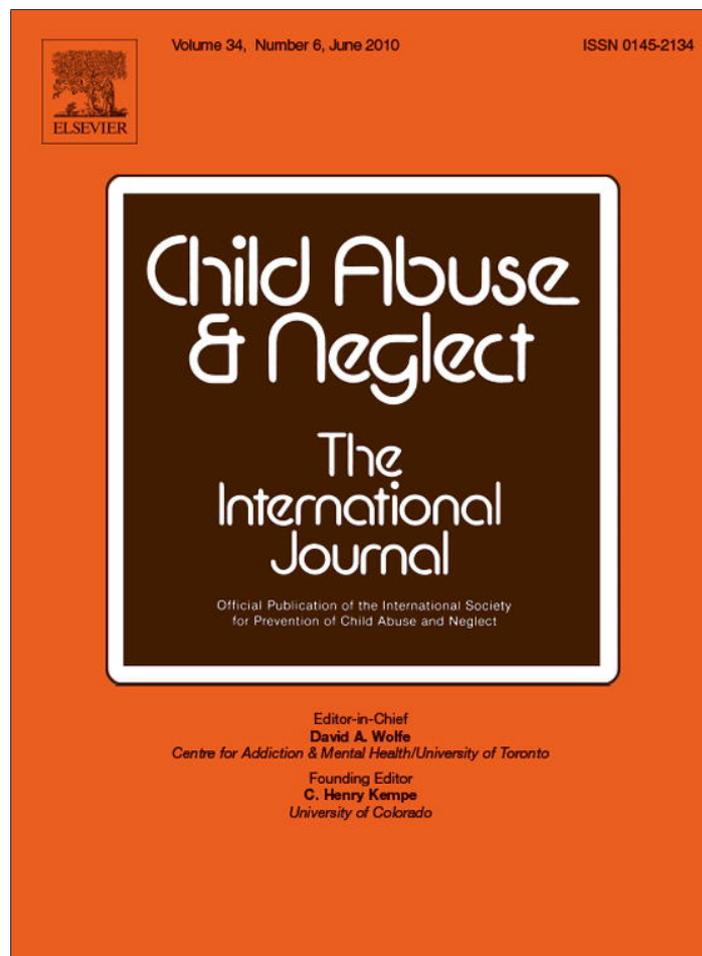


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Brief Communication

Witnessing domestic abuse in childhood as an independent risk factor for depressive symptoms in young adulthood[☆]David Russell^{a,*}, Kristen W. Springer^{b,c,1}, Emily A. Greenfield^{d,1}^a Center for Home Care Policy & Research, Visiting Nurse Service of New York, 1250 Broadway, 20th Floor, New York, NY 10001, USA^b Department of Sociology, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA^c Robert Wood Johnson Health and Society Scholars Program, Columbia University, New York, NY, USA^d School of Social Work, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA

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ABSTRACT

Objective: This study addresses the relationship between retrospective reports of witnessing domestic abuse in childhood and levels of depressive symptoms in young adulthood. We examine whether the association between having witnessed violence in childhood and depression is independent of having been the direct target of sexual and/or physical abuse, as well as other characteristics and experiences linked with family violence.

Methods: We used two waves of data collected from a sample of 1,175 young adults (ages 20–24) in Miami, Florida. Retrospective self-reports of witnessed abuse and measures of family context and adversities were obtained in 1998–2000. The respondents' level of depressive symptoms was assessed 2 years later in 2000–2002.

Results: Multivariate results indicate that frequently having witnessed domestic abuse predicts higher levels of depressive symptoms in young adulthood, independently of other risk factors for depression and family violence.

Conclusion: Results provide preliminary evidence that frequent exposure to domestic abuse is an independent risk factor for depressive symptoms in young adulthood.

Practice implications: Results support a renewed call for (a) increased attention to depression among children exposed to adults' interpersonal violence, and (b) greater efforts to bridge prevention and intervention efforts regarding domestic violence and child maltreatment.

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Introduction

Prevalence estimates indicate that between 16 and 30% of all children in the United States witness domestic abuse (Osofsky, 2003). A growing body of research suggests that exposure to domestic abuse in childhood is a risk factor for depression in adolescence and adulthood (Fantuzzo & Mohr, 1999; Feerick & Haugaard, 1999; Fergusson & Horwood, 1998; Forrstrom-Cohen & Rosenbaum, 1985; Johnson et al., 2002). Much of the previous empirical work in this area, however, has not accounted for other childhood risk factors that are likely to have co-occurred with witnessing domestic abuse (Horwitz, Widom, McLaughlin, & White, 2001; Kruttschnitt, McLeod, & Dornfeld, 1994; Langenkamp & Frisco, 2008; Schilling, Aseeltine, & Gore, 2007) including an individual's history of having been the direct target of abuse, family structure charac-

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teristics, poverty, frequent home and school moves, or parental unemployment (for exceptions, see: Carlson, 1991; Feerick & Haugaard, 1999; Herrenkohl & Herrenkohl, 2007; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008; O'Keefe, 1996; Spaccarelli, Sandler, & Roosa, 2005).

An additional limitation of existing research linking exposure to domestic abuse in childhood to depression in young adulthood is the use of selective samples (e.g., clinical samples or archival case data) that might not generalize to community populations (Edleson, 1999; Fantuzzo & Mohr, 1999; Fergusson & Horwood, 1998; Kolbo, Blakely, & Engleman, 1996; Oliver, Kuhns, & Pomeranz, 2006; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003). Furthermore, previous work generally does not account for frequency of exposure to domestic abuse, thereby not allowing for the examination of a potential dose/response relationship between the severity of exposure to domestic abuse and later depression.

This study aims to address these limitations by analyzing data from a community sample of young adults. We examine whether retrospective reports of witnessing abuse at varying levels of frequency is associated with depressive symptoms in young adulthood when controls for demographic characteristics, family structure, adverse family experiences, and being the direct target of physical and/or sexual abuse are accounted for.

Methods

Sample

We analyze two waves of data from the South Florida Transitions Study (Turner, Russell, Glover, & Hutto, 2007). The Transitions Study is a longitudinal epidemiological investigation of mental health and substance use problems among young adults and builds upon a previously completed study based in the Miami-Dade County Public School System (South Florida Youth Development Study [SFYD]; Vega & Gil, 1998). A random sample of 1,683 participants from the SFYD study was selected along with a supplementary sample of 888 females randomly drawn from the same cohort (drawn from Miami-Dade County sixth- and seventh-grade class rosters in 1990) who had not participated in the earlier study. The selection of a supplementary sample of females was needed to compensate for the deliberate under-representation of girls in the SFYD study, which focused on adolescent drug and alcohol use mostly among boys. Data were obtained within the respondents' homes using 2-hour, face-to-face computer assisted personal interviews (CAPI) between 1998 and 2000 (Time 1, when most participants were between 19 and 21 years of age). A response rate of 70.1% was achieved among those selected for interviews at Time 1. Funding constraints (and computations suggesting that a target sample of 1,200 would provide adequate statistical power for the planned analyses) led to the selection of a random sub-sample of 1,492 Time 1 participants for a second wave of interviews. A total of 1,205 participants were successfully re-interviewed between 2000 and 2002 (Time 2; when most participants were between 21 and 23 years of age) yielding a response rate of 80.8%. The analytic sample ($n = 1,175$) includes respondents who completed both interviews and who had complete data on all study variables.

Institutional Review Board (IRB) approval was obtained prior to data collection. All respondents received \$25 for participating in the study. The field interviewers received extensive training regarding difficulties that might arise during the interview due to the sensitive nature of many questions, such as those regarding witnessing abuse.

Measures

Depressive symptoms were measured with a 20-item modified version of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). This 20-item measure differed from the original scale in that it addressed experiences over the preceding month rather than the preceding week, which provides for a larger sampling of recent experiences of depressive symptoms. Respondents were asked how frequently they experienced various depressive symptoms (0 = *not at all* to 3 = *almost all the time*) in the past month. The scale's reliability coefficient for our analytic sample was .86. Table 1 displays descriptive statistics for this and all other analytic variables.

Exposure to domestic abuse. Respondents were asked: "Did you ever witness your mother or another close female relative being physically or emotionally abused?" This question is derived from a checklist of major life events designed to assess exposure to social stressors (Turner & Wheaton, 1995). Nineteen percent of respondents ($n = 234$) reported that they witnessed domestic abuse and were further probed about the number of times they witnessed such violence. Based on these reports, we created a multi-categorical variable for exposure to domestic abuse to discern the effects of high versus low exposure to domestic abuse. This variable included the categories of no exposure to domestic abuse (reference group; $n = 941$), few experiences of witnessing domestic abuse (1–9 times; $n = 122$), and frequent experiences of witnessing domestic abuse (10 or more times; $n = 112$). We designated respondents who witnessed abuse 10 or more times as the high exposure group because this cut-point indicated the modal frequency category for the sample. Sensitivity analyses indicated the results were robust to different specifications for high levels of exposure to domestic abuse (e.g., witnessing domestic abuse 10 times, 15 times, or 20 times).

Family structure. Family structure was assessed with a single question asking respondents to indicate whether various family members lived with them between the ages of 13 and 18. Responses were collapsed into one of four family-type categories:

Table 1

Means and proportions of study variables by exposure to domestic abuse.

Study variable	Total sample (<i>n</i> = 1,175)	Did not witness abuse (<i>n</i> = 941)	Low frequency witnessed abuse ^a (<i>n</i> = 122)	High frequency witnessed abuse ^b (<i>n</i> = 112)
Depressive symptoms	10.62 (7.79)	10.05 ^c (7.43)	12.04 (8.00)	13.84 (9.45)
Age				
Age in years	22.12 (.89)	22.07 ^c (.87)	22.40 (1.04)	22.25 (.85)
Gender				
Female	.44	.42*	.47	.59
Race/ethnicity				
White	.27	.84*	.05	.10
Hispanic	.23	.81	.10	.08
African American	.24	.72	.16	.11
Parental SES	.04 (.99)	.12 ^c (1.00)	-.32 (.84)	-.26 (.91)
Family structure				
Mother/father family	.56	.86*	.07	.06
Single parent	.21	.74	.13	.12
Extended single parent	.09	.67	.16	.16
Step-parent(s)	.12	.70	.15	.14
Adverse family experiences				
Parental unemployment	.20	.18*	.29	.30
Forced apart from parents	.21	.18*	.26	.36
Parental divorce	.46	.41*	.56	.80
Household expulsion	.13	.10*	.22	.26
Parental abandonment	.12	.09*	.21	.31
Parental substance abuse	.19	.14*	.32	.50
Direct target of abuse				
Target of abuse	.15	.11*	.24	.36

Note: Standard deviations are noted in parentheses for continuous variables.

All variables were measured in 1998–2000, with the exception of depressive symptoms, which was measured in 2000–2002.

The percentage of respondents who were represented in each of the four family structure categories is calculated across the three levels of exposure to domestic abuse.

^a Less than 10 instances of exposure to domestic abuse.

^b Ten or more instances of exposure to domestic abuse.

^c One-way analysis of variance reveals a statistically significant difference across the three groups indicating differential exposure to domestic abuse ($p < .05$).

* Chi-square test reveals a statistically significant difference across the three groups indicating differential exposure to domestic abuse ($p < .05$).

biological mother–father families, single parent families (includes grandparent-headed households), extended single parent families that include other relatives or persons (e.g., children residing with a single parent and a live-in partner), and families that include a step-parent. Respondents living in other family arrangements, such as foster families, were too infrequent to permit a separate analysis and thus were excluded from the analytic sample.

Lifetime exposure to other family adversities. Lifetime exposure to adverse family experiences was assessed using items from an index of exposure to major life events (Turner & Wheaton, 1995). These adverse family events included a single-item measure for each of the following: parental unemployment, forced separation from parents, parental divorce, household expulsion, parental abandonment, and parental substance problems.

Having been the direct target of physical and/or sexual abuse. Responses to three questions were used in the measure of having been a direct target of abuse in childhood (Turner & Wheaton, 1995): (a) “Were you regularly physically abused by one of your parents, step-parents, grandparents, or guardians?” (b) “Did you ever have sexual intercourse when you didn’t want to because someone forced you or threatened to harm you if you didn’t?” and (c) “Were you ever touched or made to touch someone else in a sexual way because they forced you in some way, or threatened to harm you if you didn’t?” Those who retrospectively reported one or more of these events ($n = 181$; 15%) were coded 1 on *having been the direct target of abuse*.

Demographic characteristics. We included demographic controls for age, gender, race/ethnicity (self-identification with one of three groups: white non-Hispanic, Hispanic, and African American), and parental socioeconomic status (SES). SES was created as a summary measure of standardized scores across parental education, income, and occupational prestige (Hollingshead, 1957).

Data analysis

We began our analysis by comparing mean levels of depressive symptoms across each of the study variables. These descriptive analyses are presented in Table 1. As displayed in Table 2, we ran step-wise multivariate regression models to examine the independent associations between exposure to domestic abuse (reported at Time 1) and depressive symptoms (reported at Time 2). Each of the additional factors included in the regression models (demographic variables, family structure, family adversity, and physical/sexual abuse) were reported during the Time 1 interview. The use of two waves of data reduces the potential for mood congruency bias by measuring reports of domestic abuse and depressive symptoms at separate measurement occasions. Model 1 included indicators for exposure to domestic abuse (high and low frequency, with respondents reporting no exposure as the reference group) and controls for demographic variables (age, gender, race/ethnicity, and parental socioeconomic status). Models 2 through 4 introduced additional variables that have been found to be associated with both exposure to domestic abuse and depressive symptoms, including childhood family structure (Model 2), other childhood family adversities (Model 3), and having been the direct target of physical and/or sexual abuse (Model 4). In a final model (Model 5) we regressed depressive symptoms on all variables.

As a pre-analytic step, we stratified the sample by gender and estimated models to examine potential differences in associations between exposure to domestic abuse and depressive symptoms for men and women. Because we found no evidence for gender differences, data from men and women were combined in all multivariate regression models. Also, given correlations among many of the independent variables in the final model, we employed post-estimation techniques and found no evidence for multicollinearity as a significant threat to the estimation of regression coefficients; the mean variance inflation factor for variables within the final model was 1.34, with no individual factor coefficient exceeding 1.80.

Results

Table 2 presents the multivariate results. As Model 1 indicates, in contrast to respondents who reported having not witnessed any domestic abuse, witnessing domestic abuse—at both high and low levels of frequency—was associated with more depressive symptoms independent of demographic characteristics ($b = 1.67, p < .05$, low exposure; $b = 3.22, p < .05$, high exposure). The coefficient representing frequent exposure to domestic abuse was noticeably larger than the coefficient designating a lower frequency of exposure; however, the difference in the effect of high frequency of abuse versus low

Table 2
T2 (2000–2002) depressive symptoms regressed on T1 (1998–2000) reports of witnessed abuse and controls for family context and adversity ($n = 1,175$).

Study variable	1	2	3	4	5
Witnessed abuse					
High freq. witnessed abuse ^a	3.22* (.77)	2.98* (.77)	2.09* (.81)	2.46* (.77)	1.71* (.81)
Low freq. witnessed abuse ^b	1.67* (.74)	1.53* (.74)	1.02 (.75)	1.26 (.74)	.80 (.74)
Demographic controls					
Age	-.19 (.25)	-.21 (.25)	-.15 (.25)	-.24 (.25)	-.19 (.25)
Female	2.10* (.45)	2.12* (.45)	1.92* (.45)	1.58* (.45)	1.58* (.45)
African American ^c	.43 (.66)	.05 (.67)	.53 (.67)	.52 (.66)	.41 (.67)
Hispanic ^c	-.53 (.57)	-.48 (.57)	-.38 (.57)	-.45 (.56)	-.22 (.56)
Parental SES	-.45 (.25)	-.29 (.25)	-.23 (.25)	-.45 (.24)	-.15 (.25)
Family structure					
Single parent ^d		2.21* (.58)			1.69* (.68)
Single parent w/others ^d		1.37 (.82)			.64 (.87)
Step-parent(s) ^d		.26 (.69)			-.25 (.78)
Adverse family experiences					
Parental unemployment			1.65* (.55)		1.62* (.55)
Forced apart from parents			1.18 (.59)		.99 (.58)
Parental divorce			.33 (.50)		-.09 (.57)
Sent away/kicked out home			1.52* (.66)		1.14 (.66)
Parental abandonment			.73 (.70)		.05 (.72)
Parental substance abuse			.80 (.60)		.78 (.59)
Direct target of abuse					
Target of abuse				3.41* (.64)	2.89* (.65)
Constant	13.73	13.64	11.73	14.65	12.43
Adjusted R ²	.04	.05	.06	.06	.08

Note: Unstandardized OLS regression coefficients (standard errors).

^a Ten or more instances of exposure to domestic abuse.

^b Less than 10 instances of exposure to domestic abuse.

^c Non-Hispanic whites comprise the reference category.

^d Children raised in mother-father families comprise the reference category.

* $p < .05$; two-tailed tests.

frequency of abuse on depressive symptoms was of marginal statistical significance ($p < .10$). When demographic factors were set at their respective mean values, the predicted depressive symptoms score for young adults exposed to a high frequency of domestic abuse was 14.30. It is worth noting that this level of depressive symptoms approaches the threshold of 16 points or more used to identify individuals at high risk of meeting criteria for a diagnosis of major depression (Harlow, Cohen, Otto, Spiegelman, & Cramer, 1999). The inclusion of the family structure variables in the regression equation (Model 2) explained only a small portion of the heightened risk for depressive symptoms associated with high or low exposure to domestic abuse, with the coefficient for each level of exposure slightly reduced in size from Model 1 but still statistically significant ($b = 1.53$, $p < .05$, low exposure; $b = 2.98$, $p < .05$, high exposure). In contrast, exposure to other adverse family experiences (Model 3) accounted for a considerable share of the linkage between reporting frequent experiences of having witnessed abuse and depressive symptoms ($b = 2.09$, $p < .05$) and reduced the coefficient for low exposure to domestic abuse to non-significance ($b = 1.02$, *ns*). This suggests that much of the observed association between reporting less frequent experiences of domestic abuse and depressive symptoms is attributable to other adverse family experiences that occurred during childhood, mainly parental unemployment and household expulsion. Accounting for physical and/or sexual abuse (Model 4) accounted for a substantial proportion of the association between witnessing abuse and later depressive symptoms, although the coefficient for higher exposure to witnessed abuse remained statistically significant ($b = 2.46$, $p < .05$). Results from the full equation (Model 5) reveal that having been frequently exposed to domestic abuse remains a significant risk factor for depressive symptoms in young adulthood, controlling for other potential confounding variables ($b = 1.71$, $p < .05$). Finally, it is also worth noting that overall level of variance accounted for by the full model is relatively low (Model 5 $R^2 = .08$) which suggests that exposure to domestic abuse and other family context factors explain only a small share of the variation in depressive symptoms across the respondents in the current study.

Discussion

The results of this project provide additional evidence that frequently witnessing domestic abuse in childhood is an independent risk factor for depressive symptoms in young adulthood even when accounting for being the direct target of physical and/or sexual abuse, growing up in a non-two-parent household, and experiencing other family adversities and disadvantages. While those who witnessed domestic abuse less frequently (i.e., less than 10 times) also reported higher depressive symptoms in models that included controls for sociodemographic and family structure characteristics, this association became non-significant after accounting for direct experiences of childhood abuse and other family adversities. This suggests that infrequent exposure to domestic abuse does not have a persistent influence on later depressive symptoms independently of other competing family adversities. Further, the differential findings based on frequency lend support to research that identifies a dose/response relationship between the extent of exposure to abuse and risk for poorer mental health (Fergusson & Horwood, 1998).

Several analytic features of the study merit a discussion of their limitations. First, the analyses were conducted on a preexisting survey not specifically designed to measure childhood abuse. Therefore, the study was not able to employ more commonly used measures of exposure to domestic abuse and other child adversities (Edleson et al., 2007). Due to biases associated with the respondent's current mood or mental health state, the use of retrospective reports introduces ambiguity in drawing causal conclusions about observed relationships between reports of witnessed abuse and later depression (Hardt & Rutter, 2004; Widom, Raphael, & DuMont, 2004). This issue is compounded when retrospective reports are based on a limited number of items, such as in the present study, which employed two items to screen for domestic abuse (exposure and frequency) and single-item measures of other childhood adversities. Furthermore, respondents with high levels of depressive symptoms at the time of interview may selectively recall negative experiences and exaggerate their exposure to childhood abuse and other adversities. The retrospective nature of the items also might lead respondents to under-report experiences that occurred early in childhood (such as parental unemployment). In addition, the use of a limited number of items to assess whether or not respondents were exposed to domestic abuse in childhood, as well as to direct experiences of abuse, might also lead to underreporting such experiences; previous studies have found that indices with more items regarding specific and multiple acts of violence (e.g., PC-CTS; Straus, 1979) solicit more affirmative—and likely more comprehensive and thorough—responses (Hardt & Rutter, 2004). Such instances of selective recall might also affect the total amount of variance explained (R^2) by independent variables in the model. Finally, the measure of witnessed abuse employed in this study also fails to distinguish between emotional and physical abuse and only assesses violence against women; other studies are necessary to examine the extent to which linkages between exposure to domestic abuse and mental health are contingent upon the particular types of abuse observed or the gender of the victim of abuse. Together, these limitations in measurement underscore the preliminary nature of the results and indicate the need for further research to draw more definitive conclusions about the nature of the association between witnessing abuse in childhood and reports of depressive symptoms in young adulthood.

Finally, this study focuses on only one aspect of mental health—depressive symptoms. More research is needed to evaluate the association between witnessed abuse and other forms of distress, such as anger, anxiety, and posttraumatic stress. Likewise, exposure to domestic abuse may also precipitate externalized forms of distress, such as substance abuse and conduct problems, which might be more sensitive to gender differences.

Despite the limitations discussed above, this study contributes to the empirical evidence for linkages between exposure to domestic abuse in childhood and greater depressive symptoms in young adulthood. Associations between exposure to

domestic abuse and greater depressive symptoms were particularly robust among young adults who reported frequent experiences of witnessing domestic abuse. Results provide further support for considering children's exposure to domestic abuse as an area for public concern, as well as for researchers and practitioners to better differentiate among children's varied experiences of family violence and to consider other risk factors within children and families' lives (Edleson et al., 2007).

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