



Published in final edited form as:

*J Epidemiol Community Health*. 2009 September ; 63(9): 741–748. doi:10.1136/jech.2008.078592.

## Continuity of Adolescent and Early Adult Partner Violence Victimization: Association with Witnessing Violent Crime in Adolescence

Aubrey L. Spriggs, M.A.<sup>1,2</sup>, Carolyn Tucker Halpern, Ph.D.<sup>1,2</sup>, and Sandra L. Martin, Ph.D.<sup>1,3</sup>

<sup>1</sup>Department of Maternal and Child Health University of North Carolina at Chapel Hill Chapel Hill, NC, USA

<sup>2</sup>Carolina Population Center The University of North Carolina at Chapel Hill Chapel Hill, NC, USA

<sup>3</sup>Injury Prevention Research Center The University of North Carolina at Chapel Hill Chapel Hill, NC, USA

### Abstract

**Background**—Although exposure to peer and family violence are documented risk factors for adolescent dating violence, less is known about the relationship between violent crime exposure and dating violence victimization.

**Methods**—Participants in the National Longitudinal Study of Adolescent Health (n=4,794) aged 13-17 years self-reported witnessing violent crime (someone being shot or stabbed) in the 12 months prior to Wave I interview (1994-95), physical partner violence victimization within the 18 months prior to Wave II interview (1995-96), and physical and sexual partner violence victimization within the 18 months prior to Wave III interview (2001).

**Results**—Twelve percent of respondents reported dating violence victimization at Wave II. Witnessing violent crime was positively associated with victimization in crude (OR=2.11, 95% CI 1.56-2.86) and adjusted (AOR=1.53, 95% CI 1.09-2.15) analyses. Of the adolescent partner violence victims (n=549), 32% reported continued victimization into early adulthood; after adjusting for gender, age, urbanicity, and childhood maltreatment history, witnessing violent crime in adolescence was negatively associated with having non-violent relationships in early adulthood (AOR=0.40, 95% CI 0.19-0.84). In cross-sectional and longitudinal analyses, associations between violent crime exposure and victimization did not vary by age, gender, or race/ethnicity.

**Conclusion**—Adolescents exposed to violent crime experience an increased risk of partner violence victimization in adolescence and continuing victimization into adulthood. Targeting dating violence prevention and intervention programs to geographic areas with high levels of violent crime may be an efficient strategy to reach higher risk adolescents. Reducing community violent crime may also have spillover effects on partner violence.

### Keywords

Domestic violence; adolescent; crime

**License Statement** The Corresponding Author has the right to grant on behalf of all authors and does grant on behalf of all authors, an exclusive licence (or non exclusive for government employees) on a worldwide basis to the BMJ Publishing Group Ltd and its Licensees to permit this article (if accepted) to be published in JECH editions and any other BMJ PGL products to exploit all subsidiary rights, as set out in our licence <http://jech.bmj.com/fora/licence.pdf>.

Contact: Aubrey L. Spriggs, M.A. Carolina Population Center University of North Carolina at Chapel Hill CB# 8120, University Square 123 West Franklin Street Chapel Hill, NC 27516-2524 Phone: 919-619-3436 Fax: 919-962-7217 Email: [spriggs@email.unc.edu](mailto:spriggs@email.unc.edu).

## INTRODUCTION

Violence between adolescent romantic and sexual partners is prevalent in the United States. In the 1995-96 school year, 12% of U.S. adolescents in opposite-sex romantic relationships reported physical victimization in the preceding 18 months. [1] Adolescent victimization is associated with negative health consequences (i.e., suicide attempts, illicit drug use, sexually transmitted infections and adolescent pregnancy) and increased risk for partner violence in later life. [2-7] Given the prevalence of adolescent partner violence, and its negative health effects, understanding its etiology is important.

Most research on adolescent dating violence has focused on individual and familial determinants of victimization onset. Demographic correlates include gender, race/ethnicity, age, family socioeconomic status, family structure, and residential urbanicity. [1,8-13] Exposure to partner violence between salient social contacts (i.e., parents or friends) and a history of childhood maltreatment [14-20] are also associated with dating violence, although these associations sometimes vary by race/ethnicity and gender. [14,21] Such studies suggest social learning processes may lead individuals to think of family violence as normal. [22]

Although some neighborhood attributes are linked with adult partner violence [23-26], we know little about extra-familial contextual influences on adolescent dating violence. As with family and peer violence, community violence exposure may be related to dating violence through social learning processes. One cross-sectional study conducted in Long Beach, CA found community violence exposure was positively related to dating violence victimization. [10] However, it is unclear if such findings generalize to a wider population, or whether community violence influences partner violence duration.

We also know little about the longitudinal course of partner violence from adolescence through adulthood. Although adolescent dating violence predicts adult partner violence [7,27], the proportion of young persons who desist from partner violence between adolescence and adulthood has not been determined. Studies of persistence during adulthood have documented individual and couple continuation prevalence ranging from 37% to 58%. [9,28] Age and non-white race/ethnicity are both positively associated with continuation. However, given differences in developmental maturity, the etiology of adolescent and adult partner violence (including continuation) could be distinct. Knowledge of contributors to victimization continuity between adolescence and early adulthood is important because the duration of victimization is associated with partner violence outcomes' severity. [29] Further, an understanding of contextual risk factors can inform the placement of and intervention targets for partner violence programs.

The objective of the present study is to examine the relationship between community violence exposure and both adolescent dating violence victimization and victimization continuation between adolescence and early adulthood in the U.S., controlling for demographic correlates and other potential confounders. Further, we assess whether such relationships vary by age, gender, or race/ethnicity.

## METHODS

### Data

We used data from the National Longitudinal Study of Adolescent Health (Add Health). [30] Add Health was designed to examine the determinants of health and health-related behaviors of U.S. adolescents in grades 7-12 in the 1994-95 school year. A representative core sample and several special samples were selected for in-home interviews (see Harris et al., 2003 for

details [31]). Over 21,000 in-home interviews were completed in 1995 (Wave I), almost 15,000 of whom were re-interviewed in 1996; in 2001, a third interview was conducted with about 15,200 Wave I participants. [32] The number of respondents who participated in all three waves and had valid sampling weights is 10,828. Add Health researchers found that after applying population weights adjusting for attrition, the Wave III sample is representative of the same population targeted at Wave I. [32] In-home questionnaires were computer administered. Interviewers administered non-sensitive content; sensitive content was self-administered and entered by the respondent (CASI). All Add Health procedures and forms were reviewed and approved by the University of North Carolina at Chapel Hill (UNC) School of Public Health Institutional Research Board; the present analysis was deemed exempt from review.

### Analytic Sample

Present analyses are based on a subset of Add Health respondents who participated in all three Waves (see Figure 1). For the first part of the analysis, a cross-sectional analysis of Wave II data, inclusion criteria were: (1) less than 18 years of age at Wave II, (2) reporting at least one romantic or sexual relationship since the Wave I interview (approximately 18 months), (3) reporting no same-sex relationships at Wave II, and (4) complete data on all analytic variables (n=4,794). For the second part of the analysis, a longitudinal analysis of data from Waves II and III, additional inclusion criteria were (5) experiencing dating violence at Wave II (defined below), (6) reporting no same-sex relationships at Wave III, and (7) no missing Wave III outcome data (n=549). Wave II age limitations were necessary to distinguish between adolescent and early adult partner violence experiences; exclusion of persons with same-sex relationships was based on prior findings of differential correlates of partner violence victimization between same-sex and opposite-sex couples. [1,33] Less than 10% of the eligible sample was excluded due to missing data on analytic covariates.

### Measures

**Outcomes**—Two outcomes were examined in this study: adolescent dating violence victimization and continuation of partner violence victimization from adolescence to early adulthood. The first was based on three items from the Conflict Tactics Scale (CTS2) [34] that were included in the Wave II in-home questionnaire. For up to six romantic and/or sexual relationships reported since the last interview (approximately 18 months), respondents were asked if their partner had ever: (1) threatened them with violence; (2) thrown something at them that could hurt them; and/or (3) pushed or shoved them. A dichotomous summary variable (Any Victimization) was constructed indicating whether *any* of these experiences occurred in *any* of the relationships reported by the respondent.

The second outcome was based on relationships and partner violence experiences reported at Wave III; questions about partner violence were again derived from the Conflict Tactics Scale 2 (CTS2). [34] For each relationship reported in the preceding 18 months, respondents were asked how often their partner had: (1) threatened them with violence, pushed or shoved them, or thrown something at them that could hurt; (2) slapped, hit, or kicked them; (3) insisted on or made them have sexual relations; or (4) caused an injury like a sprain, bruise, or small cut because of a fight. The Wave III questions retain continuity with Wave II minor physical violence items, and collect new information on moderate violence, sexual violence, and injury. Responses were reported on a zero (=never) to six (=more than 20 times) scale. We created a three-level nominal indicator of early adult relationship experiences: no violent relationships in the past 18 months (0=non-violent relationships); no relationships within the past 18 months (1=no relationships); or one or more violent relationships in the past 18 months (2=violent relationships).

**Predictor**—The main predictor was the respondent's report of witnessing violent crime at the Wave I interview. This question queried whether, in the twelve months prior to Wave I, the respondent had witnessed someone being shot or stabbed; response options were 0=no, 1=once, 2=more than once. Responses were dichotomized as 0=no / 1=once or more, because few respondents reported witnessing such crime more than once.

**Covariates**—Additional covariates included potential confounders or effect modifiers of the relationship between witnessing violent crime and adolescent dating violence victimization. All covariates, unless otherwise noted, derive from Wave I questionnaires to ensure measurement before dating violence experiences at Wave II. First, because likelihood of dating violence victimization increases with age, we included *age* at Wave II interview. [1] Age (in whole years) was dummy-coded to allow for a potential nonlinear relationship with the outcome. Second, we included a nominal indicator for respondent *gender* because risk factors for adolescent partner violence victimization vary by gender. [10,11] Third, we examined *race/ethnicity*, given past findings of racial/ethnic differences in both exposure to community violence and prevalence of partner violence. [8,9] We categorized race/ethnicity as non-Hispanic white, non-Hispanic black, Hispanic, and non-Hispanic other. A more nuanced breakdown was not possible due to small sample numbers in longitudinal analyses. Fourth, we included *parent education* as a proxy for family socioeconomic status (SES), as SES has been inversely related to dating violence victimization and exposure to community violence. [8, 12] We used the higher of either residential mother or father education, categorized as less than high school diploma, high school diploma or GED, some postsecondary, or Bachelor's degree or more. Fifth, we included *family structure*, as family structure has been significantly related to dating violence victimization. [1] At Wave I, adolescents were asked to complete a household roster, from which four family structure categories were created: two biological parents, one biological and one non-biological parent, single parent, other. Sixth, we examined *residential urbanicity* as a possible confounder, because urban-residing adolescents are more likely than others to be exposed to community violence, but they are less likely than rural adolescents to experience dating violence. [13] This variable distinguishes block groups in completely urbanized areas from those that have any individuals living outside urbanized areas. Seventh, we constructed an indicator for *child abuse history* based on questions posed at Wave III asking the respondent to report physical or sexual abuse by a parent or caretaker before the respondent was in sixth grade. If the respondent reported either experience, he or she was coded as having experienced maltreatment. Finally, we included a control for number of relationships reported at Wave II.

## Analyses

All analyses were conducted using survey commands in Stata 9.2 software, which adjust standard errors for non-independence of observations within schools and apply population weights interpretable as the inverse of the probability of being selected for the sample (more information on weight construction is available in [35]). We started by examining distributions of our analytic variables, as well as bivariate relationships between covariates and outcome variables. To test whether witnessing violent crime was cross-sectionally associated with adolescent dating violence victimization net of control variables, we ran a multivariable logistic regression model. We added two-way interactions between witnessing violent crime and respondent gender, race/ethnicity, and Wave II age to assess modification of this association. To test the longitudinal relationship between witnessing violent crime and early adult partnership outcomes among adolescent dating violence victims, we employed a multivariable multinomial logistic regression model; we also explored interactions between witnessing violent crime, gender, race/ethnicity, and age in this model. For both multivariable models, we maintained all control variables because of the theoretical reasons for their inclusion.

## RESULTS

### Cross-sectional Analyses

Univariate distributions of analytic variables (unweighted n's and weighted percentages) and their bivariate relationship with adolescent dating violence victimization are presented in Table 1. Over half the analytic sample was female (53.3%), reported non-Hispanic white race/ethnicity (71.9%), lived with both biologic parents (56.1%), and reported parent education as some postsecondary or greater (58.2%). Approximately 11% of respondents reported witnessing violent crime at Wave I, and 12% reported dating violence victimization at Wave II.

In bivariate analyses, a number of demographic characteristics were significantly positively related to dating violence victimization, including age, non-white race, "other" family structure and low parent education (less than high school diploma); gender, urban residence, and self-reported childhood maltreatment were not significantly related at the bivariate level. Dating violence victimization was significantly related to witnessing violent crime in adolescence: respondents who reported witnessing violent crime were significantly more likely to report dating violence victimization at Wave II compared to those who did not witness such crime (20.2% vs. 10.7%, OR=2.11, 95% CI 1.56-2.86).

In a logistic regression model adjusted for sociodemographic characteristics and prior experience of childhood maltreatment (see Table 2), the estimated association between witnessing violent crime and adolescent dating violence victimization was somewhat attenuated, but still positive and significant (AOR=1.53, 95% CI 1.09-2.15). In supplementary analyses, we found this association did not significantly vary by gender, age or race/ethnicity (results available from authors on request).

### Longitudinal Analyses

Analytic variables' univariate distributions and bivariate relationships with early adult relationship outcomes among adolescent dating violence victims are presented in Table 3; 21 respondents were dropped because of reported same-sex relationships at Wave III. Among adolescent dating violence victims, over half were female (56.0%), reported non-Hispanic white race/ethnicity (60.3%), and lived with both biologic parents (50.9%); almost half (49.6%) reported parent education as some postsecondary or greater. Nineteen percent of respondents reported witnessing violent crime at Wave I. In early adulthood, 46.9% of adolescent dating violence victims reported non-violent relationships, 21.1% reported no relationships, and 32.0% reported violent relationships.

In bivariate analyses, gender and race/ethnicity were the only control variables that were significantly associated with early adult relationship outcomes among adolescent dating violence victims. Non-violent early adult relationships were significantly more prevalent for females compared to males; having no relationships was significantly more prevalent among males compared to females. Non-violent early adult relationships were significantly more prevalent for non-Hispanic white compared to non-Hispanic black and Hispanic adolescent dating violence victims. Further, reporting no early adult relationships was more prevalent among non-Hispanic Black and Hispanic victims compared to non-Hispanic white victims. Having a greater number of adolescent relationships was marginally positively associated with having non-violent or no relationships in early adulthood. Witnessing violent crime was also marginally related to early adult relationship outcomes. Respondents who witnessed violent crime were less likely than those who did not to report non-violent early adult relationships (32.2% vs. 50.3%), and more likely to report violent relationships (42.2% vs. 29.6%).

In an adjusted multinomial logistic regression model (Table 4), witnessing violent crime was significantly negatively associated with non-violent compared to violent early adult relationships (AOR=0.40, 95% CI 0.19-0.84), and unrelated to having no relationships compared to violent early adult relationships (AOR=0.59, 95% CI 0.25-1.36). Again, we found interactions between witnessing violent crime and demographic variables (gender, race/ethnicity, age) were non-significant, and we dropped these terms from the final models (results available from authors upon request).

## DISCUSSION

Although a number of individual- and family-level predictors of adolescent dating violence have been explored in past research, less is known about extra-familial contextual contributors to adolescent dating violence, or the longitudinal course of dating violence. In the present study, we found one such contextual influence, violent crime exposure, was positively associated with both prevalent adolescent dating violence victimization and victimization continuation between adolescence and early adulthood.

Adolescents who witnessed violent crime were more likely to report dating violence victimization. This result suggests that the study findings in Long Beach, CA generalize to other adolescents across the U.S. [10] However, as both studies utilize cross-sectional data, results should be interpreted with caution. Adolescent dating violence victims may be more likely than non-victims to report community violence because they are more sensitive to violent environmental stimuli. In supplementary analyses we found self-report was significantly positively related to county-level violent crime rates, supporting the validity of self-report. However, future studies utilizing objective contextual measures at a smaller geographic unit are needed.

Continuation of victimization into early adult relationships was a prevalent phenomenon (32% overall prevalence). Such results extend past findings documenting adolescent dating violence as a significant predictor of adult partner violence [7,27] by contributing knowledge regarding the prevalence of victimization continuation into adulthood. The six-year continuation prevalence we found is similar to three-year prevalence found in a study of adult women [28], but lower than the five-year prevalence found in a study of adult couples. [9] Differences with the latter study could stem from our focus on individuals and inclusion of persons reporting no adult relationships. These high rates of victimization continuation underline the necessity of screening for partner violence early, and teaching adolescents relationship skills that can help them recognize and reject dating violence.

Among adolescent dating violence victims, those who witnessed violent crime were more likely than those who did not to continue involvement in violent relationships into early adulthood. This suggests that exposure to violent crime may place persons at risk for chronic victimization into later life. Identifying such persons is important, since the duration of victimization is positively associated with consequences' severity. [29] Exposure to violent crime could influence dating violence outcomes through a social learning process, whereby violence in interpersonal relationships is perceived as being normal. [22] These results highlight that dating violence can be influenced by multiple ecological contexts, and that multiple contextual levels may need to be addressed by dating violence interventions.

Associations between violent crime exposure and dating violence victimization prevalence and continuation were similar across gender, race/ethnicity and age. These findings contrast with studies documenting gender and racial/ethnic differences in the association between family-of-origin violence and dating violence [14,21]; however, they are not completely inconsistent, since our focus was community rather than family violence exposure. Given the extreme forms

of violence queried in the present study (someone being shot or stabbed), we believe it unlikely that such actions would be interpreted differently across cultural or gender groups.

Although this study has many strengths, including a prospective design based in a nationally-representative sample of adolescents, its limitations must also be acknowledged. First, we were unable to distinguish between prevalent and incident dating violence at Wave II; therefore, the self-reported measure of witnessing violent crime may be biased. Second, results should be interpreted in light of the sample restrictions applied - for example, heterosexual adolescents, adolescents with one or more romantic/sexual relationships, and (for the longitudinal analysis) persons who experience dating violence during adolescence. Third, Add Health data are missing one key potential confounder of the relationship between violent crime exposure and dating violence victimization - exposure to interparental violence. Future studies should test the robustness of our findings to inclusion of this variable.

In conclusion, we found that the prevalence of partner violence victimization continuation between adolescence and early adulthood was high. Exposure to violent crime in adolescence was positively associated with both adolescent dating violence victimization and victimization continuation into early adulthood. Targeting dating violence prevention programs to communities with high crime rates may reach adolescents at increased risk of dating violence initiation as well as chronic partner violence victimization. Future research should explore whether community crime reduction efforts have an impact on partner violence.

#### WHAT THIS PAPER ADDS

##### What is already known on this subject?

Community violence has been positively associated with prevalent dating violence in local samples of adolescents; however whether this relationship generalizes to a nationally-representative sample, and whether community violence is related to the persistence of dating violence over time is unknown. Knowledge of this relationship can help with placement of prevention programs, and suggest community-level targets for partner violence prevention.

##### What does this study add?

In this nationally-representative sample, exposure to violent crime in adolescence was found to be positively associated with prevalent adolescent dating violence victimization, and with the persistence of dating violence victimization between adolescence and early adulthood. Findings suggest dating violence prevention and intervention efforts should be prioritized in areas with greater levels of community violence. They also suggest that interventions that reduce community crime (i.e., built environment modifications, strengthening community watches, etc.) may also impact partner violence outcomes.

## ACKNOWLEDGMENTS / FUNDING

This research uses data from Add Health, a program project designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris, and funded by a grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 17 other agencies. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Persons interested in obtaining data files from Add Health should contact Add Health, Carolina Population Center, 123 W. Franklin Street, Chapel Hill, NC 27516-2524 (addhealth@unc.edu). No direct support was received from grant P01-HD31921 for this analysis.

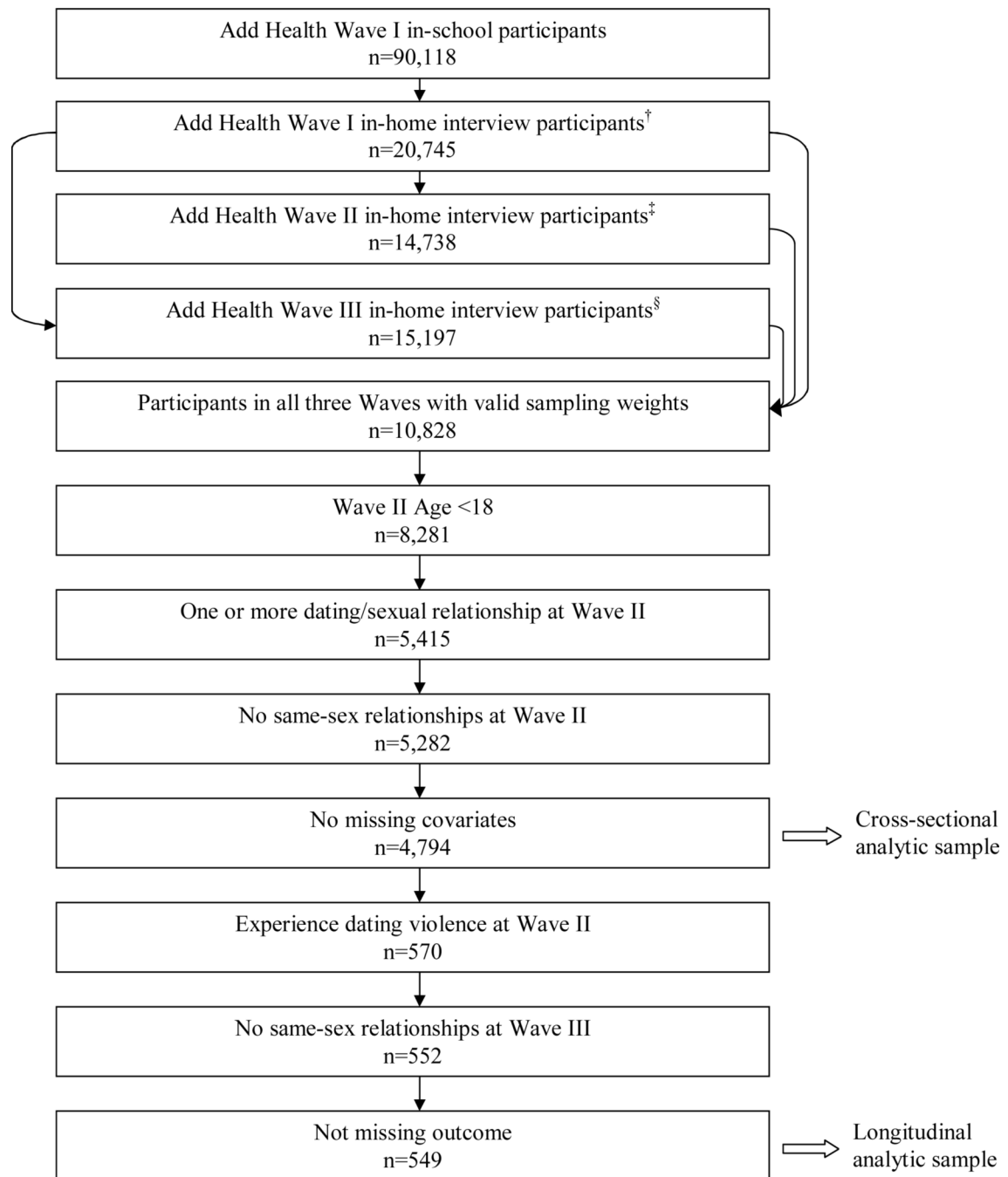
Ms. Spriggs' time on this project was supported by the Carolina Population Center, NICHD NRSA predoctoral traineeship, grant number NIH-NICHD T32-HD07168. Earlier versions of this manuscript were presented at the 2008 International Family Violence and Childhood Victimization Research Conference, and the 2008 American Public Health Association Annual Meeting. Also, an earlier version of this paper was awarded the 2008 Susan P. Baker Research Paper Prize by the Injury Prevention Research Center at the University of North Carolina at Chapel Hill.

## REFERENCES

1. Halpern CT, Oslak SG, Young ML, et al. Partner violence among adolescents in opposite-sex romantic relationships: Findings from the National Longitudinal Study of Adolescent Health. *American Journal of Public Health* 2001;91:1679–85. [PubMed: 11574335]
2. Roberts TA, Auinger P, Klein JD. Intimate partner abuse and the reproductive health of sexually active female adolescents. *Journal of Adolescent Health* 2005;36:380–5. [PubMed: 15837341]
3. Roberts TA, Klein JD, Fisher S. Longitudinal effect of intimate partner abuse on high-risk behavior among adolescents. *Archives of Pediatrics & Adolescent Medicine* 2003;157:875–81. [PubMed: 12963592]
4. Olshen E, McVeigh KH, Wunsch-Hitzig RA, et al. Dating violence, sexual assault, and suicide attempts among urban teenagers. *Archives of Pediatrics & Adolescent Medicine* 2007;161:539–45. [PubMed: 17548757]
5. Decker MR, Silverman JG, Raj A. Dating violence and sexually transmitted disease/HIV testing and diagnosis among adolescent females. *Pediatrics* 2005;116:E272–E6. [PubMed: 16061580]
6. Silverman JG, Raj A, Clements K. Dating violence and associated sexual risk and pregnancy among adolescent girls in the United States. *Pediatrics* 2004;114:220–5.
7. Lehrer JA, Buka S, Gortmaker S, et al. Depressive symptomatology as a predictor of exposure to intimate partner violence among US female adolescents and young adults. *Archives of Pediatrics & Adolescent Medicine* 2006;160:270–6. [PubMed: 16520446]
8. Okeefe M, SelaAmit M. An examination of the effects of race/ethnicity and social class on adolescents' exposure to violence. *Journal of Social Service Research* 1997;22:53–71.
9. Caetano R, Field CA, Ramisetty-Mikler S, et al. The 5-year course of intimate partner violence among White, Black, and Hispanic couples in the United States. *Journal of Interpersonal Violence* 2005;20:1039–57. [PubMed: 16051726]
10. Malik S, Sorenson SB, Aneshensel CS. Community and dating violence among adolescents: Perpetration and victimization. *Journal of Adolescent Health* 1997;21:291–302. [PubMed: 9358292]
11. Eaton DK, Davis KS, Barrios L, et al. Associations of dating violence victimization with lifetime participation, co-occurrence, and early initiation of risk behaviors among US high school students. *Journal of Interpersonal Violence* 2007;22:585–602. [PubMed: 17429024]
12. Pflieger JC, Vazsonyi AT. Parenting processes and dating violence: The mediating role of self-esteem in low- and high-SES adolescents. *Journal of Adolescence* 2006;29:495–512. [PubMed: 16297976]
13. Spencer GA, Bryant SA. Dating violence: A comparison of rural, suburban, and urban teens. *Journal of Adolescent Health* 2000;27:302–5. [PubMed: 11044701]
14. Foshee VA, Ennett ST, Bauman KE, et al. The association between family violence and adolescent dating violence onset does it vary by race, socioeconomic status, and family structure? *Journal of Early Adolescence* 2005;25:317–44.
15. Arriaga XB, Foshee VA. Adolescent dating violence - Adolescents follow in their friends', or their parents', footsteps? *Journal of Interpersonal Violence* 2004;19:162–84. [PubMed: 15006000]
16. Foshee VA, Benefield TS, Ennett ST, et al. Longitudinal predictors of serious physical and sexual dating violence victimization during adolescence. *Preventive Medicine* 2004;39:1007–16. [PubMed: 15475036]
17. Wolfe DA, Wekerle C, Scott K, et al. Predicting abuse in adolescent dating relationships over 1 year: The role of child maltreatment and trauma. *Journal of Abnormal Psychology* 2004;113:406–15. [PubMed: 15311986]
18. Foshee VA, Linder F, MacDougall JE, et al. Gender differences in the longitudinal predictors of adolescent dating violence. *Preventive Medicine* 2001;32:128–41. [PubMed: 11162338]
19. Gagne MH, Lavoie F, Hebert M. Victimization during childhood and revictimization in dating relationships in adolescent girls. *Child Abuse & Neglect* 2005;29:1155–72. [PubMed: 16315357]
20. Loh C, Gidycz CA. A prospective analysis of the relationship between childhood sexual victimization and perpetration of dating violence and sexual assault in adulthood. *Journal of Interpersonal Violence* 2006;21:732–49. [PubMed: 16672739]



21. Fang XM, Corso PS. Gender differences in the connections between violence experienced as a child and perpetration of intimate partner violence in young adulthood. *Journal of Family Violence* 2008;23:303–13.
22. Foshee VA, Bauman KE, Linder GF. Family violence and the perpetration of adolescent dating violence: Examining social learning and social control processes. *Journal of Marriage and the Family* 1999;61:331–42.
23. Cunradi CB. Drinking level, neighborhood social disorder, and mutual intimate partner violence. *Alcoholism-Clinical and Experimental Research* 2007;31:1012–9.
24. Cunradi CB. Intimate partner violence among hispanic men & women: The role of drinking, neighborhood disorder, & acculturation-related factors. *Alcoholism-Clinical and Experimental Research* 2007;31:113A–A.
25. Cunradi CB, Caetano R, Clark C, et al. 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]
26. Browning CR. The span of collective efficacy: Extending social disorganization theory to partner violence. *Journal of Marriage and the Family* 2002;64:833–50.
27. Smith PH, White W, Holland LJ. A longitudinal perspective on dating violence among adolescent and college-age women. *American Journal of Public Health* 2003;93:1104–9. [PubMed: 12835193]
28. Coker AL, Flerx VC, Smith PH, et al. Intimate partner violence incidence and continuation in a primary care screening program. *American Journal of Epidemiology* 2007;165:821–7. [PubMed: 17255117]
29. Bonomi AE, Thompson RS, Anderson M, et al. Intimate partner violence and women's physical, mental, and social functioning. *American Journal of Preventive Medicine* 2006;30:458–66. [PubMed: 16704938]
30. Udry, JR. The National Longitudinal Study of Adolescent Health (Add Health), Waves I & II, 1994-1996; Wave III, 2001-2002 [machine-readable data file and documentation]. Carolina Population Center, University of North Carolina at Chapel Hill; Chapel Hill, NC: 2003.
31. Harris, KM.; Florey, F.; Tabor, J., et al. The National Longitudinal Study of Adolescent Health: Research Design [WWW document]. Carolina Population Center, University of North Carolina at Chapel Hill; Chapel Hill, NC: 2003.
32. Chantala, K.; Kalsbeek, WD.; Andraca, E. Non-Response in Wave III of the Add Health Study. Carolina Population Center; Chapel Hill, NC: 2004.
33. Halpern CT, Young ML, Waller MW, et al. Prevalence of partner violence in same-sex romantic and sexual relationships in a national sample of adolescents. *J Adolesc Health* 2004;35:124–31. [PubMed: 15261641]
34. Straus MA, Hamby SL, Boney-McCoy S, et al. The revised Conflict Tactics Scales (CTS2): Development and preliminary psychometric data. *Journal of Family Issues* 1996;17:283–316.
35. Tourangeau, R.; Shin, H-C. Grand Sample Weight. Carolina Population Center at the University of North Carolina at Chapel Hill; Chapel Hill, NC: 1999.



**Figure 1.**

**Analytic Sample Construction: Inclusion/Exclusion Criteria**

† Persons eligible for Wave I in-home interviews were a random sample of Wave I in-school participants, plus several selected oversamples (e.g., black adolescents with college-educated parents, Cuban and Puerto Rican adolescents, Chinese adolescents, and disabled adolescents).

‡ Persons eligible for Wave II in-home interviews were Wave I in-home participants with two exceptions: Wave I high school seniors (except those who were part of a sibling pair) and Wave I disabled sample.

§ Persons eligible for Wave III in-home interviews were all Wave I in-home respondents, regardless of their Wave II interview disposition.

**Table 1**

Distribution of analytic variables among the overall sample and by categories of adolescent dating violence victimization

	OVERALL		ADOLESCENT DATING VIOLENCE <sup>†</sup>	
	(n=4,794) n (%)	Non-violent relationships (n=4,224) n (row %)	≥1 Violent relationships (n=570) n (row %)	$\chi^2$ p-value
Adolescent dating violence victimization <sup>†</sup>				
No	4,224 (88.2%)	--	--	--
Yes	570 (11.8%)	--	--	--
Witness violent crime				
No	4,175 (88.7%)	3719 (89.3%)	456 (10.7%)	<.001
Yes	619 (11.3%)	505 (79.8%)	114 (20.2%)	
Gender				
Male	2,059 (46.7%)	1819 (89.1%)	240 (11.0%)	0.165
Female	2,735 (53.3%)	2405 (87.5%)	330 (12.5%)	
Age at Wave 2				
13-14	892 (23.1%)	820 (91.3%)	72 (8.7%)	<.001
15	955 (23.2%)	853 (90.5%)	102 (9.5%)	
16	1,361 (26.8%)	1196 (86.7%)	165 (13.3%)	
17	1,586 (26.9%)	1355 (85.0%)	231 (15.0%)	
Race/ethnicity				
Non-Hispanic White	2,829 (72.0%)	2548 (90.2%)	281 (9.8%)	<.001
Non-Hispanic Black	1,000 (14.5%)	841 (82.0%)	159 (18.0%)	
Hispanic	690 (10.3%)	601 (84.7%)	89 (15.3%)	
Non-Hispanic Other	275 (3.3%)	234 (82.8%)	41 (17.2%)	
Family structure				
Two biologic parents	2,653 (56.2%)	2370 (89.3%)	283 (10.7%)	<.001
Stepfamily	860 (18.2%)	763 (90.4%)	97 (9.6%)	
Single parent	1,145 (22.8%)	989 (86.3%)	156 (13.7%)	
Other	136 (2.8%)	102 (66.8%)	34 (33.2%)	
Parent education				
<HS graduate	527 (10.7%)	439 (82.5%)	88 (17.5%)	0.002
HS diploma/GED	1,412 (31.0%)	1226 (86.9%)	186 (13.1%)	
Some postsecondary	1,032 (22.6%)	926 (89.6%)	106 (10.4%)	
≥College graduate	1,823 (35.7%)	1633 (90.2%)	190 (9.8%)	
Urban				
No	2,301 (49.2%)	2042 (89.3%)	259 (10.7%)	0.073
Yes	2,493 (50.8%)	2182 (87.1%)	311 (12.9%)	
Childhood abuse				
No	3,354 (70.8%)	2977 (88.9%)	377 (11.1%)	0.095
Yes	1,440 (29.2%)	1247 (86.5%)	193 (13.5%)	
Number of partners (mean, SE)	1.63 (0.02)	1.58 (0.02)	2.02 (0.06)	<.001

<sup>f</sup>Any minor physical victimization across all reported romantic or sexual relationships at Wave II. Percentages are weighted.

**Table 2**

Association between witnessing violent crime and adolescent dating violence victimization, adjusting for other covariates

	Adjusted binary logistic regression model <sup>†</sup>
	AOR (95% CI)
Witness violent crime	1.53 (1.09-2.15) *
Gender (Female)	1.35 (1.08-1.70) *
Age at Wave 2	
13-14	0.63 (0.47-0.85) **
15	0.60 (0.44-0.83) **
16	0.84 (0.62-1.14)
17	Ref.
Race/ethnicity	
Non-Hispanic White	Ref.
Non-Hispanic Black	1.57 (1.11-2.23) *
Hispanic	1.37 (0.98-1.93)
Non-Hispanic Other	1.82 (1.04-3.20) *
Family structure	
Two biologic parents	Ref.
Stepfamily	0.74 (0.54-1.00)
Single parent	1.00 (0.71-1.41)
Other	2.59 (1.64-4.11) ***
Parent education	
<HS graduate	1.70 (1.11-2.60) *
HS diploma /GED	1.30 (0.99-1.72)
Some postsecondary	1.04 (0.73-1.49)
≥College graduate	Ref.
Urban	1.06 (0.84-1.34)
Childhood abuse	1.14 (0.86-1.51)
Number of partners	1.57 (1.40-1.75) ***

AOR, adjusted odds ratio; CI, confidence interval

\* p<0.05

\*\* p<0.01

\*\*\* p<0.001

<sup>†</sup> Two-way interactions between witnessing violent crime and other covariates (gender, race/ethnicity, age, childhood abuse experience) were not significant at p<0.10, and were therefore dropped from the adjusted model.

**Table 3**  
Distribution of analytic variables among adolescent dating violence victims and by categories of early adult relationship status

	OVERALL		EARLY ADULT RELATIONSHIP STATUS		$\chi^2$ p-value
	(n=549) <sup>†</sup> n (%)	Non-violent relationships (n=241) n (row %)	No relationships (n=128) n (row %)	≥1 Violent relationships (n=180) n (row %)	
Witness violent crime					
No	441 (81.0%)	206 (50.3%)	100 (20.1%)	135 (29.6%)	0.069
Yes	108 (19.0%)	35 (32.2%)	28 (25.6%)	45 (42.2%)	
Gender					
Male	232 (44.0%)	92 (41.1%)	71 (28.4%)	69 (30.5%)	0.014
Female	317 (56.0%)	149 (51.5%)	57 (15.4%)	111 (33.1%)	
Age at Wave 2					
13-14	70 (17.3%)	30 (39.3%)	15 (22.6%)	25 (38.1%)	0.353
15	98 (18.9%)	36 (37.0%)	25 (23.6%)	37 (39.4%)	
16	154 (29.1%)	65 (52.6%)	38 (21.3%)	51 (26.1%)	
17	227 (34.8%)	110 (51.2%)	50 (19.0%)	67 (29.8%)	
Race/ethnicity					
Non-Hispanic White	272 (60.3%)	129 (50.4%)	51 (16.0%)	92 (33.6%)	0.019
Non-Hispanic Black	151 (22.0%)	56 (36.3%)	53 (37.1%)	42 (26.6%)	
Hispanic	86 (13.1%)	38 (43.0%)	18 (22.7%)	30 (34.3%)	
Non-Hispanic Other	40 (4.7%)	18 (62.0%)	6 (8.0%)	16 (30.0%)	
Family structure					
Two biologic parents	275 (50.9%)	129 (49.3%)	56 (16.6%)	90 (34.1%)	0.066
Stepfamily	95 (15.1%)	38 (43.1%)	17 (18.7%)	40 (38.2%)	
Single parent	148 (26.5%)	59 (43.6%)	50 (32.8%)	39 (23.6%)	
Other	31 (7.5%)	15 (49.2%)	5 (16.1%)	11 (34.7%)	
Parent education					
<HS graduate	83 (15.6%)	37 (47.6%)	16 (15.5%)	30 (36.9%)	0.734
HS diploma /GED	180 (34.8%)	83 (49.3%)	41 (22.4%)	56 (28.3%)	
Some postsecondary	100 (19.6%)	43 (51.0%)	23 (20.0%)	34 (29.0%)	
≥College graduate	186 (30.0%)	78 (41.1%)	48 (23.3%)	60 (35.6%)	
Urban					
No	249 (44.4%)	95 (42.9%)	66 (23.7%)	88 (33.4%)	0.373

	OVERALL (n=549) <sup>†</sup> n (%)	Non-violent relationships (n=241) n (row %)	No relationships (n=128) n (row %)	EARLY ADULT RELATIONSHIP STATUS		$\chi^2$ p-value
				$\geq 1$ Violent relationships (n=180) n (row %)		
Yes	300 (55.6%)	146 (50.1%)	62 (19.1%)	92 (30.8%)		
Childhood abuse						
No	368 (67.7%)	167 (47.4%)	84 (19.3%)	117 (33.3%)		0.455
Yes	181 (32.3%)	74 (45.8%)	44 (25.1%)	63 (29.2%)		
Number of partners (mean, SE)	2.02 (0.06)	2.16 (0.10)	1.98 (0.10)	1.83 (0.10)		0.060

<sup>†</sup> 21 fewer respondents are included in longitudinal analyses because these respondents initiated same-sex relationships in emerging adulthood. Percentages are weighted.

**Table 4**Association between witnessing violent crime and early adult relationship status, adjusting for other covariates<sup>‡</sup>

	Non-violent relationships vs. Violent relationships AOR (95% CI)	No relationships vs. Violent relationships AOR (95% CI)
Witness violent crime	0.40 (0.19-0.84) <sup>*</sup>	0.59 (0.25-1.36)
Gender		
Male	Ref.	Ref.
Female	1.05 (0.66-1.67)	0.45 (0.23-0.87) <sup>*</sup>
Age		
Age 13-14	0.58 (0.24-1.41)	0.94 (0.32-2.77)
Age 15	0.51 (0.27-0.96) <sup>*</sup>	1.17 (0.55-2.49)
Age 16	1.34 (0.65-2.79)	1.48 (0.67-3.27)
Age 17	Ref.	Ref.
Race/ethnicity		
Non-Hispanic White	Ref.	Ref.
Non-Hispanic Black	0.90 (0.45-1.84)	2.44 (1.12-5.31) <sup>*</sup>
Hispanic	0.87 (0.31-2.49)	1.54 (0.46-5.11)
Non-Hispanic Other	1.30 (0.44-3.86)	0.53 (0.08-3.50)
Family structure		
Two biologic parents	Ref.	Ref.
Stepfamily	0.74 (0.41-1.36)	0.89 (0.37-2.16)
Single parent	1.30 (0.70-2.42)	2.59 (1.34-5.03) <sup>**</sup>
Other	0.89 (0.33-2.37)	0.63 (0.13-2.92)
Parent education		
<High school	1.20 (0.48-3.04)	0.46 (0.16-1.34)
High school graduate	1.61 (0.81-3.21)	1.18 (0.51-2.73)
Some postsecondary	1.51 (0.71-3.21)	1.05 (0.42-2.65)
≥Bachelors degree	Ref.	Ref.
Urban	1.31 (0.77-2.25)	0.94 (0.51-1.72)
Childhood abuse	1.21 (0.70-2.10)	1.48 (0.74-2.96)
Number of partners	1.34 (1.04-1.74) <sup>*</sup>	1.12 (0.84-1.49)

AOR, adjusted odds ratio; 95% CI, 95% confidence interval.

<sup>\*</sup> p<0.05<sup>\*\*</sup> p<0.01<sup>\*\*\*</sup> p<0.001<sup>‡</sup> Two-way interactions between witnessing violent crime and other covariates (gender, race/ethnicity, age, childhood abuse experience) were not significant at p<0.10, and were therefore dropped from the adjusted model.