

# Intergenerational Transmission of Trauma: Maternal Trauma–Related Cognitions and Toddler Symptoms

Rebecca L. Babcock Fenerci<sup>1</sup> and Anne P. DePrince<sup>1</sup>

## Abstract

The purpose of this study was to elucidate possible cognitive mechanisms involved in the intergenerational transmission of trauma from maltreatment-survivor mothers to their toddler/preschool-aged children. This study investigated whether maternal trauma–related cognitions—posttrauma appraisals and disorganized memory for maltreatment—were associated with higher levels of toddler internalizing and externalizing symptoms and more dysfunction in the mother–child relationship. A community sample of mothers with histories of maltreatment and a child between the ages of 2 and 5 years was recruited for a study on maternal attachment, coping, and health ( $N = 113$ ). Path analysis results showed that posttrauma appraisals and disorganized memory were significantly related to toddler internalizing symptoms, even with maternal trauma symptoms included in the model. Maternal posttrauma appraisals and disorganized memory were also linked to more dysfunction in the mother–child relationship. These findings provide preliminary evidence in support of maternal trauma–related cognitions as potential mechanisms for the intergenerational transmission of trauma.

## Keywords

adult survivors, childhood maltreatment, parent–child relationships

Children of parents who have experienced trauma (e.g., abuse and neglect) are at greater risk for numerous negative outcomes including altered responses to stress (Bierer et al., 2014), exposure to maltreatment (Bosquet Enlow, Englund, & Egeland, 2016; Lieberman, Chu, Van Horn, & Harris, 2011; Milner et al., 2010), insecure or disorganized attachment (Bosquet Enlow, Egeland, Carlson, Blood, & Wright, 2014), and emotion regulation difficulties (Pat-Horenczyk et al., 2015) along with a host of mood and behavioral disorders (i.e., post-traumatic stress disorder [PTSD]: Scheeringa & Zeanah, 2008; dissociation: Hulette, Kaehler, & Freyd, 2011; anxiety: Field, Muong, & Sochanvimean, 2013; depression: Leen-Feldner, Feldner, Bunaciu, & Blumenthal, 2011; and oppositional defiant disorder: Zajac & Kobak, 2009). The increased incidence of these negative outcomes in children of trauma survivors is referred to as the “intergenerational transmission of trauma” (e.g., Dekel & Goldblatt, 2008; Schwerdtfeger, Lazelere, Werner, Peters, & Oliver, 2013). The intergenerational transmission of trauma is a considerable public health concern, especially given that emotion regulation difficulties have been found to emerge in children of parent survivors as early as infancy (Bosquet Enlow et al., 2011) and symptoms as early as toddlerhood (Schwerdtfeger et al., 2013; Zeanah, 2000).

In order to minimize the long-term effects of the intergenerational transmission of trauma, a better understanding of

how mood and behavior symptoms first develop in children who are 2–5 years old (i.e., toddlers and preschoolers) is needed. If at-risk toddlers/preschoolers do not receive adequate early intervention, mood and behavior concerns often persist and worsen during children’s school-aged years (Campbell & Ewing, 1990; Prior, Smart, Sanson, Pedlow, & Oberklaid, 1992; Shaw, Owens, Giovannelli, & Winslow, 2001) and even adolescence (Bosquet Enlow et al., 2014). Research indicates that genetic and epigenetic alterations play an active role in transmission (Bierer et al., 2014; Yehuda et al., 2016); however, research on environmental mechanisms, such as maternal cognitive or mother–child relationship factors, is rather sparse. The current study sought to address gaps in the literature by assessing whether trauma-related cognitions in mothers whom have survived maltreatment (referred to as “maltreatment-survivor mothers” for the sake of brevity) were associated with toddler symptoms and/or dysfunction in the mother–child relationship.

<sup>1</sup> Department of Psychology, University of Denver, Denver, CO, USA

## Corresponding Author:

Rebecca L. Babcock Fenerci, Department of Psychology, Stonehill College, 320 Washington Street, Easton, MA 02357, USA.  
 Email: [rbabcock2@gmail.com](mailto:rbabcock2@gmail.com)

### *Intergenerational Transmission of Trauma: Maltreatment-Survivor Mothers*

Children of parents who have experienced interpersonal traumas, such as child maltreatment, may be particularly vulnerable to developing mood and behavior problems (Bosquet Enlow et al., 2016; Chu & DePrince, 2006; DeGregorio, 2013; Lyons-Ruth & Block, 1996). For example, a recent meta-analysis found that effect sizes of child psychological distress were larger for children of parents who had experienced interpersonal traumas than war or combat-related trauma (Lambert, Holzer, & Hasbun, 2014). Schwerdtfeger and Nelson Goff (2007) found that prenatal attachment (a common predictor of child symptoms) was disrupted in mothers who experienced interpersonal trauma but not among mothers who experienced noninterpersonal trauma. Moreover, a recent study by Bosquet and colleagues (2016) found that maternal maltreatment history predicted child emotional and behavioral problems at age 7. These results suggest that children of maltreatment survivors are especially vulnerable to experiencing psychological distress, yet it is still unclear how this distress is transmitted across generations.

### *Cognitive Mechanisms of Transmission*

Research on the intergenerational transmission of trauma has focused primarily on links between parent survivors' psychopathology and children's psychological distress (Lambert et al., 2014). For example, substantial research links maternal PTSD and depression symptoms to the development of child symptoms (Chemtob et al., 2010; VanDeMark et al., 2005). Although such studies provide critical evidence conferring the risk parental trauma-related psychopathology has on children's social-emotional well-being, the specific cognitive mechanisms through which transmission occurs are still poorly understood. It is possible that a mother's cognitions related to her own experiences of maltreatment could negatively influence her behavior toward her child, thereby increasing relationship dysfunction and the child's risk of developing mood or behavior problems; however, associations between maternal trauma-related cognitions, child symptoms, and the mother-child relationship have yet to be examined empirically. Understanding whether or how parent trauma-related thought processes contribute to the transmission of trauma to the next generation has the potential to assist practitioners in providing targeted interventions to parent-child dyads.

In their study of transmission of psychopathology across generations, Schwartz, Dohrenwend, and Levav (1994) theorized two pathways of transmission: (1) direct, specific and (2) indirect, general. The direct, specific pathway of transmission suggests that children develop maladaptive thinking and behavior as a direct result of being exposed to their parent's psychopathology. For instance, the child of a mother with PTSD who engages in hypervigilance may learn that the world is a dangerous place which could, in turn, increase the child's risk of developing his or her own anxiety. This pathway

suggests that parents' trauma-related psychopathology directly impacts the development of child mood and behavior symptoms. On the other hand, the indirect, general pathway of transmission suggests that children develop maladaptive thinking and behavior as a result of a dysfunctional relationship with their parents, not from their parents' trauma-related psychopathology itself (Schwartz, Dohrenwend, & Levav, 1994).

Initial support for the indirect, general pathway of transmission is derived from findings that maternal trauma history predicts mothers' displays of more punitive (Cohen, Hien, & Batchelder, 2008), frightening (Jacobvitz, Leon, & Hazen, 2006), hostile-intrusive (Moehler, Biringen, & Poustka, 2007), and disengaged behaviors (Chu & DePrince, 2006; Lyons-Ruth & Block, 1996) toward their young children. Recent studies have also found associations between mothers' PTSD/trauma histories, parenting styles, and children's psychological distress. Field, Muong, and Sochanvimean (2013) found that a role-reversal parenting style mediated the relationship between maternal PTSD and daughters' anxiety. Lang, Gartstein, Rodgers, and Lebeck (2010) found that maternal history of physical maltreatment was associated with a poorer mother-child relationship, hypervigilance and difficulty recovering from distress in infants. Schwerdtfeger, Lazelere, Werner, Peters, and Oliver (2013) found that mother survivors of interpersonal trauma displayed more physical coercion, verbal hostility, and less nurturance, with verbal hostility predicting toddler mood and behavior problems.

This literature provides empirical evidence in support of Schwartz and colleagues' (1994) indirect, general pathway of transmission by demonstrating that survivor mothers' dysfunctional relationship with their children can indeed influence the development of children's mood and behavior problems. Parent-child relationship quality (referred to in the current study as mother-child dysfunctional relationship) may be a mediator between mothers' trauma-related psychopathology and child symptoms, especially given findings that the parent-child relationship directly influences child mood and behavior problems (Easterbrooks, Bureau, & Lyons-Ruth, 2012; Kim & Cicchetti, 2004). However, parent psychopathology is likely not the only parental environmental factor that contributes to intergenerational transmission indirectly through the parent-child relationship. The current study examined whether maternal trauma-related cognitions may also predict child mood and behavior symptoms (along with maternal trauma symptoms) indirectly through dysfunction in the mother-child relationship.

### *Maternal Trauma-Related Cognitions*

Research in the field of trauma and attachment suggests that cognitions of maltreatment-survivor mothers and/or mothers with PTSD are relevant to children's early social-emotional development, in that these mothers tend to have more maladaptive cognitions of their children and these cognitions predict disrupted infant attachment. Specifically, mothers with PTSD show more disengaged and distorted mental representations of their children (Schechter et al., 2005) as well as more negative

attributions toward their child, primary attachment figure, and themselves (Schechter et al., 2015). Maltreatment-survivor mothers with unresolved trauma and low reflective functioning (i.e., low ability to understand the mental states of themselves and others) are more likely to have infants with insecure or disorganized attachment (Berthelot et al., 2015; Iyengar, Kim, Martinez, Fonagy, & Strathearn, 2014). This literature suggests that mothers' experiences of child maltreatment may influence mothers' cognitions about their own children and, in turn, disrupt infants' attachment to their mothers. Given the correlational nature of these studies, causation cannot be inferred. The degree to which maternal cognitions related to their own maltreatment (i.e., maternal trauma-related cognitions instead of cognitions related to one's own child) are associated with the mother-child relationship beyond the infancy period is still unknown. Previous research points to variables that could be considered. For example, childhood trauma is linked to specific trauma-related cognitions, such as posttrauma appraisals (i.e., assessments of feelings, thoughts, and behavior related to one's own trauma; Babcock & DePrince, 2012; DePrince, Chu, & Pineda, 2011) and memory disruptions (DePrince & Freyd, 2004; Freyd, 1996) that are significantly associated with survivors' trauma-related distress (DePrince et al., 2011).

Although trauma-related cognitions are associated with maltreatment survivors' psychological distress, research has not yet examined the influence of trauma-related cognitions on survivors as parents. Amos, Furber, and Segal (2011) developed a theoretical framework for understanding how trauma-related cognitions could influence maltreatment-survivor parents' behavior toward their children. According to Amos and colleagues (2011), the experience of being a parent may be uniquely distressing for survivors of maltreatment. Although one of the main goals of an early mother-child relationship is to establish a healthy, mutual attachment (attachment theory; Ainsworth, Blehar, Waters, & Wall, 1978), survivor-mothers' own early attachments have likely been disrupted by the maltreatment they experienced as children. Therefore, the experience of mothering and attempting to form a positive bond with one's child may trigger negative cognitions related to mothers' early experiences of maltreatment (Amos, Furber, & Segal, 2011). In this triggering situation, mothers may commit a source attribution error (Briere & Scott, 2006), where they misattribute the distress they are experiencing to their child *instead* of the overall parenting context. Source attribution errors could possibly explain the increased risk that some mothers with trauma histories have for maltreating or not providing adequate care to their children (Schofield, Lee, & Merrick, 2013).

According to this theoretical model, the act of parenting may serve as a trauma reminder that not only elicits a mother's memories of maltreatment and/or experiences of disrupted attachment to her own caregivers, but also distressing thoughts and emotions associated with these memories. Some of these distressing thoughts and emotions could include posttrauma appraisals common among survivors of maltreatment, such as shame, self-blame, anger, fear, betrayal, and/or alienation

(DePrince, Zurbriggen, Chu, & Smart, 2010). Moreover, a mother who reports memories of maltreatment that are disorganized (i.e., nonsequential or lacking) may have been unable to process or resolve her conflicting thoughts/emotions related to her maltreatment. As a result, a mother with disorganized memories may be more likely to have distressing thoughts and emotions when interacting with her child. In fact, evidence-based treatments for maltreatment often target posttrauma appraisals for restructuring and utilize trauma exposure and/or narrative techniques to assist survivors in organizing and making meaning of their traumatic memories in order to decrease their distress (Cloitre, Koenen, Cohen, & Han, 2002; Cohen, Mannarino, & Deblinger, 2006).

Heightened levels of maternal distress could, in and of itself, increase the likelihood that a mother survivor will behave negatively toward her child, especially given the significant links between parental psychopathology and negative parenting behaviors (Lang, Gartstein, Rodgers, & Lebeck, 2010; Leenfeldner et al., 2011). Mothers who report posttrauma appraisals or disorganized memory may also have less of an integrated, coherent understanding of the environmental sources of their own trauma-related distress. This lack of awareness could result in mothers' misattributing the source of their distress to their child instead of explicitly recognizing that the act of parenting is causing their distress (since it functions as a trauma reminder). If a distressed mother believes that her child is causing her psychological distress, this could negatively affect the mothers' behavior toward her child, thereby increasing dysfunction in their relationship as well as the propensity that her child will develop mood or behavior problems. Although the constructs of this theory (e.g., source attribution errors) were not directly assessed in the current study, this conceptualization provides a theoretical framework for evaluating associations between the variables of interest.

### Current Study

The current study tested associations between maternal trauma-related cognitions (posttrauma appraisals and disorganized memory), maternal trauma symptoms, child internalizing and externalizing symptoms, and dysfunction in the mother-child relationship in a sample of maltreatment-survivor mothers of toddlers/preschoolers. Internalizing and externalizing symptoms were tested separately to ensure that we considered potential variability in associations between maternal trauma-related cognitions and children's mood versus behavioral problems (for considerations related to examining symptoms separately or together, see Beck, 1971; Lambert et al., 2014). First, we hypothesized that higher levels of maternal posttrauma appraisals and disorganized memory would be significantly linked to more child internalizing symptoms and externalizing symptoms, in addition to maternal trauma symptoms. Second, we hypothesized that higher levels of posttrauma appraisals and disorganized memory related to mothers' maltreatment histories would be significantly associated with more dysfunction in the mother-child relationship, in addition to

maternal trauma symptoms. Third, we hypothesized that dysfunctional mother–child relationship would mediate associations between maternal trauma–related cognitions and maternal trauma symptoms and child symptoms.

## Method

### Participants

Mothers (ages 23–47 years old,  $M = 30.2$  years) with a child between 2 and 5 years old ( $M = 3.4$  years) from a metropolitan area in the Rocky Mountain West participated in the Maternal Attachment, Coping & Health project ( $N = 113$ ), an online study where mothers completed a one-time series of questionnaires about themselves, their children, and their relationship with their child. Mothers were included in the online study if they reported having been a victim of at least one of the following types of child maltreatment: physical abuse, sexual abuse, emotional abuse, witnessing domestic violence, or neglect. A total of 124 mothers indicated interest in participating: 1 did not meet eligibility criteria, 2 never began the survey, 8 did not complete the survey, and 113 completed the survey. Toddlers/preschoolers were 50.4% ( $n = 57$ ) male and 49.6% female ( $n = 56$ ). Toddler/preschoolers' racial/ethnic backgrounds were 63.7% White/Caucasian, 19.5% Black/African American, 5.3% Hispanic/Latino, 3.5% Asian/Asian American, 2.7% Native American/Native Alaskan/American Indian, and 5.3% multiracial. Mothers had a range of one to three children ( $M = 1.4$  children), and 3% of mothers were pregnant at the time they completed the survey. Nearly all (93.8%) mothers were married. Mothers' racial/ethnic backgrounds were 68.1% White/Caucasian, 19.5% Black/African American, 6.2% Hispanic/Latino, 3.5% Asian/Asian American, and 2.7% Native American/Native Alaskan/American Indian. Mothers' levels of education were 7.1% some high school, 17.7% high school diploma or General Equivalency Diploma, 23.0% some college, 16.8% associates degree, and 35.4% bachelor's degree or beyond. Mothers self-reported the following about their economic level: 29.2% working class, 54.0% middle class, 15.0% upper middle class, and 1.8% upper class.

### Procedures

Maltreatment-survivor mothers were recruited to participate in the online survey through advertisements posted on online announcement boards (i.e., Craigslist, ResearchWE, maltreatment survivor forums) and printed communications (i.e., flyers placed at community organizations). Mothers who e-mailed requesting information about the study were e-mailed a brief description about the study accompanied by a unique link to the study's online survey on Qualtrics.com. The e-mail explained that the study is looking for mothers who experienced abuse during their own childhoods and have a child between 2 and 5 years old to complete a voluntary survey online. The purpose of the study was described as follows:

We are interested in learning more about how the quality of mothers' childhoods may influence their experiences as parents and relationships with their young children. Our hope is that this study can help inform and improve services for mothers and children like you and your child.

Upon clicking the link, mothers were presented with a screen asking them the following eligibility questions: (1) "Are you aged 18 or older?" (2) "Do you have at least one child who is currently between 2 and 5 years old?" and (3) "Have you experienced any of the following when you were under the age of 18: been physically hurt by someone to the extent that it caused bruises or marks; experienced unwanted or forced sexual contact; witnessed domestic violence such as fighting between parents or family members; been frequently put down, insulted, or made to feel worthless by someone; been ignored or left alone as a child for so long that you felt scared or that your needs were not met?"

Mothers who marked yes to the first two eligibility questions and yes to at least 1 item from the third eligibility question were transferred to a screen with the study's consent form. The consent form was followed by a five-question consent quiz, in which mothers were required to answer all yes or no questions correctly to be considered consented into the study. If a mother participant answered a consent quiz question incorrectly on first attempt, she was provided with clarifying consent information on the screen and given one more attempt to answer the question correctly (before being disqualified from taking the survey). All mother participants answered 100% of questions correctly according to these standards. Examples of quiz questions were as follows: "Do I have to complete the survey because I consented to participate?"; "Will researchers share my personal information with others?"; "If I become upset by a certain question can I skip the question or take a break?" Mother participants completed the online survey as well as the Response to Research Participation Questionnaire (RRPQ; Newman & Kaloupek, 2001), which asked them about how it was participating. Participants were e-mailed US\$15 compensation via Paypal or an Amazon Gift Card. RRPQ results were monitored throughout data collection to assess cost–benefit ratio for participation (DePrince & Chu, 2008). This study and all of its procedures were approved by a university's institutional review board.

### Measures

**Maltreatment history.** Mothers' histories of child maltreatment were assessed using the Traumatic Event Screening Inventory (TESI; Ribbe, 1996). The TESI screens for a variety of traumatic events including hospitalizations and injuries, domestic and community violence, and maltreatment. The TESI has demonstrated good reliability and internal consistency (Ribbe, 1996). TESI items pertaining to the following type of traumatic events were used to classify participants' maltreatment experiences: physical abuse, sexual abuse, emotional abuse, witnessing domestic violence, and neglect. TESI follow-up questions about age, number of incidents, and perpetrator were also administered for each type of maltreatment.

**Posttrauma appraisals.** Mothers' posttrauma appraisals related to maltreatment were assessed using the Trauma Appraisal Questionnaire (TAQ; DePrince et al., 2010), a 54-item self-report questionnaire that measures six categories of posttraumatic appraisals: betrayal, self-blame, fear, alienation, anger, and shame. The TAQ has good internal consistency, reliability, and validity (DePrince et al., 2010). TAQ items are rated on a 5-point Likert-type scale with mean scores ranging from 1.0 to 5.0 and higher scores indicative of greater degrees of posttrauma appraisals. A TAQ global mean score was calculated by summing TAQ item scores and dividing by the total number of items. Cronbach's  $\alpha$  for this sample was .96.

**Disorganized memory.** Disorganized memory of maltreatment was assessed using the Trauma Memory Questionnaire (TMQ; Halligan, Michael, Clark, & Elhers, 2003), a 13-item self-report questionnaire that measures intrusive and disorganized elements of memories for traumatic events. The TMQ has good validity and reliability (Halligan et al., 2003). TMQ items are rated on a 5-point Likert-type scale from 0 = *not at all* to 5 = *very strongly*. The 5 items from the Disorganized subscale, a measure of incomplete or disorganized aspects of trauma memory, were summed. TMQ Disorganized subscale scores range from 0 to 25 with higher scores indicating greater degrees of traumatic memory disorganization. Subscale items include "I feel that my memory for the event/s is incomplete"; "I have trouble remembering the order in which things happened during the event/s"; "I cannot get what happened during the event/s straight in my mind." Cronbach's  $\alpha$  for this sample was .77.

**Mother-child dysfunctional relationship.** Mother-child dysfunctional relationship was measured using the Parenting Stress Index-Short Form (PSI-SF; Haskett, Ahern, Ward, & Allaire, 2006), a 36-item self-report questionnaire that measures stress levels associated with parenting. The PSI-SF has good psychometric properties (Haskett et al., 2006). The Parent-Child Dysfunctional Interactions (PCDI) subscale has 12 items that are summed to yield a raw subscale score from 12.0 to 60.0. PCDI raw scores greater than 35 (85th percentile) indicate clinically significant dysfunction in the parent-child relationship. PCDI raw subscale scores were calculated for this sample; Cronbach's  $\alpha$  was .91. In a study of parents of toddlers (Whiteside-Mansell et al., 2007), the PCDI subscale showed modest but significant associations with a parent-rated measure of family conflict, the Family Environment Scale (Moos & Moos, 2002;  $r = .25, p < .01$ ), and a behavioral observation measure of parenting behavior, the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984; HOME-punitive:  $r = .13, p < .01$ ; HOME-emotional responsiveness:  $r = -.14, p < .01$ ; HOME-total:  $r = -.25, p < .01$ ).

**Maternal trauma symptoms.** Mothers' trauma symptoms were measured using the Trauma Symptom Checklist-40 (TSC-40), a 40-item self-report measure that assesses several

symptom clusters related to trauma including anxiety, depression, dissociation, sexual problems, and sleep disturbance (TSC-40; Briere, 1996). The TSC-40 has good psychometric properties (Briere, 1996). Participants are asked to rate how often, during the past 2 months, they have experienced specific symptoms on a 4-point Likert-type scale from 0 = *never* to 3 = *often*. Although formal clinical cutoffs have not been established, TSC-40 total scores range from 0 to 140.0 with higher scores indicative of greater symptom severity. Validation studies have documented TSC-40 total scores among female child sexual abuse survivors in outpatient ( $M = 54.7, SD = 22.5$ ; Whiffen, Benazon, & Bradshaw, 1997) and inpatient settings ( $M = 71.8, SD = 35.3$ ; Zlotnick et al., 1996). The TSC-40 total score was calculated for this sample; Cronbach's  $\alpha$  was .96.

**Internalizing and externalizing symptoms.** Children's internalizing and externalizing symptoms were assessed using the 100-item Child Behavioral Checklist (CBCL), Pre-School Version (Achenbach & Rescorla, 2000) that assesses children aged 1.5–5 years old. The CBCL is one of the most widely used parent report measures of social-emotional and behavioral problems in children; the measure has strong psychometric properties (Achenbach & Rescorla, 2000). *T*-scores were used to assess levels of internalizing and externalizing symptoms. *T*-scores range from 30.0 to 100.0 for the internalizing and externalizing domains with scores greater than or equal to 70.0 indicative of clinically significant internalizing/externalizing symptoms. Cronbach's  $\alpha$ s for this sample were .93 for internalizing and .89 for externalizing.

### Imputation and Data Analysis

Of the 113 participants in the study, 41 (36%) had missed items on one or more key measures. Based on CBCL scoring guidelines (Achenbach, 2015), prorated scores were calculated if less than 10% of items were missing for a particular measure/subscale (or if only 1 item was missing for the 5-item TMQ Disorganized subscale). Proration reduced the percentage of missing data for each measure: CBCL (42% to 3%), TAQ (41% to 15%), TMQ (24% to 14%), TSC (37% to 16%), and PSI (12% to 7%). Preliminary *t*-tests indicated that data were not missing at random in that TMQ Disorganized scores were significantly lower for participants with missing CBCL data compared to participants with complete CBCL data, *Intergenerational Transmission of Trauma: Maternal Trauma-Related Cognitions and Toddler Symptomst* (95) = 2.64,  $p < .01$ . Multiple imputation (Rubin, 1987) was conducted for incomplete measures that were not prorated (23% of participants had one or more measure imputed) to ensure that analyses had adequate power to detect effects and to avoid bias associated with casewise deletion. The WinMICE (Version 2005) software program was utilized to conduct multiple imputation using a linear mixed model (10 iterations) and chained equation process where imputations are updated at each iteration allowing the last cycle to be retained as the final data set (Azur, Stuart, Frangakis, & Leaf, 2011). Study hypotheses

**Table 1.** Descriptive Statistics for All Key Variables.

Key Variables	Mean (SD)	Range	Percentage
Posttrauma appraisals	2.46 (0.69)	1.12–3.85	—
Disorganized memory	6.58 (3.96)	0.00–14.00	—
Maternal trauma symptoms	36.79 (20.72)	4.13–84.10	—
Dysfunctional relationship	32.49 (10.26)	12.00–51.00	—
Clinical	—	—	54.0
Nonclinical	—	—	46.0
Internalizing symptoms (T-score)	63.16 (13.47)	29.00–86.00	—
Clinical	—	—	54
Nonclinical	—	—	46
Externalizing symptoms (T-score)	75.74 (12.19)	50.33–100.00	—
Clinical	—	—	82.3
Nonclinical	—	—	17.7

Note. *N* = 113.

**Table 2.** Bivariate Correlations Among Variables Used in Mediation Analyses.

Key Variables	1	2	3	4	5	6
1. Posttrauma appraisals	—	.70***	.85***	.78***	.87***	.69***
2. Disorganized memory		—	.61***	.64**	.72***	.52***
3. Trauma symptoms			—	.70***	.83***	.80***
4. Mother–child dysfunctional relationship				—	.75***	.51**
5. Internalizing symptoms					—	.77***
6. Externalizing symptoms						—

\*\**p* < .01. \*\*\**p* < .001.

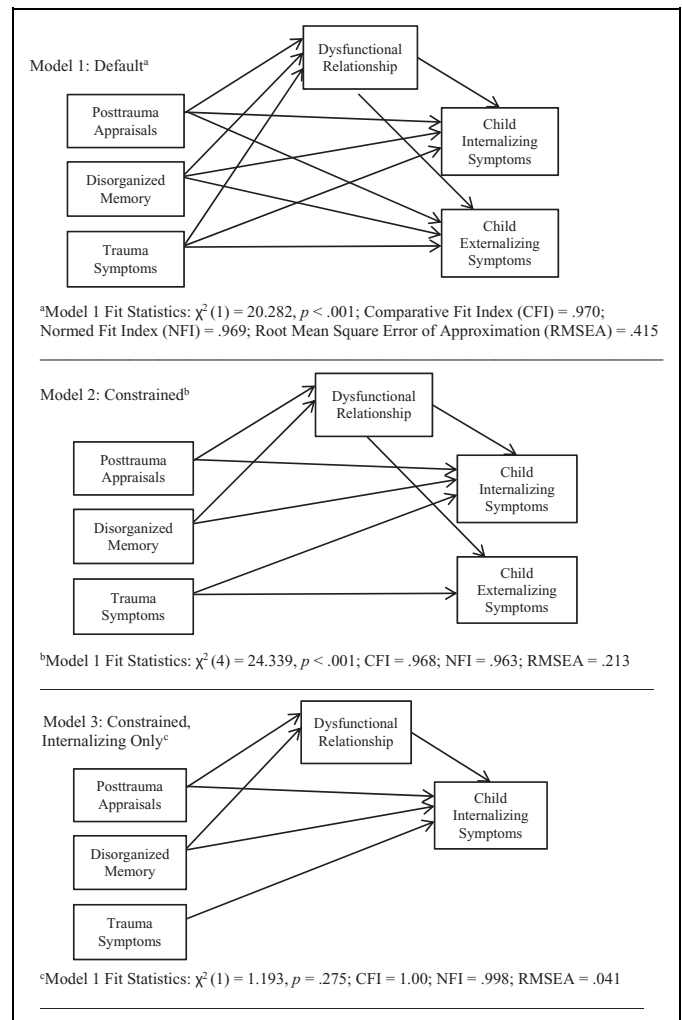
were tested using path model analysis in AMOS for SPSS 22.0©.

**Results**

Before beginning analyses, distributions of all continuous variables were assessed for skew and kurtosis, which were satisfactory for all variables (Chan, 2003). Table 1 displays descriptive statistics. Clinical rates were high in the sample: 54% for internalizing symptoms, 82% for externalizing symptoms, and 54% for dysfunction in the mother–child relationship. Table 2 displays bivariate correlations performed to explore relationships between all key variables. Since correlations were high (.70 or above) between certain predictor variables, multicollinearity was assessed. All variance inflation factor values were less than 5, suggesting that multicollinearity did not preclude conducting path model analysis (Midi, Sarkar, & Rana, 2010).

**Path Model Analysis**

Figure 1 displays the results of three path analysis models. Model 1, the default model, tested all paths between predictor

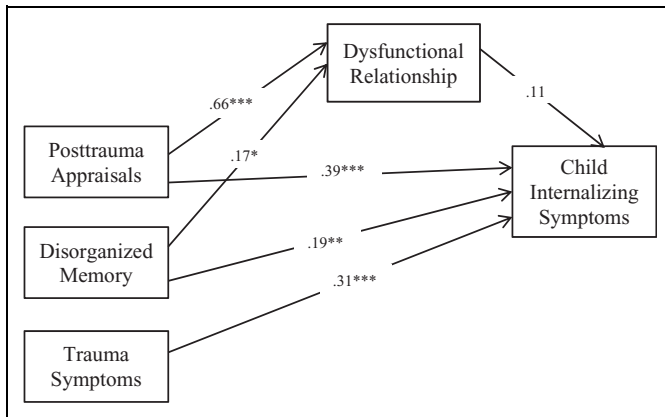


**Figure 1.** Path models tested. All models include correlations between exogenous predictor variables.

variables, the mediator variable, and outcome variables. Model 2 constrained nonsignificant paths from predictor variables to the mediator and outcome variables to compare model fit. In Model 1, the following paths were not significant and thus constrained in Model 2: posttrauma appraisals to child externalizing symptoms:  $\beta = .146, p = .251$ ; disorganized memory to child externalizing symptoms:  $\beta = .067, p = .403$ ; and trauma symptoms to dysfunctional mother–child relationship:  $\beta = .12, p = .274$ . Since neither of the maternal trauma–related cognition variables significantly predicted child externalizing symptoms, Model 3 tested the constrained model with child externalizing symptoms removed to assess whether eliminating this endogenous variable would improve model fit.

Although Model 2 had an improved root mean square error of approximation value, the  $\chi^2$  difference test indicated that Model 2 did not fit the data significantly better than Model 1,  $\chi^2(3) = 4.057, p = .255$ . Overall, neither Model 1 nor 2 showed acceptable fit with the data. Since Model 3 was not nested within Models 1 and 2,  $\chi^2$  difference tests could not be conducted. However, Model 3 showed improvement on all model





**Figure 2.** Standardized coefficients for tested paths of final model (Model 3). \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

fit statistics and was also the only model with a nonsignificant  $\chi^2$  ( $p = .274$ ). Model 3 was the only model that showed an acceptable fit to the data across all fit indices; therefore, it was determined to be the most plausible model. Figure 2 depicts the standardized path coefficients for the retained model (Model 3). Indirect effects between maternal trauma-related cognitions and child internalizing symptoms via dysfunctional mother-child relationship were not tested, since the direct path from dysfunctional mother-child relationship to child internalizing symptoms was not significant. However, posttrauma appraisals, disorganized memory, and trauma symptoms were all significantly related to internalizing symptoms, and posttrauma appraisals and disorganized memory were significantly related to dysfunctional mother-child relationship.

## Discussion

The current study tested links between maternal trauma-related cognitions, toddlers' mood and behavior symptoms, and dysfunction in the mother-child relationship with the goal of elucidating maternal cognitive mechanisms that may be involved in the intergenerational transmission of trauma. Consistent with previous literature (e.g., Lambert et al., 2014), mothers' trauma symptoms were associated with child internalizing symptoms and externalizing symptoms. Maternal trauma-related cognitions (posttrauma appraisals and disorganized memory for maltreatment) were associated with more child internalizing symptoms, though not externalizing symptoms. These findings provide preliminary evidence that mothers' posttrauma appraisals and disorganized memory for maltreatment could increase the risk that their toddlers will develop mood symptoms. It is possible that mothers' trauma-related cognitions may strongly relate to young children's mood symptoms in particular, given the large body of evidence in the cognitive-behavioral therapy literature (e.g., dating back to Beck, 1971) that highlights the impact negative cognitions can have on an individual's mood. For example, maltreatment-survivor mothers with high levels of negative posttrauma appraisals may provide their toddlers with negative interpretations of their environment, which could

lead to early disturbances in child mood as they learn that the world is an unsafe, unfriendly, and/or unpredictable place. Maltreatment-survivor mothers with high levels of posttrauma appraisals may be particularly likely to provide such interpretations while parenting, which may be distressing for these mothers (Amos et al., 2011; Briere & Scott, 2006). On the other hand, early impulsive or disruptive behavior may be less driven by parental cognitions and instead acquired through social learning processes, that is, modeling behaviors of their symptomatic parents (Bandura, 1971). Parent hostility, excessive punitiveness, and/or inadvertent reinforcement of the child's negative behaviors may also serve as operant conditioning that promotes the development of early behavior problems.

In terms of disorganized memory, mothers with disorganized memories of their own child maltreatment histories may be unable to adequately integrate the often contradictory, scary, confusing, and/or disturbing aspects of their own childhoods. This lack of integration may prevent these mother survivors from developing a cohesive life narrative or make meaning of these early life traumas, a process that evidence-based treatments have found as critical to recovery from child maltreatment (Cloitre et al., 2002; Cohen et al., 2006). Thus, mothers with disorganized memory may be more vulnerable to experiencing distress and/or misattributing the source of that distress while parenting their children, leading to dysfunctional interactions and toddler mood symptoms. Longitudinal research and assessment of source attribution among maltreatment-survivor mothers is needed to assess the validity of these theoretical explanations. Even so, mothers' posttrauma appraisals and the organization of their own maltreatment memories could be as critical of factors to assess as mothers' trauma symptoms when attempting to understand and treat child mood symptoms.

Both maternal posttrauma appraisals and disorganized memory for maltreatment predicted higher levels of dysfunction in the mother-child relationship, whereas maternal trauma symptoms were not a significant predictor with cognition variables included in the model. These findings address gaps in literature that has, thus far, focused primarily on how parental psychopathology relates to parenting and the development of child symptoms (e.g., Banyard, Williams, & Siegal, 2003; Leen-Feldner et al., 2011). Specifically, these findings suggest that survivor mothers' cognitions about their own trauma relate to dysfunction in the mother-child relationship, possibly even more so than maternal psychopathology itself. Prospective research using multiple methods and reporters is necessary to determine whether maternal trauma-related cognitions indeed influence the quality of survivor-mothers' relationships with their young children, and how such cognitions may interact with or influence mothers' trauma symptoms. Moreover, although significant associations between maternal trauma-related cognitions and dysfunction in the mother-child relationship were found, dysfunction did not mediate the relationship between maternal cognitions and child symptoms as hypothesized. Since the current results are based solely on maternal self-report, additional research using behavioral observation and coding of mother-child interactions is

necessary to further assess mother–child relationship dysfunction as a potential mediator between these constructs. Nevertheless, these novel findings suggest that targeting posttrauma appraisals and the disorganized nature of mothers' memory may prove clinically useful for practitioners working to enhance the mother–child relationship or reduce child mood symptoms as part of treatment with survivors and their children.

### *Limitations and Future Research*

The current study is cross-sectional in design; therefore, causal relationships cannot be inferred. Prospective research is necessary to establish temporal precedence of maternal trauma-related cognitions and symptoms as they relate to toddler mood symptoms and the mother–child relationship. Mothers were not asked to indicate whether their toddlers had been maltreated; therefore, early maltreatment experiences could also explain variance in toddler symptoms in this sample. The current study relied on maternal and self-report measures for assessment of all variables; such measures are subject to shared method variance as well as potential reporting biases and inaccurate recall. Future studies should utilize multiple reporters to assess child symptoms and multiple methods to assess maternal trauma-related cognitions including structured clinical interviews or cognitive laboratory techniques (e.g., DePrince, Combs, & Shanahan, 2009). Behavioral observation methods, attachment inventories, and/or parenting style questionnaires may also be useful in measuring the quality of the mother–child relationship. This study used inclusion criteria questions that were broad and could encompass child traumatic experiences (e.g., bullying, dating violence) other than child maltreatment itself. For the vast majority of the sample (93%), maltreatment history was confirmed based on mothers' responses to the TESI. A small minority (7%) of mothers did not respond to the TESI though were retained in these analyses. False positives (either among the 7% who did not respond to the TESI or among women who answered incorrectly on the TESI) may have led to erroneously including some women in this sample who were not child maltreatment survivors. Future studies should continue to use standardized measures specific to child maltreatment, relying on questionnaires where necessary (such as the Childhood Trauma Questionnaire; Bernstein, Fink, Handelsman, & Foote, 1994) and interview methods where possible.

Results from the current study may not be generalizable to mother survivors whom are single, separated/divorced, or from a lower socioeconomic background, given that the sample included a majority of women who were married (94%), completed some college or a college degree (75%), and classified themselves as middle class or higher (71%). The online nature of the study may have limited the recruitment of women who were less familiar with or who had less access to computers. Correlations between maternal trauma symptoms and child symptoms in this study were higher than those of previous studies (e.g., Lambert et al., 2014). Since maternal symptom and cognition variable correlations were also high, these results

may have been a by-product of shared method variance. Yet, since multicollinearity was within normal limits and predictor variables showed differentiated results across outcomes, shared method variance is unlikely to solely account for the results. Alternatively, highly symptomatic maltreatment-survivor mothers may have difficulty differentiating between cognitive, emotional, and behavioral constructs in themselves and/or their children. Given the high rates of clinically elevated symptoms and parent–child dysfunction in the current sample, it is also possible that mothers' experiences of maltreatment and/or trauma symptoms could have negatively influenced perceptions of their children's mood and behavior and/or their relationship with their child, resulting in inflated reports. Studies incorporating multiple reporters of child symptoms and behavioral observation of the mother–child relationship could assist in clarifying these results.

Since only maltreatment survivor mothers were surveyed, possible links between fathers' trauma-related cognitions, symptoms, and toddlers' symptoms were not evaluated. Future studies that incorporate fathers and other caregivers as participants could provide additional evidence to further advance the field's comprehension of the intergenerational transmission of trauma. The current study drew from the theoretical concept of source attribution errors (Briere & Scott, 2006) for conceptualization and hypothesis development. Research that uses cognitive laboratory paradigms such as the source-monitoring task (Chiu et al., 2016) to measure source attribution among maltreatment-survivor parents is needed to determine whether trauma-related cognitions lead to actual source attribution errors and whether such errors predict child symptoms or dysfunction in the mother–child relationship.

### **Conclusions**

The current investigation was, to our knowledge, the first of its kind to evaluate whether trauma-related cognitions (posttrauma appraisals and disorganized memory) among mothers who survived maltreatment were associated with mood and/or behavior symptoms in their toddler/preschool-aged children. Findings from this investigation address gaps in the literature by providing initial evidence indicating that posttrauma appraisals and disorganized memory for maltreatment among survivor mothers are linked to child internalizing symptoms, even when accounting for maternal trauma symptoms. Posttrauma appraisals and disorganized memory were also linked to more dysfunction in the relationship between survivor mothers and their young children. These findings further the field's understanding of the intergenerational transmission of trauma by providing support for alterations in maternal thought processes and traumatic memory as potential environmental mechanisms of transmission. Future studies should explore whether mothers' trauma-related cognitions could interact with established genetic/epigenetic mechanisms (e.g., Yehuda et al., 2016) in explaining the intergenerational transmission of trauma. These results provide preliminary evidence suggesting that the way mothers think about and recall their own maltreatment may be



relevant factors to address as part of treatment aimed at improving the mother–child relationship or child mood symptoms. Future research using multimethod, multireporter, longitudinal approaches, and/or randomized control trials is necessary to clarify whether promoting the organization of traumatic memories (e.g., through a trauma narrative) or restructuring maternal posttrauma appraisals can positively impact the mother–child relationship or reduce children’s mood symptoms. Nevertheless, these findings may assist practitioners in providing evidence-based, trauma-informed interventions by increasing awareness of how mothers’ appraisals of their maltreatment and the nature of their maltreatment memories may influence their children’s mood even in their earliest years of life.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by a Graduate Studies Research Fellowship at the University of Denver.

### References

- Achenbach, T. (2015). *Interpretation of ASEBA scores and profiles*. Retrieved from <http://www.aseba.org/support/interpretation.html>
- Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA preschool forms & profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Oxford, England: Lawrence Erlbaum.
- Amos, J., Furber, G., & Segal, L. (2011). Understanding maltreating mothers: A synthesis of relational trauma, attachment disorganization, structural dissociation of the personality, and experiential avoidance. *Journal of Trauma & Dissociation*, *12*, 495–509. doi:10.1080/15299732.2011.593259
- Azur, M. J., Stuart, E. A., Frangakis, C., & Leaf, P. J. (2011). Multiple imputation by chained equations: What is it and how does it work? *International Journal of Methods in Psychiatric Research*, *20*, 40–49. doi:10.1002/mpr.329
- Babcock, R. L., & DePrince, A. P. (2012). Childhood betrayal trauma and self-blame appraisals among survivors of intimate partner abuse. *Journal of Trauma and Dissociation*, *13*, 526–538. doi:10.1080/15299732.2012.694842
- Bandura, A. (1971). *Social learning theory*. New York, NY: General Learning Press.
- Banyard, V. L., Williams, L. M., & Siegal, J. A. (2003). The impact of complex trauma and depression on parenting: An exploration of mediating risk and protective factors. *Child Maltreatment*, *8*, 334–349. doi:10.1177/1077559503257106
- Beck, A. T. (1971). Cognition, affect, and psychopathology. *Archives of General Psychiatry*, *24*, 495–500. doi:10.1001/archpsyc.1971.01750120011002
- Bernstein, D. P., Fink, L., Handelsman, L., & Foote, J. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *American Journal of Psychiatry*, *151*, 1132–1136. doi:10.1176/ajp.151.8.1132
- Berthelot, N., Ensink, K., Bernazzani, O., Normandin, L., Luyten, P., & Fonagy, P. (2015). Intergenerational transmission of attachment in maltreatment and neglected mothers: The role of trauma-specific reflective functioning. *Infant Mental Health Journal*, *36*, 200–212. doi:10.1002/imhj.21499
- Bierer, L. M., Bader, H. N., Daskalakis, N. P., Lehrner, A. L., Makotkine, I., Seckl, J. R., . . . Yehuda, R. (2014). Elevation of 11 $\beta$ -hydroxysteroid dehydrogenase type 2 activity in Holocaust survivor offspring: Evidence for an intergenerational effect of maternal trauma exposure. *Psychoneuroendocrinology*, *48*, 1–10. doi:10.1016/j.psyneuen.2014.06.001
- Bosquet Enlow, M., Egeland, B., Carlson, E., Blood, E., & Wright, R. J. (2014). Mother–infant attachment and the intergenerational transmission of posttraumatic stress disorder. *Development and Psychopathology*, *26*, 41–65. doi:10.1017/S0954579413000515
- Bosquet Enlow, M., Englund, M. M., & Egeland, B. (2016). Maternal childhood maltreatment history and child mental health: Mechanisms in intergenerational effects. *Journal of Clinical Child & Adolescent Psychology*, 1–16. doi:10.1080/15374416.2016.1144189
- Bosquet Enlow, M., Kitts, R. L., Blood, E., Bizarro, A., Hofmeister, M., & Wright, R. J. (2011). Maternal posttraumatic stress symptoms and infant emotional reactivity and emotion regulation. *Infant Behavior and Development*, *34*, 487–503. doi:10.1016/j.infbeh.2011.07.007
- Briere, J. (1996). Psychometric review of the Trauma Symptoms Checklist-40. In B. H. Stamm (Ed.), *Measurement of stress, trauma, and adaptation* (pp. 381–383). Lutherville, MD: Sidran Press.
- Briere, J., & Scott, C. (2006). *The principles of trauma therapy: A guide to symptoms evaluation and treatment*. Thousand Oaks, CA: Sage.
- Caldwell, B. M., & Bradley, R. H. (1984). *Administration manual: Home observation for measurement of the environment*. Little Rock: University of Arkansas at Little Rock.
- Campbell, S. B., & Ewing, L. J. (1990). Follow-up of hard to manage preschoolers: Adjustment at age nine and predictors of continuing symptoms. *Journal of Child Psychology and Psychiatry*, *31*, 871–889. doi:10.1111/j.1469-7610.1990.tb00831.x
- Chan, Y. H. (2003). Biostatistics 101: Data presentation. *Singapore Medical Journal*, *44*, 280–285.
- Chemtob, C. M., Nomura, Y., Rajendran, K., Yehuda, R., Schwartz, D., & Abramovitz, R. (2010). Impact of maternal posttraumatic stress disorder and depression following exposure to September 11 attacks on preschool children’s behavior. *Child Development*, *81*, 1129–1141. doi:10.1111/j.1467-8624.2010.01458.x
- Chiu, C. D., Tseng, M. C. M., Chien, Y. L., Liao, S. C., Liu, C. M., Yeh, Y. Y., . . . Hwu, H. G. (2016). Misattributing the source of self-generated representations related to dissociative and psychotic symptoms. *Frontiers in Psychology*, *7*, 1–10. doi:10.3389/fpsyg.2016.00541
- Chu, A., & DePrince, A. P. (2006). Development of dissociation: Examining the relationship between parenting, maternal trauma,

- and child dissociation. *Journal of Trauma & Dissociation*, 7, 75–89. doi:10.1300/J229v07n04\_05
- Cloitre, M., Koenen, K. C., Cohen, L. R., & Han, H. (2002). Skills training in affective and interpersonal regulation followed by exposure: A phase-based treatment for PTSD related to childhood maltreatment. *Journal of Consulting and Clinical Psychology*, 70, 1067–1074. doi:10.1037//0022-006X.70.5.1067
- Cohen, L. R., Hien, D. A., & Batchelder, S. (2008). The impact of cumulative maternal trauma and diagnosis on parenting behavior. *Child Maltreatment*, 13, 27–38. doi:10.1177/1077559507310045
- Cohen, J. A., Mannarino, A. P., & Deblinger, E. (2006). *Treating trauma and traumatic grief in children and adolescents*. New York, NY: Guilford Press.
- DeGregorio, L. J. (2013). Intergenerational transmission of maltreatment: Implications for parenting interventions from a neuropsychological perspective. *Traumatology: An International Journal*, 9, 158–166. doi:10.1177/1534765612457219
- Dekel, R., & Goldblatt, H. (2008). Is there intergenerational transmission of trauma? The case of combat veterans' children. *American Journal of Orthopsychiatry*, 78, 281–289. doi:10.1037/a0013955
- DePrince, A. P., & Chu, A. T. (2008). Perceived benefits in trauma research: Examining methodological and individual difference factors in responses to research participation. *Journal of Experimental Research on Human Research Ethics*, 18, 218–219. doi:10.1525/jer.2008.3.1.35
- DePrince, A. P., Chu, A. T., & Pineda, A. S. (2011). Links between specific post-trauma appraisals and three forms of trauma-related distress. *Psychological Trauma: Theory, Research, Practice, and Policy*, 3, 430–441. doi:10.1037/a0021576
- DePrince, A. P., Combs, M. D., & Shanahan, M. (2009). Automatic relationship-harm associations and interpersonal trauma involving close others. *Psychology of Women Quarterly*, 33, 163–171. doi:10.1111/j.1471-6402.2009.01486.x
- DePrince, A. P., & Freyd, J. J. (2004). Forgetting trauma stimuli. *Psychological Science*, 15, 488–492. doi:10.1111/j.0956-7976.2004.00706.x
- DePrince, A. P., Zurbriggen, E. L., Chu, A. T., & Smart, L. (2010). Development of the trauma appraisal questionnaire. *Journal of Aggression, Maltreatment, & Trauma*, 19, 275–299. doi:10.1080/10926771003705072
- Easterbrooks, M. A., Bureau, J-F., & Lyons-Ruth, K. (2012). Developmental correlates and predictors of emotional availability in mother-child interaction: A longitudinal study from infancy to middle childhood. *Development and Psychopathology*, 24, 65–78. doi:10.1017/S0954579411000666
- Field, N. P., Muong, S., & Sochanvimean, V. (2013). Parental styles in the intergenerational transmission of trauma stemming from the Khmer Rouge Regime in Cambodia. *American Journal of Orthopsychiatry*, 83, 483–494. doi:10.1111/ajop.12057
- Freyd, J. J. (1996). *Betrayal trauma: The logic of forgetting childhood maltreatment*. Cambridge, MA: Harvard University Press.
- Halligan, S. L., Michael, T., Clark, D. M., & Ehlers, A. (2003). Post-traumatic stress disorder following assault: The role of cognitive processing, trauma memory, and appraisals. *Journal of Consulting and Clinical Psychology*, 71, 419–421. doi:10.1037/0022-006X.71.3.419
- Haskett, M. E., Ahern, L. S., Ward, C. S., & Allaire, J. C. (2006). Factor structure and validity of the parenting stress index-short form. *Journal of Clinical Child and Adolescent Psychology*, 35, 302–312. doi:10.1207/s15374424jccp3502\_14
- Hulette, A. C., Kaehler, L. A., & Freyd, J. J. (2011). Intergenerational associations between trauma and dissociation. *Journal of Family Violence*, 26, 217–225. doi:10.1007/s10896-011-9357-5
- Iyengar, U., Kim, S., Martinez, S., Fonagy, P., & Strathearn, L. (2014). Unresolved trauma in mothers: Intergenerational effects and the role of reorganization. *Frontiers of Psychology*, 5, 1–9. doi:10.3389/fpsyg.2014.00966
- Jacobvitz, D., Leon, K., & Hazen, N. (2006). Does expectant mothers' unresolved trauma predict frightened/frightening maternal behavior? Risk and protective factors. *Development and Psychopathology*, 18, 363–379. doi:10.1017/S0954579406060196
- Kim, J., & Cicchetti, D. (2004). A longitudinal study of child maltreatment, mother-child relationship quality and maladjustment: The role of self-esteem and social competence. *Journal of Abnormal Child Psychology*, 32, 341–354. doi:10.1023/B: JACP.0000030289.17006.5a
- Lambert, J. E., Holzer, J., & Hasbun, A. (2014). Association between parents' PTSD severity and children's psychological distress: A meta-analysis. *Journal of Traumatic Stress*, 27, 9–17. doi:10.1002/jts.21891
- Lang, A. J., Gartstein, M. A., Rodgers, C. S., & Lebeck, M. M. (2010). The impact of maternal child maltreatment on parenting and infant temperament. *Journal of Child and Adolescent Psychiatric Nursing*, 23, 100–110. doi:10.1111/j.1744-6171.2010.00229.x
- Leen-Feldner, E. W., Feldner, M. T., Bunaciu, L., & Blumenthal, H. (2011). Associations between parental posttraumatic stress disorder and both offspring internalizing problems and parental aggression within the National Comorbidity Survey-Replication. *Journal of Anxiety Disorders*, 25, 169–175. doi:10.1016/j.janxdis.2010.08.017
- Lieberman, A. F., Chu, A., Van Horn, P., & Harris, W. W. (2011). Trauma in early childhood: Empirical evidence and clinical implications. *Development and Psychopathology*, 23, 397–410. doi:10.1017/S0954579411000137
- Lyons-Ruth, K., & Block, D. (1996). The disturbed caregiving system: Relations among childhood trauma, maternal caregiving, and infant affect and attachment. *Infant Mental Health Journal*, 17, 257–275. doi:10.1002/(SICI)1097-0355(199623)17:3<257::AID-IMHJ5>3.0.CO;2-L
- Midi, H., Sarkar, S. K., & Rana, S. (2010). Collinearity diagnostics of binary logistic regression model. *Journal of Interdisciplinary Mathematics*, 13, 253–267. doi:10.1080/09720502.2010.10700699
- Milner, J. S., Thomsen, C. J., Crouch, J. L., Rabenhorst, M. M., Martens, P. M., Dyslin, C. W., ... Merrill, L. L. (2010). Do trauma symptoms mediate the relationship between childhood physical maltreatment and adult child maltreatment risk? *Child Maltreatment & Neglect*, 34, 322–344. doi:10.1016/j.chiabu.2009.09.017
- Moehler, E., Biringen, Z., & Poustka, L. (2007). Emotional availability in a sample of mothers with a history of maltreatment. *American Journal of Orthopsychiatry*, 77, 624–628. doi:10.1037/0002-9432.77.4.624
- Moos, R. H., & Moos, B. S. (2002). *Family environment scale*. Redwood City, CA: Mind Garden.

- Newman, E., & Kaloupek, D. (2001). *Response to research participation questionnaire: Short Form*. Unpublished manuscript.
- Pat-Horenczyk, R., Cohen, S., Ziv, Y., Achituv, M., Asulin-Peretz, L., Blanchard, T. R., . . . Brom, D. (2015). Emotion regulation in mothers and young children faced with trauma. *Infant Mental Health Journal, 36*, 337–348. doi:10.1002/imhj.21515
- Prior, M., Smart, D., Sanson, A., Pedlow, R., & Oberklaid, F. (1992). Transient versus stable behavior problems in a normative sample: Infancy to school age. *Journal of Pediatric Psychology, 17*, 423–443. doi:10.1093/jpepsy/17.4.423
- Ribbe, D. (1996). Psychometric review of traumatic event screening instrument for children (TESI-C). In B. H. Stamm (Ed.), *Measurement of stress, trauma, and adaptation* (pp. 386–387). Lutherville, MD: Sidran Press.
- Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys*. New York, NY: John Wiley & Sons.
- Schechter, D. S., Coats, T., Zeanah, C. H., Davies, M., Coates, S. W., Trabka, K. A., . . . Myers, M. M. (2005). Maternal mental representations of the child in an inner-city clinical sample: Violence-related posttraumatic stress and reflective functioning. *Attachment & Human Development, 7*, 313–331. doi:10.1080/14616730500246011
- Schechter, D. S., Moser, D. A., Reliford, A., McCaw, J. E., Coates, S. W., Turner, J. B., . . . Willheim, E. (2015). Negative and distorted attributions towards child, self, and primary attachment figure among posttraumatically stressed mothers: What changes with clinician assisted videofeedback exposure sessions (CAVES). *Child Psychiatry & Human Development, 46*, 10–20. doi:10.1007/s10578-014-0447-5
- Scheeringa, M. S., & Zeanah, C. H. (2008). Reconsideration of Harm'sWay: Onsets and comorbidity patterns of disorders in preschool children and their caregivers following Hurricane Katrina. *Journal of Clinical Child & Adolescent Psychology, 37*, 508–518. doi:10.1080/15374410802148178
- Schofield, T. J., Lee, R. D., & Merrick, M. T. (2013). Safe, stable, nurturing relationships as a moderator of intergenerational continuity of child maltreatment: A meta-analysis. *Journal of Adolescent Health, 53*, S32–S38. doi:10.1016/j.jadohealth.2013.05.004
- Schwartz, S., Dohrenwend, B., & Levav, I. (1994). Nongenetic familial transmission of psychiatric disorders? Evidence from children of Holocaust survivors. *Journal of Health and Social Behavior, 35*, 385–402. doi:jstor.org/stable/2137216
- Schwerdtfeger, K. L., Lazelere, R. E., Werner, D., Peters, C., & Oliver, M. (2013). Intergenerational transmission of trauma: The mediating role of parenting styles on toddlers' DSM-related symptoms. *Journal of Aggression, Maltreatment & Trauma, 22*, 211–229. doi:10.1080/10926771.2013.743941
- Schwerdtfeger, K. L., & Nelson Goff, B. S. (2007). Intergenerational transmission of trauma: Exploring mother–infant prenatal attachment. *Journal of Traumatic Stress, 20*, 39–51. doi:10.1002/jts.20179
- Shaw, D. S., Owens, E. B., Giovannelli, J., & Winslow, E. B. (2001). Infant and toddler pathways leading to early externalizing disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, 36–43. doi:10.1097/00004583-200101000-00014
- VanDeMark, N. R., Russell, L. A., O'Keefe, M., Finkelstein, N., Noether, C. D., & Gampel, J. C. (2005). Children of mothers with histories of substance maltreatment, mental illness, and trauma. *Journal of Community Psychology, 33*, 445–459. doi:10.1002/jcop.20062
- Whiffen, V. E., Benazon, N. R., & Bradshaw, C. (1997). Discriminant validity of the TSC-40 in an outpatient setting. *Child Abuse & Neglect, 21*, 107–115. doi:10.1016/S0145-2134(96)00134-2
- Whiteside-Mansell, L., Ayoub, C., McKelvey, L., Faldowski, R. A., Hart, A., & Shears, J. (2007). Parenting stress of low-income parents of toddlers and preschoolers: Psychometric properties of a short form of the Parenting Stress Index. *Parenting: Science and Practice, 7*, 26–56. doi:10.1177/0193841X15600859
- Yehuda, R., Daskalakis, N. P., Bierer, L. M., Bader, H. N., Klengel, T., Holsboer, F., . . . Binder, E. B. (2016). Holocaust exposure induced intergenerational effects on FKBP5 methylation. *Biological Psychiatry, 80*, 372–380. doi:10.1016/j.biopsych.2015.08.005
- Zajac, K., & Kobak, R. (2009). Caregiver unresolved loss and maltreatment and child behavior problems: Intergenerational effects in a high-risk sample. *Development and Psychopathology, 21*, 173–187. doi:10.1017/S095457940900011X
- Zeanah, C. H. (2000). *Handbook of infant mental health* (2nd ed.). New York, NY: Guilford.
- Zlotnick, C., Shea, M. T., Begin, A., Pearlstein, T., Simpson, E., & Costello, E. (1996). The validation of the Trauma Symptom Checklist-40 (TSC-40) in a sample of inpatients. *Child Abuse & Neglect, 20*, 503–510. doi:10.1016/0145-2134(96)00032-4