neighbors hesitant to intervene in what some might perceive as "private matters."

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

Street crime (Kirk & Papachristos, 2011), exposure to violence (Leventhal & Brooks-Gunn, 2000), physical and mental health problems (Xue, Leventhal, Brooks-Gunn, & Earls, 2005), and personal victimization (e.g., Pinchevsky & Wright, 2012; Wright & Fagan, 2013) are among some of the outcomes associated with deleterious neighborhood conditions.

Neighborhood effects are most often examined under the theoretical umbrella of social disorganization theory (Shaw & McKay, 1942), which posits that community-level variations in social control lead to variations in crime (Sampson, 2012). The majority of research on the criminological effects of neighborhoods has centered on crimes that occur in public, but recent work has examined neighborhood effects on interpersonal and more “private” crimes, such as domestic/intimate partner violence (IPV) against women, child abuse, and family violence (e.g., Cunradi, Caetano, Clark, & Schafer, 2000; Xie, Lauritsen, & Heimer, 2012). These forms of violence were previously **assumed to be unaffected by** neighborhood conditions, primarily because they occurred “behind closed doors” and thus were considered less susceptible to the social control mechanisms (e.g., communication or interaction between neighbors, willingness to intervene in crime-prone situations, etc.) postulated by social disorganization theory (Gelles, 1983; Sampson & Raudenbush, 1999; Wright & Benson, 2011).

Such control mechanisms, however, may be applicable in explaining neighborhood variation in **crimes like IPV against women** – at least in part – as growing evidence suggests **neighborhoods do somehow influence** these private crimes. However, there are theoretical questions that remain regarding how certain neighborhood characteristics operate for interpersonal victimization such as partner violence. Neighborhood social ties (**i.e., interrelationships between neighborhood residents**) and neighbor interaction, for instance, have been shown to reduce crime by increasing levels of informal social control amongst neighbors

(Bellair & Browning, 2010), but the evidence regarding the impact of social ties on IPV is limited, and at times, demonstrates mixed effects (Kirst, Lazgare, Zhang, & O'Campo, 2015; Pinchevsky & Wright, 2012). Similarly, collective efficacy (i.e., social cohesion among neighborhood residents) has received strong support as a neighborhood feature that is associated with lower levels of street crime (Sampson, 2012), but has received somewhat more marginal support as an inhibitor of IPV (Browning, 2002; Wright & Benson, 2011).

What could account for the different patterns of findings? Because IPV against women largely occurs outside of the public eye, interactions between neighbors may be even more necessary to “draw out” the violence that occurs inside of homes. Various measures of social interactions between neighbors, however, have not been examined for this outcome. Further, due to the private nature of IPV against women, the influence of collective efficacy may be partially dependent upon individual and neighborhood social ties (Wright & Benson, 2011), again because the ties are needed to bring knowledge of the violence into the public sphere. In fact, this might explain some of the marginal effects of collective efficacy on IPV in past research. We seek clarification on these issues in the current study.

### **Social Ties, Collective Efficacy, and Intimate Partner Violence against Women**

Social ties among residents and collective efficacy are important concepts of community social control. The significance of social ties to social control has a long legacy, dating back to the “systemic” disorganization model, which held that community control was exercised primarily through social ties or networks between residents (Kasarda & Janowitz, 1974). Ties and social networks were theorized to foster a sense of community and provide supervision, communication, and interaction among neighbors, which led to positive behavior such as realizing common values or solving problems (Bursik & Grasmick, 1993; Kornhauser, 1978).

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

Not all social ties, however, are crime-inhibitive, as some studies have shown (Browning, Feinberg, & Dietz, 2004; Pattillo, 1998), and collective efficacy was in part borne out of the need to move beyond the dependence upon social ties for social action and control (Sampson, 2012). Collective efficacy is characterized by neighbors' willingness to intervene and activate control for the good of the community (Sampson, 2012; Sampson, Raudenbush, & Earls, 1997), and has been found to protect a variety of communities from high crime rates (Ahern et al., 2013; Armstrong, Katz, & Schnebly, 2015; Pratt & Cullen, 2005). Scholars of collective efficacy are careful to note, however, that community action can be taken to control crime *without* relying on social ties, and in this way, argue that collective efficacy is not dependent upon social ties for social control (Sampson, 2012). In fact, Sampson (2012, p. 154) notes that even strong ties in areas may be "weakly tethered to collective actions," thus widening the theoretical divide between collective efficacy and neighborhood social ties. However, studies that have simultaneously examined the effects of social ties *and* collective efficacy suggest that these relationships may be more complex, with social ties perhaps fostering collective efficacy (Morenoff, Sampson, & Raudenbush, 2001) and/or moderating its influence on neighborhood crime rates (Browning et al., 2004). The interaction of social ties and collective efficacy has not been examined for IPV against women, despite the theoretical underpinnings to do so.

Like street crime, there is research that suggests collective efficacy and social ties impact IPV (Pinchevsky & Wright, 2012), though both lines of inquiry are in their infancy. Theoretically, neighborhood social ties and interaction can provide support to victims, offer avenues by which to seek help, and increase the surveillance and monitoring of residents' (violent) behavior (Browning, 2002; Pinchevsky & Wright, 2012; Wright & Benson, 2011). Most of the research on social ties and IPV against women exists at the individual-level, and

generally indicates that social networks reduce IPV (Pinchevsky & Wright, 2012; Van Wyk, Benson, Fox, & DeMaris, 2003). Other research has examined perceptual measures of neighborhood support and cohesion from respondents (Kirst et al., 2015), but suggests few, if any, direct effects on IPV outcomes. Most importantly to the current study, very few studies have examined the impact of *neighborhood-level* social ties – drawn independently from those reporting their abuse – and this literature has been limited primarily to ties between friends and/or family and their influence on *severe* IPV. This research is mixed, with one multilevel study suggesting that such ties may have some regulatory effect on IPV (Wright & Benson, 2010), and another indicating that ties have no effect on partner violence (Frye, 2007).

Still, there are many possible social network indicators beyond social “ties” that might influence informal control within neighborhoods (Bellair & Browning, 2010), and importantly, have not been examined for IPV against women. These include how well residents know each other, interact with each other, and watch activities that go on within the neighborhood (Bellair & Browning, 2010; Bursik & Grasmick, 1993). These activities may facilitate surveillance and increase the likelihood that residents feel they can count on each other for help and/or intervention to exercise informal control. Interactions between residents, for instance, may help to build relationships between residents, which might in turn foster trust and in the case of IPV, increase the likelihood that residents will offer or provide support if necessary, or that victims might feel comfortable enough to disclose information about the abuse. Such interactions may also increase the likelihood of recognizing the signs of abuse (e.g., bruises, physical ailments). Even loose social ties can be beneficial (Granovetter, 1973), and intimate or frequent interaction is not necessary to generate their social control benefits. For instance, if the residents of a neighborhood are not intimately familiar with one another and do not “hang out” or interact

often, these loose ties can nonetheless provide surveillance and monitoring. Loose ties where neighbors know each other by sight but do not know each other's personal story (e.g., "he's under a lot of stress right now") may even make these ties more adept at seeing a violent situation from afar. To reiterate, however, research has yet to examine these neighborhood-level indicators with regard to IPV against women.

Preliminary evidence suggests that collective efficacy is somewhat protective against partner violence (Beyer, Wallis, & Hamberger, 2015; Pinchevsky & Wright, 2012). Collective efficacy requires shared expectations regarding control and the activation of resources (e.g., intervention, Sampson, 2012). As such, it may deter IPV because residents may believe neighbors will intervene (personally or formally, such as by calling the police) if they engage in IPV (Wright & Benson, 2011). Additionally, collective efficacy may reduce IPV against women by increasing victim support and willingness to reach out for help (Browning, 2002). Not all evidence has been supportive, however, with studies suggesting that the effect of collective efficacy may be moderated by type (e.g., lethal, nonlethal, sexual) of IPV as well as other neighborhood variables (Browning, 2002; Frye et al., 2014; Frye et al., 2008; Wright & Benson, 2011). In this study, we seek to clarify whether the impact of collective efficacy on IPV differs by type of violence or level of neighborhood social ties.

### **Is the Effect of Collective Efficacy on IPV Against Women Contingent on Social Ties?**

It has been suggested that community features such as collective efficacy may not penetrate into private settings (like the home, Gelles & Straus, 1988), particularly without the help of disclosure to others (Jain, Buka, Subramanian, & Molnar, 2010)<sup>1</sup>. Yet, individual and

---

<sup>1</sup> In a study of adolescent/young adult dating violence, Jain and others (2010) found that neighborhood collective efficacy reduced males' risk of dating violence perpetration in certain neighborhoods (mid- to low-poverty), but increased perpetration in others (high poverty neighborhoods). They suggested that dating violence may be less private than IPV among adults because of youths' routine activities (e.g., school, peer activities), which may make

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

neighborhood social ties may be mechanisms that bring IPV into the public domain by increasing support and activating help for victims (Pinchevsky & Wright, 2012; Wright & Benson, 2010). For instance, victims of IPV may reach out to neighbors or social networks to seek help or emotional support (Coker et al., 2002; Van Wyk et al., 2003; Wright, 2015). Additionally, neighborhood social ties may increase levels of informal surveillance (Bellair, 2000), thus increasing the likelihood that violence within relationships will become publically known and lead to in formal intervention (Wright & Benson, 2011). In sum, the impact of collective efficacy *on IPV* may be at least partially contingent on individual or neighborhood social ties. Due to the private nature of IPV, collective efficacy may be less effective at reducing IPV among women who have weak social ties or who live in neighborhoods where social ties are weak and surveillance is low. Low surveillance may reduce the likelihood that violence becomes publically known, which may limit the impact of collective efficacy because neighbors would not have the opportunity to intervene. In areas where social ties and informal networks are plentiful, the effect of collective efficacy may be stronger because residents may be more likely to be aware of the violence and thus can address it.

An alternative hypothesis, however, is that the influence of collective efficacy on IPV against women might be weak or non-significant, even when social ties are strong. The social control mechanisms assumed to be associated with collective efficacy may not be activated in cases of IPV against women because of who the offender is (i.e., a member of the community), the nature of the victim-offender relationship (i.e., a crime between intimates), and relatedly, the perceived seriousness of the violence. First, it is possible that social ties among neighbors may

---

this violence more “amenable to community-level change than adult IPV...as youths...may have more avenues for disclosure” (Jain et al., 2010, p. 1743). That is, community features such as collective efficacy may not penetrate into private settings, particularly without the help of disclosure to others.

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

actually foster crime because residents are less willing to exert control over people they know and/or interact with, thus in a sense protecting residents within the neighborhood when they engage in crime (Browning et al., 2004). This may be particularly salient for IPV, because the perpetrator is a member of the community who may have the social capital that allows him to avoid the social control typically aimed at criminals. Additionally, this may be especially true in neighborhoods with strong social networks, where residents may know the offender personally, thus dampening any crime inhibitive effects of collective efficacy.

Second, even in neighborhoods marked by high levels of collective efficacy (and thus capable of realizing common values and maintaining effective social control) and social ties (possibly alerting neighbors to crimes behind closed doors), the reduction of IPV against women may not be identified as a goal worth mobilizing collective action. This might occur for two reasons: the victim-offender relationship in IPV may create little perceived risk for those outside the relationship, and the violence may not be deemed serious enough for outside intervention. As Bursik (1988, p. 535) has noted, “nonconformity in an area can be tolerated as long as it does not interfere with the attainment of a commonly accepted goal.” Presumably, neighborhoods high in collective efficacy address crime problems because residents view these actions as a threat to the general safety of the neighborhood. When a neighbor becomes the victim of a robbery, for example, there is a concern among residents that they or their loved ones could be the next victim (Rountree & Land, 1996; Wilcox Rountree, 1998), thus making crime reduction a common goal worthy of collective action. The victim-offender relationship in IPV, however, may create little perceived risk for those outside the relationship (i.e., it affects the intimate partners and immediate family members, but not neighborhood residents). This may be particularly true in the case of more minor violence perpetrated against women, which may not

be deemed by residents as serious “enough” to intervene, or it may be considered a “private” issue, and thus may be less susceptible to neighborhood influences.

In the current study, we seek to answer two research questions. First, what are the direct effects of various measures of neighborhood social ties (e.g., interaction, ability to recognize outsiders) on IPV against women, controlling for structural factors and individual covariates? Second, is the effect of collective efficacy on IPV against women dependent upon individual- or neighborhood-level social ties, controlling for structural factors and individual covariates of partner violence against women? We explore these relationships for both minor and severe forms of IPV to examine whether neighborhoods influence various types of IPV in different ways.

### **Method**

#### **Data**

This study used data from the Project on Human Development in Chicago Neighborhoods (PHDCN; Earls, Brooks-Gunn, Raudenbush, & Sampson, 2002). The PHDCN design divided all of Chicago’s 847 census tracts into 343 geographically contiguous neighborhood clusters (NCs). From these NCs, data for the PHDCN were collected in several different components. Individual-level predictors of IPV were created from data collected between 1994 and 1997 during the first wave of the Longitudinal Cohort Study (LCS). The 343 NCs were grouped by seven categories of racial/ethnic composition and three levels of socioeconomic status, and 80 NCs were selected via stratified probability sampling; from these 80 NCs, respondents for the Longitudinal Cohort Study (LCS) were selected. Households within these areas that had at least one child in one of seven age cohorts (newborns and children ages 3, 6, 9, 12, 15, and 18) were eligible to participate in the LCS, and 6,226 children and caregivers (75% of the eligible population) agreed to participate. Because this study is concerned with

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

intimate partner violence against women in relationships, it focused only on female caregivers and female young adult subjects (18 years or older) who reported being in a married, cohabiting, or dating relationship within the year prior to the PHDCN study (hereafter referred to as the respondents). The final sample included 4,645 respondents who reported being in a relationship during the year prior to the first wave of the PHDCN study. A total of 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. This led to the final eligible sample of 4,645 females in a relationship. Through listwise deletion in the multivariate models, an additional 497 and 494 cases were lost for severe IPV and minor IPV, respectively, due to missing data. There were no significant differences on any independent or dependent variables between the analysis samples and the eligible sample of female respondents in a relationship.

Data for the measures of collective efficacy and social ties were derived from the Community Survey portion of the PHDCN, conducted from 1994-1995 in all 343 neighborhood clusters, while data for neighborhood structural features – concentrated disadvantage, residential stability, and concentrated immigration – were abstracted from the 1990 United States Census.<sup>2</sup> The current study examines the 80 neighborhood clusters in which the individual respondents from the LCS were nested. The data from the Community Survey were provided by respondents who were largely independent from the respondents in the LCS.

### **Measures**

Table 1 describes the measures used in this study. All individual-level measures were provided by the female respondents and refer to characteristics of the individuals within the

---

<sup>2</sup> 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 so that census-derived information for each NC could be calculated.

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

relationship (e.g., female's age, male's substance use) or characteristics of the couple (e.g., cohabitation). Two outcomes measuring the prevalence of "minor" and "severe" IPV against women were examined. These measures were derived from the Conflict Tactics Scale (Straus, 1979) interview of the PHDCN. *Minor IPV* was a dichotomous measure reflecting whether the woman's partner had thrown something at her, pushed her, or slapped her at least one time during the past year. *Severe IPV* was a dichotomous measure indicating that the woman's partner had kicked, bit, or hit her with a fist; hit or tried to hit her with something; beat her up; choked her; threatened her with a knife or a gun; or had a knife used or fired a gun during an argument) at least one time during the past year (Straus, 1979; Straus, Hamby, Boney-McCoy, & Sugarman, 1996).

Individual-level variables represent key predictors of IPV against women and were included in the analyses to avoid misspecification (Stith, Smith, Penn, Ward, & Tritt, 2004). These include respondents' demographic characteristics (e.g., age, race/ethnicity), partner risk factors (e.g., male substance use, male non-egalitarian views), cohabitation status, household income, respondents' employment, education level, and social ties to tap into emotional and instrumental forms of social support (Barrera, 1986; Cullen, 1994; House, Umberson, & Landis, 1988). Respondents were asked the degree to which (ranging from 1 = *not true* to 3 = *very true*) each of the following statements was true: (a) "No matter what happens, I know that my family will always be there for me should I need them," (b) "people in my family help me find solutions to my problems," (c) "I know my family will always stand by me," (d) "sometimes I am not sure I can rely on my family" (reverse coded), (e) "I have at least one friend that I could tell anything to," (f) "I feel very close to some of my friends," (g) "my friends would take the time to talk about my problems, should I ever want to." Females were also asked if they could think of

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

anyone in particular who would help them if they were in need; from this question, three additional variables were created, indicating that she had a friend, family member, or “other” person (from the community, school, or church) who would help her in need. The 10 individual-level ties variables were standardized and then summed to create *social ties* (eigenvalue=2.94; KMO=0.717; alpha =0.59); higher values reflect higher levels of support.

Three neighborhood structural variables often controlled for in social disorganization research were taken from the 1990 U.S. Census. Similar to prior research (Molnar, Cerda, Roberts, & Buka, 2008), *concentrated disadvantage* was based on a principal components analysis and draws from three poverty-related variables (alpha=0.81): the percentage of all residents in a neighborhood cluster who were below the poverty line, receiving public assistance, and unemployed. Higher values on this measure reflect greater disadvantage. To control for the influence of informal surveillance on violence within these neighborhoods, we measured *residential stability* as the percentage of the population that lived in the same house for the past five years (see Bellair & Browning, 2010). *Concentrated immigration* was a factor reflecting the percentage of residents in a NC who were Latino or who were foreign-born.

Measures relating to neighborhood social ties and collective efficacy were derived from the Community Survey data. We followed the procedures used in previous analyses (e.g., Browning et al., 2004; Raudenbush & Sampson, 1999; Sampson et al., 1997) to construct these measures through item response modeling. *Collective efficacy* was created with a three-level item response model and measured the degree of informal social control (e.g., neighbors would intervene if children were spray painting graffiti) and social cohesion (e.g., neighbors are willing to help each other) between neighbors (neighborhood internal consistency = 0.85). The three-level item response model adjusted for individual characteristics such as age, gender, marital

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

status, homeownership, race/ethnicity, residential mobility, number of years in the neighborhood, and socioeconomic status.

*Social interactions* between neighborhood residents was also assessed. This variable was meant to capture the degree to which neighborhood residents interacted and spoke to one another. Respondents of the Community Survey were asked how often (on a four-point Likert scale, from “never” to “often”) people in the neighborhood interacted (e.g., do favors for each other; visit in each other’s homes or on the street). A three-level item response model was also used to create the social interactions scale (see Browning et al., 2004), and adjusted for individual characteristics such as age, gender, marital status, homeownership, race/ethnicity, residential mobility, number of years in the neighborhood, and socioeconomic status. The internal consistency of this scale at the neighborhood level was 0.73.

Two additional measures primarily tapping neighborhood surveillance and monitoring were examined. *Recognize* reflects the proportion of adults in a neighborhood cluster in the Community Survey who reported that they could recognize “many” or “a great many” of adults or children by sight. This measure largely captures loose ties between neighbors where they may casually know of one another but may not necessarily know their neighbors intimately. It was aggregated to the NC level and then mean centered so that interactions with collective efficacy could be examined. Similarly, *outsiders* reflects the extent to which community members are able to identify individuals who are not members of the neighborhood. This measure also taps loose, non-intimate residential ties, and primarily reflects supervision levels in the neighborhood. It was reported on a four-point Likert scale ranging from “very difficult” to “very easy,” and aggregated to the NC level. It was then mean centered to allow for interactions with collective

efficacy.<sup>3</sup> A third measure tapping how often neighbors “watch” each other’s homes, was created and examined, but produced collinearity problems with collective efficacy ( $r = 0.60$ ). It was subsequently dropped from the analyses.

**(Table 1 About Here)**

### **Analytic Strategy**

We utilized random effects hierarchical Bernoulli models (Hierarchical Linear Modeling [HLM]) (Raudenbush & Bryk, 2002) using the statistical software HLM 7.0 (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004). The analyses proceeded in several stages. First, unconditional models revealed that significant variation ( $p \leq 0.001$ ) existed in both IPV measures across NCs, which provided justification for the exploration of neighborhood influences. Second, intercepts-as-outcome models were estimated; these individual-level models were conducted to examine the relationships between individual-level covariates (e.g., age, race, income, etc.) and IPV against women. The relationships that did not vary significantly ( $p \leq 0.05$ ) across neighborhoods were fixed, while all other individual-level predictors were treated as random effects. All individual-level predictors were grand-mean centered (Enders & Tofighi, 2007). Third, the neighborhood-level variables were added to the models to assess their main effects on the rates of partner violence against women. When conducting the individual-level analyses, the reliability of the intercept was reduced. To adjust for this situation, the Empirical Bayes estimates of the individual-level intercepts were modeled at level-two (Raudenbush & Bryk, 2002; Raudenbush, Bryk, Cheong, & Congdon, 2004). We utilized hierarchical analyses, whereby the main and interactive effects of collective efficacy and various measures of neighborhood social ties were entered into the models at different stages so as to ascertain: a) the

---

<sup>3</sup> The social interactions measure and collective efficacy measure did not need to be mean centered because they were normalized through the item response technique.

direct effect of collective efficacy on IPV against women, b) the direct effects of social ties measures on IPV, c) the interactive effects of collective efficacy and the social ties measures on IPV against women, controlling for the main effects of collective efficacy and social ties, and d) the direct and interactive effects of collective efficacy and social ties measures on violence against women, controlling for the structural features of neighborhood disadvantage, residential stability, and concentrated immigration.<sup>4</sup>

### **Results**

Tables 2 through 5 provide the results of the hierarchical Bernoulli models. First, to determine whether the impact of collective efficacy was in part due to individual-level social ties, we conducted neighborhood analyses (not shown<sup>5</sup>) with and without controlling for individual-level social ties. The findings demonstrated that the impact of collective efficacy on both minor and severe IPV against women was consistent across models with and without individual-level social ties: it was not significantly related to IPV against women in models which included and excluded individual-level social ties. We then sought to determine whether collective efficacy impacted individual-level social ties (not shown), and found that after accounting for females' age, race, cohabitation status, income, employment, and education levels, none of the neighborhood variables (including collective efficacy) were predictive of women's social ties. Thus, a woman's social ties are not influenced by collective efficacy, and the effect of collective efficacy on minor and severe forms of IPV against women is insignificant and does not depend on individual social ties.

---

<sup>4</sup> We did not specify directional hypotheses with regard to the direct effects of neighborhood-level social ties on IPV. Therefore, to be consistent in the presentation of the results, we used two-tailed significance tests for all results.

<sup>5</sup> All supplemental analyses which are not provided are available upon request from the first author.

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

Because individual social ties did not impact the effect of collective efficacy, we chose to use the most stringent model specification at level-one, and therefore proceeded with the fully specified individual-level model, which controlled for all individual-level covariates including social ties. The findings provided in Table 2 demonstrate that older women were less likely to experience severe and minor IPV than younger women, African American women were more likely than Caucasian women to experience both IPV outcomes, women whose partners used substances and who made the majority of the household decisions were more likely to experience both severe and minor IPV, and women with higher household incomes were less likely than those with lower incomes to experience both types of violence. Women who reported having stronger social ties with others (friends, family, or community members who would help and support her if needed) were less likely to experience severe and minor forms of IPV. Women who had achieved higher education levels were less likely to experience severe IPV than those with lower educational achievement.

### **(Table 2 About Here)**

Table 3 provides the results of the neighborhood-level analyses pertaining to social interactions among neighbors. These findings, and the findings presented in Tables 4 and 5, control for all individual-level covariates provided in Table 2. Results indicate that collective efficacy did not impact severe IPV against women when individual-level social ties were included and when neighborhood structural variables were not included (Model 1), nor was it significant when the main and **interaction term** of social interactions and collective efficacy were included (Model 3). Social interactions among neighbors did not significantly influence this outcome (Model 2), and the interaction between collective efficacy and social interactions also failed to reach significance (Model 3). Additionally, in the “full” neighborhood model (Model 4),

only concentrated disadvantage reached significance. Regarding minor IPV against women, the variables of collective efficacy, social interactions, and their **interaction term** were not predictive. Only disadvantage was significantly related to this outcome in the full model (Model 4).

**(Table 3 About Here)**

Table 4 depicts the analyses relating to neighbors' ability to recognize other residents by sight. This variable did not significantly impact severe IPV against women (Model 2), nor did its interaction term with collective efficacy (Model 3). Once neighborhood structural variables were included, only concentrated disadvantage increased severe violence against women. However, with regard to minor IPV against women, the ability of residents to recognize other neighbors was related to *higher* rates of this violence against women – by itself in Model 2, as well as when collective efficacy and the interaction term were included (Model 3). None of the neighborhood variables were significantly related to minor IPV against women in Model 4.

**(Table 4 About Here)**

The final set of analyses examined neighborhood social ties as they pertain to residents' ability to identify people who were not members of the neighborhood (see Table 5). This variable was not related to severe IPV against women in any of the models, nor was its interaction term with collective efficacy. The only structural variable to influence this outcome was concentrated disadvantage, which significantly increased the rates of severe IPV against women (Model 4). Residents' ability to identify outsiders was, however, related to minor IPV against women in Model 3, when collective efficacy and the interaction term were included.

However, this effect dropped to non-significance once the structural variables were controlled; once again, no neighborhood variables were related to minor IPV in Model 4.<sup>6</sup>

**(Table 5 About Here)**

### **Discussion and Conclusions**

Although neighborhood effects have recently been observed for interpersonal forms of victimization such as partner violence against women, the precise theoretical mechanisms at work remain somewhat unclear and gaps in our understanding persist. First, the research examining the influence of neighborhood social ties on this outcome has been limited primarily to family and friend social ties, leaving several other indicators of neighborhood ties and networks unexamined in the literature. Second, evidence regarding the effect of neighborhood collective efficacy on IPV against women is somewhat mixed, and suggests that there may be potential unexamined moderators (e.g., social ties, types of IPV) of its effect on this outcome. No studies that we are aware of have specifically examined whether the impact of collective efficacy on IPV against women is dependent upon individual-or neighborhood-level social ties. Lastly, most of the research in the area has focused on severe forms of partner violence, with less attention to more minor forms that may be differentially susceptible to neighborhood influences. Our study attempted to shed light on these issues. We found that “loose” as opposed to close neighborhood social ties are related to minor forms of IPV only (and in the positive direction), and that collective efficacy does not appear to influence women’s IPV victimization regardless of whether individual-level social ties or neighborhood-level social ties are considered, nor does it interact with neighborhood-level social ties to influence IPV. Furthermore, some neighborhood

---

<sup>6</sup> We did explore whether individual-level social ties might interact with collective efficacy to impact women’s IPV victimization. As indicated in Table 2, however, the effect of individual-level social ties on women’s IPV victimization did not vary significantly across neighborhoods. We therefore did not model cross-level interactions.

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

effects vary depending on the severity of IPV examined (minor vs. severe). We expand upon these points below.

First, although we set out to determine whether type of severity of IPV moderated the effect of collective efficacy, we found evidence that some neighborhood factors were more consistently related to severe IPV (e.g., concentrated disadvantage), while others (e.g., neighborhood social ties) were only related to minor forms of IPV against women. Thus, it is possible that neighborhood effects on IPV are moderated by the type or severity of IPV considered. Few contextual studies have examined whether neighborhood effects differ across levels of IPV severity. Given the dearth of evidence regarding whether (or how) neighborhoods impact forms of partner violence differently, we were unsure what we would find in this regard. That neighborhood concentrated disadvantage was associated with higher rates of severe IPV against women is consistent with prior literature (Beyer et al., 2015; Pinchevsky & Wright, 2012). However, the finding that loose neighborhood ties or those that reflected the ability to recognize neighbors and distinguish members of the community from outsiders were related to higher levels of minor IPV against women is new and somewhat unexpected, especially given that numerous studies have shown that communities marked by dense social ties, friendship networks, and resident interaction have lower levels of *street crime* (Bellair & Browning, 2010; Wilcox Rountree & Warner, 1999). Our results indicated that neighborhoods where more residents were able to recognize their neighbors by sight or identify outsiders were predictive of minor, but not severe, IPV. These findings may suggest that minor forms of IPV against women are not considered worthy of intervention by neighborhood residents, an issue we return to momentarily.

Our findings also suggest that collective efficacy **does not appear to protect women from IPV victimization**, as collective efficacy was not significantly related to either form of IPV, regardless of whether individual-level correlates (including social ties) or neighborhood variables (including social ties) were controlled. Given that collective efficacy was not predictive of individual-level social ties, it does not appear that such ties mediate a relationship between collective efficacy and women's IPV victimization. Additionally, the effect of collective efficacy on IPV does not **appear to depend upon neighborhood-level social ties, either** – no interaction term was significant, indicating that the level of social ties in a neighborhood did not enhance collective efficacy's effect. In short, it **appears that collective efficacy does not influence** violence behind closed doors even when individual or neighborhood social ties are present to bring this form of violence to the public's attention for potential intervention.

We speculate that there are a couple of explanations for our main findings. Returning to our earlier point, it is possible that minor forms of IPV may not be considered worthy of intervention by neighborhood residents. Unlike robbery, burglary, and other forms of street crime, **most people do not perceive intimate partner violence to be a threat to others outside of the relationship**. Thus, it may not be seen as a threat to the general safety of the neighborhood. Moreover, this may be particularly true in the case of "minor" forms of IPV, like slapping and pushing. In fact, Browning (2002) examined whether community "non-intervention norms" (e.g., the belief that fighting amongst family members was nobody else's business) were related to IPV against women. He found that areas with higher levels of nonintervention norms had higher rates of non-lethal IPV, suggesting that residents' tolerance levels of the privacy of family fighting was related to non-lethal IPV levels. However, he also noted that the effect of nonintervention

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

norms did not extend to lethal IPV, indicating that very severe forms of violence are not protected by these norms. Our findings regarding minor IPV complement his in this regard.

Second and relatedly, while social ties might enhance the awareness of IPV among neighbors, this awareness may not necessarily translate into social control. In his study, Browning (2002) also examined whether community nonintervention norms moderated the impact of collective efficacy on IPV against women and found that the effect of collective efficacy on IPV was weakened in areas characterized by higher levels of nonintervention norms. While it is possible that community norms may be weakening the impact of collective efficacy on IPV in our study, **given the positive findings uncovered for minor IPV we believe our findings instead suggest that residents, even if they are aware of the violence, may be hesitant to exert social control over residents within the neighborhood.** This is consistent with the negotiated coexistence model (Browning et al., 2004), whereby (IPV) offenders are somewhat protected from intervention because of the ties and social capital they have accrued within the neighborhood. **In fact, this could explain why** neighborhood social ties were positively associated with minor IPV, but not severe IPV. That is, while neighborhood social ties may serve to “protect” IPV perpetrators, there is a limit to such protection. When violence goes beyond pushing, slapping, and throwing things, the perpetrator of IPV no longer appears to benefit from the social capital that may have been accrued by residing in a neighborhood with such social ties.

Our study has some limitations that must be acknowledged. First, we focused on partner victimization among females, not males. Primarily, we did this in an effort to be consistent with prior neighborhood-level research on IPV, most of which (e.g., Benson, Fox, DeMaris, & Van Wyk, 2003; Benson, Wooldredge, Thistlethwaite, & Fox, 2004; Frye et al., 2014; Frye et al., 2008; Wright & Benson, 2010, 2011) has focused on female IPV victimization. We also contend

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

that the research base knows much less about males' IPV victimization than females' IPV victimization, and thus, we cannot say whether the same contextual effects should be expected for violence against males. It is important for future research to consider whether and how males' IPV victimization is similar to and different from females' victimization (Swan, Gambone, Caldwell, Sullivan, & Snow, 2008) – in regards to predictors, motives, consequences, and neighborhood effects. Relatedly, only the primary caregiver in the LCS was interviewed about their victimization in the past year, so we only have one partner's reports of IPV. Having data from both partners to corroborate violent behaviors would have strengthened the analyses, and we encourage researchers to use victim *and* partner data whenever it is available. We also focused on prevalence measures of minor and severe forms of IPV. While our study contributes to the research by examining these forms of IPV against women separately, we nonetheless did not examine the frequency or chronicity of violence, largely because we sought to understand the most basic relationship between neighborhood collective efficacy, social ties, and various IPV measures. Neighborhood effects might differ, as we found in this study with respect to severity, with more frequent or chronic IPV. In addition, we were unable to determine the quality of the neighborhood ties examined here, as well as the cultural norms and beliefs about IPV across neighborhoods. That is, we were unable to assess whether neighbors were prosocial or antisocial (and may have supported violence in relationships), and as we noted throughout the study, such qualities may determine the effect of neighborhood social ties on IPV (e.g., whether they are protective against IPV, unrelated, or supportive of IPV). It is important that future research continue to try to unpack the relationships between neighborhood norms, collective efficacy and social ties with regard to IPV, as these may interact with each other in meaningful ways. Finally, we were unable to directly measure some of the mechanisms by which the observed

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

neighborhood characteristics are assumed to influence IPV. For example, we posited that neighborhood social ties would serve to raise resident awareness about IPV, thus making it possible for neighbors to intervene to reduce it. Other data sources are needed to test whether, in fact, residents living in neighborhoods with strong social ties and networks **become aware** of IPV incidents when they do occur.

Our study sought to clarify the relationship between various neighborhood characteristics and intimate partner violence against women. In particular, we examined several measures of neighborhood social ties and networks, and found that these characteristics were generally associated with *higher* rates of minor IPV. In addition, collective efficacy does not appear to influence IPV, nor is its influence enhanced by individual or neighborhood social ties. While our study sheds some light on how neighborhoods may (and may not) influence intimate partner violence against women, additional research is needed to determine whether these same findings are observed for IPV against males, how they might vary depending on the chronicity of violence, and the extent to which the quality of neighborhood social ties matters.

### References

- Ahern, J., Cerda, M., Lippman, S. A., Tardiff, K. J., Vlahov, D., & Galea, S. (2013). Navigating non-positivity in neighbourhood studies: An analysis of collective efficacy and violence. *Journal of Epidemiology & Community Health, 67*, 159-165.
- Armstrong, T. A., Katz, C. M., & Schnebly, S. M. (2015). The relationship between citizen perceptions of collective efficacy and neighborhood violent crime. *Crime & Delinquency, 61*, 121-142.
- Barrera, M. J. (1986). Distinctions between social support concepts, measures, and models. *American Journal of Community Psychology, 14*(4), 413-443.
- Bellair, P. E. (2000). Informal surveillance and street crime: A complex relationship. *Criminology, 38*(1), 137-170.
- Bellair, P. E., & Browning, C. R. (2010). Contemporary disorganization research: An assessment and further test of the systemic model of neighborhood crime. *Journal of Research in Crime & Delinquency, 47*(4), 496-521.
- Benson, M. L., Fox, G. L., DeMaris, A., & Van Wyk, J. (2003). Neighborhood disadvantage, individual economic distress and violence against women in intimate relationships. *Journal of Quantitative Criminology, 19*(3), 207-235.
- Benson, M. L., Wooldredge, J. D., Thistlethwaite, A. B., & Fox, G. L. (2004). The correlation between race and domestic violence is confounded with community context. *Social Problems, 51*, 326-342.
- Beyer, K., Wallis, A. B., & Hamberger, L. K. (2015). Neighborhood environment and intimate partner violence: A systematic review. *Trauma, Violence & Abuse, 16*(1), 16-47.
- Browning, C. R. (2002). The span of collective efficacy: Extending social disorganization theory to partner violence. *Journal of Marriage and the Family, 64*(4), 833-850.
- Browning, C. R., Feinberg, S. L., & Dietz, R. D. (2004). The paradox of social organization: Networks, collective efficacy, and violent crime in urban neighborhoods. *Social Forces, 83*(2), 503-534.
- Bursik, R. J. (1988). Social disorganization and theories of crime and delinquency: Problems and prospects. *Criminology, 26*(4), 519-551.
- Bursik, R. J., & Grasmick, H. G. (1993). *Neighborhoods and Crime: The dimensions of effective community control*. Lanham: Lexington.
- Coker, A. L., Smith, P. H., Thompson, M. P., McKeown, R. E., Bethea, L., & Davis, K. E. (2002). Social support protects against the negative effects of partner violence on mental health. *Journal of Women's Health & Gender-Based Medicine, 11*(5), 465-476.
- Cullen, F. T. (1994). Social support as an organizing concept for criminology: Presidential address to the Academy of Criminal Justice Sciences. *Justice Quarterly, 11*(4), 527-559.

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

- Cunradi, C., Caetano, R., Clark, C., & Schafer, J. (2000). Neighborhood poverty as a predictor of intimate partner violence among white, black, and Hispanic couples in the United States: A multilevel analysis. *Annals of Epidemiology, 10*(5), 297-308.
- Earls, F. J., Brooks-Gunn, G., Raudenbush, S. W., & Sampson, R. J. (2002). Project on Human Development in Chicago Neighborhoods (PHDCN): Wave 1: Ann Arbor, MI: Inter-university Consortium for Political and Social Research, Grant 93-IJ-CX-K005.
- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods, 12*(2), 121-138.
- Frye, V. (2007). The informal social control of intimate partner violence against women: Exploring personal attitudes and perceived neighborhood social cohesion. *Journal of Community Psychology, 35*, 1001-1018.
- Frye, V., Blaney, S., Cerda, M., Vlahov, D., Galea, S., & Ompad, D. C. (2014). Neighborhood characteristics and sexual intimate partner violence against women among low-income, drug-involved New York City residents: Results from the IMPACT studies. *Violence Against Women, 20*(7), 799-824.
- Frye, V., Galea, S., Tracy, M., Bucchiarelli, A., Putnam, S., & Wilt, S. (2008). The role of neighborhood environment and risk of intimate partner femicide in a large urban area. *American Journal of Public Health, 98*, 1473-1479.
- Gelles, R. J. (1983). An exchange/social control theory. In D. Finkelhor, R. J. Gelles, G. T. Hotaling, & M. A. Straus (Eds.), *The dark side of families: Current family violence research* (pp. 151-165). Beverly Hills, CA: Sage.
- Gelles, R. J., & Straus, M. A. (1988). *Intimate Violence: The Definitive Study of the Causes and Consequences of Abuse in the American Family*. New York: Simon and Schuster.
- Granovetter, M. S. (1973). Strength of weak ties. *American Sociological Review, 78*, 1360-1380.
- House, J. S., Umberson, D., & Landis, K. R. (1988). Structures and processes of social support. *Annual Review of Sociology, 14*, 293-318.
- Jain, S., Buka, S. L., Subramanian, S. V., & Molnar, B. E. (2010). Neighborhood predictors of dating violence victimization and perpetration in young adulthood: A multilevel study. *American Journal of Public Health, 100*(9), 1737-1744.
- Kasarda, J. D., & Janowitz, M. (1974). Community attachment in mass society. *American Sociological Review, 39*, 328-339.
- Kirk, D. S., & Papachristos, A. V. (2011). Cultural mechanisms and the persistence of neighborhood violence. *American Journal of Sociology, 116*(4), 1190-1233.
- Kirst, M., Lazgare, L. P., Zhang, Y. J., & O'Campo, P. (2015). The effects of social capital and neighborhood characteristics on intimate partner violence: A consideration of social resources and risks. *American Journal of Community Psychology, 55*, 314-325.
- Kornhauser, R. R. (1978). *Social Sources of Delinquency: An Appraisal of Analytic Models*. Chicago: University of Chicago Press.

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

- Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin*, *126*(2), 309-337.
- Molnar, B. E., Cerda, M., Roberts, A. L., & Buka, S. L. (2008). Effects of neighborhood resources on aggressive and delinquent behaviors among urban youths. *American Journal of Public Health*, *98*(6), 1086-1093.
- Morenoff, J. D., Sampson, R. J., & Raudenbush, S. W. (2001). Neighborhood inequality, collective efficacy, and the spatial dynamics of urban violence. *Criminology*, *39*(3), 517-559.
- Pattillo, M. E. (1998). Sweet mothers and gangbangers: Managing crime in a black middle-class neighborhood. *Social Forces*, *76*(3), 747-774.
- Pinchevsky, G. M., & Wright, E. M. (2012). The impact of neighborhoods on intimate partner violence and victimization. *Trauma, Violence, & Abuse*, *13*(2), 112-132.
- Pratt, T., & Cullen, F. T. (2005). Assessing the relative effects of macro-level predictors of crime: A meta-analysis. In M. Tonry (Ed.), *Crime and Justice: A Review of Research* (Vol. 32, pp. 37-50). Chicago: University of Chicago Press.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear model: Applications and data analysis methods* (2nd ed.). Newbury Park, CA: Sage.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., Congdon, R., & du Toit, M. (2004). *HLM 6: Hierarchical Linear and Nonlinear Modeling*. Lincolnwood, IL: Scientific Software International, Inc.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., & Congdon, R. T. (2004). *HLM 6: Hierarchical Linear and Nonlinear Modeling*. Lincolnwood, IL: Scientific Software International, Inc.
- Raudenbush, S. W., & Sampson, R. J. (1999). Ecometrics: Toward a science of assessing ecological settings, with application to the systematic social observation of neighborhoods. *Sociological Methodology*, *29*, 1-41.
- Rountree, P. W., & Land, K. C. (1996). Burglary victimization, perceptions of crime risk, and routine activities: A multilevel analysis across Seattle neighborhoods and census tracts. *Journal of Research in Crime and Delinquency*, *33*, 147-180.
- Sampson, R. J. (2012). *Great American city: Chicago and the enduring neighborhood effect*. Chicago, IL: University of Chicago Press.
- Sampson, R. J., & Raudenbush, S. W. (1999). Systematic social observation of public spaces: A new look at disorder in urban neighborhoods. *American Journal of Sociology*, *105*(3), 603-651.
- Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, *277*(5328), 918-924.

## NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

- Shaw, C. R., & McKay, H. D. (1942). *Juvenile Delinquency and Urban Areas: A study of rates of delinquency in relation to differential characteristics of local communities in American cities*. Chicago: University of Chicago Press.
- Stith, S. M., Smith, D. B., Penn, C. E., Ward, D. B., & Tritt, D. (2004). Intimate partner physical abuse perpetration and victimization risk factors: A meta-analytic review. *Aggression and Violent Behavior, 10*, 65-98.
- Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family, 41*(1), 75-88.
- Straus, M. A., Hamby, S. L., Boney-McCoy, S., & Sugarman, D. B. (1996). The Revised Conflict Tactics Scale (CTS2). *Journal of Family Issues, 17*(3), 283-316.
- Swan, S. C., Gambone, L. J., Caldwell, J. E., Sullivan, T. P., & Snow, D. L. (2008). A review of research on women's use of violence with male intimate partners. *Violence and Victims, 23*, 301-314.
- Van Wyk, J., Benson, M. L., Fox, G. L., & DeMaris, A. A. (2003). Detangling individual-, partner-, and community-level correlates of partner violence. *Crime and Delinquency, 49*(3), 412-438.
- Wilcox Rountree, P. (1998). A reexamination of the crime-fear linkage. *Journal of Research in Crime & Delinquency, 35*(3), 341-372.
- Wilcox Rountree, P., & Warner, B. D. (1999). Social ties and crime: Is the relationship gendered? *Criminology, 37*(4), 789-814.
- Wright, E. M. (2015). The relationship between social support and intimate partner violence in neighborhood context. *Crime & Delinquency, 61*(10), 1333-1359.
- Wright, E. M., & Benson, M. L. (2010). Immigration and intimate partner violence: Exploring the immigrant paradox. *Social Problems, 57*(3), 480-503.
- Wright, E. M., & Benson, M. L. (2011). Clarifying the effects of neighborhood disadvantage and collective efficacy on violence "behind closed doors" *Justice Quarterly, 28*(5), 775-798.
- Wright, E. M., & Fagan, A. A. (2013). The cycle of violence in context: Exploring the moderating roles of neighborhood disadvantage and cultural norms. *Criminology, 51*(2), 217-249.
- Xie, M., Lauritsen, J. L., & Heimer, K. (2012). Intimate partner violence in U.S. metropolitan areas: The contextual influences of police and social services. *Criminology, 50*(4), 961-992.
- Xue, Y., Leventhal, T., Brooks-Gunn, J., & Earls, F. (2005). Neighborhood residence and mental health problems of 5- to 11-year-olds. *Archives of General Psychiatry, 62*, 554-563.

NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

**Table 1.** Definitions, Means and Standard Deviations of Measures

<b>Variable</b>	<b>Definition</b>	<b>Mean</b>	<b>SD</b>	<b>Min-Max</b>
<b>Outcome Measures</b>				
Severe IPV	Female reported that her partner had kicked, bit or hit her with a fist, hit or tried to hit her with something, beat her up, choked her, threatened her with knife or gun, or used knife or gun during an argument with her in the past year.	0.15	0.36	0-1
Minor IPV	Female reported that her partner had thrown something at her, pushed her, or slapped her during an argument with her in the past year.	0.28	0.46	0-1
<b>Individual-Level Measures</b>				
Age	Female's age in years.	31.96	8.62	15-82
Latina	Female is Hispanic.	0.46	0.50	0-1
African American	Female is African American.	0.33	0.47	0-1
Other race/ethnicity	Female is of a race/ethnicity other than Hispanic, African American, or Caucasian.	0.04	0.20	0-1
Caucasian	Female is Caucasian (serves as reference category).	0.17	0.38	0-1
Male Substance Use	Partner's drinking and/or drug use has ever caused problems with health, family, job or police.	0.09	0.29	0-1
Male Non-Egalitarian Views	Male makes most of the household decisions.	0.42	0.49	0-1
Cohabitation	Partners live together.	0.73	0.44	0-1
Income	Total maximum personal or household income earned in the past year.	3.95	1.97	1-7
Employment	Female is employed.	0.49	0.50	0-1
Education	Female's highest level of education.	1.97	0.93	1-3
Social Ties	Female reported having family members, friends, or others who would stand by her, support her, listen to her, talk to her about problems, and help her in need. Ten questions, standardized and summed.	-0.00	4.52	-22.59-10.69
<b>Neighborhood-Level Measures</b>				
Concentrated Disadvantage	The percentage of the residents below poverty line, percentage of household receiving public assistance, and the percentage of residents unemployed according to the 1990 U.S. Census (alpha = .81). Higher values reflect greater disadvantage.	0.00	1.00	-1.51 – 2.35
Residential Stability	The percent of population who lived in same house 5 years ago according to the 1990 U.S. Census.	52.29	13.43	24.24-78.37

NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

*(Table 1 Continued)*

Concentrated Immigration	The percentage of residents in a neighborhood who were Latino and who were foreign-born according to the 1990 U.S. Census.	-0.00	1.00	-1.27 - 2.54
Collective Efficacy	Three-level item response model based on 10 indicators of social cohesion and informal social control reported by adult residents in the Community Survey; individual characteristics such as age, gender, marital status, homeownership, race/ethnicity, residential mobility, number of years in the neighborhood, and socioeconomic status are controlled.	-0.01	0.22	-0.46 - 0.64
Social Interactions	Three-level item response model based on four indicators of how often neighbors in the Community Survey do favors for each other, ask advice of each other, have get-togethers, and visit each other; individual characteristics such as age, gender, marital status, homeownership, race/ethnicity, residential mobility, number of years in the neighborhood, and socioeconomic status are controlled.	-0.00	0.17	-0.52 - 0.63
Recognize	The proportion of adults in a neighborhood in the Community Survey who reported that they could recognize “many” or “a great many” of adults or children by sight, mean centered.	-0.00	0.14	-0.34 - 0.32
Outsiders	The ease at which community members in the Community Survey are able to identify individuals who are not members of the neighborhood, mean centered.	0.00	0.35	-0.77 - 0.80

NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

**Table 2.** Individual-level Effects on Severe and Minor IPV against Women

	Severe IPV	Minor IPV
	b (se)	b (se)
Intercept	<i>-1.83**</i> (0.04)	<i>-0.92**</i> (0.04)
<b>Individual-Level Measures</b>		
Age	<i>-0.03**</i> (0.00)	<i>-0.03**</i> (0.00)
Latina	<i>0.09</i> (0.12)	<i>-0.07</i> (0.10)
African American	<i>0.77**</i> (0.11)	<i>0.44**</i> (0.11)
Other race/ethnicity	<i>0.39</i> (0.22)	<i>0.13</i> (0.18)
Male Substance Use	<i>0.84**</i> (0.14)	<i>0.54**</i> (0.13)
Male Non-Egalitarian Views	<i>0.23*</i> (0.09)	<i>0.21**</i> (0.08)
Cohabitation	<i>0.14</i> (0.11)	<i>0.20</i> (0.11)
Income	<i>-0.11**</i> (0.03)	<i>-0.10**</i> (0.02)
Employment	<i>-0.04</i> (0.10)	<i>0.02</i> (0.08)
Education	<i>-0.12*</i> (0.05)	<i>-0.06</i> (0.05)
Social Ties	<i>-0.03**</i> (0.01)	<i>-0.04**</i> (0.01)
Variance Component	0.06764	0.25591
Model Fit (Chi <sup>2</sup> )	93.54*	90.86**

\*\*  $p \leq .01$  \*  $p \leq .05$ ,

Notes: Analyses based on 4,148 (for severe IPV) and 4,151 (for minor IPV) individuals within 80 neighborhoods. Individual-level models were analyzed using random effects Bernoulli models (random coefficients are italicized).

NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

**Table 3.** Effects of Neighborhood Collective Efficacy and Social Interactions on IPV against Women

	Severe IPV				Minor IPV			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)
<b>Neighborhood-Level Measures</b>								
Collective Efficacy	-0.12 (0.08)	--	-0.16 (0.10)	0.09 (0.14)	-0.06 (0.08)		-0.15 (0.10)	0.04 (0.14)
Social Interactions	--	-0.05 (0.10)	0.04 (0.12)	-0.12 (0.14)	--	0.10 (0.10)	0.18 (0.12)	0.00 (0.14)
Collective Efficacy x Social Interactions	--	--	0.25 (0.34)	0.22 (0.32)	--	--	0.32 (0.33)	0.30 (0.32)
Concentrated Disadvantage	--	--	--	0.07** (0.02)	--	--	--	0.06* (0.02)
Residential Stability	--	--	--	-0.00 (0.00)	--	--	--	-0.00 (0.00)
Concentrated Immigration	--	--	--	-0.01 (0.02)	--	--	--	-0.02 (0.02)
R <sup>2</sup>	.030	.002	.039	.168	.006	.011	.048	.139

\*\*  $p \leq .01$  \*  $p \leq .05$

Notes: Analyses based on 4,148 (severe IPV) and 4,151 (minor IPV) individuals within 80 neighborhoods. Models include all individual-level covariates. Empirical Bayes estimates used.

NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

**Table 4.** Effects of Neighborhood Collective Efficacy and Recognize on IPV against Women

	Severe IPV				Minor IPV			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)
<b>Neighborhood-Level Measures</b>								
Collective Efficacy	-0.12 (0.08)	--	-0.12 (0.08)	0.05 (0.11)	-0.06 (0.08)	--	-0.06 (0.08)	0.03 (0.11)
Recognize	--	0.05 (0.12)	0.04 (0.13)	-0.06 (0.16)	--	0.31** (0.12)	0.34** (0.12)	0.25 (0.16)
Collective Efficacy x Recognize	--	--	-0.35 (0.59)	-0.46 (0.57)	--	--	0.90 (0.55)	0.83 (0.56)
Concentrated Disadvantage	--	--	--	0.06* (0.03)	--	--	--	0.04 (0.02)
Residential Stability	--	--	--	-0.00 (0.00)	--	--	--	-0.00 (0.00)
Concentrated Immigration	--	--	--	-0.01 (0.02)	--	--	--	-0.02 (0.02)
<b>R<sup>2</sup></b>	.030	.002	.037	.162	.006	.083	.121	.182

\*\*  $p \leq .01$  \*  $p \leq .05$

Notes: Analyses based on 4,148 (severe IPV) and 4,151 (minor IPV) individuals within 80 neighborhoods. Models include all individual-level covariates. Empirical Bayes estimates used.

NEIGHBORHOODS AND INTIMATE PARTNER VIOLENCE

**Table 5.** Effects of Neighborhood Collective Efficacy and Outsiders on IPV against Women

	Severe IPV				Minor IPV			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)	b (se)
<b>Neighborhood-Level Measures</b>								
Collective Efficacy	-0.12 (0.08)	--	-0.12 (0.09)	0.08 (0.12)	-0.06 (0.08)	--	-0.13 (0.08)	0.01 (0.12)
Outsiders	--	-0.02 (0.05)	0.01 (0.06)	-0.03 (0.08)	--	0.09 (0.05)	0.12* (0.05)	0.09 (0.07)
Collective Efficacy x Outsiders	--	--	-0.16 (0.20)	-0.16 (0.19)	--	--	0.19 (0.19)	0.19 (0.18)
Concentrated Disadvantage	--	--	--	0.06* (0.02)	--	--	--	0.05 (0.02)
Residential Stability	--	--	--	-0.00 (0.00)	--	--	--	-0.00 (0.00)
Concentrated Immigration	--	--	--	-0.01 (0.02)	--	--	--	-0.01 (0.02)
R <sup>2</sup>	.030	.001	.039	.163	.006	.043	.079	.155

\*\*  $p \leq .01$  \*  $p \leq .05$

Notes: Analyses based on 4,148 (severe IPV) and 4,151 (minor IPV) individuals within 80 neighborhoods. Models include all individual-level covariates. Empirical Bayes estimates used.