

Depressive Symptomatology as a Predictor of Exposure to Intimate Partner Violence Among US Female Adolescents and Young Adults

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Objective: To examine whether depressive symptomatology is predictive of subsequent intimate partner violence victimization among a national prospective sample of female adolescents and young adults.

Design: Home interview data from 2 waves of the school-based National Longitudinal Study of Adolescent Health were used to examine whether baseline depressive symptomatology was associated with increased risk of past-year exposure to physical abuse by a current partner at 5-year follow-up, controlling for age, race/ethnicity, parental education, retrospective childhood physical and sexual abuse, and baseline dating violence and forced sex.

Setting: A stratified random sample of 80 US high schools and 52 middle schools.

Participants: All young women (n=1659) were in a current opposite-sex relationship at follow-up.

Main Exposure: Baseline past-week depressive symptomatology, measured as both a dichotomous and continuous variable.

Main Outcome Measures: Past-year exposure to mild and moderate to severe physical abuse by a current intimate partner.

Results: In adjusted models with dichotomous depressive symptoms, high baseline symptom levels were associated with 1.86 times the odds of subsequent exposure to moderate to severe partner violence (95% confidence interval, 1.05-3.29). In adjusted models with continuous depressive symptoms, an increase of 1 SD in baseline symptom levels was associated with a 24% increase in odds of exposure to mild partner violence and a 24% increase in the odds of exposure to moderate to severe partner violence.

Conclusions: The findings of this study suggest that depressive symptomatology among girls during adolescence is associated with increased risk of subsequent exposure to physical partner violence. Prevention, identification, and treatment of depressive symptomatology among adolescent girls may help to reduce the likelihood of subsequent victimization.

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WHILE DEPRESSION IS understood to be a common outcome of exposure to intimate partner violence (IPV) among female adolescents and young adults,¹ little research has examined the reverse relationship—the extent to which depressive symptomatology in adolescence may be associated with risk of exposure to future abuse by an intimate partner, independent of factors such as prior dating violence or childhood abuse. Increased understanding of the depression-IPV relationship may contribute to prevention efforts by helping to identify girls at risk of future IPV exposure.

Lifetime prevalence of major depressive disorder and minor depression among girls aged 15 to 24 years have been estimated to be 21% and 10%, respectively.² The time of transition from adolescence to adulthood is a time of peak depression

onset.³ At the same time, 8.8% of female high school students in the national 2003 Youth Risk Behavior Surveillance System survey reported past-year experience of physical abuse by a dating partner.⁴ Estimates of dating violence victimization among girls in smaller studies range from 8% to 57%; studies vary in the period assessed.⁵ Nationally, 22% of women 18 years and older report experiencing physical IPV at some point in their lifetime.⁶

Depressive symptomatology, dysthymia, and major depression during adolescence have been found to be associated with a broad range of functional impairments and adverse outcomes in later adolescence and young adulthood, including diminished self-esteem, self-mastery and life satisfaction, internalizing behavior problems, interpersonal difficulties, increased need for social support, career dissatisfaction,⁷ divorce,⁸⁻¹¹ impaired work and social functioning, lower social class, increased work

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absence, unemployment,¹² diminished educational attainment,^{9,11,12} female teenage childbearing,¹⁰ and decreased likelihood of on-time marriage.¹³ In addition to predicting adverse social outcomes, diagnosed depression in adolescence is associated with subsequent substance abuse¹⁴ and is a strong and specific predictor of depression in early adulthood^{7,12,15-18} as well as suicide and suicide attempts.^{12,19} One study found that depression at age 18 years was associated with impaired psychological and social functioning at age 21 years regardless of depression status at age 21 years, suggesting that depression during the time of transition to adulthood is associated with continued psychosocial vulnerability and poorer functioning in young adulthood regardless of depression status in young adulthood¹⁹; other studies support the finding of vulnerability beyond the duration of the depressive episode.¹⁴

Few prospective studies have examined IPV exposure as a potential outcome related to adolescent depressive symptomatology, and findings among these studies have been mixed. A 3-year study of a high-risk sample found that women's baseline depressive symptomatology was predictive of their male partners' subsequent perpetration of psychological but not physical abuse.²⁰ A 6-year study of male and female high school students found that depressive symptomatology in adolescence was not associated with subsequent physical aggression in dating relationships or marriage (perpetration and victimization were not distinguished).²¹ A retrospective national study of married or cohabiting adults found that premarital depression was not associated with subsequent IPV victimization among women.²² A 5-year study of female high school students found that the proportion of days spent in depressive episodes was positively associated with psychological and physical abuse by boyfriends over the follow-up period; temporal order of depressive episodes and abuse could not be ascertained.¹⁶

Given the high prevalence of depressive symptomatology and IPV exposure among female youth in the United States, as well as research demonstrating many adverse psychosocial outcomes for adolescents with depressive symptomatology, this study examined whether depressive symptomatology among adolescent girls is predictive of subsequent IPV exposure in late adolescence and young adulthood. Analyses were conducted with prospective, population-based data from the National Longitudinal Study of Adolescent Health (Add Health).²³

METHODS

DESIGN

The Add Health study is a longitudinal study of the determinants and contexts of youth health and risk behaviors. In summary, a stratified random sample of 80 US high schools and 52 middle schools was selected with probability of selection proportional to school size. Stratification was with respect to region of country, urbanicity, school size, school type, and race/ethnic composition. Wave 1 structured, closed-ended home interviews were conducted with youth in grades 7 through 12 in 1995; 82% of wave 1 home interview subjects with sampling weights had a parental figure who participated in a wave 1 parent interview. Wave 2 home interview data were col-

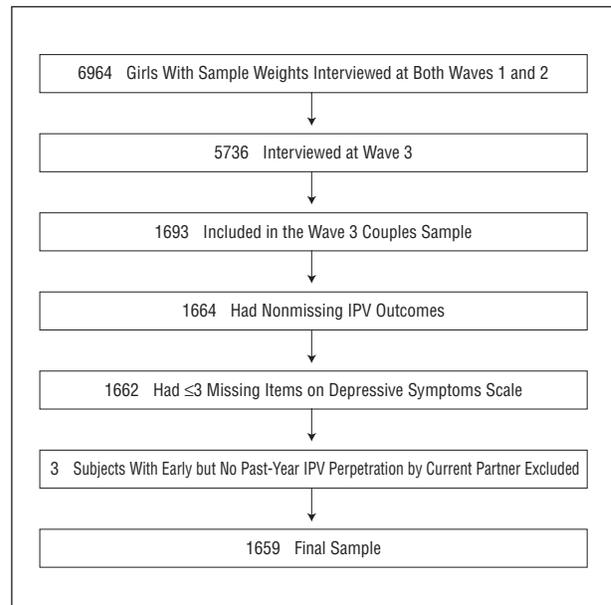


Figure. Sample selection flowchart. IPV indicates intimate partner violence.

lected in 1996 (n with sampling weights=13 570) and wave 3 data were collected in 2001 and 2002 (n with sampling weights=10 828). Written informed consent was provided by youth participants as well as a parental figure at waves 1 and 2 and by youth participants at wave 3. Approval for the full Add Health study was granted by the institutional review board of the University of North Carolina at Chapel Hill School of Public Health; approval for the present data analysis was granted by the Human Subjects Committee of the Harvard School of Public Health (Boston, Mass).

SAMPLE

The study sample was restricted to the 1659 girls in the contractual use data set²⁴ who participated in home interviews at waves 1, 2, and 3; had sample weights; and were selected for the couples sample of the Add Health study. One half of all wave 3-eligible subjects were randomly selected to be considered for the wave 3 couples sample. By design, the couples sample includes one-third dating couples, one-third cohabiting couples, and one-third married couples. Criteria for inclusion in the couples sample were (1) involvement in a current relationship; (2) relationship duration of 3 months or more; (3) opposite-sex relationship; and (4) partner 18 years or older. The sample for the present study was also restricted to subjects who had nonmissing data regarding IPV outcomes and who had 3 or fewer missing items on the wave 2 depressive symptoms scale. Three subjects who reported that their partner had physically abused them more than 1 year prior to the wave 3 interview, but not within the past year, were also excluded so as to maintain temporal clarity between wave 2 depressive symptoms and IPV exposure (**Figure**).

MEASURES

Baseline Depressive Symptomatology

Self-reported past-week depressive symptomatology was assessed both as a dichotomous and continuous variable at wave 2, with a 19-item, modified Center for Epidemiologic Studies Scale (CES-D) used in the Add Health survey.²⁵ The original 20-item scale has been widely used as a measure of depressive

symptomatology in epidemiologic research and as an initial screening tool for clinical depression in community-based samples. In the modified Add Health scale, 2 original CES-D items were removed (“I had crying spells” and “My sleep was restless”) and 1 item was added (“I felt that life was not worth living”). Two additional items were rephrased. Item scores in the modified scale correspond to symptom frequency and range from 0 (“never or rarely”) to 3 (“most or all of the time”); scale scores range from 0 to 56. Internal consistency reliability in the present sample was 0.89, similar to that found for the CES-D in other adolescent samples.²⁶⁻²⁸

A CES-D cutoff score of 24 has been found to maximize sensitivity (0.84) and specificity (0.75) for *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition*²⁹ major depressive disorder or dysthymia for adolescent girls.²⁷ Proportionally adapted to the 19-item scale, the cutoff score used in this study for above-threshold or “high” depressive symptomatology was 23.^{30,31} Secondary analyses were also performed with the continuous scale for greater statistical power.

Control Variables

Age. This was a continuous variable for age at wave 2.

Race/Ethnicity. Four categories were used: non-Hispanic white, non-Hispanic black, Hispanic, and other. Youth reporting more than 1 race/ethnicity were assigned to the category with which they indicated they most identify.

Wave 1 Parental Education. This was a dichotomous variable indicating whether the highest educational attainment among resident parental figures at wave 1 was less than high school. Data were obtained from the parent interview.

Covariates

Childhood Experience of Physical and/or Sexual Abuse. At wave 3, subjects were asked 2 self-administered questions regarding the time before they entered the sixth grade: (1) “How often had your parents or other adult caregivers slapped, hit, or kicked you?” and (2) “How often had one of your parents or other adult caregivers touched you in a sexual way, forced you to touch him or her in a sexual way, or forced you to have sexual relations?” A dichotomous variable was created reflecting subject report of being slapped, hit, or kicked more than 5 times and/or report of any occurrence of sexual abuse.

Dating Violence and/or Forced Sex Between Waves 1 and 2. At wave 2, subjects were asked whether any partner they had had since wave 1 ever threatened them with violence, pushed or shoved them, or thrown something at them that could hurt. Subjects who indicated at wave 2 that they had ever had sexual intercourse were also asked whether they were ever physically forced to have sexual intercourse against their will since the wave 1 interview. These data were collected with audio computer-assisted self-interview.^{32,33} A dichotomous variable was created reflecting 1 or more affirmative responses to these items.

Outcome Variables

Mild Violence. At wave 3, subjects were asked 1 self-administered question regarding how often in the past year their current partner had threatened them with violence, pushed or shoved them, or thrown something at them that could hurt. A dichotomous variable was created reflecting any past-year experience of this outcome.

Moderate to Severe Physical Violence. At wave 3, subjects were asked 1 self-administered question regarding how often in the past year their current partner had slapped, hit, or kicked them and another question regarding how often in the past year they had had an “injury, such as a sprain, bruise, or cut” because of a fight with their current partner. A dichotomous variable was created reflecting experience of either or both of these outcomes.

STATISTICAL ANALYSIS

All analyses were conducted with SAS version 8 (SAS Institute Inc, Cary, NC). Logistic regression models were estimated using the 2 dichotomous violence variables as dependent variables. The SAS proc GENMOD function (generalized estimating equations) was used for all regressions, with specification of an independent working correlation structure. The use of generalized estimating equations accounts for data clustering to provide robust standard error estimation.

Multivariate models first adjusted for control variables of age, race/ethnicity, and parental education (model 1) and then additionally adjusted for covariates of childhood physical/sexual abuse and dating violence/forced sex (model 2). All baseline data for these analyses were collected at wave 2, except for wave 1 parental education and wave 3 retrospective childhood abuse.

Potential interactions between depressive symptomatology and each of the 2 prior abuse covariates were examined separately in unadjusted and adjusted models predicting mild and moderate to severe abuse outcomes, with both the dichotomous and continuous depressive symptoms variables. These interaction terms were insignificant in all model specifications and were not included in final models.

In addition, 2 variables reflecting wave 2 alcohol abuse comorbidity (frequent drinking and heavy drinking) were considered for inclusion as covariates; neither variable was included in final models because they were not associated in bivariate or multivariate models with either IPV outcome, and their addition to the adjusted models did not alter the effect size or significance of depressive symptoms. This may have been owing to insufficient statistical power.

Variables reflecting subjects’ relationship status were also not included in final models because relationship status was viewed as a potential mediator between depressive symptoms and IPV exposure. Inclusion of relationship status variables in preliminary analyses, however, produced no difference in the effect size or significance level of depressive symptomatology with regard to either IPV outcome.

All analyses used adjusted grand sample weights to account for wave 3 nonresponse and subgroup oversampling. For analyses examining the outcome of mild IPV, a subsample of 1632 subjects was used; 27 subjects who reported exposure to moderate to severe but not mild violence at wave 3 were excluded. For analyses examining moderate to severe IPV, a subsample of 1525 subjects was used; 134 subjects who experienced mild but not moderate to severe violence were excluded. For the 15 subjects who were missing 3 or fewer items on the wave 2 depressive symptoms scale, the mean of the remaining items was imputed for each missing item.

RESULTS

SAMPLE CHARACTERISTICS

The sample of girls was 68.5% non-Hispanic white, 15.6% non-Hispanic black, 10.6% Hispanic, and 5.3% other race/ethnicities (**Table 1**). The mean ages at baseline and follow-up were 15.9 years and 21.3 years, respectively; the wave 3 age range was 18 to 27 years. Ten percent of sub-

Table 1. Sample Characteristics of 1659 Subjects*

| Characteristic | Percentage† |
|--------------------------------------------|-------------|
| Wave 2 age, y, mean (SD) | 15.9 (1.6) |
| Wave 3 age, y, mean (SD) | 21.3 (1.6) |
| Race/ethnicity | |
| Non-Hispanic white | 68.5 |
| Non-Hispanic black | 15.6 |
| Hispanic | 10.6 |
| Other | 5.3 |
| Parent education <12 y | 10.1 |
| Parent education missing | 10.5 |
| Wave 3 marital status | |
| Married | 25.7 |
| Cohabiting | 24.9 |
| Dating/other | 49.4 |
| Wave 2 depressive symptom score, mean (SD) | 11.4 (8.1) |
| Childhood sexual and/or physical abuse | 10.2 |
| Baseline dating violence and/or forced sex | 12.4 |
| Wave 3 partner violence | |
| Threatened, pushed, or threw object | 17.0 |
| Hit, slapped, or kicked | 9.6 |
| Injury | 4.8 |
| Any violence or injury | 18.6 |
| Years between waves 2 and 3, mean (SD) | 5.4 (0.2) |

*Number of subjects is unweighted.

†Unless otherwise noted. Percentages and means are weighted.

jects came from homes where the highest parental education level was less than 12th grade. The mean baseline depressive symptoms scale score was 11.4, and 10.2% of subjects had above-threshold symptom scores. At wave 3, 25.7% of subjects were married, 24.9% were cohabiting, and 49.4% were considered to be dating. The mean number of years between wave 2 and 3 interviews was 5.4. One percent of subjects were married at both waves 2 and 3.

DEPRESSIVE SYMPTOMATOLOGY AND SUBSEQUENT IPV EXPOSURE

Twenty-eight percent of subjects with high depressive symptom levels at baseline reported any IPV or injury at follow-up as compared with 17.5% of subjects with lower symptom levels (odds ratio [OR], 1.84 [95% confidence interval (CI), 1.20-2.84]) (**Table 2**).

In bivariate analyses with the dichotomous depressive symptoms variable, girls with high baseline symptom levels had 1.66 times the odds of subsequent exposure to mild IPV and 2.46 times the odds of exposure to moderate to severe IPV as compared with girls with lower baseline symptom levels (results not shown). In fully adjusted analyses, high depressive symptomatology was not significantly associated with likelihood of exposure to mild IPV ($P = .11$) (**Table 3**); girls with high depressive symptoms had 1.86 times the odds of subsequent exposure to moderate to severe IPV (95% CI, 1.05-3.29) (**Table 4**).

In bivariate analyses with continuous depressive symptomatology, a 1-point increase in baseline symptoms was associated with a 3% increase in the odds of subsequent exposure to mild IPV (95% CI, 1.01-1.05) and a 4% increase in the odds of exposure to moderate to severe IPV (95% CI, 1.02-1.06). In fully adjusted analyses, each

Table 2. Percentage of 1659 Subjects Who Reported Past-Year Intimate Partner Violence at Wave 3, by Wave 2 Depressive Symptom Level*

| | Subjects With High Wave 2 Depressive Symptoms, % | Subjects Without High Wave 2 Depressive Symptoms, % |
|-------------------------------------|--------------------------------------------------|-----------------------------------------------------|
| Threatened, pushed, or threw object | 23.5 | 16.3 |
| Hit, slapped, or kicked | 20.0 | 8.5 |
| Injury | 6.7 | 4.6 |
| Any violence or injury | 28.1 | 17.5 |

*Number of subjects is unweighted. Percentages are weighted.

Table 3. Association Between Dichotomous Wave 2 Depressive Symptomatology and Wave 3 Mild Intimate Partner Violence in 1632 Subjects*

| | Model 1† | Model 2‡ |
|--------------------------------------------|-------------------|-------------------|
| Wave 2 dichotomous depressive symptoms | 1.64 (1.01-2.68)§ | 1.49 (0.91-2.45) |
| Wave 2 age | 0.98 (0.89-1.08) | 0.98 (0.89-1.08) |
| Race/ethnicity | | |
| Non-Hispanic white | 1.00 | 1.00 |
| Non-Hispanic black | 1.67 (1.03-2.71)§ | 1.70 (1.06-2.74)§ |
| Hispanic | 0.95 (0.53-1.72) | 0.97 (0.53-1.77) |
| Other | 0.96 (0.46-1.99) | 0.92 (0.45-1.89) |
| Parent education <12 y | 1.30 (0.73-2.33) | 1.33 (0.74-2.39) |
| Parent education missing | 0.88 (0.52-1.46) | 0.91 (0.54-1.52) |
| Childhood sexual and/or physical abuse | | 1.39 (0.83-2.33) |
| Baseline dating violence and/or forced sex | | 1.40 (0.84-2.30) |

*Number of subjects is unweighted. Values are expressed as adjusted odds ratio (95% confidence interval).

†Model 1 includes depressive symptoms, age, race/ethnicity, parental education, and indicator for parental education missing.

‡Model 2 includes all variables of model 1 and adds childhood sexual/physical abuse and baseline dating violence/forced sex.

§ $P < .05$.

1-point increase in depressive symptomatology was associated with a 3% increase in the odds of exposure to mild IPV (95% CI, 1.01-1.05) and a 3% increase in the odds of exposure to moderate to severe IPV (95% CI, 1.01-1.05) (tables available on request).

Regarding covariates and controls, adjusted analyses demonstrated that childhood physical/sexual abuse and baseline dating violence/forced sex were each associated with approximately 2 times the odds of exposure to moderate to severe IPV (Table 4). Additional analyses found that the lack of association observed between the abuse covariates and mild IPV in the fully adjusted model did not seem to be due to a mediating effect of depressive symptomatology.³⁴

COMMENT

Findings from this prospective study suggest that depressive symptomatology among adolescent girls is as-

Table 4. Association Between Dichotomous Wave 2 Depressive Symptomatology and Wave 3 Moderate to Severe Intimate Partner Violence in 1525 Subjects*

| | Model 1† | Model 2‡ |
|--------------------------------------------|-------------------|-------------------|
| Wave 2 dichotomous depressive symptoms | 2.26 (1.32-3.87)§ | 1.86 (1.05-3.29) |
| Wave 2 age | 1.04 (0.93-1.17) | 1.03 (0.91-1.16) |
| Race/ethnicity | | |
| Non-Hispanic white | 1.00 | 1.00 |
| Non-Hispanic black | 1.21 (0.64-2.26) | 1.22 (0.65-2.29) |
| Hispanic | 1.10 (0.57-2.12) | 1.15 (0.57-2.31) |
| Other | 1.10 (0.53-2.31) | 1.02 (0.51-2.04) |
| Parent education <12 y | 1.61 (0.84-3.08) | 1.70 (0.88-3.28) |
| Parent education missing | 1.00 (0.55-1.82) | 1.11 (0.61-2.02) |
| Childhood sexual and/or physical abuse | | 1.99 (1.11-3.57) |
| Baseline dating violence and/or forced sex | | 2.05 (1.18-3.53)§ |

*Number of subjects is unweighted. Values are expressed as adjusted odds ratio (95% confidence interval).

†Model 1 includes depressive symptoms, age, race/ethnicity, parental education, and indicator for parental education missing.

‡Model 2 includes all variables of model 1 and adds childhood sexual/physical abuse and baseline dating violence/forced sex.

§ $P < .01$.

|| $P < .05$.

sociated with increased risk of subsequent physical abuse by an intimate partner in late adolescence and young adulthood, independent of childhood physical or sexual abuse as well as prior experience of dating violence or forced sex. Twenty-eight percent of girls with high levels of baseline depressive symptomatology, corresponding to an elevated likelihood of mood disorder, reported some form of past-year physical IPV victimization 5 years later. Girls with high baseline depressive symptoms had 1.86 times the odds of girls with lower symptom levels of subsequent exposure to moderate to severe IPV, and victimization risk was also found to increase with increasing levels of continuous depressive symptomatology. The finding that childhood abuse and dating violence/forced sex were associated with subsequent IPV risk also provides prospective evidence that prior abuse is predictive of revictimization among young women.

The time of transition from adolescence to adulthood is one of increasing independence from parents, strengthening self-concept, and critical decision making regarding education, occupation, and intimate relationships, all of which have a salient impact on the long-term social trajectory of the individual.^{16,19} Depression that occurs during this time of transition may have a particularly significant impact on maturational processes and choices made, generating a trajectory of risk for continued psychosocial impairment and psychopathology.^{11,15,16,35,36}

Regarding social pathways that may be affected by depression in adolescence, studies of peer group homophily and assortative mating have found that adolescents and adults with depressive symptoms or disorders often associate, in friendship,^{37,38} dating,²⁰ and marriage,³⁹ with others who have similar levels of symptomatology. In turn, depressive symptoms and disorders among men have been

found to be positively associated with subsequent psychological²⁰ and/or physical²² aggression toward an intimate partner.

Depressive symptomatology is also associated with a range of adolescent risk behaviors including substance use and abuse,⁴⁰⁻⁴² and depressed youth are more likely to associate with deviant or risky peer groups¹⁸ from which partner selection is likely to occur. Alcohol and drug use, in turn, have been associated in some studies with males' physical abuse perpetration toward their dating partners,⁴³ cohabiting partners, and wives.⁴⁴ Depressive symptomatology has also been associated with antisocial behavior among young men^{20,45}; delinquency⁴⁶ and antisocial behavior^{20,21} among male adolescents are associated with increased likelihood of physical IPV perpetration. In sum, depressive symptomatology may elevate girls' risk of future IPV exposure by way of its contribution to risky peer group affiliations and assortative partnering with high-risk mates.

In addition to differential selection into abusive relationships, young women with a history of depressive symptomatology may be less likely to leave abusive relationships (or take a longer time to leave) for various reasons. First, insofar as depression in adolescence is predictive of outcomes such as teenage childbearing, diminished educational attainment, and unemployment, it may be associated with increased economic dependency on future partners and thus decreased likelihood of relationship exit.^{47,48} Second, increasing social isolation of the woman from family and friends is a common feature of abusive relationships, and diminished social support is another obstacle to relationship exit.^{49,50} Depressed youth often have impaired social relationships and diminished support from family members and peers,^{11,35,51} such that young women with former or current depression may enter intimate relationships from a starting point of greater isolation than those with no former or current depression. This diminished potential pool of external support may contribute to an increased likelihood of not leaving, or returning to, an abusive partner. Girls with a history of depression and diminished social support may also place an elevated premium on intimacy and maintenance of a relationship with a romantic partner and be more willing to tolerate acts of violence from an otherwise seemingly secure partner.⁴⁸

Third, depression is a primary psychological response to abuse, and Barnett⁴⁸ notes that depression or other mental health difficulties due to IPV may impair women's ability to mobilize to exit their relationships. Women who have a history of vulnerability to depression may have an increased likelihood of responding to the stressor of IPV with depression or other debilitation, contributing to a decreased likelihood of relationship exit. Further research should examine these and other potential mechanisms.

This study has several limitations. First, the adapted CES-D scale is not a diagnostic instrument. The wave 2 measurement of past-week depressive symptomatology may also not fully reflect the severity, chronicity, or recurrence of symptomatology over the period between waves 2 and 3, which may be relevant to likelihood of future IPV exposure. However, depressive symptoms and

disorders in adolescence are predictive of subsequent disorder in young adulthood, and a number of studies have noted the stability of depressed mood among adolescents, although a consistent pattern of findings has not yet emerged for girls.^{11,52-54} Second, incomplete measurement of confounding factors may have contributed to the observation of an association between depressive symptomatology and IPV exposure. The childhood abuse, dating violence, and sexual coercion covariates do not account for all relevant time in respondents' lives, and the wave 2 sexual coercion item focuses only on forced intercourse. The Add Health study also does not include a measure of exposure to interparental violence, which has been found to be predictive of women's subsequent depressive symptomatology⁵⁵ and abuse by an intimate partner.⁵⁶ Third, IPV is frequently underreported by survivors,^{57,58} which may have led to bias in results. Fourth, this study did not address perpetration; this relationship should be examined with surveys that distinguish between violence committed in self-defense or retaliation and self-initiated acts.⁵⁹ Finally, the generalizability of the study findings is limited, given the specific nature of the sample.

Overall, this study provides evidence that elevated levels of depressive symptomatology among adolescent girls are associated with an increased vulnerability to subsequent IPV exposure in late adolescence and young adulthood. However, the question of whether depressive symptomatology plays an independent role in shaping the trajectory toward future IPV exposure among young women, or whether it is simply a marker for IPV risk, is not fully resolved with the present study and warrants further investigation. If depressive symptomatology among adolescent girls becomes recognized as an independent predictor of subsequent IPV exposure, this will be one more reason to increase efforts in the prevention, identification, and treatment of depressive symptomatology among adolescent girls. If depressive symptomatology comes to be understood as a marker for risk of IPV exposure, it may be helpful in identifying high-risk girls for targeted intervention efforts.

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REFERENCES

- Campbell JC. Health consequences of intimate partner violence. *Lancet*. 2002;359:1331-1336.
- Kessler RC, Walters E. Epidemiology of *DSM-III-R* major depression and minor depression among adolescents and young adults in the National Comorbidity Survey. *Depress Anxiety*. 1998;7:3-14.
- Hankin BL, Abramson LY, Moffitt TE, et al. Development of depression from pre-adolescence to young adulthood: emerging gender differences in a 10-year longitudinal study. *J Abnorm Psychol*. 1998;107:128-140.
- Grunbaum JA, Kann L, Kinchen SA, et al. Youth Risk Behavior Surveillance—United States, 2003 [published correction appears in *MMWR Morb Mortal Wkly Rep*. 2004;53:536. *MMWR Morb Mortal Wkly Rep*. 2005;54:608]. *MMWR Surveill Summ*. 2004;53:1-96.
- Hickman LJ, Jaycox LH, Aronoff J. Dating violence among adolescents: prevalence, gender distribution, and prevention program effectiveness. *Trauma Violence Abuse*. 2004;5:123-142.
- Tjaden P, Thoennes N. *Extent, Nature and Consequences of Intimate Partner Violence: Findings From the National Violence Against Women Survey*. Washington, DC: US Dept of Justice; 2000.
- Giaconia RM, Reinherz HZ, Paradis AD, et al. Major depression and drug disorders in adolescence: general and specific impairments in early adulthood. *J Am Acad Child Adolesc Psychiatry*. 2001;40:1426-1433.
- Kessler RC, Walters EE, Forthofer MS. The social consequences of psychiatric disorders, III: probability of marital stability. *Am J Psychiatry*. 1998;155:1092-1096.
- Kessler RC, Foster CL, Saunders WB, et al. Social consequences of psychiatric disorders, I: educational attainment. *Am J Psychiatry*. 1995;152:1026-1032.
- Kessler RC, Berglund PA, Foster CL, et al. Social consequences of psychiatric disorders, II: teenage parenthood. *Am J Psychiatry*. 1997;154:1405-1411.
- Kandel DB, Davies M. Adult sequelae of adolescent depressive symptoms. *Arch Gen Psychiatry*. 1986;43:255-262.
- Weissman MM, Wolk S, Goldstein RB, et al. Depressed adolescents grown up. *JAMA*. 1999;281:1707-1713.
- Forthofer MS, Kessler RC, Story AL, et al. The effects of psychiatric disorders on the probability and timing of first marriage. *J Health Soc Behav*. 1996;37:121-132.
- Birmaher B, Ryan N, Williamson D, et al. Childhood and adolescent depression: a review of the past 10 years, part I. *J Am Acad Child Adolesc Psychiatry*. 1996;35:1427-1439.
- Rao U, Ryan ND, Birmaher B, et al. Unipolar depression in adolescents: clinical outcome in adulthood. *J Am Acad Child Adolesc Psychiatry*. 1995;34:566-578.
- Rao U, Hammen C, Daley S. Continuity of depression during the transition to adulthood: a 5-year longitudinal study of young women. *J Am Acad Child Adolesc Psychiatry*. 1999;38:908-915.
- Lewinsohn PM, Rohde P, Klein DN, et al. Natural course of adolescent major depressive disorder I: continuity into young adulthood. *J Am Acad Child Adolesc Psychiatry*. 1999;38:56-63.
- Fergusson DM, Woodward LJ. Mental health, educational and social role outcomes of adolescents with depression. *Arch Gen Psychiatry*. 2002;59:225-231.
- Reinherz HZ, Giaconia RM, Carmola Hauf AM, et al. Major depression in the transition to adulthood: risks and impairments. *J Abnorm Psychol*. 1999;108:500-510.
- Kim HK, Capaldi DM. The association of antisocial behavior and depressive symptoms between partners and risk for aggression in romantic relationships. *J Fam Psychol*. 2004;18:82-96.
- Andrews JA, Capaldi D, Foster SL, et al. Adolescent and family predictors of physical aggression, communication, and satisfaction in young adult couples: a prospective analysis. *J Consult Clin Psychol*. 2000;68:195-208.
- Kessler RC, Molnar BE, Feurer ID, et al. Patterns and mental health predictors of domestic violence in the United States: results from the National Comorbidity Survey. *Int J Law Psychiatry*. 2001;24:487-508.
- Harris KM, Florey F, Tabor J, Bearman PS, Jones J, Udry JR. The National Longitudinal Study of Adolescent Health: research design. Available at: <http://www.cpcunc.edu/projects/addhealth/design>. Accessed July 15, 2004.
- Udry JR. *The National Longitudinal Study of Adolescent Health (Add Health), Waves I & II, 1994-1996; Wave III, 2001-2002*. Chapel Hill: Carolina Population Center, University of North Carolina at Chapel Hill; 2003.
- Radloff L. The CES-D Scale: a self-report depression scale for research in the general population. *Appl Psychol Meas*. 1977;1:385-401.

26. Roberts RE, Andrews JA, Lewinsohn PM, et al. Assessment of depression in adolescents using the Center for Epidemiologic Studies Depression Scale. *Psychol Assess*. 1990;2:122-128.
27. Roberts RE, Lewinsohn P, Seeley J. Screening for adolescent depression: a comparison of depression scales. *J Am Acad Child Adolesc Psychiatry*. 1991;30:58-66.
28. Garrison CZ, Addy CL, Jackson KL, et al. The CES-D as a screen for depression and other psychiatric disorders in adolescents. *J Am Acad Child Adolesc Psychiatry*. 1991;30:636-641.
29. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Revised, Third Edition*. Washington, DC: American Psychiatric Association; 1987.
30. Shrier LA, Harris S, Beardslee W. Temporal associations between depressive symptoms and self-reported sexually transmitted disease among adolescents. *Arch Pediatr Adolesc Med*. 2002;156:599-606.
31. Goodman E, Capitman J. Depressive symptoms and cigarette smoking in teens. *Pediatrics*. 2000;106:748-755.
32. Des Jarlais DC, Paone D, Milliken J, et al. Audio-computer interviewing to measure risk behavior for HIV among injecting drug users: a quasi-randomized trial. *Lancet*. 1999;353:1657-1661.
33. Supple AJ, Aquilino WS, Wright DL. Collecting sensitive self-report data with laptop computers: impact on the response tendencies of adolescents in a home interview. *J Res Adolesc*. 1999;9:467-488.
34. Baron RM, Kenny DA. The mediator-moderator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *J Pers Soc Psychol*. 1986;51:1173-1182.
35. Merikangas K, Angst J. The challenge of depressive disorders in adolescence. In: Rutter MJ, ed. *Psychosocial Disturbances in Young People: Challenges for Prevention*. Victoria, Australia: Cambridge University Press; 1995:131-165.
36. Reinherz HZ, Paradis AD, Giaconia RM, et al. Childhood and adolescent predictors of major depression in the transition to adulthood. *Am J Psychiatry*. 2003;160:2141-2147.
37. Hogue A, Steinberg L. Homophily of internalized distress in adolescent peer groups. *Dev Psychol*. 1995;31:897-906.
38. Rosenblatt A, Greenberg J. Examining the world of the depressed: do depressed people prefer others who are depressed? *J Pers Soc Psychol*. 1991;60:620-629.
39. Lindeman S, Kaprio J, Isometsa E, et al. Spousal resemblance for history of major depressive episode in the previous year. *Psychol Med*. 2002;32:363-367.
40. Lewinsohn PM, Gotlib IH, Seeley JR. Adolescent psychopathology, IV: specificity of psychosocial risk factors for depression and substance abuse in older adolescents. *J Am Acad Child Adolesc Psychiatry*. 1995;34:1221-1229.
41. Deykin EY, Levy JC, Wells V. Adolescent depression, alcohol and drug abuse. *Am J Public Health*. 1987;77:178-182.
42. Kelder SH, Murray NG, Orpinas P, et al. Depression and substance use in minority middle-school students. *Am J Public Health*. 2001;91:761-766.
43. O'Keefe M. Predictors of dating violence among high school students. *J Interpers Violence*. 1997;12:546-568.
44. Pan HS, Neidig PH, O'Leary KD. Predicting mild and severe husband-to-wife physical aggression. *J Consult Clin Psychol*. 1994;62:975-981.
45. Zoccolillo M. Co-occurrence of conduct disorder and its adult outcomes with depressive and anxiety disorders: a review. *J Am Acad Child Adolesc Psychiatry*. 1992;31:547-556.
46. Malamuth NM, Sockloskie RJ, Koss MP, et al. Characteristics of aggressors against women: testing a model using a national sample of college students. *J Consult Clin Psychol*. 1991;59:670-681.
47. Anderson DK, Saunders DG. Leaving an abusive partner: an empirical review of predictors, the process of leaving, and psychological well-being. *Trauma Violence Abuse*. 2003;4:163-191.
48. Barnett OW. Why battered women do not leave, part 1: external inhibiting factors within society. *Trauma Violence Abuse*. 2000;1:343-372.
49. Walker L. Assessment of abusive spousal relationships. In: Beach SR, ed. *Marital and Family Processes in Depression*. Washington, DC: American Psychological Association; 1996:338-356.
50. Barnett OW. Why battered women do not leave, part 2: external inhibiting factors—social support and internal inhibiting factors. *Trauma Violence Abuse*. 2001;2:3-35.
51. Lewinsohn PM, Gotlib IH, Seeley JR. Depression-related psychosocial variables: are they specific to depression in adolescents? *J Abnorm Psychol*. 1997;106:365-375.
52. Holsen I, Kraft P, Vitterso J. Stability in depressed mood in adolescence: results from a 6-year longitudinal panel study. *J Youth Adolesc*. 2000;29:61-78.
53. Patten CA, Choi WS, Vickers KS, et al. Persistence of depressive symptoms in adolescents. *Neuropsychopharmacology*. 2001;25(suppl 5):S89-S91.
54. Charman T. The stability of depressed mood in young adolescents: a school-based survey. *J Affect Disord*. 1994;30:109-116.
55. Maker AH, Kemmelmeier M, Peterson C. Long-term psychological consequences in women of witnessing parental physical conflict and experiencing abuse in childhood. *J Interpers Violence*. 1998;13:574-589.
56. Hotelling GT, Sugarman DB. An analysis of risk markers in husband to wife violence: the current state of knowledge. *Violence Vict*. 1986;1:101-124.
57. Sugarman DB, Hotelling GT. Intimate violence and social desirability: a meta-analytic review. *J Interpers Violence*. 1997;12:275-290.
58. Koss MP, Goodman LA, Browne A, et al. *No Safe Haven: Male Violence Against Women at Home, at Work and In the Community*. Washington, DC: American Psychological Association; 1994.
59. Lewis SF, Fremouw W. Dating violence: a critical review of the literature. *Clin Psychol Rev*. 2001;21:105-127.

“Look there,
 look in the eyes,
 and look in the hearts,
 of those who watch while a baby sleeps,
 who will come at a call if he wakes and weeps,
 who forget the diapers and broken toys,
 who remember the tears and fears and joys,
 and the catch in the throat, and the heart's
 clutch,
 when small hands fumble, and reach, and
 touch—
 Yes, look in their hearts, and the signs are
 clear . . .
 A baby lives here.”
 —Anonymous