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Posttraumatic Stress Symptoms and Parenting Following Intimate Partner Violence: The
Role of Maternal Emotion Regulation

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Abstract

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Post-traumatic stress symptoms are high among female survivors of intimate partner violence (IPV), and children of parents experiencing post-traumatic stress symptoms (PTSS) are at heightened risk for a wide range of emotional and behavioral problems. Parenting has significant influence on child adjustment, and although links have been found between parental psychopathology and maladaptive parenting, little is known about the factors that may explain this relation. The current study examines mother's emotion regulation (ER) as a mediator of the relation between mother PTSS and parenting, particularly around children's emotions in a study sample of sixty-four female survivors of IPV and their 6-12 year old children. Mothers reported on their own posttraumatic stress symptoms and their parenting. Mother's ER was measured by observer coding of the Meta-Emotion Interview (Katz & Gottman, 1986), a structured assessment that asks parents about their attitudes towards and experiences with emotions, including their regulation of emotions. Mothers' PTSS symptom severity showed a significant indirect effect on supportive parenting reactions around children's emotions via mothers' emotion regulation. Results suggest that mother's ER abilities represent factors that significantly impact associations between maternal PTSS and parenting practices around children's experiences of emotion, particularly in regards to adaptive parenting responses. Implications for assessment and intervention with families exposed to the stress of IPV are discussed.

Introduction

It is well established that caregivers' parenting behaviors strongly influence child development, and are significantly related to children's mental health outcomes under conditions of adversity (Masten, 2001; Masten & Osofsky, 2010; Valentino, 2010). Prior work has focused on factors that may explain variability in parenting efforts, including how parental mental health relates to parenting outcomes. Research has documented links between parenting and a poorer quality of parent-child interactions in families with a depressed parent (see Downey & Coyne, 1990; Weissman et al., 2006; Goodman & Gotlib, 1999). Though a number of studies have established a link between early experiences of abuse and violence, and their associations with impairments in parenting (Kim et al. 2010; Ammerman et al., 2012), there has not been much empirical work aimed at understanding the specific relation between parental PTSD symptoms and parenting behaviors (Valentino, 2010). This is problematic, given the 3.5% 12 month prevalence for PTSD diagnoses in the American adult population (Kessler, et al., 2005); and this statistic is likely a significant underestimate of the impact of traumatic stress in the U.S. adult population when considering the many more individuals experiencing subthreshold levels of clinically significant posttraumatic stress symptoms (PTSS).

Some work clearly suggests that parents suffering from PTSS report poorer parent-child relationships compared to parents without PTSS, and that traumatized mothers are more likely to exhibit unstructured, insensitive, and hostile interactions with their infants, and show less emotional availability around their children (Van Ee, Kleber & Mooren, 2012). In addition, a maternal history of sexual abuse which places caregivers at significant risk of developing PTSS, has been linked with negative communication styles, self-focus, decreased involvement, restricted affect, and intrusiveness during parent-child interactions (Burkett, 1991; Lyons-Ruth

& Block, 1996; Moehler et al., 2007). While the association between parental traumatic stress and individual differences in parenting is beginning to emerge, little is known about the mechanisms that may account for this relation. Investigation of factors that may explain how PTSS influences parenting efforts are needed to advance assessment, prevention, and intervention efforts for populations with caregivers at risk for experiencing PTSS.

Lieberman, Van Horn, & Ozer (2005) have shown links between maternal stress, PTSS, and the parent-child relationship, and others have suggested that such associations are likely influenced by mothers' emotion regulation abilities (Masten & Osofsky, 2010). It may be that a mother's ability to regulate emotions is an important factor that relates to how PTSS may impact her parenting. In addition, given the links between PTSS and impaired emotional processes, particularly around emotions of fear and anger among others (Power & Fyvie, 2013), parenting around children's emotions specifically may be a dimension in which such effects are salient. This paper examines mother's ER abilities of fear and anger as a mechanism through which mother's PTSS symptoms are associated with parenting around children's experiences of emotion.

PTSS & Emotion Regulation

Drawing on a transdiagnostic model of psychopathology (Noelen-Hoeksema & Watkins, 2012; Aldao, Nolen-Hoeksema, & Schweizer, 2010), the current study emphasizes the importance of understanding the role of emotion regulation as a process by which parenting behaviors may be impacted by parental PTSS. Emotion regulation is the ability to monitor, evaluate, and modulate emotional reactions (Thompson, 1994; Gratz & Roemer, 2004). Like many other forms of psychopathology, PTSS is largely characterized by persistent emotion regulation difficulties (Badour & Feldner, 2013; van der Kolk, 2005; Cicchetti & Toth, 1995).

The association between severity of trauma symptoms and heightened emotional reactivity in response to trauma cues has been well documented (Badour & Feldner, 2013; Orr, 2002; Van der Kolk, 1996). Badour & Feldner (2013) have recently shown that heightened emotional reactivity and poor emotion regulation abilities interact to contribute to the maintenance of PTSS severity. In addition, other work has shown that maladaptive emotion regulation leads to increased behavioral avoidance among trauma exposed individuals (Gratz & Chapman, 2007), which suggests that simple relations between behavioral outcomes and PTSS severity is influenced by emotion regulation processes. Such causal hypotheses have only recently begun to be empirically tested, and the degree to which traumatized individuals' emotion regulation difficulties generalize from lab based trauma cue paradigms to the context of daily tasks like parenting have not to our knowledge been studied.

There are several ways that mother's ER may be associated with parenting among parents experiencing PTSS. Dysregulated responses to trauma can include overactivation of emotion in the form of mood lability and deactivation in the form of avoidance and emotional numbing (Frewen & Lanius, 2006; Litz, Orsillo, Kaloupek, & Weathers, 2000). Individuals with PTSS are often chronically hyper-aroused and experience heightened levels of intense emotions like fear and anger (Van der Kolk, 1996).

Traumatic stress symptoms are also associated with experiences of alexithymia, which is characterized by a compromised ability to recognize, describe, and distinguish feelings from the bodily sensations that comprise emotional arousal (Nemiah, Freyberger, & Sifneos, 1976). Alexithymia has been consistently shown to be associated with greater difficulties in recognition and classification of emotional expressions, particularly in relation to negative emotions (Jessimer & Markham, 1997; McDonald & Prkachin, 1990; Swart, Kortekaas, & Aleman, 2009;

Cook, Brewer, Shah & Bird, 2013). Thus, it may be that caregivers who experience alexithymia as an effect of posttraumatic stress symptoms have difficulties with identifying, labeling, and generally being aware of their own and their children's emotional states. Some prior work has indeed shown that maternal trauma symptoms are associated with a decreased awareness of their children's emotional experiences (Johnson & Lieberman, 2007). This is problematic, given that emotional awareness is a pre-requisite for engaging in adaptive emotion oriented parenting tasks that are crucial for children's socio-emotional development (Gottman, Katz, & Hooven, 1996).

Moreover, individuals with PTSS are chronically hyper-aroused and experiencing heightened levels of intense emotions like fear and anger (Van der Kolk, 1996). In contrast to the lack of awareness that may resemble alexithymia, unusually heightened awareness of emotional experiences would also impair aspects of emotion regulation that may adversely impact parenting efforts. Traumatized caregivers who have difficulty regulating intense fear and anger emotions may model emotional dysregulation to their children, as well as be more likely to engage in dissociative, disorganized, and/or overtly aggressive behaviors around their children (Van Ee et al., 2012).

It is clear that there are several theoretically relevant pathways through which PTSS may have adverse effects on a mother's ability to regulate her own emotion. If so, do trauma induced changes in maternal emotion regulation mediate the impact of PTSS on parenting? It is important to shed light on such questions, given the potential implications for identifying whom among traumatized caregivers is at highest risk for poor emotion regulation, and to what extent emotion regulation processes may be the mechanism by which domains of parenting are impacted by PTSS.

Temporal Relations between PTSS and ER

ER and psychopathology likely share a reciprocal relation in which individuals who have less adaptive ER may be predisposed to developing psychopathology (Beauchaine, Gatzke-Kopp, & Mead, 2007) and psychopathology itself is partly characterized by and contributes to further impairment of ER. Specificity of the temporal relation between ER and psychopathology has significant implications for prevention and intervention (McLaughlin, Hatzenbuehler, & Phil, 2009; McLaughlin, Hatzenbuehler, Mennin & Nolen-Hoeksema 2011). In a prospective study, McLaughlin et al. (2011) have demonstrated that changes in ER precede and predict subsequent depression, anxiety, aggression, and eating pathology. However, in the case of posttraumatic stress reactions where there is a specific antecedent traumatic event, it is more likely that the traumatic reaction to the event contributes to dysregulated affective reactions rather than vice versa. Traumatized caregivers who have difficulty regulating intense fear and anger may model emotional dysregulation to their children, and may also be more likely to become dysregulated in response to their children's reactions and behaviors. Thus, an important question is whether mother's ER abilities mediate the relation between maternal PTSS and child adjustment. Understanding whether mother's ER is a significant explanatory mechanism can help identify new targets for intervention so that the deleterious effects of maternal PTSS on positive parenting reactions can be minimized.

Parenting & Interpersonal Partner Violence As A Risk Context

Interpersonal Partner Violence (IPV) increases the likelihood for maternal PTSS (Bogat et al., 2004) and heightens risk for a wide range of negative child outcomes (Jouriles, Norwood, McDonald, & Peters, 2001; Kitzmann, Gaylord, Holt, & Kenny, 2003). IPV is a stress context in which the importance of parenting around children's experiences of emotion have been

emphasized for their role as a protective factor for children (Katz & Windercker-Nelson, 2006). In addition, trauma exposed mothers are more likely to engage in punitive parenting, increased psychological aggression, and more use of physical discipline (Cohen et al., 2008). Mothers and children exposed to IPV are a population in which understanding the role of maternal emotion regulation on associations between PTSS and parenting behaviors could have significant implications for assessment, prevention, and intervention efforts. As such, the current study seeks to explore the relation between parental PTSS, emotion regulation, and supportive as well as nonsupportive parenting reactions around children's experiences of emotion.

Given the theoretical basis we have outlined, we predict that maternal PTSS will be related to parenting outcomes, such that higher PTSS severity will be predictive of less supportive parenting reactions and more nonsupportive parenting reactions. In addition, it is predicted that the effect of PTSS on parenting outcomes will be mediated by maternal emotion regulation. In addition, we test an alternative mediation model of ER influencing parenting through PTSS, to explore alternative temporal influence between ER and PTSS.

Method

Participants

Participants were 64 mothers aged 28 to 56 ($M = 39.06$, $SD = 7.18$) and their children aged 6 to 12 years old ($M = 9.33$, $SD = 1.50$) who were recruited as part of a larger intervention study examining the efficacy of an emotion focused parenting intervention for families who experienced IPV. The child sample was 51.6% female. Participants were recruited from local domestic violence agencies, and had to be out of the abusive relationship for at least 6 months, English speaking, and have at least one child between the ages of 6 and 12 years old. In families where there was more than one child within the appropriate age range, one child was selected at

random for participation. Fifty seven percent of mothers identified as White/Caucasian, 17% as Black/African American, 7% as Asian American, 7% as Native American, 5% as Native Hawaiian/Pacific Islander, and 7% as Other race/ethnicity. Seventy three percent of the sample reported an average income of under \$19,000, 4% between \$20,000 and \$39,000, 11% between \$40,000 and \$59,000, and 12% of \$60,000 or more. Eleven percent of mothers did not graduate from high school, 14% graduated high school, 47% attended some college, 19% graduated college, and 9% achieved some graduate study.

Procedures

Participants were seen twice at a local domestic violence agency to collect interview data from mothers and self-report data from mothers. Mothers completed questionnaires assessing their posttraumatic stress symptoms, their parenting practices, and information about family demographic factors. During the first visit mothers also completed the meta-emotion interview (Katz & Gottman, 1986). All data for the current study was obtained at baseline, before intervention.

Measures

Mother's PTSS. The Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1997) is a 17-item self-report measure used to assess PTSS. It provides a PTSD diagnosis according to DSM-IV criteria as well as a posttraumatic stress symptom severity score. Mothers were asked to rate the presence of symptoms of PTSD on a 4-point Likert severity scale ranging from not at all (0) to very much (3). The PDS has demonstrated good psychometric properties, including good test-retest reliability ($\kappa = .74$, Pearson $r = .83$), internal consistency ($\alpha = .92$) and convergent validity ($\kappa = .59$). The current study employed the PTSS severity scores because PTSD diagnoses are relatively more rare and individuals who experience trauma may still suffer from significant

functional impairment yet fail to meet full diagnostic criteria (Erickson et al., 2013; Steenkamp et al., 2012).

Mother's Emotion Regulation. Mothers' emotion regulation was measured using the Parent Meta Emotion Interview (PMEI; Katz & Gottman, 1986). Each participant was interviewed about their experiences with and attitudes toward their own and their children's emotions of sadness, anger, and fear. The audio taped interviews lasted an average of between 45 and 60 minutes. Interviews were coded with the Meta- Emotion Coding System (Katz, Mittman, & Hooven, 1994), which yields subscale scores for dimensions of Awareness, Expressivity, Acceptance, Remediation, and Regulation of parent emotions. Subscales for the regulation of parent fear and anger were used for the purposes of this study as theoretical and empirical evidence suggests that the emotions of fear and anger in particular have a strong relation to the experience of PTSD (Van der Kolk, 1996; Lancaster et al., 2011; Power & Fyvie, 2013). Sample items in the regulation subscales include: "there is difficulty regulating the intensity of the emotion", "this emotion is difficult to get over" and "this emotion has been a problem/concern". A total emotion regulation score was created by summing the individual regulation subscale scores for fear and anger.

Parenting. Mothers reported on their parenting by completing the Coping with Children's Negative Emotions Scale (CCNES; Fabes, Eisenberg, & Bernzweig, 1990). The CCNES is a self-report instrument made up of six subscales that reflect different styles in which parents respond to their children's experiences of negative emotion. The subscales are broadly divided into Supportive Reactions (Expressive Encouragement, Emotion-Focused Responses, and Problem-Focused Responses), and Nonsupportive Reactions (Distress Reactions, Punitive Responses, and Minimization Responses). The measure has shown good reliability, validity, and

also shown to be predictive of emotional competence in children in prior longitudinal research (Fabes et al., 2001).

Demographics. Mothers completed a demographic information questionnaire that assessed family income, mother's education, child age, child sex, and ethnicity. Results

Results

Correlations among key variables are presented in Table 1. Mother's total PTSS severity did not show significant simple relations between any of the parenting reaction scores or her emotion regulation. Although the effect sizes of the observed zero order correlation between mother's PTSS and her emotion regulation approached significance ($p = .08$) and likely failed to reach statistical significance due to low power given the current sample size. Mother's emotion regulation had a significant positive relation with Expressive Encouragement ($r = .43, p < .01$) and a significant positive relation with Emotion Focused Reactions ($r = .35, p < .05$). Because the absence of main effects does not preclude the testing of theoretically informed a priori defined indirect effects (Hayes, 2013), the primary mediation hypothesis was then statistically examined.

To examine whether mother's emotion regulation mediated the influence of PTSS on parenting, the strength of the indirect effect of mother's PTSS on parenting through mother's ER was tested using bootstrapped estimates. Bootstrapping was conducted using the PROCESS macro for SPSS (Hayes, 2013). Bootstrapped sampling was set to 20,000 samples. There was a statistically significant unstandardized indirect effect for the outcome of Supportive Reactions of $-.024$ ($p < .05$; 95% Bias Corrected CI $-.002$ to $-.015$) with a standard error of $.015$. The unstandardized indirect effect for Nonsupportive Reactions was $.004$ ($p > .05$; 95% Bias Corrected CI of $-.005$ to $.024$) with a standard error of $.007$. The significant indirect effect on

mother's Supportive Reactions suggests that as mother's PTSS increases, supportive reactions to children's emotions is predicted to significantly decrease indirectly through mother's ER.

The potential alternative model that mother's ER abilities are associated with parenting reactions as mediated by mother's PTSS was also tested. Results of bootstrapping analyses were non-significant for all parenting outcomes.

Discussion

Increased understanding of the link between mother's PTSS and parenting is important to inform assessment, intervention and prevention efforts in at-risk families. Following a transdiagnostic perspective of psychopathology (Nolen-Hoeksema & Watkins, 2011; Aldao, Nolen-Hoeksema, & Schweizer, 2010), we examined mother's ER as a mechanism by which mother's PTSS is associated with her parenting around children's experiences of emotion.

Mother's ER was found to mediate the relation between mother's PTSS and a cluster of Supportive Reactions including Emotion Focused Reactions, Problem Focused Reactions, and Expressive Encouragement. The absence of significant simple direct relations between mother's PTSS and parenting outcomes underscores the importance of identifying and testing theoretically informed mediating variables driven by theory regardless of direct effects. To our knowledge, this is the first study to examine whether emotion regulation difficulties characteristic of traumatized individuals relates to their parenting. ER may impact parenting as individuals who cannot effectively manage their emotional responses will be more likely to experience longer and more severe periods of distress than those who can (Aldao et al. 2010), perhaps making them less emotionally available to parent their children. Moreover, mothers who have poor ER abilities may not have the necessary skills to teach their child how to appropriately regulate their own affect, which would adversely affect child adjustment.

Given these findings, a potential new avenue for assessment and intervention is to help traumatized mothers improve their ER abilities. One approach to address parental ER is through the incorporation of mindfulness-based parenting (MBP) principles (Dumas 2005; Bogels et al. 2010), which emphasize the non-judgmental acceptance of negative emotions. Grounded in the work of Kabat-Zinn & Kabat-Zinn (1997), there is growing evidence to suggest that mindfulness-based interventions may have a significant impact on ER transdiagnostically by decreasing stress and reactivity and improving executive functioning (Bogels et al. 2010). There is also evidence that MBP has been helpful in reducing negative mother-child interactions, by decreasing mothers' emotional reactivity and increasing their awareness of emotions in themselves, in families where children have attention-deficit hyperactivity disorder (Singh et al. 2010), autism (Singh et al. 2006), and externalizing problems (Bogels et al. 2008). Future research using MBP principles with traumatized mothers will be important to determine if MBP may be helpful in influencing mother's ER and subsequently reducing child internalizing and externalizing symptoms.

Several strengths of the current study should be noted, including use of interview methods to assess ER and recruitment of a racially diverse sample. Limitations are also present. The current study's measurement methods relied heavily on mother reports and mother interviews and some common reporter variance may be operative. However, the meta-emotion interview is coded by independent observers who base their judgments not only on what mothers report they experience but also on their own observations of mother's behavior during the interview, which mitigates against common reporter variance between ER and parenting outcomes. In addition, although correlational data does not preclude conducting mediation analyses (Hayes, 2013), longitudinal data makes a stronger case for examining causal processes.

While the current study's design falls short of truly identifying temporal relations between mother's PTSS and mother's ER, models testing both temporal orders were examined to inform further theoretical and empirical work. In regard to the current study's sample, indirect effects were observed only for PTSS as a predictor and ER as a mediator but not vice versa. This supports the idea that in regards to posttraumatic stress reactions following stressful circumstances like IPV, PTSS likely significantly influences mother's abilities to regulate their emotions, which in turn results in deleterious effects on their ability to parent around children's emotions. These results should be replicated by future studies, ideally using well-timed longitudinal measurements of relevant variables to understand this process further.

The current study provides implications about links between parental PTSS, emotion regulation abilities of parents, and parenting around children's emotions in at risk populations exposed to IPV. These results provide preliminary empirical evidence to suggest that PTSS is associated with parental emotion regulation, which may be a more proximal factor predicting variability in parenting than the parent's trauma symptoms themselves. We believe these considerations could enhance prevention and intervention efforts with high-risk families, and future work should seek to further our understanding of processes and interactions between parental PTSS and emotion regulation abilities in the family to maximize the likelihood of resilient outcomes for children under severe stress.

TABLE 1.

Means, Standard Deviations, and Zero Order Correlations Among Key Variables

Variable	M (SD)	1	2	3	4	5	6	7	8
1. PTSS	22.67 (14.53)								
2. Emotion Regulation	43.07 (4.12)	-.26							
3. Distress Reactions	2.91 (.77)	.18	-.21						
4. Punitive Reactions	2.36 (.89)	.05	-.02	.61**					
5. Minimizing Reactions	2.54 (.85)	.03	-.14	.40**	.63**				
6. Expressive Encouragement	5.08 (1.34)	-.01	.43**	-.33*	-.40**				
7. Emotion Focused Reactions	5.56 (.93)	.26	.35**	-.08	-.05	.57**			
8. Problem Focused Reactions	5.74 (.83)	.19	.26	-.10	-.13	-.10	.58**	.86**	

Note. * = $p < .05$. ** = $p < .01$

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