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Testing the Cycle of Violence Hypothesis: Child Abuse and Adolescent Dating Violence as Predictors of Intimate Partner Violence in Young Adulthood

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Abstract

Child abuse is an important determinant of future violence perpetration and victimization. Past research examining linkages between child abuse and adult intimate partner violence (IPV) has predominantly focused on married individuals and not considered adolescent dating violence. In the present study, data from three waves of the National Longitudinal Study of Adolescent Health are used to examine the impact of child abuse and adolescent dating violence on the likelihood of IPV victimization and perpetration in young adulthood. Child abuse and adolescent dating violence are common in this study population and are highly predictive of IPV. In regression models stratified by gender, child abuse and adolescent dating violence are significant predictors of IPV victimization and perpetration for both men and women, but the magnitude of these associations differs by gender. Although gender

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differences exist, it appears that experiencing violence during childhood and/or adolescence is highly predictive of IPV in young adulthood.

Keywords

child abuse, dating violence, intimate partner violence

Introduction

Intimate partner violence (IPV) is a pervasive public health problem in the United States. Nearly 29% of American women and 23% of men have experienced IPV—broadly defined as psychological, physical, or sexual violence perpetrated by a current or former spouse, partner, or lover—during their lifetimes (Coker et al, 2002). Of violent crimes committed by partners, 85% are against women (Rennison & Welchans, 2000), although men may also be victimized. Women between the ages of 16 and 24 are at the greatest risk for nonfatal IPV, the time during life when they are most likely to be dating (Rennison & Welchans, 2000). Dating violence is alarmingly common among adolescents, with 32% of in-school adolescents reporting some form of psychological or physical abuse by heterosexual partners (Halpern, Oslak, Young, Martin, & Kupper, 2001). The sequalae of IPV include increased risk for sexually transmitted infections, unintended pregnancy, decreased condom negotiation skills, greater number of lifetime sex partners, and poor mental health (Campbell et al., 2002; Coker et al., 2002; Goodwin et al., 2000; Hathaway et al., 2000; Plichta & Falik, 2001; Silverman, Raj, Mucci, & Hathaway, 2001; Smith, Thornton, DeVellis, Earp, & Coker, 2002; Weinbaum et al., 2001). Furthermore, women who are victims of child abuse face many of the same adverse health outcomes (Bensley, Van Eenwyk, & Simmons, 2003; Noll, Horowitz, Bonanno, Trickett, & Putnam, 2003; Noll, Trickett, & Putnam, 2003). Nearly all research studies on the health effects of violence in relationships focus on IPV and its effects on women (Chen & White, 2004). IPV is a serious human rights and health issue, and a better understanding of its risk factors is necessary for the development of effective public health interventions.

The cycle of violence hypothesis postulates that children who experience abuse and maltreatment are more likely to experience and perpetrate violence as they age (Heyman & Sleps, 2002). Abused children may often be rejected by their "normal" peers and seek friendships with deviant peer groups, choosing romantic partners from these peers during adolescence and young adulthood (Feiring & Furman, 2000). Indeed, many studies find a greater risk

of adulthood violence victimization and perpetration among victims of child abuse (Bensley et al., 2003; Dunkle et al., 2004; Ehrensaft et al., 2003; Heyman & Sleps, 2002; Noll, Horowitz, et al., 2003). However, parental maltreatment of children may represent a constellation of other disadvantages, including sociodemographic, economic, cultural, and environmental influences that are risk factors for later aggression (Neugebauer, 2000). For example, in a prospective birth-cohort study in New Zealand, Fergusson and Lynskey (1997) find that participants who retrospectively report child maltreatment at age 18 had a tendency to come from disadvantaged families and experienced more childhood adversity than those who were not maltreated. In interpreting these findings, the authors argue that interventions should not solely focus on individual-level factors but should consider context. There is a dearth of studies that recognize that social and contextual factors correlated with both child abuse and the risk of adult IPV may be reflected in the strong association between these two factors, rather than a singular, direct effect of violence (Mullen, Martin, Anderson, Romans, & Herbison, 1996). Similarly, much research on child abuse fails to consider the effect of adolescent dating violence and vice versa (Maker, Kemmelmeier, & Peterson, 2001). Women who experience dating violence during adolescence (broadly, ages 12-19) are found to be at risk of repeat violence in young adulthood (ages 20-26; Smith, White, & Holland, 2003).

Past research examining linkages between child abuse and adult IPV is limited by its focus on married individuals (Feiring & Furman, 2000; Kwong, Bartholomew, Henderson, & Trinke, 2003). As the greatest risk of IPV comes during a period prior to the average age of marriage, it is vital to examine violence in sexual and romantic relationships that are characterized as dating, cohabiting, and casual. In addition, many studies use cross-sectional, nonrepresentative samples and tend to only consider women as victims and men as perpetrators (Chen & White, 2004; Fergusson & Lynskey, 1997; Kimmel, 2002). Although the majority of reported IPV crimes in the United States are committed against women, men are also often the victim of women's psychological and physical abuse (Rennison & Welchans, 2000). Female IPV perpetration may be concurrent with their victimization; that is, women may perpetrate violence to protect themselves and/or their children or in retaliation to being victimized (Chen & White, 2004).

An understanding of the causes of violence against women is offered by Heise's (1998) adaptation of ecological systems theory (Bronfenbrenner, 1979), a framework for studying violence against women that incorporates individual, situational, and sociocultural factors. As relevant to this analysis, Heise suggests several layers of risk factors. Individual factors, or those that

shape an individual's response to stressors from other levels, that put men at greater risk of perpetrating IPV include witnessing domestic violence as a child, being abused as a child, and having an absent or rejecting father. In addition, this analysis examines exosystem, particularly social, factors. The exosystem refers to social structures that influence individual behaviors. Exosystem factors linked to violence against women include unemployment, low socioeconomic status, social isolation, and delinquent peer associations. Although the framework has been specifically developed as a tool for organizing research on violence against women, many of the factors that Heise identifies are also germane to female perpetration of violence and male victimization.

In addition, the cycle of violence hypothesis may be explained by social learning theory (Bandura, 1977). According to social learning theory, behaviors are learned from observations. Thus, victims of child abuse enter adolescence and adulthood with the belief that aggression is a method for dealing with interpersonal conflict. Furthermore, victims of child abuse may respond to IPV with learned helplessness. Feelings of powerlessness or inability to cope with trauma may be initiated through experience of uncontrollability in the family of origin (Walker, 1983).

Social disorganization theory incorporates contextual factors that may precede child abuse and adult IPV. The theory suggests that a lack of neighborhood cohesiveness affects communities' ability to mobilize resources to address crime and violence. The confluence of poverty, racial heterogeneity, and residential instability affect collective efficacy by limiting the formation of lasting relationships, community attachment, and common goals (Sampson, Raudenbush, & Earls, 1997). Sampson and colleagues (1997) apply social disorganization theory to the study of collective efficacy and violent crimes in Chicago neighborhoods. The authors find that three dimensions of neighborhood social characteristics (concentrated disadvantage, immigrant concentration, and residential stability) explain 70% of neighborhood variation in collective efficacy. Browning (2002) extends the work of Sampson et al. to the study of community-level processes influencing IPV in Chicago neighborhoods. Both Browning and Sampson et al. find that the influence of the three areas of social factors on violence is mediated by collective efficacy.

Little quantitative research incorporates parental and social factors in examining the association between child abuse and adult IPV. This study aims to fill a gap in the literature by using a longitudinal, nationally representative, school-based survey of adolescents to examine the impact of child abuse and adolescent dating violence victimization on the likelihood of IPV

perpetration and victimization in young adulthood. While a previous study using these data has found links between child abuse, youth violence, and IPV (Fang & Corso, 2007), this analysis further contributes to the literature by examining dating violence and applying social disorganization theory.

Method

Data

Data from three waves of the National Longitudinal Study of Adolescent Health (Add Health) are used. Add Health is a nationally representative, school-based study of youth in Grades 7 to 12 conducted during the 1994-1995 school year. Respondents were interviewed again during Waves 2 (1996) and 3 (2001-2002). All interviews used in this study were conducted in the homes of the respondents. During Waves 1 and 2, audio computer-assisted self-interview technology was used for sensitive subjects (e.g., sexual activity and drug use). In addition, parents were interviewed during Wave 1, and 1990 census data has been linked to individual records. The methods are detailed elsewhere (Harris, 2005).

This analysis uses a subset of 4,191 Add Health respondents. Inclusion criteria for the study are as follows: (a) having completed Wave-2 and Wave-3 interviews, (b) having reported being in at least one romantic or sexual relationship after the age of 18 at Wave 3, and (c) being age 22 or older at Wave 3. While the key independent and dependent variables are drawn from Waves 2 and 3, the age truncation is necessary to allow for exposure to adult IPV. That is, it is believed that respondents who are 22 years or older, who have completed at least 4 years of their young adult lives, and who are either in or beyond the prime age group for IPV are the most valid sample for this analysis.

Measures

Both IPV perpetration and victimization are examined as outcome variables in this analysis. During the Wave-3 interview, respondents listed all romantic and sexual partners since the summer of 1995 in a relationship roster. Recent sexual relationships and relationships that respondents identified as important are selected for a more detailed relationship history. For each selected partner, respondents are asked a series of questions related to IPV, adapted from the revised Conflicts and Tactics Scale (CTS; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). All IPV questions are asked in terms of

both perpetration and victimization. The ordinal outcome variables for both perpetration and victimization include three categories: no IPV, less severe IPV, and more severe IPV in young adulthood. Less severe IPV includes responses to two questions about whether the respondent had been the victim or perpetrator of the following types of abuse: (a) threats of violence, pushing or shoving, throwing objects that could injure a partner and (b) kicking, slapping, or hitting. Most severe IPV includes two questionnaire items: (a) sexual abuse (insisting on or making a partner have sex when he or she did not want to, or having a partner insist or make the respondent have sex when he or she did not want to) and (b) physical abuse that led to an injury, such as sprains, bruises, and cuts. Each relationship that began after the age of 18 is examined for both IPV perpetration and victimization. Because only relationships initiated in adulthood are included in this analysis, there is no overlap between the young adult IPV and adolescent dating violence measures. On average, respondents have 2.4 sexual or romantic partners during young adulthood, ranging from 2.1 for those aged 25 or older to 2.6 for 24-year-olds.

The key independent variables are child abuse and adolescent dating violence victimization. Child abuse is measured retrospectively at Wave 3. Child abuse is a dichotomous variable, with respondents coded as "1" if they responded affirmatively to two survey items about behaviors perpetrated by a parent or caregiver before the sixth grade, including (a) being slapped, kicked, or hit and (b) forced to have sex.

Adolescent dating violence is measured at Wave 2 and captures only victimization. Items from the CTS assess psychological and physical abuse from a maximum of three sexual and three romantic partners (Straus et al., 1996). For each reported partnership, respondents are asked if the partner ever called them names, insulted them, or treated them disrespectfully in front of others (Item 1); swore at them (Item 2); threatened them with violence (Item 3); threw something at them that could hurt them (Item 4); or pushed or shoved them (Item 5). Adolescents reporting only Items 1 to 3 for any partner are considered to have experienced less severe dating violence, whereas those reporting Items 4 to 5 experienced more severe violence.

Family factors included in the final models were parent's income in 1995 and family structure. Parent's income is included as categorical variables for less than US$16,000, US$16,000 to US$29,999, US$30,000 to US$49,999, US$50,000 to US$79,999, and more than US$80,000. Eleven percent of the subsample did not have a parental interview; rather than dropping these observations from the analysis, a variable is included that indicates that no parental data were available. In addition, nearly 9% of observations are

missing parental income despite having had a parental interview. A variable indicating whether income was not reported by interviewed parents is included in multivariate regression models. Family structure, as reported by the respondent in Wave 1, is included as categorical variables indicating whether the respondent lived with two biological parents, any other two parents (including combinations of biological, step, and adoptive parents), a single father, a single mother, or another situation.

Three indices as a proxy for collective efficacy are used to examine social disorganization. Using principal components analysis, measures are created with 1990 Census data at the census tract level. The concentrated disadvantage index includes the proportion of the population living below the poverty line, receiving public assistance, below age 18, African American, and of households that are headed by women. The residential stability index reflects the proportion of the population that has not moved since 1985 and houses that are owner occupied. Immigrant concentration includes the proportion of population that are Latino and foreign born. Each index is entered in the models as a continuous variable.

Sociodemographic factors from the Wave-3 interview included in the models are as follows: age at the time of interview, gender, educational attainment (some high school or less, received high school diploma or GED, some postsecondary, received college degree, or higher), and relationship status (married, cohabiting, or neither). Immigrant status is also included, indicating whether the respondent was foreign born (first generation), U.S. born to foreign-born parents (second), or U.S. born to U.S.-born parents (third plus generation; Harris, 1999). Wave-1 characteristics include region (West, Midwest, South, Northeast) and race/ethnicity (mutually exclusive categories for Latino, non-Latino Black, non-Latino Asian, non-Latino Native American, other non-Latino, non-Latino White). In addition, the models include a variable that indicates whether the respondent reported a romantic or sexual partner of the same sex in the relationship history at Wave 3.

Analytic Approach

Descriptive statistics, including weighted frequencies and means, are tabulated. Multivariate, ordered logistic regression analyses are conducted using maximum likelihood estimation techniques in Stata/SE 9.2 statistical software. Survey commands in Stata are used to account for sample design features of Add Health, including stratification, clustering, and sample weights, and to produce unbiased Taylor series linearized standard errors.

Results

Descriptive statistics for the entire sample and for adult IPV perpetrators and victims are presented in Table 1. Greater proportions of young adult IPV perpetrators and victims report experiencing child abuse and adolescent dating violence as compared to the entire sample. For example, although only 12% of the sample report child abuse, 19% of IPV perpetrators and 18% of victims report being abused as children. IPV perpetrators and victims are more likely to be female, Black, cohabiting, and have less than a college education. Their parents are more likely to have income in the lowest two categories, and there is a higher mean level of concentrated disadvantage and lower level of residential stability among the perpetrators and victims. The most notable demographic difference between IPV victims and perpetrators is gender. Whereas female victims constitute 53%, female perpetrators constitute 61%.

For each set of multivariate models, individual sociodemographic characteristics are first entered, followed by separate models—including parental and social factors—and a final model with all three sets of variables. Each table presents the results of the models with only individual characteristics and with all sets of variables. Specific odds ratios (OR) and 95% confidence intervals refer to the results of the final model with individual, parental, and social factors, unless otherwise noted. The first set of ordered logistic regression models (Table 2) considers IPV perpetration and victimization (none, less severe, or more severe) as the outcome. Across the models, child abuse and both levels of severity of adolescent dating violence victimization are highly significant and predictive of young adult IPV perpetration. In the final model, victims of child abuse have a 97% higher odds of perpetrating IPV as young adults compared to those who were not abused. More severe dating violence victimization is associated with an 82% increase in the odds of violence perpetration, whereas less severe dating violence increases the odds by 60%. Growing up with a single mother is protective (OR = 0.70, 95% CI = 0.52-0.95). None of the social disorganization factors have a statistically significant relationship with IPV perpetration. Across the models, women are significantly more likely to perpetrate violence as compared to men.

For young adult IPV victimization, child abuse and both forms of adolescent dating violence victimization are again highly predictive of the outcome. The effect is not attenuated with the addition of parental and social factors to the model. Respondents with parents in the highest two income categories are less likely to be victimized by sexual and romantic partners as young adults. The social factors are not statistically significant. Being female increases the risk of IPV victimization.

Table 1. Selected Characteristics of the Study Population (Weighted Frequencies and Means)

	Entire sample (N = 4,191)	Perpetrators of young adult IPV (n = 986)	Victims of young adult IPV (n = 1,039)
Child abuse	12.0	18.9	17.9
Adolescent dating violence victimization			
Less severe	17.4	21.6	21.8
More severe	10.2	14.0	14.7
Age			
22	40.2	37.8	37.9
23	36.2	36.1	35.5
24	18.3	21.2	20.9
25 and older	5.3	5.0	5.6
Female	47.8	61.1	52.7
Race			
White	65.0	56.8	59.6
Latino	12.4	13.4	12.3
Black	15.7	21.8	20.7
Asian	3.9	4.2	4.2
Native American	2.1	2.7	2.4
Other	0.9	0.2	0.6
Immigrant status			
First generation	6.1	7.6	7.2
Second generation	10.2	10.5	9.0
Third generation or more	82.7	80.4	82.5
Relationship status			
Married	19.3	20.4	19.1
Cohabitating	20.6	24.6	24.8
Neither	60.1	55.0	56.2
Ever had same sex relationship	3.8	4.3	4.1
Region			
South	36.3	40.1	39.0
West	16.2	15.3	16.0
Midwest	34.4	29.9	30.3
Northeast	13.2	14.6	14.7
Educational attainment			
College graduate	18.1	11.5	9.9
Some college	37.6	38.6	42.1
High school graduate	35.2	38.1	35.8
Some high school	9.0	11.6	12.0
Parental factors			
Parental income			
Less than US$16,000	13.2	15.7	16.9

Table 1. (continued)

	Entire sample (N = 4,191)	Perpetrators of young adult IPV (n = 986)	Victims of young adult IPV (n = 1,039)
US$16,000-US$29,999	14.5	17.6	16.5
US$30,000-US$49,999	20.9	20.6	21.2
US$50,000-US$79,999	19.1	16.4	15.8
More than US$80,000	23.7	22.3	21.4
Missing	8.6	7.3	8.3
Family structure			
Two biological parents	53.5	48.8	48.9
Two other parents	17.2	20.6	19.6
Single mother	20.1	19.8	22.0
Single father	3.4	4.6	3.8
Other	5.8	6.3	5.7
Social disorganization			
Concentrated disadvantage	−0.035	0.157	0.084
Residential stability	−0.055	−0.098	−0.075
Immigrant concentration	−0.248	−0.198	−0.218

Note: *N*s are unweighted. The following variables were missing data (weighted frequency from entire sample in parentheses): child abuse (5.0), race (0.1), immigrant status (1.0), educational attainment (1.0), concentrated disadvantage (0.3), residential stability (0.2), and immigrant concentration (0.2).

Because of the elevated likelihood of IPV perpetration and victimization for women, the models are stratified by gender (Tables 3 and 4). Although child abuse and adolescent dating violence victimization remain highly significant, less severe dating violence presents a slightly greater risk of violence perpetration for men (Table 3). Men who experienced only psychological abuse in dating relationships have an 80% increase in the odds of perpetrating IPV in young adulthood, whereas those who experienced physical abuse have a 75% increase in the odds of perpetration. Among parental factors, only single fatherhood is a significant risk factor for violence perpetration. Men who are in single-father households have greater odds of perpetrating IPV (OR = 2.83, 95% CI = 1.13-7.10). Social factors do not have a statistically significant impact.

In the case of male victimization, more severe adolescent dating violence is the most salient historical abuse factor. Men who had been physically abused by partners as adolescents are more likely to be victimized as adults than those who had not (OR = 2.80, 95% CI = 1.68-4.68). Less severe adolescent dating violence continues to have a strong and significant effect

Table 2. Odds Ratios (and 95% Confidence Intervals) From Ordered Logistic Regression Models for IPV Perpetration and Victimization in Young Adulthood (n = 3,881)

	IPV perpetration		IPV victimization	
	Individual factors	All factors	Individual factors	All factors
Child abuse	1.96 (1.45-2.66)***	1.97 (1.44-2.68)***	1.94 (1.44-2.62)***	1.96 (1.44-2.66)***
Adolescent dating violence victimization				
Less severe	1.56 (1.21-2.00)***	1.60 (1.25-2.04)***	1.53 (1.19-1.96)***	1.55 (1.21-1.99)***
More severe	1.78 (1.26-2.51)***	1.82 (1.26-2.63)**	2.08 (1.48-2.91)***	2.14 (1.52-3.02)***
Female	2.02 (1.67-2.44)***	2.03 (1.68-2.45)***	1.40 (1.11-1.76)**	1.40 (1.11-1.77)**
Parental factors				
Parental income				
US$16,000-US$29,999		0.88 (0.63-1.22)		0.81 (0.60-1.09)
US$30,000-US$49,999		0.78 (0.56-1.07)		0.81 (0.58-1.12)
US$50,000-US$79,999		0.67 (0.46-0.96)*		0.61 (0.39-0.94)*
More than US$80,000		0.58 (0.38-0.89)*		0.56 (0.32-0.97)*
No response		1.04 (0.62-1.76)		1.16 (0.66-2.04)
Family structure				
Any other two parents		1.10 (0.86-1.42)		1.08 (0.83-1.41)
Single mother		0.70 (0.52-0.95)*		0.86 (0.63-1.17)
Single father		1.28 (0.67-2.44)		0.89 (0.50-1.57)
Other		0.68 (0.41-1.12)		0.69 (0.45-1.08)
No parental interview		1.49 (0.93-2.37)		1.41 (0.80-2.50)
Social disorganization				
Concentrated disadvantage		0.97 (0.90-1.03)		0.95 (0.89-1.00)
Residential stability		0.99 (0.91-1.08)		1.01 (0.92-1.11)
Immigrant concentration		1.00 (0.92-1.08)		1.04 (0.94-1.15)

Notes: IPV = intimate partner violence. Models also controlled for age, race, immigrant status, history of same sex relationship, region, and educational attainment. n varies slightly from Table 1 due to missing data.
$*p < .05. **p < .01. ***p < .001.$

Table 3. Odds Ratios (and 95% Confidence Intervals) From Ordered Logistic Regression Models for Male IPV Perpetration and Victimization in Young Adulthood (n = 1,932)

	IPV perpetration		IPV victimization	
	Individual factors	All factors	Individual factors	All factors
Child abuse	2.00 (1.33-2.99)***	1.90 (1.29-2.81)***	1.66 (1.10-2.50)*	1.66 (1.11-2.48)*
Adolescent dating violence victimization				
Less severe	1.84 (1.27-2.68)**	1.80 (1.24-2.63)**	1.95 (1.41-2.69)***	1.94 (1.39-2.70)***
More severe	1.63 (0.98-2.70)+	1.75 (1.04-2.94)*	2.74 (1.66-4.52)***	2.80 (1.68-4.68)***
Parental factors				
Parental income				
US$16,000-US$29,999		0.88 (0.43-1.83)		0.67 (0.39-1.13)
US$30,000-US$49,999		0.77 (0.42-1.40)		0.86 (0.52-1.42)
US$50,000-US$79,999		0.84 (0.45-1.55)		0.71 (0.38-1.33)
More than US$80,000		0.47 (0.23-0.97)*		0.50 (0.21-1.19)
No response		1.27 (0.57-2.84)		1.32 (0.54-3.26)
Family structure				
Any other two parents		1.24 (0.77-1.99)		1.23 (0.82-1.86)
Single mother		0.73 (0.41-1.31)		0.80 (0.51-1.28)
Single father		2.83 (1.13-7.10)*		1.29 (0.57-2.93)
Other		0.46 (0.19-1.14)		0.67 (0.30-1.54)
No parental interview		2.29 (1.16-4.52)*		1.69 (0.70-4.10)
Social disorganization				
Concentrated disadvantage		1.00 (0.88-1.13)		0.98 (0.88-1.09)
Residential stability		1.07 (0.91-1.26)		1.10 (0.95-1.26)
Immigrant concentration		1.07 (0.86-1.33)		1.20 (0.97-1.48)

Note: IPV = intimate partner violence. Models also controlled for age, race, immigrant status, history of same sex relationship, region, and educational attainment. n varies slightly from Table 1 due to missing data.
*p < .05. **p < .01. ***p < .001.
+p < .10

Table 4. Odds Ratios (and 95% Confidence Intervals) From Ordered Logistic Regression Models for Female IPV Perpetration and Victimization in Young Adulthood (n = 1,949)

	IPV perpetration		IPV victimization	
	Individual factors	All factors	Individual factors	All factors
Child abuse	1.94 (1.36-2.76)**	1.94 (1.34-2.79)**	2.12 (1.44-3.13)***	2.10 (1.42-3.09)**
Adolescent dating violence victimization				
Less severe	1.40 (0.97-2.04)+	1.43 (0.99-2.07)	1.23 (0.84-1.79)	1.24 (0.85-1.79)
More severe	1.89 (1.24-2.86)**	1.96 (1.28-2.99)**	1.61 (1.10-2.35)*	1.67 (1.14-2.46)**
Parental factors				
Parental income				
US$16,000-US$29,999		0.86 (0.54-1.36)		1.01 (0.66-1.52)
US$30,000-US$49,999		0.75 (0.45-1.25)		0.76 (0.45-1.28)
US$50,000-US$79,999		0.54 (0.30-0.97)*		0.55 (0.30-1.02)
More than US$80,000		0.67 (0.39-1.16)		0.65 (0.35-1.22)
No response		0.86 (0.46-1.61)		1.02 (0.45-2.31)
Family structure				
Any other two parents		1.05 (0.74-1.47)		0.97 (0.65-1.45)
Single mother		0.70 (0.47-1.05)		0.99 (0.65-1.51)
Single father		0.77 (0.39-1.55)		0.62 (0.29-1.32)
Other		0.95 (0.53-1.68)		0.76 (0.42-1.38)
No parental interview		1.06 (0.61-1.85)		1.14 (0.62-2.11)
Social disorganization				
Concentrated disadvantage		0.94 (0.88-1.01)		0.91 (0.84-0.99)*
Residential stability		0.95 (0.86-1.05)		0.94 (0.85-1.05)
Immigrant concentration		0.95 (0.82-1.10)		0.91 (0.77-1.08)

Note: IPV = intimate partner violence. Models also controlled for age, race, immigrant status, history of same sex relationship, region, and educational attainment. n varies slightly from Table 1 due to missing data.
*p < .05. **p < .01. ***p < .001.
+p < .10

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(OR = 1.94, 95% CI = 1.39-2.70), whereas men who had been abused as children have a 66% greater odds of being IPV victims as young adults. No parental or social factors have a statistically significant impact on male relationship victimization in young adulthood.

For female perpetration of violence in young adulthood, child abuse and more severe adolescent dating violence victimization are significant predictors (Table 4). Women who experienced child abuse have a 94% greater odds of perpetrating adult IPV. The effect of severe adolescent abuse is similar (OR = 1.96, 95% CI = 1.28-2.99). Unlike the models for men, less severe dating violence is only marginally significant (p = .08) and associated with a 43% increase in the odds of violence perpetration. Among parental factors, women with parental income of US$50,000 to US$79,999 are significantly less likely to perpetrate IPV compared to those with parental income of less than US$16,000. No social factors are statistically significant.

For female IPV victimization in young adulthood, child abuse is highly significant, with victims of child abuse having a 210% increase in the odds of victimization as compared to women who were not abused. More severe adolescent dating violence also has a significant influence on the likelihood of IPV victimization (OR = 1.67, 95% CI = 1.14-2.46). Less severe adolescent dating violence does not have a significant association with IPV victimization of women in young adulthood. Among social factors, concentrated disadvantage has a slightly protective effect (OR = 0.91, 95% CI = 0.84-0.99). Parental factors do not reach statistical significance in this model.

Discussion

Taken together, the results of this analysis indicate that child abuse and adolescent dating violence victimization are highly predictive of young adult IPV, and the relationship is not attenuated by parental or social factors. In fact, in a number of the models, the effects of child abuse and adolescent dating violence grow stronger with the inclusion of parental and social factors. Though the models are not shown in this article, the interaction of child abuse and adolescent dating violence do not have a significant influence on the likelihood of young adult IPV. Thus, child abuse and adolescent dating violence appear to work independently of each other.

These results demonstrate that women have a significantly greater likelihood of reporting both IPV perpetration and victimization in young adult sexual and romantic relationships. The perpetration result was unforeseen, particularly because the IPV literature tends to focus on women as victims. There are several explanations for this association. First, women may be IPV

perpetrators and victims concurrently. As rich as the Add Health data are, they do not provide information about the context of violence in relationships. The temporality of perpetration and victimization is often unknown in research studies. For example, Magdol et al. (1997) find a higher prevalence of IPV perpetration among women than men and that anxiety is a significant predictor of perpetration for women. However, with survey data, they are unable to tease out whether this anxiety puts women at greater risk of victimization or if victimization is causing the anxiety. In the present study, 65% of women who perpetrated IPV report being in adult relationships where they were both the victim and perpetrator, as compared to 59% of men. Female perpetration may be driven by female victimization, as women may fight back to protect themselves and their children (Chen & White, 2004; Dasgupta, 2002; Hamberger & Guse, 2002; Kimmel, 2002).

Second, there may be reporting differences in violence perpetration by gender. Some studies have found that women are more likely to report violence perpetration because the behavior is considered less socially acceptable and thus may be more memorable. Conversely, men may underreport violence perpetration because it demonstrates a lack of control over their partners (Dobash, Dobash, Cavanagh, & Lewis, 1998). Though this cannot be explored over the entire course of adult relationships in Add Health, disparities in reporting IPV could be examined using a sample of current relationships where both partners are interviewed and asked the same questions about violence perpetration and victimization (Harris, 2005). Moreover, qualitative research would be useful to flesh out the temporality of events.

Regardless of whether gender is a risk factor for perpetration, it is worth noting that even if women are more likely to perpetrate IPV than men, the biological ability of women to injure their partners is generally lower than their male counterparts. Injuries are less likely to be caused by pushing, shoving, and grabbing, the perpetration behaviors that are more common among women (Kimmel, 2002). Thus, the physical health implications of female IPV perpetration may not be as profound as male perpetration. For example, the rate of homicide of spouses or former spouses is much higher among men than women. The gender imbalance has increased over time: In the mid-1970s, women represented half of victims murdered by intimate partners, and this proportion increased to three quarters in the late 1990s (Rennison & Welchans, 2000). However, there is scant research on the health consequences of violence victimization among men. Considering the linkages to child abuse and adolescent dating violence, it is possible that being the victim of IPV may have mental health consequences for men or that poor mental health caused by historical abuse may drive both victimization and perpetration among men.

In the present study, historical abuse factors are found to operate somewhat differently for men and women. For example, child abuse is highly predictive of IPV perpetration and victimization for both men and women. Although child abuse is a strong predictor of female victimization (OR = 2.07, 95% CI = 1.40-3.05), it is slightly less predictive for men (OR = 1.65, 95% CI = 1.11-2.45). The results for adolescent dating violence victimization are more disparate. For male IPV perpetration, both levels of adolescent victimization are significant predictors. For female perpetration, more severe dating violence is statistically significant, whereas less severe abuse is marginally significant. For men, IPV perpetration effect estimates for less severe psychological dating violence are greater than those for more severe abuse, whereas for women, more severe adolescent victimization has a stronger impact. Considering IPV victimization, the adolescent dating violence variables have a much weaker effect for women than men. Although both adolescent dating violence measures are highly significant for men, less severe dating violence is not significant for women and more severe abuse is significant only at the .05 level. Though it appears that a cycle of violence is in play for both men and women, the mechanism varies by gender.

Parental income is occasionally a protective factor for young adult IPV. Family structure does not play a significant role, except for the male perpetration models, where male youth who lived in single-father homes had substantially greater odds of perpetrating violence than those who lived with two biological parents. Results from a previous analysis of Add Health data examining the effect of growing up in a single-father home on adolescent well-being indicate that the strong effects of living with a single father may be less related to the specific family structure and more connected to instability of living arrangements that bring youth to live with fathers. Harris, Cavanagh, and Elder (2000) find that for many youth in single-father homes, the living arrangements are recent and involve a shift from living in a home with a single mother to a single father. Youth living with single fathers report lower levels of parental monitoring and supervision and are more likely to witness, perpetrate, or be the victim of a violent crime compared to youth living with two biological parents or a single mother. It appears that the measure of living with single fathers may reflect aggression that leads to the instability of living arrangements and that this aggression may translate into higher levels of involvement in violence throughout the life course.

Neither the social disorganization factors have any significant effect on the likelihood of either young adult IPV perpetration or young adult IPV victimization nor do they attenuate the effects of historical abuse. Although the three indices used explain much of the variation in collective efficacy in

previous research on violence (Sampson et al., 1997), they are only a proxy for this construct. Perhaps measuring social disorganization at Wave 3 rather than Wave 1 or at multiple points of time may be a better approach to explore this mechanism in future research.

Although this study fills a gap in the literature, it does face a number of limitations. First, the retrospective measurement of child abuse is problematic. Measures of child abuse were not included in the Add Health survey until Wave 3, when respondents were between the ages of 18 and 26. In examining the Add Health data, Hussey, Chang, and Kotch (2006) contend that the level of child abuse is potentially underreported, based on comparisons to other research. However, researchers have also argued for the prospective rather than retrospective measurement of child abuse, finding that respondents tend to overestimate abuse in retrospective reports for a myriad of reasons (Tajima, Herrenkohl, Huang, & Whitney, 2004). If the results are biased due to measurement error, it is difficult to ascertain in which direction. In addition, respondents were only asked about three types of physical abuse—slapping, kicking, and hitting—in one questionnaire item. As these behaviors vary in severity, it would be useful to examine the occurrence of each type of abuse as well as psychological and other types of physical abuse not included in Add Health. Second, although I am able to examine violence in young adulthood across numerous relationships, there is a lack of information to contextualize violence. This is particularly important for understanding some of the gender differences in IPV and why women are at higher risk for perpetrating violence in this analysis. Third, the measure of adolescent dating violence only includes victimization and captures limited severity. Although there is generally a strong relationship between adolescent victimization and adult IPV, a more complete portrait would examine adolescent perpetration and measures of abuse comparable to the adult IPV items as well. The context of the violence would be important to explore in this case as well, particularly whether violence occurred throughout the relationship or only during a breakup, and whether adolescents were both perpetrators and victims in the same relationship. Finally, this analysis does not examine the impact of witnessing parental IPV on the likelihood of young adult IPV, an important piece of Heise's (1998) framework for examining the risk factors for violence against women. Although interviewed parents are asked about the frequency of arguments with their current partner, there is no degree of specificity that would allow an understanding of the severity of the abuse (psychological, physical, or sexual). In addition, frequent arguments do not necessarily imply that abuse occurred, and respondents are not asked if they witnessed their parents' arguments.

These results have important implications for public health interventions and programs. First, child abuse prevention is paramount, as both the short- and long-term consequences of abuse are significant. Second, the long-term consequences of child abuse should be considered in counseling efforts. Though certainly not all children who are abused go on to be perpetrators or victims of relationship violence, the elevated likelihood of abuse makes it vital to consider the implications of child abuse for future transmission of violence. Third, nearly a third of respondents had been the victims of dating violence by their Wave-2 interview (Grades 10-12). As even less severe psychological abuse is generally strongly predictive of both young adult IPV perpetration and victimization, interventions to educate adolescents on healthy relationships may be an important opportunity to stop the cycle of violence (Foshee et al., 1998). If adolescents develop ideals and expectations about relationships during this precocious time when abuse is common, intervening may provide an opportunity to reduce the likelihood of relationship violence throughout the life course.

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