



HHS Public Access

Author manuscript

Soc Sci Res. Author manuscript; available in PMC 2016 September 01.

Published in final edited form as:

Soc Sci Res. 2015 September ; 53: 59–72. doi:10.1016/j.ssresearch.2015.05.001.

Intimate Partner Violence in Neighborhood Context: The Roles of Structural Disadvantage, Subjective Disorder, and Emotional Distress

Jennifer E. Copp*

Florida State University

Danielle C. Kuhl,

Bowling Green State University

Peggy C. Giordano,

Bowling Green State University

Monica A. Longmore, and

Bowling Green State University

Wendy D. Manning

Bowling Green State University

Abstract

Most theoretical treatments of intimate partner violence (IPV) focus on individual-level processes. Some researchers have attempted to situate IPV within the larger neighborhood context, but few studies have sought to link structural- and individual-level factors. The current analyses fill a research gap by examining the role of anger and depression in the association between neighborhood disadvantage and IPV. Using data from the Toledo Adolescent Relationships Study (TARS) and the 2000 Census, this study focuses on structural indicators of disadvantage as well as subjective disorder, and highlights the complex associations between neighborhood conditions, emotional distress, and IPV. Findings indicate that anger and depressive symptoms partially explain the association between neighborhood disadvantage and IPV. Additionally, the associations between disadvantage, disorder, and IPV depend on respondent's level of anger. Results underscore the need to further consider the role of neighborhood factors (both objective and subjective) in relation to IPV, and also suggest the utility of introducing individual-level emotional measures to assess the circumstances under which neighborhoods matter most.

Keywords

intimate partner violence; neighborhood context; disorder; anger; depression

*Direct correspondence to: Jennifer E. Copp, Florida State University, 112 S. Copeland St., Tallahassee, Florida 32306. jcopp@bgsu.edu..

INTRODUCTION

Recent data from the National Intimate Partner and Sexual Violence Survey (NIPSVS) demonstrate that roughly 1 in 3 women (32.9%) and more than 1 in 4 men (28.2%) have experienced physical violence by an intimate partner in their lifetimes, and nearly half of women (47%) and two-fifths of men (39%) experienced this violence when they were between the ages of 18 and 24 (Black, Basile, Brieding, Smith, Walters, Merrick, Chen, and Stevens 2011). Moreover, relationship violence is associated with a range of negative physical and mental health outcomes (Basile and Smith 2011; Breiding, Black, and Ryan 2005; Coker, Davis, Arias, Desai, Sanderson, Brandt, and Smith 2002; Hill, Kaplan, French, and Johnson 2010; Hill, Schroeder, Bradley, Kaplan, and Angel 2009; Logan and Cole 2007; Sutherland, Bybee, and Sullivan 2002). Yet while we know much about certain risk factors and consequences, fewer studies have examined the processes that link structural and individual correlates underlying risk for intimate partner violence. Importantly, there is renewed effort to contextualize IPV, highlighting higher-order risk factors and associated processes. Recent prevention efforts note, especially, that researchers need to reframe the focus of IPV to address not just healthy relationships, but “healthy communities” as well—with the aim to “influence the structural and economic factors that contribute to IPV” (Parks, Cohen, and Kravitz-Wirtz 2007:vi). As such, scholars have begun to focus on how neighborhood context influences intimate partner violence.

Despite efforts emphasizing the importance of neighborhoods for understanding IPV risk, scholars note that research needs to specify “exactly *how* the neighborhood environment affects experience and perpetration of intimate partner...violence” (Frye and O’Campo 2011:189). Thus, it is an advancement that much recent scholarship has shown that neighborhoods matter for IPV, but we still need to uncover the possible *ways* that they matter. To date, most of the research on neighborhoods and IPV has focused on neighborhood structural characteristics, generally overlooking how residents subjectively experience their neighborhoods and whether these perceptions have consequences for IPV. Further, most of the work specifying potential mediating mechanisms has drawn on a social disorganization framework. Although the findings from this research have provided evidence of a general association between the neighborhood structure and IPV, social disorganization’s emphasis on the community’s level of informal social cohesion/control has a stronger intuitive connection to more public forms of violence, such as street and gang violence relative to acts that occur most often within the home. Additionally, recent research on IPV has shown a strong connection between this form of behavior and affective processes, suggesting the utility of examining the role of emotions as factors that link neighborhood context and variability in IPV risk. Using data from the Toledo Adolescent Relationships Study (TARS), we examine neighborhood variation in IPV perpetration to determine whether neighborhood disadvantage and subjective disorder influence IPV, and further, whether these associations are explained by individual-level indicators of emotional distress (anger and depressive symptoms). Proposed emotional mediators stem from Agnew’s (1999) strain theory. Additional analyses, situated in the theoretical framework of structural amplification, (Mirowsky and Ross 2003; Ross, Mirowsky, and Pribesh 2001)

consider whether the associations between emotional distress and IPV are moderated by disadvantage and disorder.

NEIGHBORHOOD CONTEXT AND INTIMATE PARTNER VIOLENCE

Researchers have described IPV as something that occurs “behind closed doors” (Straus, Gelles, and Steinmetz 1980), thus alluding to its private nature. In contrast, scholarship on neighborhood or community effects has focused most often on ‘street’ violence, which typically occurs in public spaces. Yet as Browning (2002:849) notes, assumptions about the private nature of intimate relationships can obscure the fact that they, like other forms of personal interaction in public space, are embedded in broader communities. Much of the current scholarship linking neighborhood structure to IPV highlights economic disadvantage as an especially salient factor. In the mid-1990s, for example, scholars began examining the association between community economic factors and IPV, although with rather restricted samples. O’Campo and colleagues’ (1995) demonstrated an association between tract-level unemployment rates and increased odds of IPV among low-income women in Baltimore, and Miles-Doan (1998) showed that higher levels of disadvantage are associated with increased rates of IPV in a single county in Florida. Other studies using samples of one or two cities, counties, or states also found significant associations between indices of economic deprivation/disadvantage and IPV (DeJong, Pizarro, and McGarrell 2011; Diem and Pizarro 2010; Frye and Wilt 2001; Li, Kirby, Sigler, Hwang, LaGory, and Goldenberg 2010; Wooldredge and Thistlethwaite 2003; Wu 2009) or between poverty levels and IPV (Pearlman, Zierler, Gjelsvik, and Verhoek-Oftedahl 2003).

In addition to community-focused studies, researchers relying on important nationally representative studies have examined the link between neighborhood economic disadvantage and IPV. Cunradi and colleagues (2000) used the National Alcohol Survey (NAS) to demonstrate an increased likelihood of IPV for African Americans, and of female-perpetrated IPV for African American and White individuals living in higher-poverty neighborhoods. Finally, a number of studies relied on data from the National Survey of Families and Households (NSFH) to examine the association between community disadvantage and IPV. These studies (Benson, Fox, DeMaris, and Van Wyk 2003; Benson, Wooldredge, Thistlethwaite, and Fox 2004; DeMaris, Benson, Fox, Hill, and Van Wyk 2003; Fox and Benson 2006; Van Wyk, Benson, Fox, and DeMaris 2003) consistently report that higher levels of neighborhood disadvantage are associated with increased risk of IPV. An exception to the generally observed association was noted by Lauritsen and Schaum (2004); using the National Crime Victimization Survey (NCVS), they found that higher poverty levels *decreased* IPV, but cautioned against drawing conclusions because this finding might be due to multicollinearity or spuriousness.

The above scholarship has been important in linking neighborhoods to IPV, but has yet to provide a compelling explanation of the processes via which neighborhoods influence partner violence. Moreover, by focusing exclusively on neighborhood structural characteristics, it has not thoroughly examined other neighborhood factors that may heighten IPV risk, particularly subjective considerations. Our objectives in this paper are to contribute further to scholarship in this area by considering variability in the subjective experience of

neighborhood conditions (as well as more objective indicators of neighborhood disadvantage), and exploring the role of emotional processes as potential mediators of these neighborhood effects. We draw on Agnew's (1999) revised General Strain Theory (GST) as a conceptual framework for this investigation. Additional models explore the potential for neighborhood conditions to moderate the effect of negative emotional processes as influences on the experience of IPV.

THEORETICAL MECHANISMS

Many studies linking neighborhoods to IPV have not been explicit about the theoretical underpinnings of these investigations. These exploratory studies recognize that neighborhood characteristics influence relationship dynamics (including violence) because neighborhoods are one of many "different levels of social life" (DeMaris et al. 2003) that are important, but precisely *how* they are important is not well understood. Of the studies conducted in the United States in the past 12 years examining community characteristics as risk factors for IPV, the theoretical underpinning is most often either a version of social disorganization theory (Shaw and McKay 1942) or a particular theoretical framework is not identified (VanderEnde, Yount, Dynes, and Sibley 2012).¹ Within the disorganization framework, the expectation is that neighborhood characteristics influence IPV through community-level social control, social cohesion, or collective efficacy, although there is mixed support in the literature for these mediational processes (Browning 2002; Caetano, Ramisetty-Mikler, and Harris 2010; Frye, Galea, Tracy, Bucciarelli, Putnam, and Wilt 2008; Wright and Benson 2011).

Recognizing some potential limitations of the traditional "neighborhood effects" approach of social disorganization as applied to IPV specifically, it is potentially useful to expand the theoretical lens by taking into consideration distinctive features of intimate partner violence, including the role of emotional processes. Agnew (1999) explicitly argued for community characteristics to influence crime/violence directly, but also *indirectly* via emotional processes. As applied to our current study, emotions thus are expected to mediate the influence of neighborhood factors on IPV. Although Agnew's revised theory was intended to explain rates of crime, scholars have subsequently argued that this revision has multilevel implications—that is, the notion that communities influence *individual* behavior via emotional responses (Wareham, Cochran, Dembo, and Sellers 2005). Because IPV involves relationships in which emotional dynamics are especially salient, this multilevel strain theoretical framework seems particularly appropriate. Yet while there are numerous studies testing multilevel strain models of general delinquency (Brezina, Piquero, and Mazerolle 2001; Hoffmann 2003; Hoffmann and Ireland 2004; Op de Beeck, Pauwels, and Put 2012), the findings are somewhat mixed. Further, little scholarship has extended this approach and linked neighborhood characteristics to individual strain/emotional distress, and subsequently to IPV perpetration.

¹Studies outside the U.S., for example in Haiti or India, are more likely to use feminist theories, or examine levels of gendered access to resources such as education or literacy (see, for example, Ackerson, Kawachi, Barbeau, and Subramanian 2008; Gage and Hutchinson 2006).

The tenability of a multilevel strain model is noted among various scholars (Brezina, Piquero, and Mazerolle 2001; Wareham et al. 2005) because Agnew (1999:123) explicitly stated that macro theories “essentially describe how community-level variables affect individual criminal behavior.” In Agnew’s model (1999:137-38), economic deprivation is a key community-level factor that indirectly predicts individual behavior through, among other factors, exposure to aversive stimuli which then become a source of distress, manifesting in the emotional responses of anger and depression. It is beyond the scope of this investigation to delineate all of the features of residing in a disadvantaged neighborhood that may serve as underpinnings of such feelings of demoralization, but note that this clustering of potentially difficult physical/environmental, social, and family-level circumstances may be related to these forms of emotional distress, which in turn influence the dynamics of intimate relationships. That is, individuals in contexts of disadvantage may face a unique set of concerns that become sources of discord in their own intimate relationships, both fueling conflict and heightening the risk of a violent response. This may include discord that relates directly to financial strain (Copp 2014), as well as relationship issues such as simultaneous involvement in more than one intimate relationship (see, e.g., Miller and White 2003). Thus, it is likely that the neighborhood context does shape emotional responses directly, but this does not preclude considering the role of relational factors in further shaping and influencing their expression.

NEIGHBORHOOD DISADVANTAGE AND EMOTIONAL DISTRESS

Early Chicago School research suggested that poor mental health, like other social ills, was spatially concentrated in the most disadvantaged areas in and around the city center (Faris and Dunham 1939). In line with this argument, even contemporary work has demonstrated significant associations between indicators of socioeconomic status (at the neighborhood and individual level) and emotional distress (Galea, Ahern, Rudenstine, Wallace, and Vlahov 2005; Matheson, Moineddin, Dunn, Creatore, Gozdyra, and Glazier 2006; Ross 2000; Ross and Mirowsky 2009; Ross, Reynolds, and Geis 2000; Silver, Mulvey, and Swanson 2002). The majority of the research in this area uses the stress process model as an orienting framework (Aneshensel 2009). This perspective suggests that contextual factors serve as stressors that influence an individual’s emotional well-being. Much of this work focuses on the link between objective neighborhood conditions, including poverty and residential instability, and depression (Galea et al. 2005; Kim 2010; Matheson et al. 2006; Ross 2000), or attempts to identify mediating mechanisms linking neighborhood conditions to emotional health (Kim 2010; Latkin and Curry 2003; Ross 2000; Ross and Mirowsky 2009; Schieman and Meersman 2004; Snedker and Hooven 2013). Yet Hill and Maimon (2013) noted that the influence of neighborhood conditions on emotional distress is largely a function of how individuals “experience” the neighborhood, suggesting the importance of also tapping into the subjective experience of these neighborhood conditions.

There is a growing body of research documenting a link between neighborhood disorder and emotional distress (e.g., Hill and Angel 2005; Latkin and Curry 2003; Ross 2000; Ross, Reynolds, and Geis 2000; Schieman and Meersman 2004), which suggests that disorderly neighborhood conditions contribute to feelings of hopelessness and abandonment—among an already vulnerable population—and foster heightened levels of anger and distress. This

argument is developed further in Ross and colleagues' research (Mirowsky and Ross 2003; Ross, Mirowsky, and Pribesh 2001) in which they argue that emotions are both a *consequence* of perceived disorder and a *modifier* of disorder's influence on other emotions (especially mistrust). We argue that this modification/amplification may also apply to IPV, via disorder's influence on depression and anger. Important research has established, first, that emotions are outcomes of disorder and that they link disorder to other risk behaviors. For example, Hill and Angel (2005) found that depression and anxiety mediate the link between neighborhood disorder and heavy drinking among low-income women. Specifically, disorder increased anxiety, which in turn is associated with increased depression, to influence heavy drinking. More recent work has focused on the processes or mechanisms underlying the association between neighborhood disorder and emotional distress (Ross and Mirowsky 2009). Fewer studies have examined how increased levels of distress among residents of disadvantaged neighborhoods influence relationship outcomes, including IPV. It is likely that emotional distress, especially in contexts of structural disadvantage and perceived disorder, carry over to individuals' intimate relationships, influencing their own behavior and heightening the risk of IPV perpetration.

Some studies also examine anger as an emotional response to neighborhood disorder. Focusing on a regional sample of young adults, Snedker and Hooven (2013) found that perceived neighborhood stressors influenced depressed affect, hopelessness, and anger. Ross and Mirowsky (2009) found that net of individual characteristics, neighborhood disorder led to anxiety, anger, and depressive symptoms. Schieman and Meersman (2004) found that the association between neighborhood disadvantage and anger was conditional on individuals' income and financial comparisons with neighbors. That is, perceived economic inequality appears to amplify the detrimental effects of neighborhood disadvantage on levels of anger. Taken as a whole, this literature suggests that neighborhood structural disadvantage may lead to increases in depressive symptoms and anger, and that the way neighborhood conditions are subjectively experienced may serve as an especially important conduit between neighborhood structure and these emotional responses. The crucial next question is whether these links between objective indicators of disadvantage, subjectively experienced disorder, and the experience of negative emotions (anger, and depression) are subsequently linked to an increased risk of IPV perpetration.

EMOTIONAL DISTRESS AND INTIMATE PARTNER VIOLENCE

Research on the emotional predictors of partner violence is more common in the family violence tradition. Although investigations typically focus on depression or anxiety as an outcome of relationship violence (Beydoun, Beydoun, Kaufman, Lo, and Zonderman 2012; Coker et al. 2002; Hill, Mossakowski, and Angel 2007; Johnson, Giordano, Longmore, and Manning 2014), a number of scholars using nationally representative and clinical samples have found that both stress and depression influence IPV perpetration (Hamberger and Hastings 1986; Straus 1990). These findings highlight that IPV is, at least in part, related to emotional wellbeing (Anderson 2002). Given the high rates of emotional distress among individuals reporting IPV, researchers have considered the possibility of comorbidity between abusive relationships and clinical disorders. This research provides evidence of the co-occurrence of IPV and emotional distress outcomes, including depression.

Research drawing connections between anger and IPV often conceptualizes anger as a trait-based behavior (Follingstad, Wright, Lloyd, and Sebastian 1991; Swan, Gambone, Fields, Sullivan, and Snow 2005). As such, differences in styles of anger expression are conceptualized as individual differences. Other research (Wolf and Foshee 2003) has implicated early social learning experiences in the family of origin, suggesting that exposure to family violence may influence anger expression styles. Some research has examined the meanings attached to specific violent episodes and has identified anger as a “predominant emotion, both as effect and perceived cause” (Jackson, Cram, and Seymour 2000:35). Although this work suggests a general association between anger and IPV, theoretical development in this regard is still lacking and it has not fully explored links between neighborhood structural conditions, the subjective experience of these conditions, and the experience of anger. Moreover, it fails to articulate the process by which anger results in violence.

Based on prior theorizing about anger and IPV (Giordano, Copp, Manning, and Longmore 2013) and the above research linking community structure and perceived disorder to emotional distress and IPV, a logical next step is to consider that both anger and depression might mediate the association between neighborhood disadvantage and IPV perpetration (i.e., investigating the notion that emotional distress serves as a “lynchpin” mechanism between neighborhood context and behavioral outcomes (Hill and Maimon 2013)). A secondary goal is to consider the possibility of moderation effects. Mirowsky and Ross’ (2003) notion of “structural amplification” explains the process by which disorderly neighborhood conditions erode an individual’s ability to cope with the negative consequences of such an environment. Neighborhood disadvantage is also important to this amplification process because amplification is argued to concentrate emotional distress, and thus put the greatest burden, on the “most disadvantaged individuals and groups” (Mirowsky and Ross 2003:242). We extend this reasoning to partner violence, examining anger and depression as indicators of emotional distress that may exacerbate the association between neighborhood factors and IPV perpetration. Accordingly, we examine whether anger or depression modify the effect of objective disadvantage and subjective disorder on the risk of perpetrating relationship violence.

THE CURRENT STUDY

The literatures on neighborhood structure, disorder, emotional distress and IPV are largely disjointed. One body of work links community structure to IPV, another body links community structure to emotional distress, and yet another links emotional distress to IPV. We seek to overcome this disconnect by joining insights from these lines of research—to highlight the more nuanced processes linking structure, subjective disorder, emotional responses, and IPV—offering a unique contribution to scholarship on IPV, and neighborhood effects research more broadly. Extending the prior work on the above separate scholarships, the four objectives include the following: (1) to examine whether concentrated disadvantage is related to IPV perpetration; (2) to assess whether subjective perceptions of disorder contribute to the risk of IPV perpetration above and beyond the effects of concentrated disadvantage; (3) to determine whether the association between neighborhood characteristics (both objective disadvantage and subjective disorder) and IPV is mediated by

individual-level indicators of anger and depression; and (4) to examine whether anger and depression moderate the effects of neighborhood characteristics on IPV perpetration.

Our analyses include a number of sociodemographic and traditional predictors that prior research has shown are related to IPV, neighborhood disadvantage, and emotional distress. The IPV literature has identified several demographic risk factors including age (Abramsky, Watts, Garcia-Moreno, Devries, Kiss, Ellsberg, Jansen, and Heise 2011; Kim, Laurent, Capaldi, and Feingold 2008), racial minority status (Caetano, Field, Ramisetty-Mikler, and McGrath 2005; Huang, Son, and Wang 2010), and socioeconomic status (Benson and Fox 2004; Benson et al. 2003; Cunradi et al. 2000; DeMaris et al. 2003; Van Wyk et al. 2003). Similarly, both racial minority status and economic marginality have been linked to concentrated disadvantage (Browning, Leventhal, and Brooks-Gunn 2004), and adverse neighborhood conditions are associated with emotional adaptations (Hill and Maimon 2013; Hill and Angel 2005; Ross 2000; Ross and Mirowsky 2009; Schieman and Meersman 2004). Because both education and employment are important markers of socioeconomic status, and young adults are often actively pursuing education, we account for whether individuals are enrolled in school or employed (Alvira-Hammond, Longmore, Manning, and Giordano 2014). Several relationship factors have been found to increase IPV risk including relationship status (Brown and Bulanda 2008; Cui, Durtschi, Donnellan, Lorenz, and Conger 2010; Herrera, Wiersma, and Cleveland 2008), relationship duration (Halpern-Meekin, Manning, Giordano, and Longmore 2013; Magdol, Moffitt, Caspi, and Silva 1998; Stets and Straus 1989), and the presence of children (Vest, Catlin, Chen, and Brownson 2002). Additionally, since social learning models of partner violence highlight the role of exposure to violence in the family of origin as a precursor to later IPV perpetration and victimization (Capaldi and Clark 1998; Renner and Slack 2006; White and Widom 2003), we account for adolescents' reports of coercive parenting. Finally, given that exposure to relationship violence in prior relationships is a risk factor for the use of violence in later relationships (Gomez 2011), we include a control for prior IPV.

Few studies have examined the mechanisms underlying the association between neighborhood context and IPV, and thus the literature upon which to base our hypotheses is limited. Nevertheless, drawing on existing theory and findings from a disparate body of work, we put forth a number of expectations. First, we expect that neighborhood concentrated disadvantage will directly influence self-reported IPV perpetration. Second, we expect that subjective neighborhood disorder will also influence IPV perpetration, net of structural disadvantage. Third, we expect that anger and depressive symptoms will mediate the association between neighborhood concentrated disadvantage, subjective disorder, and IPV perpetration. Finally, we expect that these emotional distress indicators will moderate the effects of neighborhood disadvantage and disorder on IPV perpetration. We suggest this might work in a couple of ways. First, anger and depression may strengthen the influence of neighborhood disadvantage and disorder on the risk of IPV perpetration (i.e., the "structural amplification" process that Mirowsky and Ross (2003; Ross, Mirowsky, and Pribesh 2001) describe and which we discuss above). Alternatively, however, anger and depression may weaken the association between neighborhood disadvantage and perceived disorder due to a "saturation" or "desensitization" process in which emotional distress is so common in

disadvantaged neighborhoods that the influence of any single negative emotion (anger or depression) is diluted (Wright and Fagan 2013).

DATA AND METHODS

The current study uses data from the Toledo Adolescent Relationships Study (TARS), a stratified, random sample of adolescents registered for the 7th, 9th, and 11th grades in Lucas County, Ohio, based on enrollment records from the year 2000. The sample (n=1,321), devised by the National Opinion Research Center, was drawn from 62 schools across seven school districts with over-samples of Black and Hispanic youth. To examine neighborhood effects, this study used the TARS contextual database, which was created by appending data from the 2000 U.S. Census. While the study draws primarily on data from the Wave 4 interview, when respondents are ages 17-24, some of the sociodemographic characteristics are from the parent questionnaire, which was administered at the time of the first interview.

At Wave 4, there are 1,092 valid respondents, or 83% of Wave 1. Attrition analyses indicate that participation at Wave 4 is not related to most characteristics. The analytic sample, however, is more likely to be female and to report an 'other' family structure. The analytic sample includes all those who participated in the Wave 4 interview, but excludes individuals living in census tracts with fewer than five survey participants (241 respondents spread across 152 tracts) in an attempt to maximize power to detect cross-level interactions, since this is a focus of our analyses, and studies have demonstrated that average level-1 sample size is most important for examining cross-level interactions, compared to having a larger sample of level-2 units (Mathieu, Aguinis, Culpepper, and Chen 2012). Additional exclusions included those who did not identify as Black, White, or Hispanic (n = 22) and those who did not report on a current or most recent relationship (n = 85). Finally, we excluded those with missing information on variables from the contextual database (n = 10). The final analytic sample consists of 734 respondents distributed across 85 neighborhoods.

MEASURES

Dependent Variable

The outcome variable in this study, *relationship violence perpetration*, is from a revised version of the Conflict Tactics Scale (CTS) (Straus, Hamby, Boney-McCoy, and Sugarman 1996) which includes the following four items: "thrown something at," "pushed, shoved or grabbed," "slapped in the face or head with an open hand," and "hit." The questions refer to experiences at any time with the current/most recent partner, measured at Wave 4. We focus on reported perpetration rather than victimization, as our interest is in the ways in which neighborhood levels of disadvantage influence individual emotions (anger and depressive symptoms), which, in turn, may shape an individual's behavior in the relationship context. This measure is dichotomous (1 = any IPV perpetration; 0 = no IPV perpetration).

Independent Variables

Neighborhood structure—The neighborhood economic indicators (measured at the tract level at Wave 4) include the proportion of households below the poverty line, proportion of households receiving public assistance, proportion of the population over 16 who are

unemployed, and the proportion of female-headed households. Following prior research using the TARS contextual data (Warner, Giordano, Manning, and Longmore 2011), and research concluding that it is the combined effect of multiple disadvantages that defines the neighborhood socioeconomic context for residents (Kubrin and Weitzer 2003; Sampson and Wilson 1995), we combine these items into a summed scale of *concentrated disadvantage* (Cronbach's alpha = .92). We include factor loadings in Appendix A.

Subjective disorder is a 7-item scale (alpha = .90) from the Wave 4 questionnaire in which respondents were asked about potential problems in their neighborhoods, including "high unemployment," "litter or trash on the sidewalk and streets," "run down and poorly kept buildings and yards," "quarrels in which someone is hurt badly," "drug use or drug dealing in the open," "youth gangs," and "graffiti." Responses were first dichotomized to indicate whether these items posed a problem (1 = yes), and then summed.

Emotional Distress—The focal level-one independent variables are anger and depression, measured at Wave 4. *Anger* is a single item assessing the degree of agreement with the following statement: "To what extent do you agree that other people would describe you as angry?" (responses range from "strongly disagree" to "strongly agree"). We measure *depressive symptoms* using a revised six-item version of the Center for Epidemiological Studies' depressive symptoms scale (CES-D) (Radloff 1977). Respondents were asked how often each of the following was true during the past seven days: "you felt that you could not shake off the blues," "you had trouble keeping your mind on what you were doing," "you felt lonely," "you felt sad," "you had trouble getting to sleep or staying asleep," and "you felt that everything was an effort" (responses range from "never" to "every day") (Cronbach's alpha = .82).

Sociodemographic and Background Factors—Sociodemographic factors include gender, which is a dichotomous variable (*female*; male serves as the reference category). We measure *age* in years using a continuous variable reported from Wave 4. We include three dichotomous variables to measure race/ethnicity including non-Hispanic *White* (reference category), non-Hispanic *Black*, and *Hispanic*. *Gainful activity* is a dichotomous indicator defined as being currently enrolled in school or employed.

We include several family background factors including family structure, mother's education, and prior coercive parenting. Family structure includes four dichotomous variables, *step-parent family*, *single-parent family*, and "*other*" family type (two biological parents is the reference category) at Wave 1. To control for socioeconomic status origins, we use the highest level of mother's education reported on the parent questionnaire from Wave 1. Categories include *less than high school*, *high school* (reference category), *some college*, and *college or more*. We measure *coercive parenting* using a six-item scale from the parent questionnaire asking, during the past month, how often they have, "gotten angry at their child," "criticized their child," "shouted or yelled at their child," "argued with their child," "threatened to physically hurt their child," and "pushed, grabbed, slapped, or hit their child" (responses range from "never" to "very often") (Chronbach's alpha = .83).

We measure relationship status at Wave 4, as *dating* (reference), *cohabiting*, and *married*. *Relationship duration* is a single continuous item indicating the length of the focal relationship (responses range from “less than a week” to “a year or more”). We include a dichotomous variable to account for whether the respondent had any *children* at the time of the Wave 4 interview. Finally, we measure *prior IPV* using a revised version of the CTS (Straus et al. 1996) referencing any relationship violence (victimization and perpetration) at the time of the first interview (Chronbach’s alpha = .88).

ANALYTIC STRATEGY

We use hierarchical logistic regression models to examine the multilevel association between concentrated disadvantage, subjective disorder, anger, depressive symptoms, and IPV perpetration. We estimate models using the PROC GLIMMIX function available in the statistical package SAS (Snijders and Bosker 2012). The analyses consist of several stages. First, we estimate an unconditional model to determine whether the between-neighborhood variation in IPV perpetration is significant ($p < .001$).

$$\pi_{ijt} = \gamma_{00} + \nu_{0j}$$

In the above model, γ_{00} represents an overall intercept term and ν_{0j} is a person-specific random error term with variance σ^2_u . From this unconditional model, we compute the intraclass correlation (ICC) to determine the total variation that occurs between census tracts. Assuming a latent variable approach (Guo and Zhao 2000; Teachman 2011), we estimate the intra-neighborhood correlations by $\sigma^2_u / (\sigma^2_u + \sigma^2_e)$, where σ^2_e is the variance of the standard logistic distribution ($\pi^2/3$). In our sample, the ICC is 0.07, indicating that 7% of the variation in IPV perpetration is at the neighborhood level.

Next, we predict IPV perpetration in models with neighborhood concentrated disadvantage and subjective disorder. A second model adds the sociodemographic, family background, and relationship factors. Subsequent models introduce anger and depression individually, and then as a block, to determine whether these mediate the effect of neighborhood disadvantage or subjective disorder on IPV. Two final models add the interactions between neighborhood disadvantage and emotional distress, and subjective disorder and emotional distress.

RESULTS

We present all means and standard deviations for the pooled sample and by perpetration status in Table 1. Examination of differences between the violent and non-violent subgroups reveals a number of significant differences. Individuals reporting IPV perpetration resided in neighborhoods with significantly higher levels of concentrated disadvantage. These individuals also indicated higher levels of subjective disorder. Notably, because TARS mirrors national demographics, standard deviations demonstrate that there is considerable variation in both objective disadvantage and subjective disorder. Regarding emotional distress, individuals in the IPV perpetration subgroup reported higher levels of both anger

and depressive symptoms compared to those with no perpetration experience. Additionally, a greater proportion of IPV perpetrators were female and belonged to a racial minority (Hispanic, black), and a lower proportion reported involvement in gainful activity. As compared to those reporting no IPV perpetration, a higher percentage of individuals in the perpetration subgroup grew up in a step-parent or 'other' family structure. Based on the parents' Wave 1 reports, perpetrators had mothers with lower levels of education; a greater share had mothers with less than a high school education and fewer had college-educated mothers. They also reported higher levels of parental coercion than their non-perpetrating peers. Finally, a greater proportion of those reporting IPV perpetration at Wave 4 were involved in cohabiting relationships, relationships of longer duration, had children at the time of the Wave 4 interview, and had experienced relationship violence at an earlier point in time (Wave 1).

We present the results of multivariate, multilevel analyses in Table 2. In Model 1, concentrated disadvantage and subjective disorder are significant predictors of IPV perpetration, indicating that higher levels of both structural disadvantage and perceived disadvantage are associated with increased odds of IPV perpetration at the individual level. Thus, here we find support for both of our first two hypotheses (concentrated disadvantage has a positive association with IPV perpetration, and net of this effect, perceived disadvantage has a positive association with IPV perpetration).² Model 2 includes controls for level-one sociodemographic, family, and relationship characteristics. Controlling for these factors, the associations between neighborhood structure and IPV are attenuated. Specifically, the coefficient for concentrated disadvantage is no longer significant, and this is due to the inclusion of the race/ethnicity indicator, as minorities live in significantly more disadvantaged neighborhoods than white respondents. Subjective disorder continues to exert a positive influence on the odds of IPV perpetration, although it is reduced in magnitude. Models 3 and 4 introduce, separately, the measures of emotional distress that we hypothesize will mediate the influence of neighborhood characteristics. Model 3 demonstrates that, net of neighborhood disadvantage and subjective disorder, anger is significantly associated with heightened odds of IPV perpetration. Additionally, the magnitude of the coefficient for subjective disorder is reduced by 29%, and its association with IPV perpetration is no longer significant at conventional levels. In a more direct examination of this mediational process, the results of a Sobel test reveal that subjective disorder does in fact operate indirectly via anger ($z = 3.84, p < .001$). The link between depressive symptoms and IPV perpetration, however, is more tenuous (Model 4); the association between depressive symptoms and IPV perpetration is only marginally significant net of other factors. Model 5 adds anger and depression as a block, and net of neighborhood context, depression, and study covariates, anger continues to exert a positive influence on the odds of IPV perpetration, and just as in Model 3, the influence of neighborhood perceived disadvantage is attenuated by the presence of anger. Across these models, the effect of sociodemographic characteristics remains largely unchanged, with

²In supplemental analyses (not shown due to table space constraints) we also test whether concentrated disadvantage predicts perceived disadvantage, and find that there is a significant effect of disadvantage on subjective disorder ($b = 0.42, p < .001$). Thus, it seems that objective neighborhood conditions influence IPV via their influence on perceptions of disadvantage. This is in line with arguments from mental health literature that argue that objective conditions lead to compromised emotional health via their influence on subjective perceptions of disorder (Hill and Maimon 2013).

female and Hispanic respondents having significantly higher odds of perpetrating IPV compared to male and white respondents. Additionally, respondents living in step-parent households during adolescence, those experiencing coercive parenting, those involved in cohabiting relationships and relationships of longer duration, and those reporting prior IPV exposure had higher odd of perpetrating IPV.

We examined a series of interactions to determine whether the associations between neighborhood disadvantage or perceived disadvantage and IPV perpetration were moderated by emotional distress (anger, depressive symptoms). We present significant interactions in Table 2, Models 6 and 7.

The lack of significance in the interaction terms indicates that concentrated disadvantage and subjective disorder exert a similar influence on IPV perpetration across levels of depressive symptoms (results not shown). However, anger interacts with both objective and subjective disorder. Figures 1 and 2 help illustrate the interaction/amplification process that seems to be working to influence IPV perpetration. At roughly mean levels of anger, the effect of concentrated disadvantage is approximately 0. That is, a unit increase in concentrated disadvantage has little effect on the odds of IPV perpetration ($p = .92$). Similarly, at the lowest levels of anger the effect of concentrated disadvantage is not significantly related to IPV, and thus a unit increase in concentrated disadvantage has little bearing on the odds of IPV perpetration. At the highest levels of anger, however, a unit increase in concentrated disadvantage elevates the odds of IPV perpetration by about 15% (partial slope = $.1386$, $p = .05$). Importantly, as Figure 1 demonstrates, among individuals with high levels of anger situated in neighborhoods with high levels of concentrated disadvantage, the predicted probability of IPV perpetration is $.52$ —a 31% increase over those in contexts of low disadvantage (predicted probability = $.36$).

A similar pattern emerges with subjective disorder. At mean levels of anger, the effect of subjective disorder on IPV perpetration is not statistically significant (partial slope = $.04$, $p = .32$), and this is also the case at low levels of anger (partial slope = $-.04$, $p = .55$). In other words, people have similar (low) odds of perpetrating IPV at low and average levels of reported anger, no matter what their perceptions of neighborhood disadvantage. However, at the highest levels of anger, the effect of subjective disorder exerts a positive influence on the odds of IPV perpetration; a one unit increase in subjective disorder elevates the odds of violence by about 29% (partial slope = $.2507$, $p = .01$). As shown in Figure 2, among individuals with highest levels of anger, the predicted probability of IPV perpetration is 44% greater among those reporting high levels of subjective disorder as compared to those indicating low levels of disadvantage (predicted probabilities = $.54$ and $.30$, respectively). Thus, as it does with structural disadvantage, anger magnifies (amplifies) the influence of perceived disadvantage on the perpetration of IPV among young adults.³

³We also tested interactions with depression but they were not significant. Thus, the amplification process here seems to be restricted to anger. We encourage future scholarship to explore the possibilities for other types of emotional distress (e.g., frustration, anxiety, mistrust) to magnify the effects of neighborhood characteristics on IPV. Moreover, given prior research indicating gendered responses to strain (Jennings, Piquero, Gover, and Perez 2009; Piquero and Sealock 2004; Sharp, Brewster, and Love 2005) we thought it important to test for gender differences in these processes. We did not find any evidence of gender differences, however; the influence of neighborhood conditions and emotional distress indicators influenced IPV perpetration similarly for men and women.

DISCUSSION

This study provides an integrated theoretical lens to examine the link between neighborhood disadvantage and self-reports of intimate partner violence. We combine insights from separate literatures linking neighborhood structural and perceptual factors to mental health, and neighborhood structure and emotions to IPV. This study contributes beyond our prior work suggesting an association between angry emotions and IPV perpetration (Giordano, Copp, Manning, and Longmore 2013) by demonstrating potential mediating and moderating ways in which emotional distress (especially anger) influences intimate partner violence. Our results underscore the complex ways that objective disadvantage, subjective disorder, and emotional distress influence relationship violence. Whereas scholars in the field of IPV have begun to examine neighborhood effects, they often do so without much attention to theoretical processes. Our study confirms the importance of situating IPV within the larger residential environment, and uncovers nuanced patterns of influence in which the neighborhood context has indirect and interactive effects on IPV via its association with anger.

Our first objective was to examine whether structural disadvantage influenced IPV perpetration. Our results demonstrate that it does: higher levels of concentrated disadvantage are associated with higher odds of IPV perpetration. The second objective asked whether perceptions of disadvantage contribute to IPV risk net of objective criteria for neighborhood disadvantage. We find that perceptions of disadvantage influence IPV perpetration net of structural disadvantage, and that these perceptions also explain part of the association between structural disadvantage and IPV perpetration. Third, we considered whether anger and depression mediated the influence of structural disadvantage and subjective disorder on IPV, and we find support that while depression has only a marginal influence on IPV perpetration, anger has a significant positive effect and it also mediates the effect of subjective disorder. The strongest mediation of concentrated disadvantage comes from the addition of sociodemographic and family background characteristics. In particular, race accounts for a large portion of the disadvantage influence on IPV, and family structure accounts for the remaining effect of disadvantage. Racial minorities and those from non-traditional family structures come from neighborhoods characterized by significantly greater disadvantage; thus, once we account for their association, disadvantage no longer has a direct association with IPV.

Further, in line with our fourth objective of examining moderating effects of emotional distress, we find that anger interacts with both concentrated disadvantage and subjective disorder to influence IPV perpetration: anger has a direct and mediating effect on IPV perpetration, but it also magnifies the associations between objective and perceptual conditions. Specifically, concentrated disadvantage has a small positive influence on IPV but its effect is especially pronounced when people report high levels of anger. Thus anger appears to operate as a structural amplifier, as Mirowsky and Ross (2003) discuss in their example of mistrust. Specifically, anger is a mediator of neighborhood conditions, but also a “magnifier of [their] effect” (Mirowsky and Ross 2003:240). Similarly, subjective disorder has a positive association with IPV perpetration, which is mediated by anger, but its effect on the odds of IPV perpetration is much stronger for those who report high levels of anger.

These amplification effects underscore the need for scholarship to further explore the possible nuances of how other measures of emotional distress contextualize the influence of the neighborhood context on partner violence. Additionally, given the important effect of race/ethnicity in accounting for the influence of concentrated disadvantage, future research might consider whether ethnic enclaves or neighborhood racial composition might benefit relationships, to the extent that communities characterized by co-ethnic ties or other resources can help offset feelings of anger or depression.

Although these analyses contribute to the growing body of literature on neighborhood context and IPV, there are a few limitations. First, reports about the neighborhood structure, emotional distress, and IPV perpetration were assessed contemporaneously. Supplemental analyses revealed that both the objective and subjective indicators of the neighborhood context were associated with heightened levels of emotional distress; however, there may be a reciprocal process by which levels of emotional distress influence one's perception of the neighborhood. Moreover, it is also possible that childhood measures of emotional problems or psychopathology can lead to problems with relationships or reduced levels of attainment in adulthood, thereby selecting individuals into more disadvantaged neighborhoods. Similarly, a history of conduct problems or antisocial behavior has been consistently identified as a risk factor for IPV (e.g., Ehrensaft, Cohen, Brown, Smailes, Chen, and Johnson 2003), and a key correlate of anger. These patterns also likely vary by gender, as research suggests that girls who demonstrate callous-unemotional traits engage in different types of aggression (relational as opposed to overt) (Moffitt, Arseneault, Jaffee, Kim-Cohen, Koenen, Odgers, Slutske, and Viding 2008), which could have implications for patterns of partner violence in adulthood. Future research using samples that follow respondents from childhood into adulthood, or that includes measures of childhood and adolescent personality indicators (as well as subtypes of aggression) could help to more definitively sort out these possibilities.

Second, our measure of anger draws on a single item. However, in other analyses using Wave 5 of the TARS data, a similar pattern of findings emerged using this single-item measure of anger as well as a more extensive scale derived from the State-Trait Anger Expression Inventory (STAXI) (e.g., Giordano, Copp, Manning, and Longmore 2013), thus providing more confidence that the results we present here are not hampered by measurement limitations. Finally, this study drew data from a regional sample of young adults in Lucas County, OH. Although these individuals are similar to other nationally representative samples in terms of their sociodemographic profiles, these results are from one geographic area of the country and future scholarship should seek to replicate them with more representative samples.

Third, the current investigation considers the role of emotional processes in the link between the neighborhood context and the experience of partner violence. Our focus, however, is limited to anger and depressive symptoms. Future work may benefit from directing attention to other indicators of emotional well-being, including distress or anxiety symptoms. Furthermore, scholars have suggested that the neighborhood context, including perceptions of disorder, shapes patterns of alcohol and substance use (Hill & Angel, 2005)—both of which are key risk factors for IPV. In order to further explore this potential mechanism, we

ran supplemental analyses that included alcohol and substance use as mediators. However, in these analyses, neither alcohol nor substance use was directly associated with IPV, nor did they mediate the relationship between emotional distress and IPV. Nevertheless, we recommend that future research continue to explore these associations as they may further our understanding of how mental health relates to the use of violence in the intimate context.

Researchers have increasingly looked beyond the individual to understand factors related to the experience of IPV. Our findings are consistent with that work and emphasize the notion that IPV does not occur in isolation, but rather that it is tied to a number of individual-, couple-, and contextual-level factors. To present a multi-faceted explanation of IPV, researchers should continue to examine ways in which the broader context influences the experience of relationship violence. Whereas prior work provides evidence of a link between anger expression styles and IPV, often conceptualizing anger as an individual difference or personality trait, the current findings suggest that anger is fostered by real life conditions. Thus, neighborhood conditions influence a range of daily issues including access to support, housing, and job opportunities. Yet, while our study adds important insight into the complex nature of IPV, future research should build on these analyses to answer additional questions. Beyond exploring the link between additional emotional distress indicators and neighborhood characteristics in other cities/with other samples, a worthy line of research might focus on other possible mediating and moderating mechanisms—in particular, normative and cultural definitions. Finally, given the central role of relationship dynamics in the experience of IPV, future work should continue to examine the ways in which relational considerations condition the influence of other risk factors on partner violence. Neighborhood conditions may influence the inner-workings of romantic relationships, and accordingly, feelings of anger and depression may evolve from the nature and quality of the relationship itself, in addition to external structural forces.

Acknowledgments

This research was supported by grants from The Eunice Kennedy Shriver National Institute of Child Health and Human Development (HD036223 and HD044206), and by the Center for Family and Demographic Research, Bowling Green State University, which has core funding from The Eunice Kennedy Shriver National Institute of Child Health and Human Development (R24HD050959). Additional support was provided by a grant from the National Center for Family and Marriage Research (10450045/58910), which has core funding through the US Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation (5 UOI AE000001-03). The opinions and conclusions expressed herein are solely those of the author(s) and should not be construed as representing the opinions or policy of any agency of the Federal government.

Appendix. Factor Loadings for Concentrated Disadvantage (n = 734)

Indicator	Factor Loadings
Households below the poverty line	0.896
Receipt of public assistance	0.940
Unemployed	0.834
Female-headed households	0.901

REFERENCES

- Abramsky, Tanya; Watts, Charlotte H.; Garcia-Moreno, Claudia; Devries, Karen; Kiss, Ligia; Ellsberg, Mary; Jansen, Henrica AFM.; Heise, Lori. What Factors Are Associated with Recent Intimate Partner Violence? Findings from the Who Multi-Country Study on Women's Health and Domestic Violence. *BMC Public Health*. 2011; 11:109. [PubMed: 21324186]
- Ackerson, Leland K.; Kawachi, Ichiro; Barbeau, Elizabeth M.; Subramanian, SV. Effects of Individual and Proximate Educational Context on Intimate Partner Violence: A Population-Based Study of Women in India. *American Journal of Public Health*. 2008; 98:507–514. [PubMed: 18235066]
- Agnew, Robert. A General Strain Theory of Community Differences in Crime Rates. *Journal of Research in Crime and Delinquency*. 1999; 36:123–155.
- Alvira-Hammond, Marta; Longmore, Monica A.; Manning, Wendy D.; Giordano, Peggy C. Gainful Activity and Intimate Partner Aggression in Emerging Adulthood. *Emerging Adulthood*. 2014; 2:116–127. [PubMed: 25309829]
- Anderson, Kristin L. Perpetrator or Victim? Relationships between Intimate Partner Violence and Well-Being. *Journal of Marriage and Family*. 2002; 64:851–863.
- Aneshensel, Carol S. Toward Explaining Mental Health Disparities. *Journal of Health and Social Behavior*. 2009; 50:377–394. [PubMed: 20099446]
- Basile, Kathleen C.; Smith, Sharon G. Sexual Violence Victimization of Women: Prevalence, Characteristics, and the Role of Public Health and Prevention. *American Journal of Lifestyle Medicine*. 2011; 5:407–417.
- Benson, Michael L.; Fox, Greer L. When Violence Hits Home: How Economics and Neighborhood Play a Role. National Institute of Justice, U.S. Department of Justice; 2004.
- Benson, Michael L.; Fox, Greer L.; DeMaris, Alfred; Van Wyk, Judy. Neighborhood Disadvantage, Individual Economic Distress and Violence against Women in Intimate Relationships. *Journal of Quantitative Criminology*. 2003; 19:207–235.
- Benson, Michael L.; Wooldredge, John; Thistlethwaite, Amy; Fox, Greer L. The Correlation between Race and Domestic Violence Is Confounded with Community Context. *Social Problems*. 2004; 51:326–342.
- Beydoun, Hind A.; Beydoun, May A.; Kaufman, Jay S.; Lo, Bruce; Zonderman, Alan B. Intimate Partner Violence against Adult Women and Its Association with Major Depressive Disorder, Depressive Symptoms and Postpartum Depression: A Systematic Review and Meta-Analysis. *Social Science & Medicine*. 2012; 75:959–975. [PubMed: 22694991]
- Black, Michele C.; Basile, Kathleen C.; Brieding, Matthew J.; Smith, Sharon G.; Walters, Mikel L.; Merrick, Melissa T.; Chen, Jieru; Stevens, Mark R. The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; Atlanta, GA: 2011.
- Brieding, Matthew J.; Black, Michele C.; Ryan, George W. Chronic Disease and Health Risk Behaviors Associated with Intimate Partner Violence--18 U.S. States/Territories, 2005. *Annals of Epidemiology*. 2005; 18:538–544. [PubMed: 18495490]
- Brezina, Timothy; Piquero, Alex R.; Mazerolle, Paul. Student Anger and Aggressive Behavior in School: An Initial Test of Agnew's Macro-Level Strain Theory. *Journal of Research in Crime and Delinquency*. 2001; 38:362–386.
- Brown, Susan L.; Bulanda, Jennifer R. Relationship Violence in Young Adulthood: A Comparison of Daters, Cohabitors, and Marrieds. *Social Science Research*. 2008; 37:73–87.
- Browning, Christopher R. The Span of Collective Efficacy: Extending Social Disorganization Theory to Partner Violence. *Journal of Marriage and Family*. 2002; 64:833–850.
- Browning, Christopher R.; Leventhal, Tama; Brooks-Gunn, Jeanne. Neighborhood Context and Racial Differences in Early Adolescent Sexual Activity. *Demography*. 2004; 41:697–720. [PubMed: 15622950]
- Caetano, Raul; Field, Craig A.; Ramisetty-Mikler, Suhasini; McGrath, Christine. The 5-Year Course of Intimate Partner Violence among White, Black, and Hispanic Couples in the United States. *Journal of Interpersonal Violence*. 2005; 20:1039–1057. [PubMed: 16051726]

- Caetano, Raul; Ramisetty-Mikler, Suhasini; Harris, T. Robert Neighborhood Characteristics as Predictors of Male to Female and Female to Male Partner Violence. *Journal of Interpersonal Violence*. 2010; 25:1986–2009. [PubMed: 20040713]
- Capaldi, Deborah M.; Clark, Sara. Prospective Family Predictors of Aggression toward Female Partners for at-Risk Young Men. *Developmental psychology*. 1998; 34:1175. [PubMed: 9823503]
- Coker, Ann L.; Davis, Keith E.; Arias, Ileana; Desai, Sujata; Sanderson, Maureen; Brandt, Heather M.; Smith, Paige H. Physical and Mental Health Effects of Intimate Partner Violence for Men and Women. *American journal of preventive medicine*. 2002; 23:260–268. [PubMed: 12406480]
- Copp, Jennifer E. Normative Beliefs, Financial Strains, and Intimate Partner Violence in Young Adulthood. Bowling Green State University, Sociology; 2014. Doctoral Dissertation
- Cui, Ming; Durtschi, Jared A.; Donnellan, M Brent; Lorenz, Frederick O.; Conger, Rand D. Intergenerational Transmission of Relationship Aggression: A Prospective Longitudinal Study. *Journal of Family Psychology*. 2010; 24:688. [PubMed: 21171767]
- Cunradi, Carol B.; Caetano, Raul; Clark, Catherine; Schafer, John. 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*. 2000; 10:297–308. [PubMed: 10942878]
- DeJong, Christina; Pizarro, Jesenia M.; McGarrell, Edmund F. Can Situational and Structural Factors Differentiate between Intimate Partner and “Other” Homicide? *Journal of Family Violence*. 2011; 26:365–376.
- DeMaris, Alfred; Benson, Michael L.; Fox, Greer L.; Hill, Terrence; Van Wyk, Judy. Distal and Proximal Factors in Domestic Violence: A Test of an Integrated Model. *Journal of Marriage and Family*. 2003; 65:652–667.
- Diem, Chelsea; Pizarro, Jesenia M. Social Structure and Family Homicides. *Journal of Family Violence*. 2010; 25:521–532.
- Ehrensaft, Miriam K.; Cohen, Patricia; Brown, Jocelyn; Smailes, Elizabeth; Chen, Henian; Johnson, Jeffrey G. Intergenerational Transmission of Partner Violence: A 20-Year Prospective Study. *Journal of Counseling and Clinical Psychology*. 2003; 71:741–753.
- Faris, Robert E.; Dunham, Henry W. *Mental Disorders in Urban Areas: An Ecological Study of Schizophrenia and Other Psychoses*. University of Chicago Press; Oxford: 1939.
- Follingstad, Diane R.; Wright, Shannon; Lloyd, Shirley; Sebastian, Jeri A. Sex Differences in Motivations and Effects in Dating Violence. *Family Relations*. 1991; 40:51–57.
- Fox, Greer Litton; Benson, Michael L. Household and Neighborhood Contexts of Intimate Partner Violence. *Public Health Reports*. 2006; 121:419–427. [PubMed: 16827443]
- Frye, Victoria; Galea, Sandro; Tracy, Melissa; Bucciarelli, Angela; Putnam, Sara; Wilt, Susan. The Role of Neighborhood Environment and Risk of Intimate Partner Femicide in a Large Urban Area. *American Journal of Public Health*. 2008; 98:1473–1479. [PubMed: 18556618]
- Frye, Victoria; O’Campo, Patricia. Neighborhood Effects and Intimate Partner and Sexual Violence: Latest Results. *Journal of Urban Health*. 2011; 88:187–190. [PubMed: 21336999]
- Frye, Victoria; Wilt, Susan. Femicide and Social Disorganization. *Violence Against Women*. 2001; 7:335–351.
- Gage, Anastasia J.; Hutchinson, Paul L. Power, Control, and Intimate Partner Sexual Violence in Haiti. *Archives of Sexual Behavior*. 2006; 35:11–24. [PubMed: 16502150]
- Galea, Sandro; Ahern, Jennifer; Rudenstine, Sasha; Wallace, Zachary; Vlahov, David. Urban Built Environment and Depression: A Multilevel Analysis. *Journal of Epidemiology and Community Health*. 2005; 59:822–827. [PubMed: 16166352]
- Giordano, Peggy C.; Copp, Jennifer E.; Manning, Wendy D.; Longmore, Monica A. 2013 Working Paper Series. Center for Family and Demographic Research: Bowling Green State University; 2013. Anger, Control, and Intimate Partner Violence in Young Adulthood: A Symbolic Interactionist Perspective.
- Gomez, Anu Manchikanti. Testing the Cycle of Violence Hypothesis: Child Abuse and Adolescent Dating Violence as Predictors of Intimate Partner Violence in Young Adulthood. *Youth & Society*. 2011; 43:171–192.
- Guo, Guang; Zhao, Hongxin. Multilevel Modeling for Binary Data. *Annual Review of Sociology*. 2000; 26:441–62.

- Halpern-Meehin, Sarah; Manning, Wendy D.; Giordano, Peggy C.; Longmore, Monica A. Relationship Churning, Physical Violence, and Verbal Abuse in Young Adult Relationships. *Journal of Marriage and Family*. 2013; 75:2–12. [PubMed: 24000263]
- Hamberger, L. Kevin; Hastings, James E. Personality Correlates of Men Who Abuse Their Partners: A Cross-Validation Study. *Journal of Family Violence*. 1986; 1:323–341.
- Herrera, Veronica; Wiersma, Jacquelyn D.; Cleveland, H. Harrington The Influence of Individual and Partner Characteristics on the Perpetration of Intimate Partner Violence in Young Adult Relationships. *Journal of Youth and Adolescence*. 2008; 37:284–296.
- Hill, Terrence D.; Maimon, David. *Handbook of the Sociology of Mental Health*. Springer; 2013. Neighborhood Context and Mental Health; p. 479-501.
- Hill, Terrence D.; Angel, Ronald J. Neighborhood Disorder, Psychological Distress, and Heavy Drinking. *Social Science & Medicine*. 2005; 61:965–975. [PubMed: 15955398]
- Hill, Terrence D.; Kaplan, Lauren M.; French, Michael T.; Johnson, Robert J. Victimization in Early Life and Mental Health in Adulthood: An Examination of the Mediating and Moderating Influences of Psychosocial Resources. *Journal of Health and Social Behavior*. 2010; 51:48–63. [PubMed: 20420294]
- Hill, Terrence D.; Mossakowski, Krysia N.; Angel, Ronald J. Relationship Violence and Psychological Distress among Low-Income Urban Women. *Journal of Urban Health*. 2007; 84:537–551. [PubMed: 17457676]
- Hill, Terrence D.; Schroeder, Ryan D.; Bradley, Christopher; Kaplan, Lauren M.; Angel, Ronald J. The Long-Term Health Consequences of Relationship Violence in Adulthood: An Examination of Low-Income Women from Boston, Chicago, and San Antonio. *American Journal of Public Health*. 2009; 99:1645–1650. [PubMed: 19608949]
- Hoffmann, John P. A Contextual Analysis of Differential Association, Social Control, and Strain Theories of Delinquency. *Social Forces*. 2003; 81:753–785.
- Hoffmann, John P.; Ireland, Timothy O. Strain and Opportunity Structures. *Journal of Quantitative Criminology*. 2004; 20:263–292.
- Huang, Chien-Chung; Son, Esther; Wang, Lih-Rong. Prevalence and Factors of Domestic Violence among Unmarried Mothers with a Young Child. *Families in Society: The Journal of Contemporary Social Services*. 2010; 91:171–177.
- Jackson, Susan M.; Cram, Fiona; Seymour, Fred W. Violence and Sexual Coercion in High School Students' Dating Relationships. *Journal of Family Violence*. 2000; 15:23–36.
- Jennings, Wesley G.; Piquero, Nicole L.; Gover, Angela R.; Perez, Deanna M. Gender and General Strain Theory: A Replication and Exploration of Brody and Agnew's Gender/Strain Hypotheses among a Sample of Southwestern Mexican American Adolescents. *Journal of Criminal Justice*. 2009; 37:404–417.
- Johnson, Wendi L.; Giordano, Peggy C.; Longmore, Monica A.; Manning, Wendy D. Developmental Trajectories of Intimate Partner Violence and Depressive Symptoms. *Journal of Health and Social Behavior*. 2014
- Kim, Hyoun K.; Laurent, Heidemarie K.; Capaldi, Deborah M.; Feingold, Alan. Men's Aggression toward Women: A 10-Year Panel Study. *Journal of Marriage and Family*. 2008; 70:1169–1187. [PubMed: 19122790]
- Kim, Joongbaeck. Neighborhood Disadvantage and Mental Health: The Role of Neighborhood Disorder and Social Relationships. *Social Science Research*. 2010; 39:260–271.
- Kubrin, Charis E.; Weitzer, Ronald. New Directions in Social Disorganization Theory. *Journal of Research in Crime and Delinquency*. 2003; 40:374–402.
- Latkin, Carl A.; Curry, Aaron D. Stressful Neighborhoods and Depression: A Prospective Study of the Impact of Neighborhood Disorder. *Journal of Health and Social Behavior*. 2003; 44:34–44. [PubMed: 12751309]
- Lauritsen, Janet L.; Schaum, Robin J. The Social Ecology of Violence against Women. *Criminology*. 2004; 42:323–357.
- Li, Qing; Kirby, Russell S.; Sigler, Tobert T.; Hwang, Sean-Shong; LaGory, Mark E.; Goldenberg, Robert L. A Multilevel Analysis of Individual, Household, and Neighborhood Correlates of

- Intimate Partner Violence among Low-Income Pregnant Women in Jefferson County, Alabama. *American Journal of Public Health*. 2010; 100:531–539. [PubMed: 19696385]
- Logan TK, Cole Jennifer. The Impact of Partner Stalking on Mental Health and Protective Order Outcomes over Time. *Violence and Victims*. 2007; 22:546–562. [PubMed: 18064969]
- Magdol, Lynn; Moffitt, Terrie E.; Caspi, Avshalom; Silva, Phil A. Hitting without a License: Testing Explanations for Differences in Partner Abuse between Young Adult Daters and Cohabiters. *Journal of Marriage and Family*. 1998; 60:41–55.
- Matheson, Flora I.; Moineddin, Rahim; Dunn, James R.; Creatore, Maria Isabella; Gozdyra, Piotr; Glazier, Richard H. Urban Neighborhoods, Chronic Stress, Gender, and Depression. *Social Science & Medicine*. 2006; 63:2604–2616. [PubMed: 16920241]
- Mathieu, John E.; Aguinis, Herman; Culpepper, Steven A.; Chen, Gilad. Understanding and Estimating the Power to Detect Cross-Level Interaction Effects in Multilevel Modeling. *Journal of Applied Psychology*. 2012; 97:951–966. [PubMed: 22582726]
- Miles-Doan, Rebecca. Violence between Spouses and Intimates: Does Neighborhood Context Matter? *Social Forces*. 1998; 77:623–645.
- Miller, Jody; White, Norman A. Gender and Adolescent Relationship Violence: A Contextual Examination. *Criminology*. 2003; 41:1207–1248.
- Mirowsky, John; Ross, Catherine E. *Social Causes of Psychological Distress*. Aldine de Gruyter; Hawthorne, New York: 2003.
- Moffitt, Terrie E.; Arseneault, Louise; Jaffee, Sara R.; Kim-Cohen, Julia; Koenen, Karestan C.; Odgers, Candice L.; Slutske, Wendy S.; Viding, Essi. Research Review: Dsm-V Conduct Disorder: Research Needs for an Evidence Base. *Journal of Child Psychology and Psychiatry*. 2008; 49:3–33. [PubMed: 18181878]
- O’Campo, Patricia; Gielen, Andrea C.; Faden, Ruth R.; Xue, Xiaonan; Kass, Nancy; Wang, Mei-Cheng. Violence by Male Partners against Women During the Childbearing Year: A Contextual Analysis. 1995; 85:1092–1097.
- Op de Beeck, Hanne; Pauwels, Lieven J.R.; Put, Johan. Schools, Strain, and Offending: Testing a School Contextual Version of General Strain Theory. *European Journal of Criminology*. 2012; 9:52–72.
- Parks, Lisa Fujie; Cohen, Larry; Kravitz-Wirtz, Nicole. *Poised for Prevention: Advancing Promising Approaches to Primary Prevention of Intimate Partner Violence*. Prevention Institute; Oakland, CA: 2007.
- Pearlman, Deborah N.; Zierler, Sally; Gjelsvik, Annie; Verhoek-Oftedahl, Wendy. Neighborhood Environment, Racial Position, and Risk of Police-Reported Domestic Violence: A Contextual Analysis. *Public Health Reports*. 2003; 118:44–58. [PubMed: 12604764]
- Piquero, Nicole Leeper; Sealock, Miriam D. Gender and General Strain Theory: A Preliminary Test of Broidy and Agnew’s Gender/Gst Hypotheses. *Justice Quarterly*. 2004; 21:125–158.
- Radloff, Leonore Sawyer. The Ces-D Scale: A Self-Report Depression Scale for Research in the General Population. *Applied Psychological Measurement*. 1977; 1:385–401.
- Renner, Lynette M.; Slack, Kristen Shook. Intimate Partner Violence and Child Maltreatment: Understanding Intra- and Intergenerational Connections. *Child Abuse & Neglect*. 2006; 30:599–617. [PubMed: 16782195]
- Ross, Catherine E. Neighborhood Disadvantage and Adult Depression. *Journal of Health and Social Behavior*. 2000; 41:177–187.
- Ross, Catherine E.; Mirowsky, John. Neighborhood Disorder, Subjective Alienation, and Distress. *Journal of Health and Social Behavior*. 2009; 50:49–64. [PubMed: 19413134]
- Ross, Catherine E.; Mirowsky, John; Pribesh, Shana. Powerlessness and the Amplification of Threat: Neighborhood Disadvantage, Disorder, and Mistrust. *American Sociological Review*. 2001; 66:568–591.
- Ross, Catherine E.; Reynolds, John R.; Geis, Karlyn J. The Contingent Meaning of Neighborhood Stability for Residents’ Psychological Well-Being. *American Sociological Review*. 2000; 65:581–595.

- Sampson, Robert J.; Wilson, William Julius. Toward a Theory of Race, Crime, and Urban Inequality. In: Hagan, J.; Peterson, RD., editors. *Crime and Inequality*. Stanford University Press; Stanford: 1995. p. 37-54.
- Schieman, Scott; Meersman, Stephen C. Neighborhood Problems and Health among Older Adults: Received and Donated Social Support and the Sense of Mastery as Effect Modifiers. *The Journals of Gerontology: Series B*. 2004; 59:S89–S97.
- Sharp, Susan F.; Brewster, Dennis; Love, Sharon RedHawk. Disentangling Strain, Personal Attributes, Affective Response and Deviance: A Gendered Analysis. *Deviant Behavior*. 2005; 26:133–157.
- Shaw, Clifford R.; McKay, Henry D. *Juvenile Delinquency and Urban Areas*. University of Chicago Press; Chicago: 1942.
- Silver, Eric; Mulvey, Edward P.; Swanson, Jeffrey W. Neighborhood Structural Characteristics and Mental Disorder: Faris and Dunhan Revisited. *Social Science & Medicine*. 2002; 55:1457–1470. [PubMed: 12231022]
- Snedker, Karen A.; Hooven, Carole. Neighborhood Perceptions and Emotional Well-Being in Young Adulthood. *Journal of Child and Adolescent Psychiatric Nursing*. 2013; 26:62–73. [PubMed: 23351109]
- Snijders, Tom A.B.; Bosker, Roel J. *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling*. Sage; Los Angeles, CA: 2012.
- Stets, Jan E.; Straus, Murray A. The Marriage License as a Hitting License: A Comparison of Assaults in Dating, Cohabiting, and Married Couples. *Journal of Family Violence*. 1989; 4:161–180.
- Straus, Murray A. Social Stress and Marital Violence in a National Sample of American Families. In: Straus, MA.; Gelles, RJ., editors. *Physical Violence in American Families: Risk Factors and Adaptations in 8,145 Families*. Transaction; New Brunswick, NJ: 1990. p. 49-73.
- Straus, Murray A.; Gelles, Richard J.; Steinmetz, Suzanne K. *Behind Closed Doors: Violence in the American Family*. Doubleday; Garden City, NY: 1980.
- Straus, Murray A.; Hamby, Sherry L.; Boney-McCoy, Sue; Sugarman, David B. The Revised Conflict Tactics Scale (CTS2): Development and Preliminary Psychometric Data. *Journal of Family Issues*. 1996; 13:283–316.
- Sutherland, Cheryl A.; Bybee, Deborah I.; Sullivan, Cris M. Beyond Bruises and Broken Bones: The Joint Effects of Stress and Injuries on Battered Women's Health. *American Journal of Community Psychology*. 2002; 30:609–636. [PubMed: 12188053]
- Swan, Suzanne C.; Gambone, Laura J.; Fields, Alice M.; Sullivan, Tami P.; Snow, David L. Women Who Use Violence in Intimate Relationships: The Role of Anger, Victimization, and Symptoms of Posttraumatic Stress and Depression. *Violence and Victims*. 2005; 20:267–285. [PubMed: 16180367]
- Teachman, Jay. Modeling Repeated Events Using Discrete-Time Data: Predicting Marital Dissolution. *Journal of Marriage and Family*. 2011; 73:525–540.
- Van Wyk, Judy; Benson, Michael L.; Fox, Greer L.; DeMaris, Alfred. Detangling Individual-, Partner-, and Community-Level Correlates of Partner Violence. *Crime and Delinquency*. 2003; 49:412–438.
- VanderEnde, Kristin E.; Yount, Kathryn M.; Dynes, Michelle M.; Sibley, Lynn M. Community-Level Correlates of Intimate Partner Violence against Women Globally: A Systematic Review. *Social Science & Medicine*. 2012; 75:1143–1155. [PubMed: 22762950]
- Vest, Joshua R.; Catlin, Tegan K.; Chen, John J.; Brownson, Ross C. Multistate Analysis of Factors Associated with Intimate Partner Violence. *American journal of preventive medicine*. 2002; 22:156–164. [PubMed: 11897459]
- Wareham, Jennifer; Cochran, John K.; Dembo, Richard; Sellers, Christine S. Community, Strain, and Delinquency: A Test of a Multi-Level Model of General Strain Theory. *Western Criminology Review*. 2005; 6:117–133.
- Warner, Tara D.; Giordano, Peggy C.; Manning, Wendy D.; Longmore, Monica A. Everybody's Doin' It (Right?): Neighborhood Norms and Sexual Activity in Adolescence. Center for Family and Demographic Research; 2011. Working Paper Series, 2011-01, <http://www.bgsu.edu/organizations/cfdr/page93957.html>

- White, Helene Raskin; Widom, Cathy Spatz. Intimate Partner Violence among Abused and Neglected Children in Young Adulthood: The Mediating Effects of Early Aggression, Antisocial Personality, Hostility and Alcohol Problems. *Aggressive Behavior*. 2003; 29:332–345.
- Wolf, Kimberly A.; Foshee, Vangie A. Family Violence, Anger Expression Styles, and Adolescent Dating Violence. *Journal of Family Violence*. 2003; 18:309–316.
- Wooldredge, John; Thistlethwaite, Amy. Neighborhood Structure and Race-Specific Rates of Intimate Assault. *Criminology*. 2003; 41:393–422.
- Wright, Emily M.; Benson, Michael L. Clarifying the Effects of Neighborhood Context on Violence “Behind Closed Doors”. *Justice Quarterly*. 2011; 28:775–798.
- Wright, Emily M.; Fagan, Abigail A. The Cycle of Violence in Context: Exploring the Moderating Roles of Neighborhood Disadvantage and Cultural Norms. *Criminology*. 2013; 51:217–249. [PubMed: 25147403]
- Wu, Bohsiu. Intimate Homicide between Asians and Non-Asians: The Impact of Community Context. *Journal of Interpersonal Violence*. 2009; 24:1148–1164. [PubMed: 18701742]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

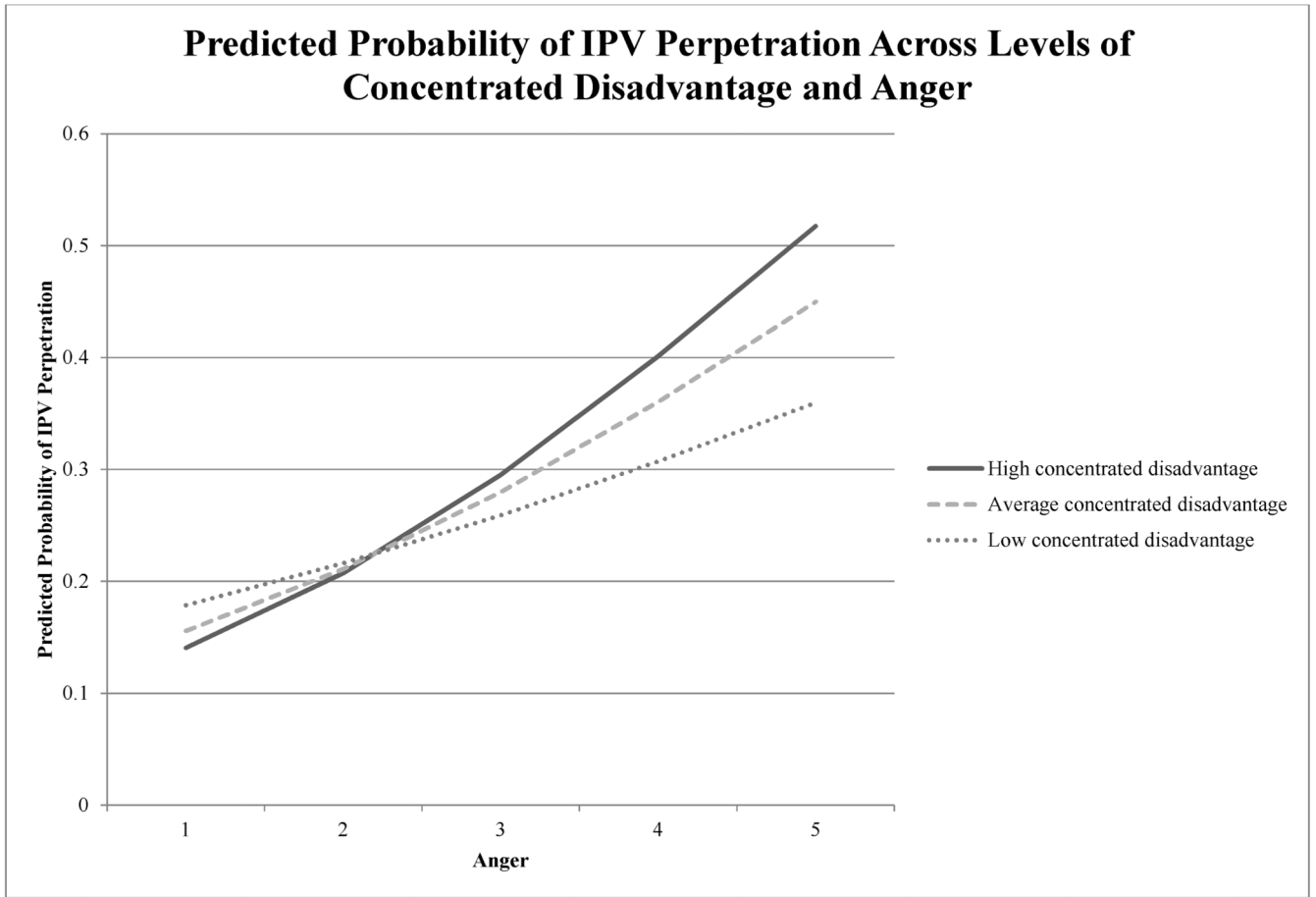


Figure 1.

Predicted Probability of IPV Perpetration Across Levels of Subjective Disorder and Anger

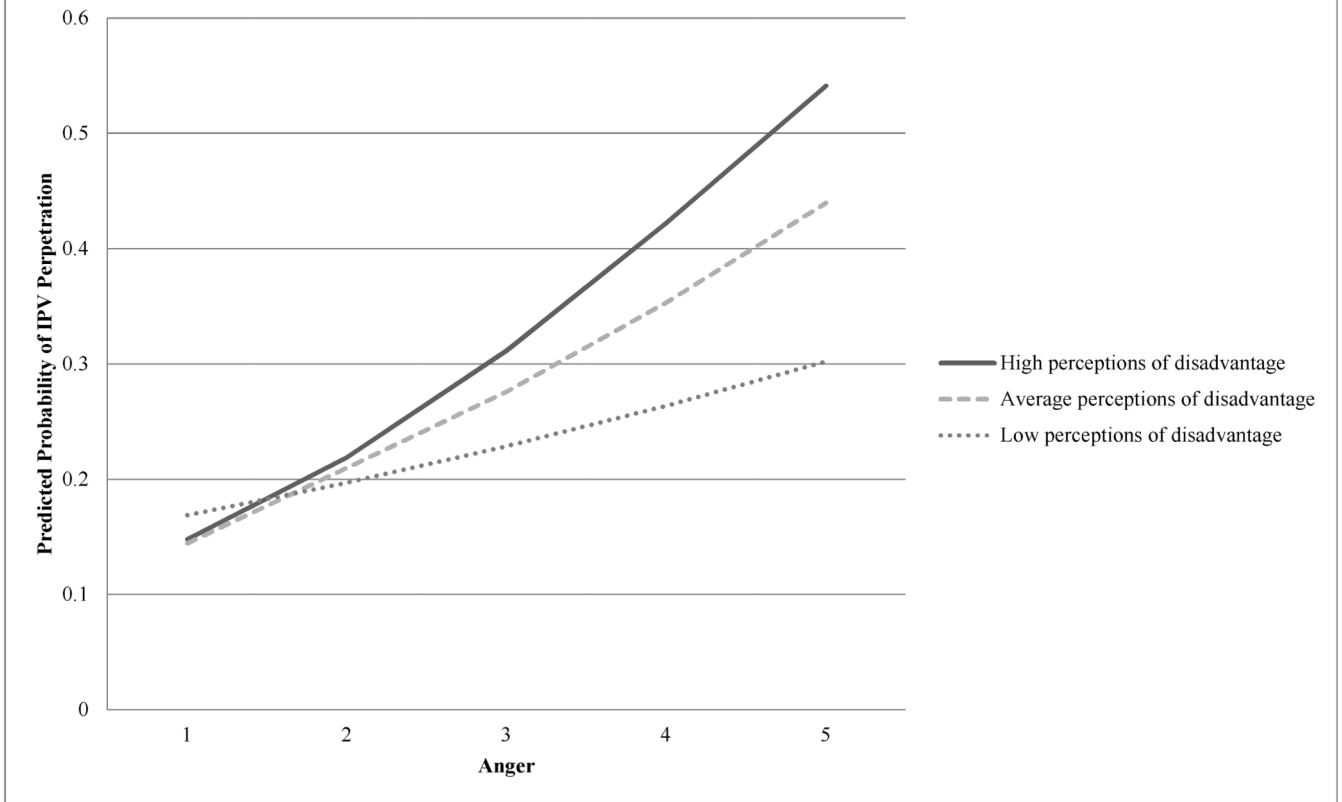


Figure 2.

Table 1
Means/Percentages and Standard Deviations of all Variables (n = 734)

Variable	Full Sample		No Perpetration (n = 540)		Perpetration (n = 194)	
	Mean/Percentage	SD	Mean/Percentage	SD	Mean/Percentage	SD
<i>Dependent Variable</i>						
IPV Perpetration	25.21%		--		--	
<i>Neighborhood Characteristics</i>						
Concentrated disadvantage	-0.01	3.54	-0.38	3.40	1.10	3.71
Subjective disorder	2.35	2.62	2.04	2.50	3.25	2.77
<i>Emotional Distress</i>						
Anger	2.15	1.02	2.03	0.98	2.50	1.06
Depression	14.45	8.02	13.89	7.71	16.11	8.71
<i>Sociodemographic Factors</i>						
Female	49.33%		45.11%		61.86%	
Age	20.26	1.79	20.21	1.78	20.41	1.84
Black	24.19%		21.99%		30.72%	
Hispanic	7.51%		5.97%		12.08%	
Gainful Activity	72.68%		75.50%		64.32%	
<i>Family Background Factors</i>						
Single parent	23.75%		22.29%		28.08%	
Step-parent	12.50%		10.97%		17.05%	
Other	12.23%		10.55%		17.20%	
Mother's Educ. < high school	11.46%		9.23%		18.05%	
Mother's Educ. some college	34.69%		34.52%		35.22%	
Mother's Educ. college or >	21.76%		24.13%		14.75%	
Coercive parenting	1.87	0.58	1.83	0.54	1.99	0.65
<i>Relationship Factors</i>						
Cohabiting	20.94%		16.91%		32.91%	
Married	5.73%		4.88%		8.24%	
Relationship Duration	6.66	1.74	6.50	1.77	7.12	1.57
Children	20.19%		16.29%		31.73%	

Variable	Full Sample		No Perpetration (n = 540)		Perpetration (n = 194)	
	Mean/Percentage	SD	Mean/Percentage	SD	Mean/Percentage	SD
Prior IPV (Wave 1)	20.88%		16.59%		33.61%	

* p < .05;

** p < .01;

*** p < .001

Table 2
Odds Ratios for the Multilevel Logistic Regression of Relationship Violence on Neighborhood & Individual Predictors (n=734)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Neighborhood Characteristics</i>							
Concentrated disadvantage	1.064*	1.024	1.017	1.024	1.017	0.996	1.017
Subjective disorder	1.123***	1.091*	1.064	1.080	1.061	1.066	1.045
<i>Emotional Distress</i>							
Anger		1.535***		1.512***	1.451***	1.435	1.435
Depression			1.019	1.008	1.008	1.008	1.007
<i>Sociodemographic Factors</i>							
Female		2.094***	2.331***	2.067***	2.306***	2.228***	2.261***
Age		0.984	0.980	0.980	0.979	0.966	0.968
Black		1.249	1.268	1.252	1.269	1.284	1.276
Hispanic		1.910*	1.968*	1.919*	1.969*	2.054*	2.005*
Gainful Activity		1.054	1.155	1.120	1.181	1.192	1.199
<i>Family Background Factors</i>							
Single parent		1.058	0.968	1.080	0.978	0.947	0.932
Step-parent		1.684	1.665	1.645	1.650	1.620	1.729
Other family structure		1.267	1.239	1.288	1.246	1.266	1.282
Mother's education < high school		1.269	1.394	1.276	1.392	1.404	1.411
Mother's education some college		0.977	1.019	0.956	1.009	0.985	0.982
Mother's education college or >		0.973	0.928	0.865	0.920	0.887	0.891
Coercive parenting		1.693***	1.528**	1.680**	1.526**	1.529**	1.559**
<i>Relationship Factors</i>							
Cohabiting		1.536	1.623*	1.586	1.644*	1.714*	1.639*
Married		1.535	1.884	1.581	1.896	1.959	1.985
Relationship Duration		1.127	1.155*	1.124	1.153*	1.157*	1.154*
Children		0.852	0.829	0.845	0.827	0.850	0.837
Prior IPV (Wave 1)		2.391***	2.393***	2.399***	2.398***	2.482***	2.414***

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Concentrated disadvantage × anger						1.051*	
Subjective disorder × anger							1.075*
σ^2 intercept	0.09	0.05	0.03	0.05	0.03	0.05	0.04

* $p < .05$;

** $p < .01$;

*** $p < .001$