

Social Context and Violence Exposure as Predictors of Internalizing Symptoms in Mothers and Children Exposed to Intimate Partner Violence

Wendy D'Andrea¹ · Sandra Graham-Berman²

Published online: 6 October 2016
© Springer Science+Business Media New York 2016

Abstract Family and social environment may play a part in children's post-violence adjustment. The goal of this paper is to examine which factors are related to internalizing symptoms in mothers and their children exposed to intimate partner violence. Participants were 208 mothers exposed to domestic violence. Mothers responded using the Conflict Tactics Scale, Beck Depression Inventory, and other standardized scales. They also reported on their children's internalizing symptoms using the Child Behavior Checklist (CBCL). For the whole group, children's CBCL scores were related to higher maternal depression and lower maternal self-esteem. Factors determining internalizing in children varied based upon the child's race. This study illustrates the importance of factors, such as maternal depression, maternal self-esteem, violence exposure, and social support, in determining whether a child exposed to domestic violence develops internalizing symptoms, and that ecological factors may have different effects on children based on race.

Keywords Interpersonal violence · Complex trauma · Domestic violence · Child maltreatment · Depression · Development

Children exposed to traumatic events in general, and to intimate partner violence (IPV) in particular, have elevated rates of anxiety, posttraumatic stress disorder,

depression and health problems compared to their non-violence exposed peers (e.g., Boney-McCoy and Finkelhor 1996; Howell and Graham-Bermann 2011; Turner et al. 2006). Though behavior problems are of concern, children who appear to be coping well with a “stiff upper lip” may also be experiencing deep sadness and fear which is overlooked if they are not exhibiting behavioral problems. A variety of factors, such as children's demographics, family environment, and social environment, may play a part in children's post-violence adjustment. The goal of this investigation is to examine how environmental and familial factors relate to internalizing symptoms, such as depression and anxiety, in children exposed to IPV.

Internalizing symptoms may be of interest for several reasons in the study of post-violence functioning in children. Depression is one manifestation of children's responses to disruptions in attachment (Abela et al. 2005; Gullone et al. 2006) and social environment (Dawson et al. 1994; Farruggia et al. 2006; Oort et al. 2009). The unpredictability of IPV has the potential to evoke significant feelings of helplessness in children (e.g., Howell et al. 2015; Olson et al. 2003). Finally, internalizing may underlie some of the externalizing behavioral problems that some children exhibit (Gilliom and Shaw 2004). Therefore, internalizing symptoms in children exposed to violence may be an important area of study and a potential target for intervention.

Numerous studies have documented that children exposed to IPV have elevated symptoms of depression (Boney-McCoy and Finkelhor 1996; Grych et al. 2000; Sternberg et al. 1993). The degree to which children exhibit post-domestic violence depressive symptomatology may vary based on factors we will review, such as race/ethnicity, family financial stress, violence characteristics (e.g., type, length), maternal mental health, and social support.

✉ Wendy D'Andrea
dandreaw@newschool.edu

¹ The New School for Social Research, Department of Psychology, 80 Fifth Ave. 7th Floor, New York, NY 10011, USA

² University of Michigan, Ann Arbor, USA

An Ecological Framework for Child Internalizing Symptoms

An ecological framework may be a useful approach for the complex variables that influence child mental health. Ecological models allow examination of the impact of multiple spheres of influence on an individual. Spheres of influence can be classified as *microsystem factors*, which are individually driven (e.g., mental health symptoms); *mesosystem factors*, which reflect small group processes (e.g., availability of social support); and *macrosystem factors*, such as cultural attitudes and norms (e.g., acceptance of violence against women). Bronfenbrenner (1979) has noted that child development is particularly subject to mesosystem factors, because children spend the largest proportion of time within the family. Thus, examining spheres of influence on child internalizing symptoms provides data over a broader range of a child's experience, necessitating the review of several variables covering multiple levels of system factors.

Mesosystem Factors

Causes of depression have been identified as an interaction among genetic, environmental and psychosocial factors (Todd and Botteron 2001). Though depression carries genetic risk, it is most likely to occur with significant environmental stress or negative life events (Sullivan et al. 2000). Abused women have elevated rates of depression relative to nonabused women, with those residing in a shelter having even greater depression and social isolation (Campbell et al. 1995; Mitchell and Hodson 1983). In a meta-analysis, Golding (1999) reported that depression is the most common outcome of intimate partner violence, with clinically significant symptoms of depression in nearly half of women exposed to IPV.

Multiple studies have examined the role of women's depression as a predictor of mental health in children exposed to IPV. Jarvis and Novaco (2006) found that maternal depression was linked to greater internalizing symptoms in children following their stay in a domestic violence shelter. Jones et al. (2001) studied children over the course of two years to examine the development of depression. Maternal levels of depression prospectively predicted the development of children's depressive symptoms regardless of the quality of the parenting relationship. It is important to note that a mother's depressive symptoms may co-occur with her child's depressive symptoms without contributing to their etiology. For example, experiences common to both mother and child, such as exposure to poverty or violence, may result in depressive symptomatology. Similarly, the relationship between maternal and child mental health may be bidirectional, such that children's stress impacts mothers' (Barbot et al. 2014).

The presence of social support is a protective factor against the negative effects of potentially traumatic events (Brewin et al. 2000). IPV-exposed women may be vulnerable to social isolation: abusers often try to control and limit access to those outside the immediate family, causing significant anxiety for abused women and less opportunity for support for the child (McCloskey et al. 2002). Measures taken to access a safe environment, like moving to a shelter, may disrupt social bonds. Social support affects an abused women's parenting and mental health, such that women with more support have better parenting, fewer symptoms of depression, and less suicidal behavior than abused women with less social support (Beeble et al. 2009; Coker et al. 2002; Fowler and Hill 2004; Tan et al. 1995).

Children's social support can be considered in two ways: support to the entire family and support of children from peers. Children rely on those closest to them (e.g., parents and family members) for guidance and support when facing adversity. When adults in a child's life are more stable, that child will be more likely to learn to regulate emotions and develop social competence (Denham 2006), particularly in the service of mediating stress responses (Thompson et al. 2006). While most of children's social support comes from family members, children, especially older children, also develop peer networks they rely on for support. However, this protective effect may be mitigated in a peer network characterized by stress (for example, in impoverished communities or in shelters).

Violence-related factors, such as type and duration of violence, may impact the development of depression in children and mothers. Litrownik et al. (2003) discovered that maternal reports of psychological victimization and the child's witnessing of physical violence predicted internalizing problems in a sample of 682 children, and others have found that psychological abuse significantly impacts mothers (e.g., Crossman et al. 2015; Gentry and Bailey 2014). Graham-Bermann and colleagues found that direct experiences of violence predicted level of adjustment in preschool children exposed to IPV (Graham-Bermann et al. 2012). However, most studies emphasize the role of witnessing physical violence; given the large body of literature that suggests that emotional abuse is related to both child and adult psychopathology, it may be important to consider whether witnessing emotional abuse, as well as physical abuse, impacts child internalizing symptoms.

Macrosystem Factors

Because macrosystem factors exist at the level of the broader culture, they may be difficult to measure; therefore, we suggest two variables that may serve as proxies for culture-level variables: economic status, and race and ethnicity.

Surprisingly few studies have examined differences in depression in children exposed to IPV based upon race. Turner et al. (2006) surveyed over 2000 children and their parents. Among younger children exposed to violence, depression symptoms were higher for Caucasians than for Hispanics and African Americans, but depressive symptoms were mediated by economic status more than race among older children, such that lower income was related to more depression. Meta-analytic techniques indicate that there do not appear to be differences in self-reported depression between Caucasian and African American children regardless of experiences of witnessing violence, but Hispanic children report elevated depression compared to these two groups (Twenge and Nolen-Hoeksema 2002). In the absence of group differences, the pathways to depression may differ for children depending on race.

While violence occurs in families of all income levels, women in low-income families may be particularly impacted by violence, because leaving an abusive partner requires economic resources and create barriers to resources (Bograd 1999; Raphael and Tolman 1997). Furthermore, financial stressors may impact mental health; and factors such as discrimination may differentially impact racial minority women (Hampton et al. 2003).

The Present Study

The literature on depression in children exposed to IPV could benefit from several augmentations. First, few researchers are taking an ecological approach to the study of the issue; that is, research to this point has not focused on environmental, familial and individual factors together as predictors of depression in children exposed to IPV (See Graham-Bermann and Gross 2008). However, because children's well-being may be determined by a broad spectrum of circumstances and because children are often dependent upon their environments, an examination of children in relation to their families and social context is appropriate and necessary. In particular, the literature may benefit from further examination of the intersection between maternal depression and child internalizing symptoms. Furthermore, the literature on children exposed to IPV has disproportionately focused on externalizing symptoms, leaving a gap in our knowledge about children whose struggles may not be so disruptive as to gain the attention of caretakers. Though internalizing and externalizing factors may overlap significantly, keeping a focus on internalizing factors will help draw attention to this area of need.

Why an ecological model? Because of the major influence of the attachment system on child mental health, we hypothesize that maternal depression symptoms will largely predict children's internalizing symptoms. However, contextual factors, such as family and peer support and ongoing exposure to

violence, may also impact health. We will thus statistically group factors according to one possible interpretation of meosystem and macrosystem levels (See data analysis section for details). This approach is modeled after our earlier research on predicting posttraumatic stress in children (Graham-Bermann et al. 2012; Horn et al. 2016). Specifically, we investigate the following research questions and hypotheses:

1. *What factors predict depression in mothers exposed to domestic violence?* We predict that levels of physical violence and psychological abuse exposure will relate to maternal mental health.
2. *Do predictors of maternal mental health vary by race?* We hypothesize that predictors of maternal mental health will differ by the race of the mother.
3. *Accounting for factors that predict depression in mothers exposed to domestic violence, does maternal depression still predict child internalizing symptoms?* Given that maternal depression may strongly impact parenting, we hypothesize that maternal depression will predict child internalizing symptoms above and beyond exposure to violence.
4. *Do predictors of child internalizing symptoms vary by race?* We hypothesize that predictors of child internalizing symptoms will differ by the race of the child.

Method

Participants

Participants were 208 mothers who had experienced physical violence by a partner in the last year. Mothers ranged in age from 21 to 55, with a mean age of 33.56 ($SD = 6.04$). Children ranged in age from 6 to 13, with a mean age of 8.38 ($SD = 2.10$); 52 % of the children were Caucasian and 48 % were African American or biracial (with one African American parent); 49 % were girls. Sixty percent of the mothers had attended at least some college or advanced technical training, and mean family income was \$1300/month ($SD = \1149). Participants were excluded if they had not experienced violence within the past year. Participants with psychiatric comorbidities, medication, and history of abuse to the child were not excluded. Unlike many studies of abused women and their children, the majority of families resided in the community and not in shelters.

Recruitment Following approval from the Institutional Review Board, participants were recruited from local community flyers and shelters to participate in a survey and an intervention for mothers and children who had experienced violence in the home (Graham-Bermann et al. 2007; Graham-

Bermann and Miller-Graff 2015). World Health Organization (WHO) guidelines on researching domestic violence were followed to the extent applicable. In order to qualify for participation, mothers were required to endorse at least mild physical violence by an intimate partner that had occurred within the past year. Three women who contacted the research coordinator did not qualify for the study and two declined participation. Before random assignment to the intervention groups (see Graham-Bermann et al. 2007 for details), research assistants interviewed mothers. Nineteen of the mothers in this study were living in shelter when the interview took place. Mothers gave consent to be interviewed.

Measures

Mothers were asked their age, race, monthly income, education level, hours of work per week, child's age, child's gender, how many hours their children spend with friends in a week, and whether they have ever lived in a shelter for abused women.

The *Conflict Tactics Scale* (CTS; Straus 1979) is a widely used 18-item questionnaire with subscales designed to address emotional maltreatment and physical violence in couples. Internal consistency on the CTS = .88; in the current study $\alpha = .84$. Reliability between partners has been found to be acceptable (Archer 1999). Examples of physical abuse include hitting, slapping, burning, or causing other injury; psychological violence includes threats, yelling, or using the "silent treatment." (The negotiation scale was not used.) The *Severity of Violence Against Women Scale* (SAVAWS; Marshall 1992) is a 46-item questionnaire designed to assess frequency and severity of violence. For this study, internal consistency for the whole scale was $\alpha = .86$. Following the endorsement of an act of violence from the CTS and SAVAWS, mothers were asked whether and how often their children had seen that violent act; this procedure has been previously used in domestic violence research (e.g., el-Sheikh et al. 2008; MacDonell 2012). The two measures were summed to create indices of the child's frequency of witnessing psychological and physical abuse.

The *Child Behavior Checklist* (CBCL; Achenbach et al. 1991) is a widely used 118-item instrument that can be reliably separated into Internalizing (anxiety/depression, withdrawal, somatic complaints) and Externalizing (delinquency, aggression) subscales (Greenbaum and Dedrick 1998). Internal consistency has ranged from .89–.93 in prior research (Achenbach et al. 1991) and was .91 for the current study. The CBCL has been found to have strong concurrent validity in clinical populations (Edelbrock and Achenbach 1980). The CBCL is normed on children ages 6–18. The Internalizing subscale is a valid measure of mixed depression/anxiety symptoms in children, and correlates well with diagnostic interviews (Jensen et al. 1993) and diagnoses of Major Depressive Disorder (Edelbrock and Costello 1988). For the

Internalizing subscale, a raw score of 14 and t-score of 64 has been used to suggest clinically significant internalizing symptoms (Achenbach et al. 1991). In this sample, the internal reliability of the internalizing subscale was $\alpha = .91$.

The *Beck Depression Inventory* (BDI; Beck et al. 1961) is a 21-item self-report questionnaire used to measure depression in adults. A total score on the BDI consists of the sum of all responses and ranges from 0 to 63. Scores on the BDI are related to psychiatrist-ratings of depression (Bumberry et al. 1978). The BDI has been found to have high content validity and internal consistency (see Richter et al. 1998 for review). BDI internal consistency was reported as $\alpha = .86$ (Bumberry et al. 1978); for the present study it was .92. The BDI has been validated in a variety of cultural groups, including African Americans (e.g., Carmody 2005; Grothe et al. 2005; Reed et al. 1996).

The *Brief Social Support Questionnaire* (Sarason et al. 1983) is a six-item questionnaire utilized to assess adults' self-report of social support. The longer version has been found to have good internal consistency (alpha = .90–.93), as well as convergent and discriminant validity (Brock et al. 1996; Sarason et al. 1987), with comparable psychometric properties for the shorter version (Sarason et al. 1987). Internal consistency for the present study was alpha = .77. The measure has been used with participants from a variety of cultural backgrounds (e.g., Nehra et al. 1996).

Procedure

All questionnaires were administered via interview, at the outset of a larger intervention study. Interviews took place at the community center, shelter, or at the woman's home if it was safe to do so (the abusive partner was not living in the home). Mothers were informed that instances of potential child abuse were required by law to be reported by the investigators to Child Protective Services. All procedures were approved by the university's IRB. Mothers were reimbursed \$20.

Data Analysis and Explicating the Model of Effects We first conducted independent-samples t-tests by race of all study variables. Then, in order to examine the impact of contextual factors on maternal depression, we conducted two regression analyses, one for the whole group and one split by race. We chose to split the file by race (dichotomously) rather than use a moderating analysis because of statistical problems associated with moderation analyses in regression (Aguinis 1995). Our third procedure was to use contextual predictors, including maternal depression, to predict child internalizing symptoms. We conducted regression analyses in three steps: first, we entered factors related to the larger social environment (race, amount of monthly income in dollars, mother's hours spent at work, mother's social support, child's time spent with friends, and whether or not the family was in shelter at the time of assessment); next, we entered characteristics of

violence exposure (frequency of physical abuse to mother, frequency of psychological abuse to mother); last, we entered maternal depression.

We allocated variables at these ecological levels based on the following rationale. First, race, income and mother's hours spent working may be least proximal to the child, because those factors and their significance may be determined by the culture at large. For example, race may dictate cultural norms within a family, but it may also dictate how a child is treated by society. The same may be true for income and hours spent working. Because of the prevalence of racial bias, women of color may earn less money and spend more hours doing working to make ends meet. Second, we selected violence characteristics as next in proximity to the child because the impact of violence exposure may be direct (e.g., witnessing violence may be traumatizing to children) and/or indirect (through its impact on mothers). Finally, we selected maternal depression as most proximal to children and entered it last in the blocked regression equation for several reasons. The literature strongly suggests that maternal mental health may significantly impact children even in the absence of current life stressors (for review, see Main and Hesse 1999). Furthermore, though maternal depression may be largely independent of contextual factors, it may also be largely determined by them. Last, because of the extant literature's focus on maternal depression, entering this variable in the regression equation in the final block allowed us to account for contextual variables first and provide us with an understanding of the relationship of maternal depression to children's internalizing symptoms when controlling for other variables. Our final step was to repeat the regression analysis predicting internalizing symptoms split by race (excluding race as a predictor).

Results

Descriptives Fifty-eight percent of children ($n = 128$) met criteria for clinically significant depression on the CBCL-Internalizing subscale, and 33 % ($n = 73$) of mothers scored in the clinically significant range for depression on the BDI: 19 % of mothers with moderate depression, 10 % with severe depression and 4 % with extreme depression. (See Table 1 for specific values.) Independent samples t-tests were conducted to examine differences between racial/ethnic groups on social context variables, intimate partner violence variables and demographic characteristics of mothers and children – all potential contributors to variance in depression for mothers and children (see Table 1). No significant between-groups differences were found.

Predictors Associated with Maternal Depression Pearson correlations were used to identify potential variables for

predict maternal depression, (See Table 2). The number of hours worked, social support, shelter status and the frequency of psychological abuse were significantly associated with maternal depression.

Results of regression analyses indicated that, for the total sample, maternal depression was inversely predicted by social support and positively predicted by the frequency of psychological abuse, and at the trend level for the frequency of physical violence ($R = .42$; $R^2 = .17$; $\text{Adj } R^2 = .14$; $F = 5.19$, $p < .001$) (see Table 3). Thus the first hypothesis was only partially supported. However, for African American/biracial mothers, depression was significantly predicted by experiences of psychological abuse, and inversely predicted by social support ($R = .50$; $R^2 = .25$; $\text{Adj } R^2 = .20$; $F = 4.30$, $p < .001$). For Caucasian mothers, depression was significantly predicted by the frequency of psychological abuse ($R = .43$; $R^2 = .18$; $\text{Adj } R^2 = .13$; $F = 3.11$, $p < .01$), and negatively at the trend level by frequency of physical abuse and number of hours worked per week. (See Table 3.) Thus, the second hypothesis was supported with differences in predictors found for African American and for Caucasian mothers.

Predictors of Child Internalizing Symptoms Three models were tested to predict child internalizing symptoms. Following the ecological framework, factors distal to the child were entered in the first model. Results, shown in Table 4, indicate that the only distal factor significantly predicting internalizing problems was the child spending less time with friends (Whole Group $R = .23$; $R^2 = .05$; $\text{Adj } R^2 = .03$; $F = 2.33$, $p < .05$; Caucasian children $R = .22$; $R^2 = .15$; $\text{Adj } R^2 = .00$; $F = 1.03$, $p = .40$). For African American/biracial children, a trend was found for less time with friends predicting internalizing symptoms ($R = .27$; $R^2 = .07$; $\text{Adj } R^2 = .02$; $F = 1.39$, $p = .24$). However, neither overall model significantly predicted variance in internalizing symptoms. Entering violence characteristics into the second model yielded additional results, rendering the overall model significant, such that psychological abuse was accounted for variance in internalizing symptoms for the whole group ($R = .32$; $R^2 = .10$; $\text{Adj } R^2 = .07$; $F = 3.39$, $p < .01$). Physical abuse was an additional significant predictor for African American/Biracial children ($R = .56$; $R^2 = .31$; $\text{Adj } R^2 = .26$; $F = 5.76$, $p < .001$), although neither abuse variable contributed to predictive value for Caucasian children ($R = .26$; $R^2 = .07$; $\text{Adj } R^2 = .00$; $F = 1.04$, $p = .41$).

Adding maternal depression to the third model significantly increased the amount of variance accounted for in internalizing symptoms (Whole Group $R = .48$; $R^2 = .23$; $\text{Adj } R^2 = .21$; $F = 8.02$, $p < .001$). Thus, the third hypothesis was supported. For the whole group, less social support, less child's time with a friend and maternal depression significantly predicted internalizing symptoms. The fourth hypothesis was also supported such that, for African American/biracial

Table 1 Means, Standard Deviations and T-Statistics for Group Differences

Variable	Race		Statistics		Total
	Black/Biracial M (SD)	Caucasian M (SD)	t	p	M (SD)
<i>Social Context Variables</i>					
Mother's total number of work hours/week	14.69 (18.54)	19.48 (18.62)	1.91	.06	17.07 (18.75)
Monthly income (\$)	1293 (1117)	1313 (1149)	.13	.90	1306 (1149)
Family social support	26.21 (4.43)	26.69 (3.54)	.88	.38	26.45 (4.01)
Time child spends with friends (hours/week)	12.34 (10.97)	11.03 (9.65)	9.36	.35	11.65 (10.29)
<i>Violence Characteristics</i>					
Freq. witnessing physical abuse	14.22 (23.06)	15.52 (24.33)	.41	.68	14.87 (23.65)
Freq. witnessing psych. Abuse	62.76 (59.66)	75.55 (58.72)	1.72	.09	69.62 (59.47)
<i>Maternal Characteristics</i>					
Mother's age	32.90 (5.52)	34.21 (6.47)	1.15	.12	33.56 (6.04)
Mother's depression symptoms	18.16 (11.55)	16.18 (10.27)	-1.34	.18	17.18 (10.95)
<i>Child Characteristics</i>					
Child's age	8.25 (2.11)	8.50 (2.10)	.88	.38	8.38 (2.10)
Female Gender	n = 49	n = 60	1.01	.31	–
Internalizing symptoms	13.68 (10.63)	13.33 (9.27)	-.257	.80	13.50 (9.96)

children, internalizing symptoms were predicted by the frequency of physical abuse to mothers and mothers' depression, with a trend for shelter use ($R = .59$; $R^2 = .35$; Adj $R^2 = .29$; $F = 5.88$, $p < .001$), whereas for Caucasian children, internalizing symptoms were predicted by maternal depression, with a trend for less time with a friend ($R = .56$; $R^2 = .31$; Adj $R^2 = .26$; $F = 5.89$, $p < .001$) (See Table 4).

Discussion

Taken together, this study illustrates the importance of factors such as maternal depression, frequency and chronicity of violence exposure, family income, and social support in

children's internalizing symptoms. Furthermore, these findings indicate that ecological factors may have different relationships to internalizing symptoms for children who differed by race. The finding that internalizing may be buffered by social support directly to mothers, as well as to their children through time spent with peers, is novel. Finally, this study highlights the impact of psychological abuse on women and their children.

The findings of this study are consistent with some, but not all, of the extant literature. In particular, previous research has indicated that maternal mental health may be a strong determinant of internalizing in violence-exposed children (Graham-Bermann et al. 2009; Jones et al. 2001). Although significant in both racial groups, this relationship was

Table 2 Intercorrelations Among Study Variables

Variables	2	3	4	5	6	7	8	9	10
1. Child Race	.16*	.35*	.37**	-.03	.37**	-.22**	-.08	-.002	.24**
2. Income		.34**	.12	-.11	.26**	-.21**	-.19	-.12	.05
3. Hours Spent Working			.43**	.16*	.22**	-.14*	-.02	-.14*	.09
4. Maternal Social Support				.08	.46**	-.1	.07	-.53**	.12
5. Child's Time with Friends					-.08	-.07	.07	-.08	-.19**
6. Shelter Status						-.27**	-.25**	-.17*	.04
7. Freq. Phys. Abuse to Mother							.74**	.08	.13*
8. Freq. Psych. Abuse to Mother								.20**	.21**
9. Maternal Depression									.37**
10. Child Internalizing									

* $p < .05$, ** $p < .01$

Table 3 Variables that Predict Maternal Depression

Variable β	Whole Group			Black/Biracial			Caucasian		
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>
Race	-.20	.14	-.10	–	–	–	–	–	–
Income	-.04	.09	-.04	.24	.16	.15	-.15	.10	-.15
Mother’s Work Hours	-.01	.00	-.14+	-.00	.01	-.08	-.01	.01	-.18+
Mother’s Social Support	-.22	.07	-.24***	-.34	.09	-.41***	-.07	.10	-.06
Time Child Spends with Friends	-.05	.03	-.11+	-.03	.04	-.07	-.05	.04	.13
In Shelter (1 = yes, 2 = no)	-.18	.14	-.09	-.06	.22	-.03	-.30	.19	-.15
Frequency of Physical Abuse to Mother	-.21	.11	-.18+	-.10	.16	-.09	-.30	.16	-.26+
Frequency of Psychological Abuse to Mother	.32	.10	.33***	.26	.13	.27*	.39	.14	.39**

+*p* < .1, ** *p* < .01, *** *p* < .001

particularly evident among Caucasian children, where maternal depression usurped variance accounted for by other factors. Beyond genetics, maternal depression may significantly impact the well-being of children via several routes. First, maternal depression may impact parenting, particularly the capacity for engagement. Manifestations of depression,

whether affectively labile or anhedonic, may result in disengagement with one’s child via a shift in a parent’s focus to depressive concerns, or through withdrawal as the demands of caretaking add to the burden of depression. Another possibility is that maternal depression causes children to worry about their mothers, which in turn increases their own mental health

Table 4 Predictors of Child Internalizing Symptoms

Variable	Whole Group				Black/Biracial				Caucasian			
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>R</i> ²	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>R</i> ²	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>R</i> ²
<i>Model 1</i>				.05				.07				.15
Income	-.10	.08	-.01		.22	.16	.15		-.06	.12	-.05	
Mother’s Work Hours	.00	.00	.08		-.00	.01	-.07		.00	.01	.01	
Mother’s Social Support	.06	.07	.06		.13	.09	.17		-.06	.12	-.05	
Child’s Time with Friends	-.09	.03	-.21**		-.08	.04	-.20+		-.09	.04	-.20*	
In Shelter	.04	.14	.02		-.06	.22	-.03		-.11	.22	.05	
<i>Model 2</i>				.10				.31***				.07
Income	-.03	.08	.03		.25	.14	.16+		-.06	.119	-.05	
Mother’s Work Hours	.00	.00	.06		-.005	.01	-.180		-.00	.00	-.02	
Mother’s Social Support	.04	.07	.04		.06	.08	.07		-.09	.12	-.07	
Child’s Time with Friends	-.09	.03	-.20**		-.06	.04	-.14		-.10	.04	-.23*	
In Shelter	.15	.14	-.07		.33	.20	.17		-.10	.22	-.04	
Frequency of Physical Abuse to Mother	-.03	.10	-.03		.36	.14	.34**		-.26	.19	-.20	
Frequency of Psychological Abuse to Mother	.26	.10	.26**		.21	.12	.23+		.22	.16	.20	
<i>Model 3</i>				.23***				.35***				.31***
Income	.05	.08	.04		.20	.14	.13		.04	.10	.03	
Mother’s Work Hours	.01	.00	.09		-.01	.01	-.08		.00	.00	.08	
Mother’s Social Support	.14	.07	.14*		.13	.08	.17		-.05	.11	-.04	
Child’s Time with Friends	-.07	.03	-.16**		-.05	.04	-.12		-.07	.04	-.16+	
In Shelter	.19	.13	.10		.34	.20	.17+		.09	.20	.04	
Frequency of Physical Abuse to Mother	.06	.09	.06		.38	.14	.36**		-.07	.17	-.05	
Frequency of Psychological Abuse to Mother	.11	.09	.11		.16	.12	.17		-.01	.15	-.01	
Mother’s Depression	.41	.07	.40**		.21	.09	.22*		.62	.10	.55**	

+*p* < .10; * *p* < .05, ** *p* < .01, ****p* < .001

burden. Finally, depression may be more directly “transmitted” through modeling. These findings extend with prior research on violence exposure severity from physical to psychological violence as a factor in the development of depression (one facet of internalizing) in children (e.g., Boney-McCoy and Finkelhor 1996; Litrownik et al. 2003); further, it examines the mediating influence of maternal depression on the link between violence exposure and child internalizing symptoms.

A significant contribution of this study is the examination of how factors predicting depression and internalizing vary across cultural groups. For example, among African American women, exposure to psychological abuse predicted depression symptoms, and witnessing psychological and physical abuse predicted internalizing symptoms for their children. One hypothesis is that witnessing psychological abuse may increase the burden of racism on minority women. The burden of racism may lead African American women to feel de-valued (Lewin et al. 2011); witnessing psychological abuse may reinforce their internalized negative views of themselves. Furthermore, although other research (e.g., Litrownik et al. 2003) has established that witnessing physical violence is related to depressive symptoms in children, the finding that witnessing psychological abuse was a marginal predictor of internalizing symptoms *independent of maternal depression* in African American children is novel. Therefore, examining the impact of witnessing psychological abuse may be an overlooked and important area of research. Social support to mothers was particularly protective against depression for racial minority mothers; in contrast, no unique predictors emerged as protective for Caucasian mothers. This difference suggests that factors which support healthy coping in the aftermath of violence may differ based on cultural background. These findings highlight the importance of ecological models with children: both the immediate and larger social context seems to contribute to mental health symptoms in violence-exposed children.

We report here a paradoxical finding that merits comment: frequency of physical violence *inversely* predicted maternal depression in Caucasian mothers. Perhaps women experiencing frequent violence were more motivated to leave the situation; this finding may bear out in Caucasian but not African American women if resources for leaving are not equally available to women of all racial backgrounds. However, income and social support was controlled for in this analysis, suggesting the importance of examining further contextual variables in the relationship between violence exposure frequency and depression.

Another key difference related to race emerged in these data. Child internalizing symptoms were most strongly predicted by maternal depression in Caucasian children, and exposure to violence was no longer significant in predicting internalizing when adding maternal depression to the equation for this group. For African American women, maternal

depression and exposure to violence were both significant predictors of child internalizing symptoms. The symptoms of depression in adults—negative mood, irritability, low energy, negative cognitive biases—may impact children both through modeling and through reducing a woman’s capacity to provide nurturance to children already struggling with the strain of domestic violence. Depression may also serve to isolate mothers and children from their social support systems; it is unclear whether children’s time with peers is protective, or indicative of the withdrawal associated with depression. Regardless of the pathway of transmission between maternal and child depression, these data indicate the importance of pursuing interventions for both mothers and children in order to help children overcome the effects of intimate partner violence. Though no single contextual-level variable predicted internalizing in children, contextual variables as a whole predicted internalizing in African American children. It may be particularly important to provide minority mothers with practical resources, such as income support, to help reduce the impact of domestic violence and depression on their children.

As with any study, this research is limited in several regards. First, the mental health variables are not based on independent diagnostic interviews. Thus, studies that move beyond self- and parent-report and into observational data on symptoms in children may be a useful addition to the literature. Another limitation of the study is that it relies on a correlational design. For example, while maternal depression may elicit sadness in children, it is equally possible that children with internalizing symptoms may elicit feelings of guilt and sadness in their mothers. Prospective studies that examine the direction of the relationship between maternal and child symptoms may be useful, in addition to studies that examine the source of the contagion. Finally, the single-reported nature of the study is a limitation. However, other investigators report that maternal depression does not appear to lead to biased reports of children’s diagnostic status (Friedlander et al. 1986).

In summary, these findings imply that social service agencies may wish to give additional attention to the role that contextual factors, including maternal mental health and social support, play in fostering children’s mental health. In particular, directing interventions towards supporting mothers in a variety of ways may be especially important both to them and to their children, and helping children connect to peer contexts may help as well. Furthermore, violence may differentially impact children of varying racial or ethnic backgrounds; while psychological violence may be viewed as less severe than physical violence, it was particularly related to symptoms in minority children. Finally, this study extends the examination of the impact of intimate partner violence in children beyond PTSD and behavioral disruptions into the realm of internalizing symptoms, which may help increase the identification of children in need of services.

Funding This study was funded by the National Injury Prevention Center, Centers for Disease Control and Prevention, Atlanta, GA. The views expressed here do not necessarily reflect those of the granting agency.

Compliance with Ethical Standards All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all patients for being included in the study.

Conflict of Interest All authors declare that they have no competing interests

References

- Abela, J. R. Z., Hankin, B. L., Haigh, E. A. P., Adams, P., Vinokuroff, T., & Trayhern, L. (2005). Interpersonal vulnerability to depression in high-risk children: The role of insecure attachment and reassurance seeking. *Journal of Clinical Child and Adolescent Psychology, 34*(1), 182–192.
- Achenbach, T. M., Howell, C. T., Quay, H. C., & Conners, C. K. (1991). National survey of problems and competencies among four- to sixteen-year-olds: Parents' reports for normative and clinical samples. *Monographs of the Society for Research in Child Development, 56*(3), v-120.
- Aguinis, H. (1995). Statistical power problems with moderated multiple regression in management research. *Journal of Management, 21*(6), 1141–1158.
- Archer, J. (1999). Assessment of the reliability of the conflict tactics scales: A meta-analytic review. *Journal of Interpersonal Violence, 14*(12), 1263–1289.
- Barbot, B., Crossman, E., Hunter, S. R., Grigorenko, E. L., & Luthar, S. S. (2014). Reciprocal influences between maternal parenting and child adjustment in a high-risk population: A 5-year cross-lagged analysis of bidirectional effects. *American Journal of Orthopsychiatry, 84*(5), 567.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561–571.
- Beeble, M. L., Bybee, D., Sullivan, C. M., & Adams, A. E. (2009). Main, mediating and moderating effects of social support on the well-being of survivors of intimate partner violence across 2 years. *Journal of Consulting and Clinical Psychology, 77*, 718–729.
- Bograd, M. (1999). Strengthening domestic violence theories: Intersections of race, class, sexual orientation, and gender. *Journal of Marital and Family Therapy, 25*(3), 275–289.
- Boney-McCoy, S., & Finkelhor, D. (1996). Is youth victimization related to trauma symptoms and depression after controlling for prior symptoms and family relationships? A longitudinal, prospective study. *Journal of Consulting and Clinical Psychology, 64*(6), 1406–1416.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68*(5), 748.
- Brock, D. M., Sarason, I. G., Sarason, B. R., & Pierce, G. R. (1996). Simultaneous assessment of perceived global and relationship-specific support. *Journal of Social and Personal Relationships, 13*(1), 143–152.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge: Harvard University Press.
- Bumberry, W., Oliver, J. M., & McClure, J. N. (1978). Validation of the Beck depression inventory in a university population using psychiatric estimate as the criterion. *Journal of Consulting and Clinical Psychology, 46*(1), 150–155.
- Campbell, R., Sullivan, C. M., & Davidson II, W. S. (1995). Women who use domestic violence shelters: Changes in depression over time. *Psychology of Women Quarterly, 19*, 237–255.
- Carmody, D. P. (2005). Psychometric characteristics of the Beck depression inventory-II with college students of diverse ethnicity. *International Journal of Psychiatry in Clinical Practice, 9*(1), 22–28.
- Coker, A. L., Smith, P. H., Thompson, M. P., McKeown, R. E., Bethea, L., & Davis, K. E. (2002). Social support protects against the negative effects of partner violence on mental health. *Journal of Women's Health & Gender-Based Medicine, 11*, 465–476.
- Crossman, K. A., Hardesty, J. L., & Raffaelli, M. (2015). He Could Scare Me Without Laying a Hand on Me Mothers' Experiences of Nonviolent Coercive Control During Marriage and After Separation. *Violence against women*. doi:10.1177/1077801215604744.
- Dawson, G., Hessel, D., & Frey, K. (1994). Social influences on early developing biological and behavioral systems related to risk for affective disorder. *Development and Psychopathology, 6*, 759–779.
- Denham, S. A. (2006). Emotional competence: Implications for social functioning. In J. Luby (Ed.), *Handbook of preschool mental health* (pp. 23–45). NY: The Guilford Press.
- Edelbrock, C., & Achenbach, T. M. (1980). A typology of child behavior profile patterns: Distribution and correlates for disturbed children aged 6–16. *Journal of Abnormal Child Psychology, 8*(4), 441–470.
- Edelbrock, C., & Costello, A. J. (1988). Convergence between statistically derived behavior problem syndromes and child psychiatric diagnoses. *Journal of Abnormal Child Psychology, 16*(2), 219–231.
- el-Sheikh, M., Cummings, E. M., Kouros, C. D., Elmore-Staton, L., & Buckhalt, J. (2008). Marital psychological and physical aggression and children's mental and physical health: Direct, mediated, and moderated effects. *Journal of Consulting and Clinical Psychology, 76*(1), 138.
- Farruggia, S. P., Greenberger, E., Chen, C., & Heckhausen, J. (2006). Perceived social environment and adolescents' well-being and adjustment: Comparing a foster care sample with a matched sample. *Journal of Youth and Adolescence, 35*(3), 349–358.
- Fowler, D. N., & Hill, H. M. (2004). Social support and spirituality as culturally relevant factors in coping among African American women survivors of partner abuse. *Violence Against Women, 10*, 1267–1282.
- Friedlander, S., Weiss, D. S., & Traylor, J. (1986). Assessing the influence of maternal depression on the validity of the child behavior checklist. *Journal of Abnormal Child Psychology, 14*(1), 123–133.
- Gentry, J., & Bailey, B. A. (2014). Psychological intimate partner violence during pregnancy and birth outcomes: Threat of violence versus other verbal and emotional abuse. *Violence and Victims, 29*(3), 383–392.
- Gilliom, M., & Shaw, D. S. (2004). Codevelopment of externalizing and internalizing problems in early childhood. *Development and Psychopathology, 16*(2), 313–333.
- Golding, J. M. (1999). Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Journal of Family Violence, 14*(2), 99–132.
- Graham-Bermann, S. A., & Gross, M. M. (2008). An ecological model of violence. In J. Edleson & C. Renzetti (Eds.), *Encyclopedia of interpersonal violence*, Sage, Inc.

- Graham-Bermann, S. A., & Miller-Graff, L. E. (2015). Community-based intervention for women exposed to intimate partner violence: a randomized control trial. *Journal of Family Psychology, 29*(4), 537–547. doi:10.1037/fam0000091.
- Graham-Bermann, S. A., Lynch, S., Banyard, V., DeVoe, E. R., & Halabu, H. (2007). Community-based intervention for children exposed to intimate partner violence: An efficacy trial. *Journal of Consulting and Clinical Psychology, 75*(2), 199.
- Graham-Bermann, S. A., Gruber, G., Howell, K. H., & Girz, L. (2009). Factors discriminating among profiles of resilience and psychopathology in children exposed to intimate partner violence (IPV). *Child Abuse & Neglect, 33*(9), 648–660.
- Graham-Bermann, S. A., Castor, L. E., Miller, L. E., & Howell, K. H. (2012). The impact of intimate partner violence and additional traumatic events on trauma symptoms and PTSD in preschool-aged children. *Journal of Traumatic Stress, 25*, 393–400. doi:10.1002/jts.21724.
- Greenbaum, P. E., & Dedrick, R. F. (1998). Hierarchical confirmatory factor analysis of the child behavior checklist/4-18. *Psychological Assessment, 10*(2), 149–155.
- Grothe, K. B., Dutton, G. R., Jones, G. N., Bodenlos, J., Ancona, M., & Brantley, P. J. (2005). Validation of the Beck depression inventory-II in a low-income African American sample of medical outpatients. *Psychological Assessment, 17*(1), 110–114.
- Grych, J. H., Jouriles, E. N., Swank, P. R., McDonald, R., & Norwood, W. D. (2000). Patterns of adjustment among children of battered women. *Journal of Consulting and Clinical Psychology, 68*, 84–94.
- Gullone, E., Ollendick, T. H., & King, N. J. (2006). The role of attachment representation in the relationship between depressive symptomatology and social withdrawal in middle childhood. *Journal of Child and Family Studies, 15*(3), 271–285.
- Hampton, R., Oliver, W., & Magarian, L. (2003). Domestic violence in the African American community an analysis of social and structural factors. *Violence Against Women, 9*(5), 533–557.
- Horn, S. A., Miller-Graff, L. E., Galano, M., & Graham-Bermann, S. A. (2016). Posttraumatic stress disorder (PTSD) in children exposed to intimate partner violence (IPV): the clinical picture of physiological arousal symptoms. *Childcare in Practice, 1–14*. doi:10.1080/13575279.2015.1126229.
- Howell, K. H., & Graham-Bermann, S. A. (2011). The multiple impacts of IPV on preschool children. In S. A. Graham-Bermann & A. A. Levendosky (Eds.), *A Developmental Approach to Understanding and Treating the Effects of Intimate Partner Violence (IPV) across Childhood*. Washington: APA Books.
- Howell, K. H., Cater, A. C., Miller, L. E., & Graham-Bermann, S. A. (2015). The process of reporting and receiving support following exposure to intimate partner violence during childhood. *Journal of Interpersonal Violence, 30*, 2886–2907. doi:10.1177/0886260514554289.
- Jarvis, K. L., & Novaco, R. W. (2006). Postshelter adjustment of children from violent families. *Journal of Interpersonal Violence, 21*(8), 1046–1062.
- Jensen, P. S., Salzberg, A. D., Richters, J. E., & Watanabe, H. K. (1993). Scales, diagnoses and child psychopathology: I. CBCL and DISC relationships. *Journal of the American Academy of Child & Adolescent Psychiatry, 32*(2), 397–406.
- Jones, D. J., Forehand, R., & Neary, E. M. (2001). Family transmission of depressive symptoms: replication across Caucasian and African American mother-child dyads. *Behavior Therapy, 32*(1), 123–138.
- Lewin, A., Mitchell, S. J., Rasmussen, A., Sanders-Phillips, K., & Joseph, J. G. (2011). Do human and social capital protect young African American mothers from depression associated with ethnic discrimination and violence exposure? *Journal of Black Psychology, 37*(3), 286–310.
- Litrownik, A. J., Newton, R., Hunter, W. M., English, D., & Everson, M. D. (2003). Exposure to family violence in young at-risk children: A longitudinal look at the effects of victimization and witnessed physical and psychological aggression. *Journal of Family Violence, 18*(1), 59–73.
- MacDonell, K. W. (2012). # 7 the combined and independent impact of witnessed intimate partner violence and child maltreatment. *Partner Abuse, 3*(3), 1–12.
- Main, M., & Hesse, E. (1999). Second-generation effects of unresolved trauma in nonmaltreating parents: Dissociated, frightened and threatening parental behavior. *Psychoanalytic Inquiry, 19*, 481–540.
- Marshall, L. L. (1992). Development of the severity of violence against women scales. *Journal of Family Violence, 7*(2), 103–121.
- McCloskey, L. A., Treviso, M., Scionti, T., & da Pozzo, G. (2002). A comparative study of battered women and their children in Italy and the United States. *Journal of Family Violence, 17*, 53–74.
- Mitchell, R. E., & Hodson, C. A. (1983). Coping with domestic violence: Social support and psychological health among battered women. *American Journal of Community Psychology, 11*(6), 629–654.
- Nehra, R., Kulhara, P., & Verma, S. K. (1996). Adaptation of social support questionnaire in Hindi. *Indian Journal of Clinical Psychology, 23*(1), 33–39.
- Olson, B. D., Curtis, C. E., & Jason, L. A. (2003). Physical and sexual trauma, psychiatric symptoms, and sense of community among women in recovery: Toward a new model of shelter aftercare. *Journal of Prevention & Intervention in the Community, 26*(1), 67–80.
- Oort, F. V. A., Verhulst, F. C., Ormel, J., & Huizink, A. C. (2009). Prospective community study of family stress and anxiety in (pre-)adolescents: The TRAILS study. *European Child & Adolescent Psychiatry, 19*(6), 483–491.
- Raphael, J., & Tolman, R. M. (1997). *Trapped by poverty, trapped by abuse: New evidence documenting the relationship between domestic violence and welfare*. Chicago: Taylor Institute.
- Reed, M. K., McLeod, S., Randall, Y., & Walker, B. (1996). Depressive symptoms in African American women. *Journal of Multicultural Counseling and Development, 24*(1), 6–14.
- Richter, P., Werner, J., Heerlein, A., Kraus, A., & Sauer, H. (1998). On the validity of the Beck depression inventory: A review. *Psychopathology, 31*(3), 160–168.
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology, 44*(1), 127–139.
- Sarason, I. G., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships, 4*(4), 497–510.
- Sternberg, K. J., Lamb, M. E., Greenbaum, C., & Cicchetti, D. (1993). Effects of domestic violence on children's behavior problems and depression. *Developmental Psychology, 29*(1), 44–52.
- Straus, M. A. (1979). Measuring intrafamily conflict and violence: The conflict tactics (CT) scales. *Journal of Marriage & the Family, 41*(1), 75–88.
- Sullivan, P. F., Neale, M. C., & Kendler, K. S. (2000). Genetic epidemiology of major depression: Review and meta-analysis. *American Journal of Psychiatry, 157*, 1552–1562.
- Tan, C., Basta, J., Sullivan, C. M., & Davidson, W. S. (1995). The role of social support in the lives of women exiting domestic violence shelters: An experimental study. *Journal of Interpersonal Violence, 10*(4), 437–451.
- Thompson, R. A., Flood, M. F., & Goodvin, R. (2006). Developmental Psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Risk*

- Disorder, and Adaptation* (Vol. 3, pp. 1–37). New York: Wiley Publishing.
- Todd, R. D., & Botteron, K. N. (2001). Family, genetic, and imaging studies of early-onset depression. *Child and Adolescent Psychiatric Clinics of North America*, 10(2), 375–390.
- Turner, H. A., Finkelhor, D., & Ormrod, R. (2006). The effect of lifetime victimization on the mental health of children and adolescents. *Social Science & Medicine*, 62(1), 13–27.
- Twenge, J. M., & Nolen-Hoeksema, S. (2002). Age, gender, race, socioeconomic status, and birth cohort difference on the Children's depression inventory: A meta-analysis. *Journal of Abnormal Psychology*, 111(4), 578–588.