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# Associations Between Maternal Maltreatment-Specific Shame, Maternal-Infant Interactions, And Infant Emotion Regulation

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**ASSOCIATIONS BETWEEN MATERNAL MALTREATMENT-SPECIFIC SHAME,  
MATERNAL-INFANT INTERACTIONS, AND INFANT EMOTION REGULATION**

by

**RENA A. MENKE**

**DISSERTATION**

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

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## CHAPTER 1

### INTRODUCTION

A history of childhood maltreatment places mothers at risk for difficulties with later psychological adjustment and parenting (Lyons-Ruth & Block, 1996). In turn, infants of these mothers are at increased risk for emotional and social problems (Field, Diego, & Hernandez-Reif, 2009). In later life, these infants are more likely to experience interpersonal trauma and subsequent difficulties with posttraumatic adjustment (Pears & Capaldi, 2001). These risks underscore the importance of understanding the mechanisms by which mothers' childhood maltreatment exerts intergenerational effects that may be potential targets of intervention. To date, research has focused primarily on maternal psychopathology as an explanatory factor of intergenerational effects, with mixed results (Pears & Capaldi, 2001; Seng et al., 2013).

The current study adds to this literature by examining how mothers' maltreatment-specific reactions are related to parenting and infant emotion regulation. Although shame is a common reaction to multiple types of childhood maltreatment, its persistence is associated with psychopathology and other psychosocial problems long after the abuse ends (Andrews, Brewin, Rose, & Kirk, 2000; Feiring, Taska, & Lewis, 2002a; Feiring & Taska, 2005). Associated with psychopathology (e.g., depression and posttraumatic stress disorder), shame is a conceptually distinct abuse-specific reaction that can interfere with self and interpersonal development (Feiring, Cleland & Simon, 2010; Feiring, Simon, & Cleland, 2009; Feiring, Simon, Cleland & Barrett, 2013). Remarkably little is known about whether and how maltreatment-specific shame might affect women's postpartum adjustment, parenting, and infant emotion regulation. The current study begins to address this gap in the literature by (1) identifying factors associated with maltreatment-specific shame during the postpartum period, and (2) examining associations

between mothers' maltreatment-specific shame with parenting and infants' emotion regulation during an interactional stressor at 6-months postpartum. Understanding associations between demographic risk factors and maltreatment characteristics could aid in identifying individuals at greatest risk for maltreatment-specific shame. Additionally, understanding associations between shame and parenting behaviors could identify a useful target for clinical intervention during the postpartum period which has heretofore been largely ignored.

### **Shame and Maltreatment**

Child maltreatment, or child abuse, is defined by the federal government as “any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual maltreatment or exploitation or an act or failure to act which presents an imminent risk of serious harm” (United States Department of Health and Human Services [US DHHS], 2006, p. 25). Thus, this definition includes emotional, physical, and sexual maltreatment and neglect. Annually, 9.9 per 1000 children are victims of maltreatment (US DHHS, 2011). The median percentage of infants and children experiencing each type of maltreatment across states ranges dramatically, with 70% neglected, 15.6% physically maltreated, 6.8% sexually maltreated, 1.3% psychologically or emotionally maltreated, and 1.9% experiencing medical neglect (US DHHS, 2011).

Childhood maltreatment is a risk factor for various types of problems in emotional and social functioning (Feiring & Taska, 2005; Andrews, 1995). When people experience negative life events, self-focus increases, and attempts to understand the negative experience occur (Feiring et al., 2002b; Pyszczynski & Greenberg, 1987). Shame occurs after childhood maltreatment when individuals take responsibility for the maltreatment and believe it occurred because there is something wrong with them (Feiring et al., 2002b). A highly aversive self-

conscious emotion, shame leads to self-criticism, defensive posturing, and the desire to escape or hide (Budden, 2009; Covert, Tangney, Maddux, & Heleno, 2003). Additionally, individuals experiencing shame attempt to eliminate the shame, but it is difficult to do so because of the global nature of shame (Feiring, Taska, & Lewis, 1998). Feeling that the self is fundamentally bad, flawed, or damaged can insidiously undermine the development or maintenance of a positive self. Relatedly, shame interferes with various dimensions of healthy adaptation that rely on healthy self-concept, such as emotion regulation and intimate relationships with others (Feiring et al., 2010; Feiring et al., 2009; Feiring et al., 2013). Painful feelings of shame are commonly experienced by victims of all types of childhood maltreatment (Andrews, 1995; Briere & Jordan, 2010; Harper & Arias, 2004). For example, 63% of sexually abused youth reporting moderate to high levels of shame at abuse discovery (Feiring & Taska, 2005).

The Traumagenic Dynamics Model of Child Sexual Abuse offers a theoretical explanation for shame as an emotional consequence of maltreatment (Finkelhor & Browne, 1985). In this model, abuse stigmatization is viewed as one of four mechanisms by which childhood sexual abuse (CSA) negatively effects adaptation and includes the emotional experience of shame and self-blaming attributions for the abuse (Finkelhor & Brown, 1986). Feiring, Taska, and Lewis (2005) note that self-blaming attributions may be generated by children who were abused, or reinforced when perpetrators falsely tell children that they caused the maltreatment (Deblinger & Runyon, 2005; Feiring, Taska, & Lewis, 1996). Self-blaming attributions may even prevent abuse disclosure, thereby increasing the likelihood of shameful feelings (Lewis, 1987; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996).

Maltreatment-specific shame can persist over time with long-term consequences for mental health as well as self and interpersonal development (Feiring et al., 2010; Feiring et al.,

2009; Feiring et al., 2013; Feiring et al., 2002b; Tangney et al., 1992). According to Feiring and Taska (2005), one third of individuals with confirmed sexual maltreatment histories continued to experience high levels of shame six-years after maltreatment discovery, with negative consequences for psychosocial adjustment (Feiring et al., 2002a).

Maltreatment-specific shame is associated with emotion dysregulation including expressions of anger and hostility (Hoglund & Nicholas, 1995; Tangney et al., 1992). In the context of maltreatment, anger is viewed as a defensive reaction to the powerlessness of shame (Feiring et al., 2013). Anger develops when individuals attempt to cope and reclaim control of shame by turning the anger in on the self or out on others, often resulting in hostility (Lewis, 1971). Blaming others for shameful events also occurs; this strategy may decrease the threat to the self but increase hostility toward others (Tangney & Dearing, 2002). The pathway from shame to hostility via anger has been documented in maltreatment and non-maltreatment samples (Feiring et al., 2013; Tangney et al., 1996).

The postpartum period is of particular importance to understanding relationships between mothers' childhood maltreatment and current psychological distress. As women evaluate their own childhoods attempting to understand and create their own identity as parents, negative reactions to maltreatment can re-surface or intensify (Wright, Fopma-Loy, & Oberle, 2012). For example, when interviewed about their experiences of childhood maltreatment, 53% of postpartum women displayed moderate levels of non-verbal shame (Menke, 2011). Effective management of emotions, including low levels of hostility, is an important component of parenting. Thus, when experienced during the postpartum period, shame may have negative implications for parenting behaviors and children's well-being. Given the evidence linking shame to hostile behavior, I expected that maltreatment-specific shame during the postpartum

period would be associated with greater maternal hostility and lower positive affect during maternal-child interactions.

### **Contextual Factors Associated with Maltreatment-Specific Shame and Parenting**

Although many youth experience shame in the immediate aftermath of child maltreatment, the persistence of shame is variable. To my knowledge, no studies have examined maltreatment-specific shame during the postpartum period and the factors that predict maltreatment-specific shame, thus an initial goal of the current study was to identify contextual factors associated with mothers' maltreatment-specific shame during the postpartum period. Ample evidence indicates that risk factors of maladaptive functioning include intra-individual characteristics and contextual variables, such as socio-demographic factors (Beck, 2001; Martinez-Torteya et al., 2014; O'Hara, Neunaber, & Zekoski, 1984). Prior to exploring the association between shame, parenting behaviors, and infant emotion regulation, contextual factors that may aid in understanding which mothers are at risk for maltreatment-specific shame were explored. The current study focused on two levels of contextual variables: maltreatment characteristics and socio-demographic factors.

#### **Maternal maltreatment characteristics.**

Childhood maltreatment characteristics have been linked to psychological distress, including shame and depression (Bolger, Patterson, & Kupersmidt, 1998; Classen, Granskaya, & Aggarwal, 2005; Deblinger & Runyon, 2005; English, Graham, Litrownik, Everson, & Bangdiwala, 2005). However, there is little consensus on whether all or only certain characteristics exert specific or stronger effects on psychological distress. The current study examined how maltreatment type, multi-maltreatment, and perpetrator identity are individually associated with maternal shame during the postpartum period.

***Type of maltreatment.***

Whereas particular types of maltreatment have been associated with shame, few studies have examined whether shame varies by maltreatment type (e.g., sexual, psychological, or physical maltreatment, or neglect). As noted earlier, Feiring and Taska (2005) found that one-third of sexually abused youth continued to experience elevated levels of shame six years after abuse discovery. Neglect is also believed to be associated with shame, because neglectful parents often fail to provide positive regard and warmth to their children (Wilson, Rack, Shi, & Norris, 2008). Children who receive little positive regard and warmth are at increased risk for developing internal, stable, and global negative attributions about the self based on the neglect. These attributions, in turn, evoke or exacerbate shame in offspring (Wilson et al., 2008). In support of this perspective, Bennett, Sullivan, & Lewis (2005) and Bennett, Sullivan, and Lewis (2010) found that neglect was related to greater shame-proneness, and that children with physical maltreatment and neglect histories had higher levels of shame than children with only physical maltreatment. Combinations of maltreatment types were examined by Bennett et al. (2005) indicating higher levels of shame among children with physical maltreatment and neglect histories than children with only physical maltreatment. Children with physical maltreatment histories had higher levels of shame than children with neglect histories, and all three maltreatment groups had higher levels of shame than children without maltreatment histories (Bennett et al., 2005).

Few studies have explored maltreatment-specific shame during the postpartum period, a time when women are considering their own maltreatment histories and shame is likely to be present (Menke, 2011; Wright et al., 2012). Sexual and physical maltreatment, and neglect are frequently associated with shame, but it is unclear whether certain types of maltreatment are

more likely to be associated with shameful reactions than others, either directly after the abuse or over time (Bennett et al., 2005; Bennett et al., 2010; Feiring et al., 2002b). The current study explored the relationships between maltreatment type and maltreatment-specific shame during the postpartum period. At least moderate levels of shame were expected across all forms of maltreatment. Given the paucity of research, I made no specific predictions about whether shame would vary by type of child maltreatment.

### *Perpetrator identity.*

Perpetrator identity was hypothesized to be an important predictor of maltreatment-specific shame. When children are maltreated by their caregiver, essential caregiving systems are interrupted in ways that can disrupt social and emotional development and increase risk for symptoms of depression and posttraumatic stress disorder (PTSD; Barnett, Manly, & Cicchetti, 1993). Furthermore, shameful reactions to maltreatment may be intensified if the perpetrators are parents (Deblinger & Runyon, 2005; Feiring Taska, & Lewis, 1996; Finkelhor & Brown, 1986). For example, children may believe their parent is a protector, someone to trust and provide warmth, care, and affection. Within this safe and secure relationship, children develop a view of the self as someone worthy of protection, warmth, and affection. If parents maltreat or harm their children, this violates children's core beliefs about parents as beneficent caregivers and the self as worthy of protection and care. Children may then come to believe that they are fundamentally flawed and experience shame. If the transition to parenthood prompts parents to reevaluate their own childhood, those who experienced maltreatment by a parent may be particularly vulnerable to shameful feelings during the postpartum period. To my knowledge, current research lacks evidence identifying associations between perpetrator identity and maltreatment-specific shame.

I expected that individuals who experienced maltreatment by parental perpetrators would have greater levels of maltreatment-specific shame.

***Experiencing multiple types of childhood maltreatment.***

Experiencing multi-maltreatment during childhood may result in increased or more persistent shame reactions. In the current study, the term multi-maltreatment is used to describe a childhood history consisting of more than one type of maltreatment (e.g., the person was physically maltreated and neglected; Higgins & McCabe, 2001). Experiencing multi-maltreatment is related to increased shame as well as increased rates of re-victimization among adults (Classen, Gronskeya, & Aggarwal, 2005; Moeller, Bachmann, & Moeller, 1993; Davis, Petretic-Jackson, & Ting, 2001). Although associations between multi-maltreatment and shame have not been evaluated in the postpartum period, I expected to find similar associations in the current sample, with more multi-maltreatment related to higher levels shame.

**Current socio-demographic risk.**

Socio-demographic factors, including ethnic/racial status, participant age, educational attainment, family income, and the presence of spouse/partner in the household, have been linked to psychosocial functioning among postpartum women, including women with maltreatment histories (Beck, 2001; Martinez-Torteya et al., 2014; Seng, Sperlich, & Kane Low, 2008). For example, among women with maltreatment histories and in the general population, women with minority ethnic/racial status, young age, a low level of education (a high school diploma or less), insufficient financial capital, and low social support (single parenthood) have higher rates of postpartum depression and PTSD (Beck, 2001; Martinez-Torteya et al., 2014; Kneipp, Kairalla, Stacciarini, Pereira, & Miller, 2010; O'Hara, Neunaber, & Zekoski, 1984; Ross, Campbell, Dennis, & Blackmore, 2006; Schwartz, Bradley, Sexton, Sherry, & Ressler, 2005). The current



study extended this literature to document how these socio-demographic risk factors are associated with maltreatment-specific shame.

Cicchetti and Toth (2009) and Sameroff (2010) note the importance of addressing broader contextual as well as individual-level risk factors in determining outcomes. The co-occurrence of multiple risk factors among women with maltreatment histories poses a problem for clearly understanding the relationships between abuse and outcomes (Wright et al., 2012), and Sameroff et al.'s (2003) work suggests that combined risk characteristics may better account for variance in maternal behaviors. Therefore, understanding the influence of cumulative socio-demographic risk factors or a single demographic risk factor may improve understanding of the predictors of psychological distress associated with maltreatment histories. The current study examined associations between shame and demographic risk factors in order to better understand the relationships between these variables. Socio-demographic risk factors were examined individually and as a cumulative risk index to provide further insight to these complex relationships. I expected that individuals with higher demographic risk status would have higher levels of shame.

### **Intergenerational Transmission of Psychiatric Vulnerability (ITPV).**

The focus, thus far, has been on delineating contextual factors that might be associated with increased feelings of maltreatment-specific shame during the postpartum period. Next, the discussion focuses on the second project goal, to assess whether maltreatment-specific shame is associated with parenting behavior and infant emotion regulation. The Intergenerational Transmission of Psychiatric Vulnerability (ITPV) seeks to explain the increased risk of negative psychological and social outcomes among children of mothers with maltreatment histories (Hairston et al., 2011; Seng et al., 2013). According to this model, women with maltreatment

histories are more vulnerable to depression and PTSD symptoms post-maltreatment than women without maltreatment histories (Benedict-Paine, Paine, Brandt, & Stallings, 1999; Neumann, Houskmap, Pollock, & Brier, 1996; Seng et al., 2008). Pre-gravid depression and PTSD increases the likelihood of peripartum depression and PTSD, which subsequently increases the chances of postpartum depression and PTSD (Leigh & Milgrom, 2008; Seng et al., 2008). In turn, postpartum PTSD and depression symptoms are associated with the quality of mothers' parenting interactions with their infants (Collinshaw, Dunn, O'Connor, & Avon, 2007), which is a robust predictor of infants' socio-emotional outcomes (Feldman et al., 2009; Field et al., 2009). Although developed as an explanatory framework for postpartum depression and PTSD as mechanisms by which mothers' maltreatment histories place children at risk, the model might also be applied to other maltreatment reactions, including shame. The current study used this framework to further understand the relationships between shame, parenting behavior, and infant emotion regulation.

Fortunately, ITPV may be interrupted by intervening in the mothers' emotional and behavioral reactions to their own maltreatment experience (e.g., shame), thereby improving their own psychological well-being and their infants' well-being. For example, studies have identified the effectiveness of home-visit programs on reducing maternal negative emotional states during the postpartum period (Surkan, Gottlieb, McCormick, Hunt, & Peterson, 2012; Tandon, Perry, Mendelson, Kemp, & Leis, 2011). Hence, by addressing maternal emotional outcomes following childhood maltreatment, children's risk for negative emotional and behavioral outcomes may also decrease. Furthermore, by more clearly understanding the maternal and infant correlates of mothers' childhood maltreatment experiences, children's own outcomes may be improved and the ITPV cycle may be interrupted.

### **Shame and parenting.**

As suggested, ITPV provides a general framework for understanding how shame associated with childhood maltreatment may impact parenting. The current study extends this work to examine the direct associations between maltreatment-specific shame during the postpartum period and observations of parenting behaviors at 6-months postpartum. To date, the supporting research has primarily focused on maternal negative emotional states. However, a growing body of research has demonstrated links to fewer positive parenting behaviors, such as sensitivity, engagement, warmth, and positive affect (Campbell et al., 2004; Martinez-Torteya et al., 2014). Associations between shame and aggression, suggest shame may be related to expressions of hostility in parenting (e.g., Hoglund & Nicholas, 1995; Tangney et al., 1992).

Few studies have addressed the relationship between maltreatment-specific shame and parenting. However, a study by Mills et al. (2007) examined relationships between parents' proneness to shame and overprotective and rejecting parenting behaviors in a community sample of families with preschool aged children. Using self-report methods to assess parental behavior, shame predicted parents' cognitions about parenting, including anxiety about parenting (e.g. being concerned the child would get hurt) and disapproval of children's negative emotions (e.g., beliefs that children should not have negative emotions). Greater worry about parenting predicted mothers' overprotective parenting, and mothers' disapproval of children's negative emotions predicted rejecting parenting behaviors. Unlike Mills et al.'s (2007) data, which relies on self-report, the current study examined maltreatment-specific shame among postpartum women and its relation to observed parenting behavior.

In sum, ITPV focuses on the ways in which women's responses to childhood maltreatment influence their own psychological distress, and their children's emotional

outcomes. The current study extends the maltreatment and parenting literature during the postpartum period to examine associations between maltreatment-specific shame at 6-months postpartum and observed parenting behavior. It was hypothesized that maltreatment-specific shame would be associated with increased maternal hostility and decreased positive affect during mother-infant interaction, after accounting for maltreatment characteristics and socio-demographic risk factors.

### **Parenting and infant emotion regulation.**

Another critical component of the ITPV model is children's ability to cope with social stressors (Martinez-Torteya et al., 2014). A key indicator of positive coping is emotion regulation, including the ability to regulate the experience and expression of negative emotions. The ability to regulate emotions is foundational to children's long-term socio-emotional outcomes (Braungart & Stifter, 1991). Better emotion regulation is associated with attachment security as well as later social competence, including the ability to create and maintain healthy friendships (Sroufe, Egeland, & Carlson, 1999). In contrast, emotion dysregulation increases risk for internalizing and externalizing disorders, including anxiety, depression, oppositional defiant disorder, and attention-deficit/hyperactivity-disorder (Brumariu, & Kerns, 2010; Crockenberg & Leerkes, 2000; Zeman, Cassano, Perry-Parrish, & Stegall, 2006). For these reasons, it is important to understand self-regulatory behaviors during infancy that represent difficulty regulating negative emotions to allow for early interventions. In the present study, emotion regulation during a social stressor (i.e., Still-Face Paradigm) was evaluated when infants were 6-months-old. At this age, infants typically regulate their distress by engaging in self-directed behaviors (e.g., gaze aversion, object engagement, self-soothing) and other-directed behaviors (e.g., social bids or attention seeking) behaviors (Braungart-Rieker, Gardwood, Powers, &

Wang, 2001; Kogan & Carter, 1996; Sroufe, Egeland, Carlson, & Collins, 2005). A high level of positive affect and a low level of negative affect are additional indicators often used to represent successful emotion regulation abilities (Enlow et al., 2011; Manian & Bornstein, 2009; Rosenblum, McDonough, Muzik, Miller, & Sameroff, 2002; Weinberg, Beeghly, Olson, & Tronick, 2008).

As described earlier, the ITPV model proposes a direct relationship between parenting behavior and infant outcomes among mothers with maltreatment histories. The Mutual Regulation Model clarifies the normative developmental processes by which parenting behavior is associated with infant emotion regulation (Gianino & Tronick, 1988; Tronick, 2005; Tronick & Beeghly, 2011). This model asserts that infants acquire emotion regulation abilities through their interactions with primary caregivers. Within sensitive interactions, infants signal their desire for continued social engagement or disengagement to their mother via their displays of negative and positive affect, and other behaviors (e.g., direction of gaze, vocalizations, and gestures). Sensitive mothers respond to their infants in an appropriate manner, changing their own reactions in accord with their infants' signals. This ongoing co-regulatory process promotes the infants' ability to regulate social engagement and minimize distress. It also provides infants with a sense of efficacy regarding their ability to regulate responses to emotional events, and in relating to others. For example, an infant may be frightened by a loud noise, and may respond to the noise by crying and looking at the mother (i.e., a negative affective bid to the parent). A sensitive mother might respond to the infant by picking him up, comforting him, and trying to distract him with a toy. The distressed infant may continue to cry after being presented with the toy, and the mother may then take the infant to look out the window (i.e., the mother sensitively changes her response to the infant given his continued distress). By looking out the window or

playing with the toy, the infant learns that negative emotions may be regulated through coping behaviors, such as disengaging from distressing stimuli or by sustaining attention to objects (Harman, Rothbart, & Posner, 1997; Manian & Bornstein, 2009; Tronick & Beeghly, 2011). Thus, for children to learn to regulate their emotions effectively, caregivers need to be sensitive to their cues. Maternal sensitivity refers to the ability to accurately detect and respond to an infant's cues, including limiting hostile behavior and negative affect during mother-infant interactions, and expressing appropriate positive affect aiding infants in developing emotion regulation (Ainsworth, Blehar, Waters, & Wall, 1978; Pianta, Sroufe, & Egeland, 1989).

Recent research suggests that mothers experiencing psychological distress may engage in less positive parenting behaviors with negative consequences for infant emotion regulation (Field et al., 2007; Martinez-Torteya et al., 2014). Prior results suggest that, if maternal maltreatment-specific shame is related to parenting behavior, shame may help explain the relationships between maternal mood, parenting behaviors, and infant emotion regulation. Maltreatment-specific shame may disrupt mothers' ability to engage in sensitive interactions with their infants, thus influencing the quality of infants' emotional responses to a social stressor (i.e., maternal still-face, during the Still-Face episode of the Still-Face Paradigm). Maltreatment-specific shame may lead women to increase hostile behaviors, thus reducing positive involvement with others, including their infants (Budden, 2009; Tangney et al., 1992).

As posited by the Mutual Regulation Model, infants develop the ability to regulate emotion in the context of maternal support provided during mother-infant social interactions. If, in reaction to their maltreatment-specific shame, mothers become hostile toward their infants, their infants may not receive the scaffolded interactions that they need to develop effective emotion regulation skills. To my knowledge, no studies have examined relations between

mothers' maltreatment-specific shame, parenting, and infant emotion regulation. The current study takes a first step to address this gap in the literature by exploring whether mothers' maltreatment-specific shame is indirectly associated with infant emotion regulatory outcomes via parenting (i.e., positive affect and hostility).

### **Maternal Depression, Parenting and Infant Emotion Regulation**

Depression and maltreatment-specific shame are conceptually distinct but interrelated phenomena (Harper & Arias, 2004). Depression is a constellation of symptoms including increased feelings of sadness, loss of interest, anhedonia, decreased concentration, indecisiveness, fatigue, feelings of worthlessness or guilt, sleep problems, psychomotor agitation or retardation, recurring thoughts of death or suicide, and significant weight loss or gain (American Psychiatric Association [APA], 2000). Although distinct, shame and depression are moderately correlated and often co-occur (Harper & Arias, 2004). Maltreatment-specific shame predicts symptoms of depression and may be related to a resurgence of depression symptoms postpartum (Feiring et al., 2002b; Seng et al., 2008). Indeed, postpartum mothers with maltreatment histories experience a higher prevalence of depression (16.6%) compared to a prevalence of 5-9% in national community samples (DSM-IV TR, 2004; Seng et al., 2008). Similarly, Harper and Arias (2004) found that high levels of shame predicted more symptoms of depression among participants with psychological maltreatment histories (Harper & Arias, 2004).

In contrast to the dearth of research on maternal shame reactions and parenting, many studies have examined links between postpartum depression and parenting behavior. For example, Field et al. (2007) reported that mothers with symptoms of depression exhibited less positive affect and were less positively engaged with their infants, than mothers without

symptoms of depression. In turn, the infants of depressed mothers also cried less when compared to infants of non-depressed mothers. Contrary to Field et al.'s (2007) results, Manian and Bornstein (2009) found that infants of mothers with depression showed more negative affect, compared to infants of mothers without depression. In recent analyses using the current sample, Martinez-Torteya et al. (2014) examined associations between maternal depressive symptoms, parenting behavior, and infants' behavior during a social stressor. Results indicated that high symptoms of depression predicted lower ratings of positive parenting, controlling for PTSD symptoms. Additionally, they found that higher levels of positive parenting behaviors were associated with increased infant emotion regulation; however, these findings are not entirely consistent in the literature. Other studies have not found significant associations between maternal symptoms of depression and infants' emotional responses during a social stressor (Rosenblum et al., 2002; Stanley, Murray, & Stein, 2004; Weinberg et al., 2008). In sum, findings from research examining the relationships between depression, parenting behavior, and infant emotion regulation are inconsistent. Some studies suggest that maternal depression is associated with infants' decreased positive affect, but others note associations with increased positive affect. Moreover, a recent study directly links increased positive parenting behaviors, including maternal positive affect, to increased infant emotion regulation.

Given the strong associations between maltreatment-specific shame and maternal depression, and the well-documented (although inconsistent) associations between depression, parenting behavior, and infant emotion regulation, evaluation of the interactive effects of shame and depression may provide further insight to the relationship between shame and parenting behavior. As noted, shame and depression are two conceptually distinct phenomena, with maltreatment-specific shame encompassing a core perception of the self as being bad. Moreover,



maltreatment-specific shame is a relatively stable construct persisting for extended periods of time and often intertwined with a relatively stable sense of self, whereas depression represents a constellation of symptoms that may not be as closely linked to a core sense of self (Feiring et al., 1998; Feiring et al., 2002a). The aims of the current study were to explore associations between maltreatment-specific shame and parenting behavior; however, given the moderate associations between depression and shame, I expected that depression may also impact this relationship. Specifically, I hypothesized that varying levels of maternal depression would moderate the relationship between shame and parenting behavior.

Therefore, the current study examined the direct associations between maternal maltreatment-specific shame, and parenting behavior as well as the direct associations between maternal depression and parenting behavior. This allowed me to compare the outcomes associated with shame to those of depression, a well-documented phenomenon. Further, in order to understand the interactive effects of these two, a moderated model was used to understand the moderated effects of depression on the relationship between maltreatment-specific shame and parenting behavior.

### **Current Study: Aims and Hypothesis**

The primary goal of the current study was to examine associations between maternal maltreatment-specific shame, maltreatment characteristics, socio-demographic risk factors, parenting, and infant emotion regulation. Toward this end, three primary aims were evaluated. The first aim was to understand how mothers' maltreatment histories and demographic factors are related to shame regarding childhood maltreatment (see Figure 2). Exploratory analyses were conducted to investigate the relationships among shame, maltreatment characteristics, and socio-demographic factors. Individual maltreatment characteristics were expected to be associated with

shame. It was also expected that at least moderate levels of maltreatment-specific shame would be present across all forms of maltreatment. Individuals with parental perpetrators were expected to have higher levels of maltreatment-specific shame than individuals without parental perpetrators. Multi-maltreatment was also expected to be related to increased levels of maltreatment-specific shame. Moreover, socio-demographic factors were expected to be associated with shame, with higher levels of socio-demographic risk being associated with higher levels of shame. The goal was to understand whether certain types of maltreatment histories or socio-demographic factors place mothers at greater risk for maltreatment-specific shame during the postpartum period.

The second aim of the study was to examine whether maternal shame about childhood maltreatment is directly associated with mothers' parenting behaviors. Figure 3 illustrates the hypothesized relations between maltreatment-specific shame and parenting. I expected that mothers' maltreatment-specific shame would be associated with more hostile parenting, and less positive affect during mother-infant interactions observed at six months postpartum, after accounting for maltreatment and demographic characteristics. The same model was used to examine the associations between concurrent symptoms of depression with the goal of comparing the relations from postpartum shame and depression to parenting behavior. Next, a moderated effect of depression on the relationship between shame and parenting was explored (Figure 4).

The third aim of the study was to explore whether parenting helps to explain the process by which maternal shame might be associated with infant emotion regulation. Towards this end, I proposed a model of indirect effects in which the association between maternal shame and infant emotion regulation during a social stressor was mediated by mothers' parenting during

mother-infant interactions observed at six months postpartum. I anticipated that, after controlling for concurrent maltreatment and demographic characteristics, an indirect pathway from shame to infant emotion regulation via parenting behavior would exist such that mothers with higher shame would have infants with greater difficulty regulating emotions, as indexed by more negative affect and decreased soothability during a social stressor (see Figure 5).

## CHAPTER 2

### METHODS

Study participants are part of a larger study entitled Maternal Anxiety during the Childbearing Years (MACY). MACY aims to examine the relationships among maternal history of childhood adversity, perinatal depression and PTSD, and biological and psychological outcomes in offspring across the first years postpartum. Women were recruited for the MACY study in one of two ways: (1) as a postpartum follow-up to a study on the prenatal effects of PTSD on childbearing, in which mothers were recruited at initiation of prenatal care for their first child at 14-28 weeks gestation from three large metropolitan hospitals in the Midwest (see Seng, Low, Sperlich, Ronis, & Liberzon, 2009, for further details), or (2) from the community within the same area, via recruitment flyers requesting participation from mothers with difficult childhood experiences. Flyers were posted in antenatal and primary care clinics, informal and state-funded resource centers for pregnant and postpartum women (e.g., WIC, Maternal-Infant Health Programs), baby clothing and toy stores, and perinatal community mental health clinics. Women who responded to the flyer via telephone were screened for history of childhood maltreatment using the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998). To be eligible for recruitment, participants had to be fluent in English and at least 18 years old at intake. Exclusion criteria included maternal current (past month) use of illegal or non-prescription drugs, maternal history of bipolar or psychotic mental illness, child premature birth (<37 weeks gestation at delivery), child developmental disability, or maternal or child severe physical illness (e.g., epilepsy), as assessed via maternal report at four months postpartum. No women in the recruited sample were psychiatrically referred.

The MACY project includes a total of 268 women; 100 of whom reported a history of childhood maltreatment on the CTQ and completed an in-person trauma interview, the Trauma–Meaning Making Interview (TMMI) at six months postpartum. This subpopulation of  $n = 100$  is the sample for the work presented here.

Women in the current sample experienced the following maltreatment types: sexual (36%), physical (24%), neglect (6%), and emotional (34%; see Figure 1). Mothers ranged in age from 19 to 45 at the time of the TMMI interview; the average age of women in the present sample was 29.56 years ( $SD = 5.94$ ). Seventy-seven percent of participants were partnered, and half of the sample had a total household income of \$50,000 or more (49%). Table 1 provides a summary of the current sample’s demographic characteristics. Two thirds of the sample were Caucasian (65%) and over half of the participants had greater than a bachelor’s degree (52%).

## **Procedure**

The current study was approved by institutional review boards of the University of Michigan and Wayne State University. Mothers in the MACY study were assessed six times over roughly an 18-month period as follows: at six-weeks postpartum, and again at 4, 6, 12, 15, and 18 months postpartum. Analyses in the current study were based on data collected during two home visits conducted when infants were six-months-old, spaced two weeks apart. Mothers also reported on family demographics and their childhood maltreatment histories during a four-month telephone interview. Mothers provided IRB-approved verbal assent to participate in the four-month telephone interview and written informed consent at the first six-month home visit.

The current study utilized data collected during the four-month telephone interview and the two six-month home visits. During both home visits, mothers and infants were videotaped during a sequence of social interactions in structured and non-structured contexts. In the first of

two home visits, mothers were interviewed about their child maltreatment experiences with the Trauma Meaning Making Interview (TMMI; Simon, 2008), and also provided self-reports of maltreatment-specific shame and current depressive symptoms. The Still Face Paradigm was conducted at the end of the first home visit. To compensate mothers for their participation in the study, mothers were given a total of \$50 at the end of the six-month visit. At the six-month visit, the child additionally received a small toy (which cost less than \$5).

## Measures

**Self-reported shame about childhood maltreatment.** A self-report measure of maltreatment-specific shame developed by Feiring and Taska (2005) was administered at the six-month home visit following the Trauma Meaning Making Interview (TMMI: see Appendix C). The TMMI assesses individuals' representations of childhood maltreatment experiences via a description of the maltreatment, cognitive and emotional reactions to the maltreatment and the disclosure of the maltreatment, and how the maltreatment has influenced the individuals' lives (Simon, 2008). Participants were instructed to answer the TMMI in relation to their feelings about the most stressful or impactful maltreatment events they discussed during the four-month interview. After the TMMI, the participants were given the shame measure and asked to answer with respect to the maltreatment discussed in the TMMI. The self-report measure of maltreatment-specific shame included a series of seven drawings, five depicting shame postures and two depicting neutral postures. Participants were asked to rate how well each picture represented their feelings about the maltreatment experiences discussed during the interview. Ratings ranged from "not at all true = 1" to "very true = 5". The scores were summed with possible scores ranging from 5 to 25 with higher total scores indicating greater shame. The current sample had good internal consistency for this measure ( $\alpha = 0.87$ ). See Table 2 for

descriptive statistics for this measure in the current sample. In addition, Feiring reported that the self-report measure of shame has both face and predictive validity (Feiring, Taska, & Lewis, 2002a).

**Socio-demographic risk.** During the four-month telephone interview, mothers reported on socio-demographic characteristics including maternal age, race/ethnicity, level of education, total family income, and relationship status (single parent vs. married/partnered; see Appendix C). To describe individual differences among mothers on level of socio-demographic risk, a five point cumulative risk index was created based on previous work by Sameroff et al. (1993). A point was assigned for each of the following dichotomized socio-demographic risk variables and then summed (possible and observed scores range from 0 to 5): non-White ethnic minority status, single parent status (unmarried or unpartnered), low education (less than a high school diploma or GED), low family income (less than \$20,000 per year, which fell at or below the federal poverty line for most families in this sample), and young maternal age (less than 22 years old;  $\alpha = .67$ ).

**Maltreatment characteristics.** Information about participants' childhood maltreatment was obtained via an interviewer-guided measure developed specifically for the MACY study (see Trauma Table in Appendix C). The measure was completed following the TMMI, and was answered in regard to the maltreatment discussed in the TMMI and any additional maltreatment the participant may have experienced. This measure included information about the frequency, duration, developmental history, and perpetrator identity of any physical, emotional, sexual abuse or neglect experienced before the age of 16. From this measure, several summary variables were created for the current study including (1) a dichotomous variable (yes/no) indicating whether the perpetrator of the maltreatment discussed in the TMMI was a parent figure; and (2)

the number of childhood maltreatment types experienced during childhood, ranging from 1-4 (see Table 2 for mean and standard deviation). Eighty-seven percent of women in the current sample experienced two or more types of maltreatment.

**Postpartum depression symptoms.** Mothers self-reported postpartum depression symptoms were measured using the Postpartum Depression Screening Scale (PPDS; Beck & Gable, 2002). Mothers rated items from 1 (strongly disagree) to 5 (strongly agree). Item scores were summed to yield a total score that could range from 35-175, with higher scores indicating more depressive symptoms. Prior studies with the PPDS have reported good internal consistency ( $\alpha = .97$ ) with good sensitivity (.78) and specificity (.99; Beck & Gable, 2002). The current sample's reliability was consistent with previous samples ( $\alpha = .96$ ). The positive predictive power of the measure is .93 when compared to diagnosis of depression using the SCID (Beck & Gable, 2002). See Table 2 for the mean and standard deviation in the current sample. A copy of the PPDS is provided in Appendix C.

**Maternal and infant behavior.** Maternal parenting behaviors were videotaped during two five-minute mother-infant free play interactions conducted during two separate home visits at six-months postpartum. The free play interaction is an age-appropriate unstructured interactive context and believed to elicit behavior representative of the dyads' typical interactions. Mothers were provided with a standard set of developmentally appropriate toys, which were arranged on a quilt on the floor, and were instructed to play with their infants as they normally would. Videotapes of the mother-infant interactions were scored on multiple dimensions of maternal and infant behavior using five-point Likert ratings as defined by the MACY Infant-Parent Coding System (MIPCS; Earls, Muzik, & Beeghly, 2009). Coders were masked to maternal trauma history and the current study's hypotheses. The MIPCS is composed of 14 maternal, 10 infant,



and 4 dyadic ratings examining behaviors relevant for attachment formation. The measure was created based on attachment theory (e.g., Ainsworth, Blehar, Waters, & Wall, 1978; Crittenden, 1981; Lyons-Ruth, Bronfman, & Parsons, 1999; Lyons-Ruth, Zoll, Connell, & Grunebaum, 1986; Main & Hesse, 1990) and adapted from several existing scoring systems (e.g., Beeghly, 2006; Clark & Seifer, 1985; Dayton et al., 2010; Egeland & Hiester, 1995; Feldman, 1998).

*Maternal behavior.* The following maternal codes were used in the present study to represent maternal parenting behaviors relevant to maltreatment-specific shame: maternal hostility and maternal positive affect. Lower scores represented less positive affect and less hostile behavior, whereas high scores represented more positive affect and more hostile behavior. Maternal hostility and positive affect were coded during free play at each home visit. Scores for each measure were highly correlated across the two home visits; therefore, scores for each measure were averaged to create two composite free play codes.

Maternal hostility is a measure of the extent to which mothers reject, restrict, or prohibit their infants' behavior, express anger/negativity, and/or engage in discrepant communication during interactions with the infant. Note that "hostile" behaviors observed during free play in the current sample were often mild in nature. Lower indices of hostility included verbal prohibitions such as "No!", or "Don't chew on that", or behavioral restrictions such as taking a toy out of the infant's hand or preventing the infant from crawling away. Higher indices included maternal displays of explicit anger or annoyance toward the infant, verbal teasing or name-calling (e.g. "you are a stupid girl"), nonverbal teasing (e.g., giving the infant a toy and then taking it away), or engaging in pseudo-affection (i.e., loud kissing while ignoring the child's disengagement cues). This variable was significantly skewed, indicating mothers in this sample did not engage frequently in hostile behaviors with their infants, and scores were transformed prior to analysis.

The mean before transformation was 1.41, and the standard deviation was .54. The observed range was from 1 to 3. Thirteen women presented with a score greater than two, which represented several mild instances, or one angry/intense instance of hostile, rejecting, or discrepant communication; therefore, high levels of hostility were relatively rare within the current sample.

Maternal positive affect represents the level of mothers' pleasure and enjoyment while interacting with their infant, as expressed via positive facial expressions (e.g., smiles), positive vocal tones (e.g., Ooh!, chuckles, laughs), or nonverbal indices of exuberance (e.g., clapping, dancing). This variable was normally distributed in the current sample. Scores ranged from 1.25 to 4.05 ( $M = 2.55$ ,  $SD = .55$ ).

To assess inter-coder reliability, 40 of the 192 available videotaped protocols collected at the six-month home visits (21%) were recoded by an independent team of coders. The ICCs for maternal hostility and positive affect during the two free play contexts was .85 and .93, respectively, indicating very good reliability.

*Infant emotion regulation.* In the current study, infants' emotion regulation was scored from ratings of infant behaviors observed during the Still-Face episode of the Still Face Paradigm (SFP) using the MIPCS, described above (Tronick, Als, Adamson, Wise, & Brazelton, 1978). The SFP was administered at the end of the first six-month home visit, following the maternal interviews and other mother-infant interactions. The SFP is a well-validated paradigm designed to evaluate individual differences in maternal and infant behavior during en face interactions before and after a challenging social interaction (a maternal still-face). During the SFP, the infant was secured into an upright car seat which was placed on the floor and the mother sat on the floor facing the infant. A mirror was placed to the side of, and slightly behind,

the car seat so that both the mother's and the infant's faces and upper torsos could be seen simultaneously in the video. The mother was then verbally guided through three successive two-minute episodes of the SFP (Play, Still-Face, and Reunion). In the first episode (Play), the parent was instructed to interact with her infant for two minutes as she normally would, but without the use of toys or pacifiers. In the second episode (Still-Face), the parent was instructed to hold a still, expressionless ("poker") face while continuing to look at the infant, and to refrain from talking to, smiling at, or touching the infant. In the third episode (Reunion), the mother was instructed to resume her normal social interaction with the infant.

The Still-Face episode was evaluated as the context for evaluating infant emotion regulation in this study because it provides a unique opportunity to observe infants' self-initiated emotion regulation abilities, as the mother does not interact actively with the infant during the episode (Manian & Bornstein, 2009). In the literature, infant behaviors typically assessed during the Still-Face episode included the following: attempts to re-engage the mother using looks, smiles, and reaches directed at the mother; averting gaze from the mother; the dampening of positive affect and increased display of neutral or negative affect; object engagement (i.e., sustained looking at objects); self-soothing (e.g., thumb sucking); and other forms of disengagement (Adamson & Frick, 2003; Mesman, van Ijzendoorn, & Bakermans-Kranenburg, 2009; Moore, Cohn, and Campbell, 2001; Stifter & Braungart, 1995; Weinberg et al., 2008).

In the current study, the following dimensions of infant behavior hypothesized to denote emotion regulation were rated from videotapes of the Still Face Episode of the Still Face Paradigm using the MIPCS coding system (described above): negative affect (reverse coded so that higher scores mean less negative affect), and soothability. Markers of infant negative affect included facial expressions and vocalizations signaling sadness, anger, and irritability. In the

current sample, scores for negative affect ranged from 1 to 5 ( $M = 2.60$ ,  $SD = 1.35$ ). Soothability represented the degree to which the infant could regulate his or her own distress during the Still-Face episode. Regulation of both subtle and marked indices of distress were scored. Subtle signs of distress included physiological stress indicators, such as hiccups, yawns, and spit-ups, as well as behavioral indicators (e.g., negative facial expressions). Overt signs of distress included behaviors such as fussing and crying. Scores for soothability during the Still-Face Episode in the present sample ranged from 1 to 5 ( $M = 2.95$ ,  $SD = 1.25$ ). Negative affect (reverse-scored) and soothability were significantly correlated ( $r = .86$ ,  $p < .01$ ), therefore they were combined to create a variable labeled as infant emotion regulation.

To assess inter-coder reliability, 40 of the 192 SFP videotapes (21%) were re-scored by an independent team of coders. The ICCs for infant negative affect and soothability during the Still-Face episode were .94 and .93, respectively, denoting excellent reliability.

## CHAPTER 3

### Results

#### Preliminary Analyses.

Prior to analyses, all data were screened for accuracy of input, out-of-range values, plausible means and standard deviations, sufficient coefficient of variation, and univariate outliers. All variables had plausible means, standard deviations, and sufficient coefficient of variation. No out-of-range values were detected. Together this suggests that the data input was accurate. Standardized scores were computed to determine the presence of univariate outliers, defined as  $z$ -scores greater than 2.57 for the current sample size (Tabachnik & Fidell, 2007). Univariate outliers were identified among the following variables: maternal depression, maternal positive affect, and maternal hostility. The outliers for these variables were Winsorized (i.e., changed to the highest score in the distribution that did not represent an extreme value).

After correcting outliers, the data was further screened for skewness and kurtosis by creating  $z$ -scores for skewed and kurtotic values. Values exceeding 2.57 or greater than .01 probability were considered skewed or kurtotic (Tabachnik & Fidel, 2007). Cumulative demographic risk was positively skewed, and maternal hostility was significantly negatively skewed. The skew of cumulative demographic risk was corrected using a square root transformation, and the skew of maternal hostility corrected with an inverse transformation. The inverse transformation involves a reflection of the variable, and then a re-reflection to prevent the interpretation of the direction of the data from being reversed (Tabachnik & Fidell, 2007). Examination of scatterplots suggested the transformed variables were linear and homoscedastic.

Missing data analyses were also conducted (Burton & Altman, 2004). Seventy-one of the 100 participants had complete data. All variables except self-reported shame had less than 15% of missing data. The self-reported shame measures were added after the study began, and thus 24% ( $n = 24$ ) of the shame measures were missing. Independent sample *t*-tests and chi-square tests were run to determine if systematic relationships existed among shame, depression, parenting behavior, and infant behavior variables. The results of these *t*-tests and chi-square analyses suggested that the data were missing at random.

### **Descriptive Information**

Table 2 presents the means, standard deviations, and the bivariate correlations among all of the primary study variables. Greater maltreatment-specific shame was related to having experienced more multi-maltreatment during childhood as well as higher levels of concurrent depression and observed maternal hostility during mother-infant interactions. In turn, higher maternal positive affect during mother-infant interaction was related to lower levels of observed hostility and depression symptoms.

Percentiles were examined to understand the relative distribution of shame within the sample. Ten percent of participants fell at or below an average score of seven on the shame measure. Twenty-five percent of participants fell at or below an average score of 12 on the shame measure. Fifty-percent of participants fell at or below an average score of 16 on the shame measure. Seventy-five percent of participants fell at or below an average score of 20.75 on the shame measure, and 90 percent of participants fell at or below an average score of 24.3 on the shame measure. I defined moderate maltreatment-specific shame as a score greater than 12 on the shame measure, therefore, 75% of participants experienced at least moderate levels of shame.

### **Primary Analyses**

### **Aim 1: Maternal contextual factors and shame.**

The first study goal was to identify contextual factors, including maltreatment characteristics and socio-demographic risk factors, associated with maltreatment-specific shame during the postpartum period. Mean level differences of shame for all categorical variables (i.e., parent figure perpetrator, race, partner, education, income, and age risk) were examined. Bivariate correlations were calculated to test associations between shame and continuous variables (i.e., multi-maltreatment and cumulative demographic risk).

When considering maltreatment characteristics, shame was significantly associated only with multi-maltreatment,  $r(74) = .33, p = .01$ . An ANOVA showed that shame levels did not vary by type of primary maltreatment,  $F(2,73), p = .49$ : sexual ( $M = 15.63, SD = 5.74$ ), physical ( $M = 15.25, SD = 6.22$ ), emotional ( $M = 16.60, SD = 5.30$ ); and neglect ( $M = 11.67, SD = 2.08$ ). Additionally,  $t$ -tests indicated that maltreatment-specific shame levels did not vary by whether or not that maltreatment was perpetrated by a parent figure (see Table 3). Maltreatment-specific shame was also unrelated to individual socio-demographic variables analyzed in  $t$ -tests including age, race, partner status, education, and income. Moreover, shame was not related to the cumulative demographic risk score ( $r(70) = .13, p = .27$ ).

### **Aim 2: Direct associations between shame and parenting behavior.**

The second study aim was to examine whether mothers' maltreatment-specific shame was associated with their parenting behavior (i.e., maternal hostility and maternal positive affect) during the mother-infant free play interactions. Toward this end, I ran three path models of possible relationships using Mplus Version 7 (Muthen & Muthen, 2008). Missing data was handled using Full Information Maximum Likelihood (FIML), which has more power and less biases than listwise deletion (Newman, 2003). The first model is illustrated in Figure 6 and

examined associations between shame and each parenting behavior, maternal hostility and positive affect, while controlling for multi-maltreatment. For comparative purposes, a second path model examined the same associations substituting maternal depressive symptoms for shame (see Figure 7). This was done because shame and depression assessed concurrently were moderately correlated ( $r = .32, p = .01$ ); however, they are two conceptually distinct phenomena. Shame is a maltreatment-specific reaction whereas depressive symptoms may or may not be related to childhood maltreatment. If both variables were together in a model they would compete and potentially obscure each construct's effects. The third model tested for interaction effects of maternal shame and depression on maternal parenting behavior during maternal-child interactions (see Figure 8). Because shame and depression are positively associated, this model examined whether shame was more strongly related to less maternal positive affect and greater maternal hostility when depressive symptoms were elevated.

***Direct effects of shame predicting maternal positive affect and hostility.***

The direct effects of shame on maternal positive affect and maternal hostility were assessed while controlling for multi-maltreatment on shame. Model fit was assessed using the chi-square test of model fit, root mean square error of approximation (RMSEA), comparative fit indices (CFI), and standardized root mean square residual (SRMR). All indices suggested good fit ( $\chi^2(2) = .11, p = .95$ ; RMSEA = .0, CFI = 1.0, SRMR = .01). Results, presented in Table 4, demonstrate that higher multi-maltreatment was related to higher shame. Higher shame was related to higher maternal hostility, but unrelated to maternal positive affect (Figure 6).

***Direct effects of depression predicting maternal positive affect and hostility.***

The direct effects of depression predicting maternal positive affect and maternal hostility were run to compare the depression and shame models controlling for multi-maltreatment. The



fit indices suggested good fit ( $\chi^2(2) = .27, p = .87$ ; RMSEA = .00; CFI = 1.00; SRMR = .01). Maternal depression was not related to multi-maltreatment. Greater symptoms of depression were associated with decreased maternal positive affect and increased maternal hostility (see Table 5, and Figure 7).

***Depression moderating the relationship between shame and maternal hostility.***

To explore the combined effects of shame and depression on parenting behavior, a direct effects model was created to examine if depression moderated the relationship between maltreatment-specific shame, and maternal hostility (Preacher, Rucker, & Hayes, 2007). Within this direct effects model, an interaction between the direct pathways between shame and depression on maternal hostility was estimated to determine if depression moderated the relationship between maltreatment-specific shame and maternal hostility. Maternal positive affect was not included because it was unrelated to shame. Maltreatment-specific shame was regressed on maltreatment characteristics, and maternal hostility was regressed on shame and depression symptoms and the interaction term between shame and depression symptoms. The bootstrapped model had good fit ( $\chi^2(4) = 2.18, p = .70$ ; RMSEA = .00; CFI = 1.0; SRMR = .04). As expected, more types of maltreatment predicted more shame. Contrary to expectations, shame did not predict maternal hostility, and depression did not moderate the relationship between shame and maternal hostility (see Table 6; Figure 8).

**Aim 3: Indirect effects of shame on hostility and infant emotion regulation.**

The third aim of this study was to explore whether maltreatment-specific shame was associated with infant emotion regulation during the challenging Still-Face episode of the SFP, via parenting behavior. Because shame was associated with maternal hostility and not positive affect, this hypothesis was tested for only maternal hostility. Mediated effects were tested using

MacKinnon, Lockwood, and Williams (2004) method which uses bootstrapped confidence intervals, sampled 5,000 times, to indicate mediated effects. The model examined included multi-maltreatment predicting shame, shame predicting maternal hostility, and shame predicting infant emotion regulation, and maternal hostility predicting infant emotion regulation, and the indirect effect from shame to infant emotion regulation via maternal hostility (Figure 5). Higher levels of shame were expected to be associated with higher maternal hostility, and lower infant emotion regulation after controlling for multi-maltreatment.

The direct effects examined associations from maltreatment characteristics to shame to maternal hostility and shame to infant emotion regulation. Then direct effects from hostility to infant emotion regulation were examined. Fit indices suggested good fit ( $\chi^2(2) = .16, p = .92$ ; RMSEA = .00; CFI = 1.00; SRMR = .01; see Table 7; Figure 9). The fit indices examining the direct effects from multi-maltreatment to depression to maternal hostility and depression to infant emotion regulation suggested good fit ( $\chi^2(2) = .69, p = .71$ ; RMSEA = .00; CFI = 1.00; SRMR = .02; see Table 8; Figure 10).

The indirect paths were examined from maltreatment characteristics and maltreatment-specific shame to infant emotion regulation through maternal hostility, and from maltreatment characteristics and depression symptoms to infant emotion regulation through maternal hostility. The model examining the indirect pathways from shame to infant emotion regulation via hostility suggested good fit ( $\chi^2(3) = .89, p = .83$ ; RMSEA = .00; CFI = 1.0; SRMR = .03). The indirect pathway was not statistically significant (shame to maternal hostility to infant emotion regulation:  $B = .01, p = .82$ ; Beta = .01,  $p = .82$ ; see Table 9; Figure 11). The fit indices for the model examining the indirect pathways from depression to infant emotion regulation via hostility overall suggested good fit ( $\chi^2(3) = 2.58, p = .46$ ; RMSEA = .00; CFI = 1.0 SRMR = .04);

however, the indirect pathway was not statistically significant (depression to maternal hostility to infant emotion regulation:  $B = .00, p = .81$ ; Beta =  $.01, p = .81$ ; see Table 10; Figure 12).

## CHAPTER 4

### Discussion

The literature suggests that maltreatment-specific shame can persist over time and predicts negative social and emotional outcomes (Andrews et al., 2000; Feiring et al., 2002a; Feiring & Taska, 2005). Shame is also highly associated with anger and hostile behaviors, suggesting that shame might be related to decreased positive affect or increased maternal hostility during mother-infant interaction (Lewis, 1971; Tangney et al., 1992). The current study extends prior research by examining whether maternal maltreatment-specific shame is associated with parenting and infant emotion regulation among a group of postpartum women with histories of childhood maltreatment. Results indicate that 75% of women report experiencing at least moderate levels of shame for childhood maltreatment during the postpartum period. This novel finding is consistent with prior work suggesting that postpartum women reflect on their childhood experiences as they consider their identities as new mothers and experience shame postpartum (Menke, 2011; Wright et al., 2012). When this reflection results in negative feelings about the self, this may have important consequences for maternal well-being, including symptoms of depression and PTSD. Further findings shed light on contextual factors associated with maltreatment-specific shame during the postpartum period and potential implications of maltreatment-specific shame for parenting; however, contrary to expectations, results of the present analysis do not provide evidence for an association between shame and infant emotion regulation.

### Contextual Factors and Maternal Maltreatment-Specific Shame

Of the various maltreatment characteristics examined, only multi-maltreatment was associated with shame. Women who experienced more multi-maltreatment were more vulnerable

to maltreatment-specific shame during the postpartum period. These findings highlight the frequency of multi-maltreatment in this sample and extend prior research by documenting associations with shame during the postpartum period (Classen et al., 2005; Davis et al., 2001; Moeller et al., 1993; Wright et al., 2012). For women with childhood histories of multi-maltreatment, shame may undermine the development of a positive or healthy sense of self as a parent, with potential implications for mothers' well-being, parenting behavior, and infant well-being.

In the present study, shame did not vary as a function of the type of maltreatment discussed during the TMMI. These results should be interpreted with caution given the high incidence of women who experienced multi-maltreatment (87%) in this sample. Further, maltreatment-specific shame was rated for the maltreatment discussed during the TMMI and not all types of maltreatment experienced, making it difficult to distinguish associations with maltreatment type in the context of multi-maltreatment. Future research should examine either overall shame for all types of maltreatment experienced or shame for each specific type of maltreatment to better understand the relationships between maltreatment-specific shame and types of maltreatment, particularly among individuals with multi-maltreatment histories.

The current study found that maltreatment-specific shame did not vary as a function of whether or not the parent was the perpetrator. This may have been due to how parental perpetrator was defined. The variable was defined as biological mothers or fathers of the participants. Future studies may focus on defining perpetrator more broadly by creating a parental figure or trusted figure category. For example, parent as perpetrator may not include maternal or paternal unmarried partners, or other significant adults in children's lives (e.g., grandparents, aunts, uncles, neighbors, teachers, or coaches). Finally, the variable indicated

whether the parent perpetrator was the perpetrator of the maltreatment discussed in the TMMI. As noted, 87% of the current sample experienced multi-maltreatment, and the parent may have been a perpetrator for one of those forms of maltreatment but not the one discussed in the TMMI. Using a broader variable defined as any type of maltreatment perpetrated by a parent would aid in our understanding of the relationship between parental perpetrator and maltreatment-specific shame.

Concurrent socio-demographic factors, examined as separate and cumulative risks, were unrelated to shame. Whereas concurrent demographic factors may increase risk for psychopathology, they may be unrelated to shame for childhood maltreatment (Beck, 2001; Kneip et al., 2010; Martinez-Torteya et al., 2014; O'Hara et al., 1984; Ross et al., 2006; Schwartz et al., 2005). This could be because mothers' shameful feelings have persisted over time or were exacerbated during the postpartum period. This may suggest that the transition to motherhood increases the risk for painful feelings of shame, regardless of demographic risk or privilege. Additionally, the current sample was at relatively low demographic risk (i.e., women were partnered, had high levels of education, and had high household incomes); therefore, the current sample may not provide a representative picture of an at-risk, childhood maltreatment sample. This suggests the need for replication in a sample showing more diverse levels of risk. It is possible that a dimensional rather than categorical approach to analyzing the risk factors (e.g., income level versus income risk, or age versus age risk) would provide better insight to the relationships between shame and socio-demographic factors. For example, Martinez et al. (2014) utilized a dimensional approach exploring total family income related to parenting behaviors finding that as family income increased, positive parenting behaviors increased. Using this approach might further clarify whether shame is associated with socio-demographic factors.

### **Direct Relationships Between Shame and Parenting**

The next set of analyses focused on the direct relationships between maltreatment-specific shame and parenting while accounting for significant contextual factors (e.g., multi-maltreatment). Parallel analyses were run for depression versus shame for comparative purposes and to examine how their co-occurrence is related to parenting.

Path analyses of the direct relationships between multi-maltreatment, shame, and parenting replicated the bivariate relation between multi-maltreatment and shame. Controlling for multi-maltreatment, mothers' shame for their childhood maltreatment was associated with more hostile behavior toward infants during mother-infant free play interactions. In contrast, shame was not related to mothers' expression of positive affect toward their infants. Whereas prior studies have linked maltreatment-specific shame to greater maternal hostility, anger, and aggression, this may be the first study to note associations between shame and hostile parenting behavior (Feiring et al., 2013; Lewis, 1971; Tangney et al., 1992). This suggests that postpartum women with maltreatment histories are vulnerable to experiencing shameful feelings about their own childhoods, and these shameful feelings may manifest in hostile parenting behavior.

Whereas shame was associated only with hostile parenting, depression was associated with both hostile parenting and decreased positive affect. Further, multi-maltreatment was associated with shame but not with depression. These results are consistent with prior studies (e.g., Felsten, 1996; Harper & Arias, 2004; Raes et al., 2014) and support the importance of treatment efforts directed at reducing postpartum depression.

When comparing the direct model of the associations between shame, maternal hostility, and maternal positive affect, and the direct model of the associations between depression, maternal hostility, and maternal positive affect, differences were apparent. Depression was

associated with decreased positive affect but shame was not; however, both depression and shame were associated with hostility. These results are not surprising given the breadth of research indicating the associations between depression, shame, and hostility (Harper & Arias, 2004; Tangney & Dearing, 2002). As noted, the negative association between depression and positive affect is well documented (Raes et al., 2014). Keltner (1995) found a negative association between shame and positive affect, suggesting positive affect is lower among individuals experiencing shame; however, no research studies were found addressing whether maltreatment-specific shame is related to positive affect. Perhaps within a maltreatment-specific sample, relationships between shame and positive affect do not manifest, perhaps due to the appeasement function of shame. Appeasement involves soothing or calming others (Keltner & Buswell, 1997). Perchance participants with maltreatment histories send more subtle cues within social interactions to elicit appeasement processes including sympathy and amusement (Keltner, 1995). Future research examining the relationship between maltreatment-specific shame and positive affect will aid in better understanding the relationships between these two constructs.

Because shame and depression frequently co-occur, I also explored the possibility that the relationship between shame and hostile parenting behavior might be stronger for mothers with higher levels of shame and depressive symptoms. Although shame and depression were significantly related, model results did not support the idea that depression moderated the relationships between shame and parenting. Future research may explore the relationships between maltreatment-specific shame, depression, and parenting using a longitudinal design. For example, Feiring et al. (2002a) documented that maltreatment-specific shame predicted higher symptoms of depression 6 years post-maltreatment. A similar approach may be utilized with maltreatment-specific shame. For instance, investigators should evaluate whether shame predicts



maternal symptoms of depression at varying points after the child is born. Then investigators should examine whether the relationships between maltreatment-specific shame and longitudinal symptoms of depression predict maternal hostility and positive affect.

### **Indirect Effects of Shame on Maternal Hostility and Infant Emotion Regulation**

Models exploring the indirect relationship between maltreatment-specific shame and infant emotion regulation showed good fit, indicating the statistical model created was a good representation of the data. These results suggest that shame is associated with hostility; however, they failed to show a significant association of shame with infant emotion regulation at 6 months of age. The results also indicate that parental hostility is not a mechanism by which shame is related to infant emotion regulation. Similarly, the overall fit of the model examining the indirect relationships between depression and infant emotion regulation produced a good fit. As with the direct effects model, higher symptoms of depression were related to greater maternal hostility. No evidence was found for an indirect effect of maternal depression on infant emotion regulation via hostility. However, the results are consistent with previous research indicating depression is related to increased hostility (Field et al., 2007; Martinez-Torteya et al., 2014).

The lack of significant findings may have occurred because infant emotion regulation was evaluated during the Still-Face episode of the SFP, a context in which mothers were present but non-participant. In many prior studies exploring associations between depression and infant emotion regulation, the reunion episode is used as an indicator of the dyads' ability to co-regulate emotions (e.g., Martinez-Torteya et al., 2013; Rosenblum et al., 2002). The Mutual Regulation Model posits that infants' learn to regulate emotions via the support provided by mothers during maternal-infant interactions. Perhaps the infants' response to the mother during the reunion episode would provide additional insight to the relationship between shame, hostility

and infant emotion regulation in a dyadic context as well as potential indirect relationships from shame to infant emotion regulation. Additionally, the current analyses did not explore the associations between infant temperament and infant emotion regulation. Yoo and Reeb-Sutherland (2013) recently documented that 5 ½ month old infants with high and low negative reactivity had similar responses during the first play and Still-Face episodes of the SFP; however, infants with high levels of negative reactivity had significantly higher levels of negative engagement with the mother during the reunion episode. Braungart-Rieker et al. (1998) noted similar results to Yoo et al. (2013); however, they also noted that infants displayed decreased self-comforting and object orientation during the Still-Face episode. This suggests that infant temperament may impact infants' emotion regulation capabilities. Therefore, controlling for infant temperament in future studies may improve understanding of the relationships between parenting behavior and infant emotion regulation independent of temperament.

The current study examined the effects of shame on parenting at an early point in the postpartum period (six months), a time when the development of the mother-infant relationship is still evolving. At this time, mothers are still evaluating their role as parents, and beginning to understand how they want to parent and what it means to parent, given their prior history of maltreatment (Wright et al., 2012). Nevertheless, the links of maltreatment-specific shame to hostility are noteworthy, given that it appears to be a low base-rate behavior for mothers toward their 6-month-old infants, particularly during an unstructured free play context. This makes a good case to suggest the need for additional longitudinal study, to evaluate the effects of shame on parenting over the course of early development, a critical time in child social and emotional development. As children become more autonomous, they require more structure, rules, and discipline; it may be that links between maltreatment-specific shame and parenting will become

more prominent. For example, toddlers are significantly more mobile than infants, which require parents of toddlers to be more aware of the risks in the environment than parents of infants. These increased demands may result in increased difficulties managing maltreatment-specific shame, and may lead to increased maternal hostility. Therefore, the current model may be more applicable within a longitudinal model of maltreatment-specific shame during the postpartum period, which may result in better prediction of later parenting behavior and infant emotion regulation.

### **Limitations and Future Directions**

Although the current study adds to our understanding of the relationships between maltreatment-specific shame, maternal psychopathology, parenting, and infant emotion regulation, limits of interpreting the results should be acknowledged. First, the maltreatment characteristics (i.e., type of maltreatment, multi-maltreatment, and perpetrator identity) were derived from self-reported data and may have been impacted by mothers' fallible memory processes. Future research should attempt to replicate the current findings with samples of women with documented histories of maltreatment in which records could be obtained to validate maltreatment characteristics. Second, the concurrent nature of the data precludes assessment of longitudinal relationships and identifying potential mechanisms between maltreatment-specific shame, parenting behavior, and infant emotion regulation. Although infant emotion regulation was assessed at the end of the home visit, all measures were assessed within a short period of time of each other, and these relations may be better understood over a longer time delay.

Finally, the evolving nature of depression and shame needs to be considered. According to Beck (2001), symptoms of depression are likely to re-emerge during the postpartum period;

however, factors contributing to this re-emergence in relation to shame are not well understood. Understanding the associations between maltreatment type, demographic risk, and maltreatment-specific shame may aid clinician's in identifying individuals at risk for increased depression and shame postpartum. Additionally, as indicated in this study and prior research, depression and shame are each associated with parenting behavior, and in prior research, depression is robustly associated with infant outcomes. Perhaps exploring the longitudinal relationship between shame and depression will provide additional insight to the associations between shame, parenting behavior, and children's social emotional outcomes. Feiring et al.'s (2013) study modeling pathways from childhood sexual abuse to adolescent dating aggression provides a potential framework to explore the proposed longitudinal relationships. Feiring et al. (2013) reported that maltreatment-specific shame one year following abuse discovery was associated with later dating aggression via anger. Exploring the longitudinal aspects of maltreatment-specific shame and parenting behavior in contexts in which children may be likely to elicit parental anger may further provide insight to increased rates of child abuse among children of maltreated mothers (Kaufman & Zigler, 1987; Noll, Trickett, Harris, & Punam, 2009). Lesnik-Oberstein, Koers, and Cohen (1995) found that women that were psychologically abusing their children had higher levels of hostile feelings. Perhaps, women who do not effectively manage maltreatment-specific shame are more likely to experience maltreatment-specific shame long-term, which may lead to increased hostility and negative interactions with children.

### **Strengths**

The current study improves our understanding of the relationships between maltreatment-specific shame and parenting behavior. This is the first study to my knowledge to examine maltreatment-specific shame during the postpartum period and its associations with parenting

behavior and infants' emerging emotion regulation skills at 6-months of age. The postpartum period is thought to be a sensitive period for mothers as they re-visit childhood experiences and corresponding thoughts and emotions in the service of defining their identities as parents (Wright et al., 2012). The current study also contributes to the literature by underscoring the frequency with which mothers with a history of child abuse or neglect experienced multi-maltreatment, and the association of multi-maltreatment with increased postpartum shame. Finally, the results add to a growing literature indicating the importance of childhood maltreatment for maternal and infant behaviors during mother-infant interaction.

### **Clinical Implications**

The current study has significant clinical implications for practitioners working with postpartum mothers with childhood maltreatment histories. Clinicians should be aware that mothers may be experiencing shameful feelings postpartum, especially if they experienced multi-maltreatment. Clinicians working with postpartum women tend to be aware of the risks of postpartum depression and PTSD, but may also benefit from education about the nature of maltreatment-specific shame and its potential negative implications for mothers' psychosocial adjustment and parenting.

By targeting maltreatment-specific shame, clinicians can assist mothers in understanding how their maltreatment histories may influence parenting behaviors, decreasing shame, and possibly symptoms of depression. Many trauma-focused treatments provide effective strategies for treating shame and self-blaming attributions regarding traumatic histories, including Cognitive Processing Therapy (CPT; Resick, Galovski, O'Brien, Uhlmansiek, Clum, & Young-Xu, 2008), and Dialectical Behavior Therapy (DBT; Harned, Korslund, & Linehan, 2014; Neacsiu, Lungu, Harned, Rizvi, & Linehan, 2014). CPT views shame as being constructed by

attributions related to traumatic events and aids individuals in creating more balanced beliefs about what happened during traumatic events including understanding their traumatic experiences (Resick, Monson, & Chard, 2006). Mothers would benefit from this approach in being able to create a new story regarding their own maltreatment experience that allows for happiness and a positive sense of self. DBT takes the approach of acting opposite to emotion or continuing to engage in behavior that is eliciting inappropriate shame (Linehan, 1993). Given links from shame to parenting behavior, DBT skills may be useful in assisting mothers to identify and most successfully regulate negative emotions to reduce spillover effect onto maternal-child interactions. For example, a mother may use mindfulness to identify that she is feeling angry, and act opposite to emotion by taking a brief break, or deep breath. This will allow her to choose her behavior, and not react to her emotion. A more recent study examined the effects of self-compassion exercises on shame and found that individuals that engaged in writing self-compassionate letters experienced decreased shame (Johnson & O'Brien, 2013). Taken together, these findings suggest that mothers with maltreatment histories might benefit from interventions focusing on changing their attributions about the maltreatment as well as their attributions about themselves as parents, particularly because this is a period when they are creating their parenting identity (Wright et al., 2012).

Furthermore, as evidenced by the current results, mothers with maltreatment histories have more negative interactions with their infants (Bennett, Sullivan, & Lewis, 2006; Moehler, Biringen, & Poustka, 2007). By addressing maternal shame related to childhood maltreatment, it is likely more effective parenting behaviors will emerge, which in turn will influence children's psychosocial development. Maternal feelings of shame indicate a target for supporting

interactions between mothers and their infants, and potentially for preventing negative outcomes among children.

## APPENDIX A: TABLES

Table 1

*Descriptive Statistics for Demographics and Parent Perpetrator*

	<i>n</i>	Percent
Marital Status		
Partnered	77	77
Not Partnered <sup>a</sup>	23	23
Racial Category		
Caucasian	65	65
African American	21	21
Asian or Pacific Islander	6	6
Latino	3	3
Bi-Racial and other	4	4
Minority status <sup>a</sup>	34	34
Income		
Less than \$15,000	16	16
\$15,000-\$25,000	11	11
\$25,000-\$50,000	23	23
\$50,000 +	49	49
Less than \$20,000 <sup>a</sup>	23	23
Education		
Less than High School	5	5
HS Degree or GED	6	6
Some college	25	25
AA Degree	8	8
Voc or technical degree	3	3
Bachelor's Degree	29	29
Master's Degree	17	17
Doctoral Degree	6	6
High school or less <sup>a</sup>	11	11
Age		
Younger than 22 years <sup>a</sup>	9	9
Older than 22	91	91
Parent Perpetrator		
Parent	69	69
Not parent	29	29

*Note: n's may not total 100 due to missing information.*

<sup>a</sup>Denotes the risk groups.



Table 2

*Bivariate Correlations among Primary Study Variables*

	<i>n</i>	1	2	3	4	5	6	7
1. Cumulative Demographic Risk	96	.99 (1.27)						
2. Multi-Maltreatment	92	.20	2.74 (1.04)					
3. Maternal Depression	81	.05	.21	70.01 (24.55)				
4. Shame	72	.13	.33**	.32**	15.78 (5.58)			
5. Maternal Hostility (Inverse)	94	.48**	.05	.25*	.21	.79 (.22)		
6. Maternal Positive Affect	94	-.15	.01	-.26*	-.06	-.31**	2.55 (.55)	
7. Infant Emotion Regulation	89	-.01	.06	-.16	.06	.03	.21*	3.17 (1.26)

*Note.* Means and standard deviations are on the diagonal.

\* $p < .05$ . \*\* $p < .01$ .

Table 3

*T-Tests for Mean Differences in Shame by Maltreatment Characteristics for TMMI and Demographic Risk*

	Shame		<i>t</i>	<i>df</i>
	Mean	(SD)		
Parent Perpetrator			1.05	72
Yes	16.04	(5.43)		
No	14.50	(5.94)		
Race Risk			-.01	72
Yes	15.62	(5.93)		
No	15.61	(5.38)		
Partner Risk			-.44	74
Yes	16.25	(5.58)		
No	15.61	(5.68)		
Education Risk			-.21	73
Yes	16.11	(7.25)		
No	15.68	(5.41)		
Income Risk			-1.94	72
Yes	17.81	(6.10)		
No	15.11	(5.10)		
Age Risk			.41	74
Yes	15.87	(4.63)		
No	15.00	(5.70)		

Table 4

*Structural Equation Model Results for Pathways from Multi-Maltreatment to Shame to Maternal Positive Affect and Maternal Hostility*

	Estimate	S.E.	Est./S.E.	$\beta$	95% CIL	95% CIU
<b>Shame on</b>						
Multi-Maltreatment	1.82**	.54	3.38	.34	.91	2.72
<b>Maternal Positive Affect on</b>						
Shame	-.01	.01	-0.57	-.06	-.02	.01
<b>Maternal Hostility on</b>						
Shame	.01*	.01	1.99	.21	.02	.01
<b>Maternal Positive Affect with Maternal Hostility</b>	-.04**	.01	-2.88	-.21	-.02	-.06

Note: \*  $p < .05$ . \*\*  $p < .01$ .

Table 5

*Structural Equation Model Results for Pathways from Multi-Maltreatment to Maternal Depression to Maternal Positive Affect and Maternal Hostility*

	Estimate	S.E.	Est./S.E.	$\beta$	95% CIL	95% CIU
<b>Maternal Depression on</b> Multi-Maltreatment	4.28	2.44	1.75	.18	.29	8.33
<b>Maternal Positive Affect on</b> Depression	-.01*	.01	-2.26	-.24	-.01	-.01
<b>Maternal Hostility on</b> Maternal Depression	.01*	.01	2.39	.24	.01	.01
<b>Maternal Positive Affect with</b> <b>Maternal Hostility</b>	-.03*	.01	-2.59	-.27	-.01	-.05

Note: \*  $p < .05$ .

Table 6

*Structural Equation Model Results for Moderated Pathways from Multi-Maltreatment to Shame to Maternal Hostility*

	Estimate	S.E.	Est./S.E.	$\beta$	95% CIL	95% CIU
<b>Shame on</b>						
Multi-Maltreatment	1.89**	.60	3.16	.32	.92	2.88
<b>Maternal Hostility on</b>						
Maternal Depression	.01	.01	1.89	.21	.01	.00
Shame	.01	.01	1.59	.18	.01	-.01
Shame by Maternal Depression	.01	.02	.96	.10	.04	.01
<b>Maternal Depression on</b>						
Shame	1.15*	.51	2.29	.27	.31	1.96
<b>Maternal Depression with</b>						
Shame by Maternal Depression	7.97	7.22	1.10	.21	-3.93	19.90

Note: \*\*  $p < .01$ . \*  $p < .05$ .

Table 7

*Structural Equation Model Results for Direct Effects from Shame to Maternal Hostility and Infant Emotion Regulation*

	Estimate	S.E.	Est./S.E.	$\beta$	95% CIL	95% CIU
<b>Shame on</b>						
Multi-Maltreatment	1.86**	.54	3.44	.35	.97	2.77
<b>Maternal Hostility on</b>						
Shame	.01*	.01	2.02	.22	.02	.01
<b>Infant Emotion Regulation on</b>						
Shame	.02	.03	.80	.10	-.03	.07
Maternal Hostility	.05	.63	.08	.01	1.11	-.94

Note: \*  $p < .05$ . \*\*  $p < .01$ .

Table 8

*Structural Equation Model Results for Direct Effects from Maternal Depression to Maternal Hostility, and Infant Emotion Regulation*

	Estimate	S.E.	Est./S.E.	$\beta$	95% CIL	95% CIU
<b>Maternal Depression on</b>						
Multi-Maltreatment	4.15	2.54	1.64	.18	-.09	8.32
<b>Maternal Hostility on</b>						
Maternal Depression	.01*	.01	2.52	.25	.01	.01
<b>Infant Emotion Regulation on</b>						
Maternal Depression	-.01	.01	-1.38	-.16	-.02	.01
Maternal Hostility	.39	.61	.64	.07	1.40	-.62

Note: \*  $p < .05$ .

Table 9

*Structural Equation Model Results for Indirect Pathways from Multi-Maltreatment to Shame to Infant Emotion Regulation*

	Estimate	S.E.	Est./S.E.	$\beta$	95% CIL	95% CIU
<b>Shame on</b> Number of Types of Maltreatment	1.82**	.54	3.40	.34	.93	2.73
<b>Maternal Hostility on</b> Shame	.01*	.01	1.99	.21	.02	.01
<b>Infant Emotion Regulation on</b> Maternal Hostility	.16	.61	.25	.03	1.19	-.85

Note: \*  $p < .05$ . \*\*  $p < .01$ .



Table 10

*Structural Equation Model Results for Indirect Pathways from Multi-Maltreatment to Maternal Depression to Infant Emotion Regulation*

	Estimate	S.E.	Est./S.E.	$\beta$	95% CIL	95% CIU
<b>Maternal Depression on</b> Number of Types of Maltreatment	4.63	2.43	1.90	.20	.68	8.69
<b>Maternal Hostility on</b> Maternal Depression	.01*	.01	2.38	.24	.01	.01
<b>Infant Emotion Regulation on</b> Maternal Hostility	.16	.61	.25	.03	1.19	-.85

Note: \*  $p < .05$ .

## APPENDIX B: FIGURES

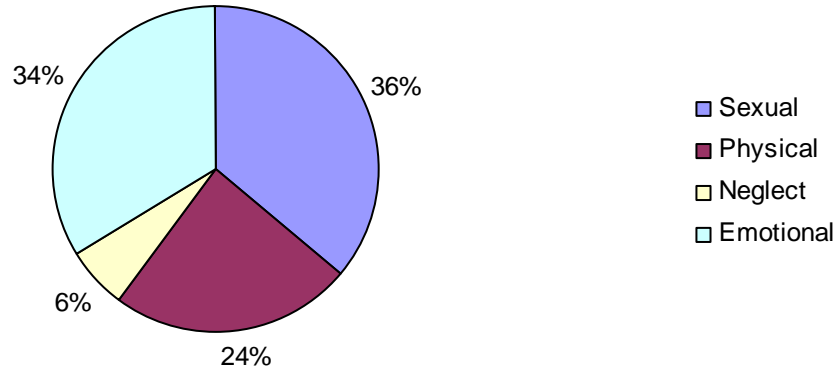
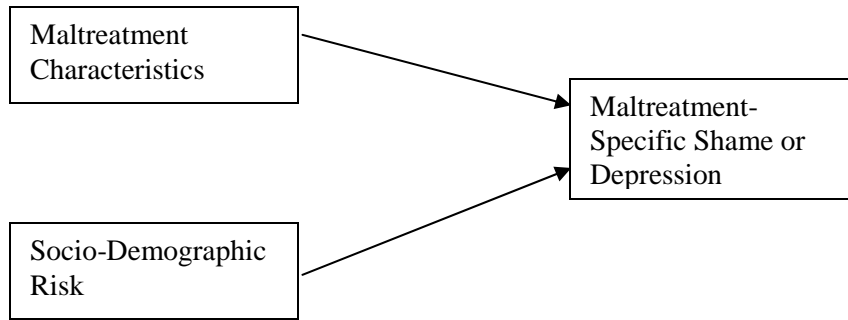
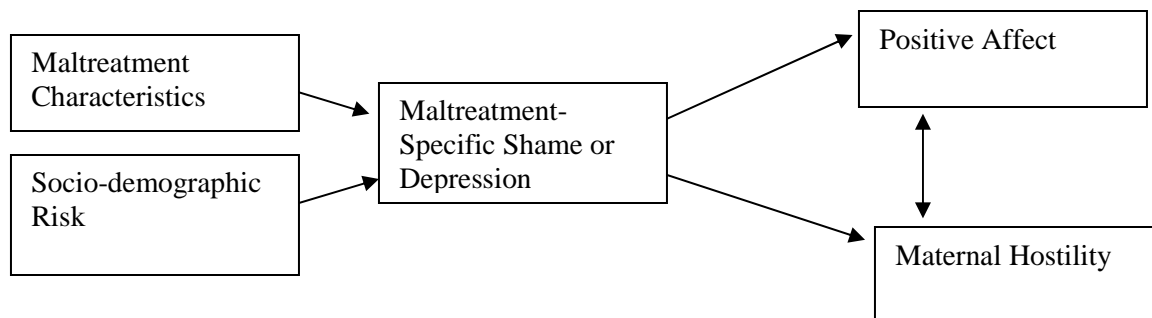


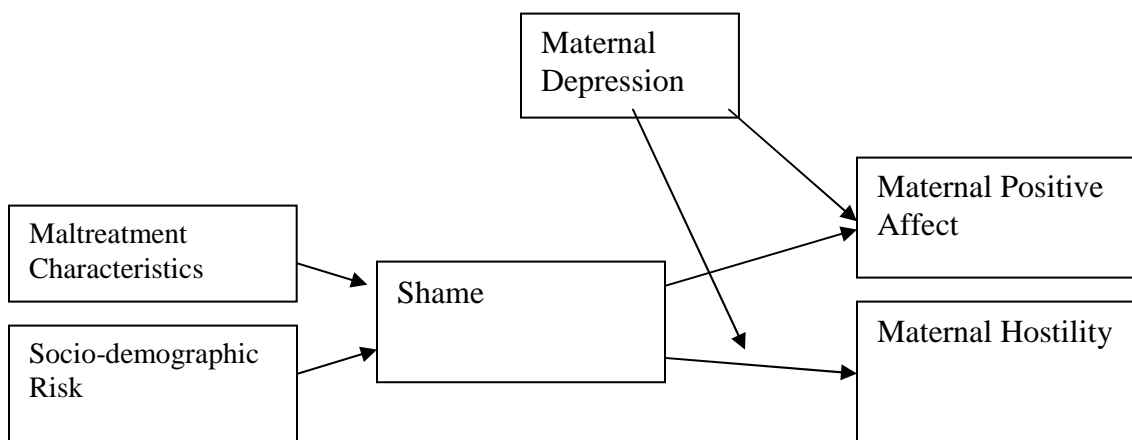
Figure 1. Rates of childhood maltreatment in current sample.



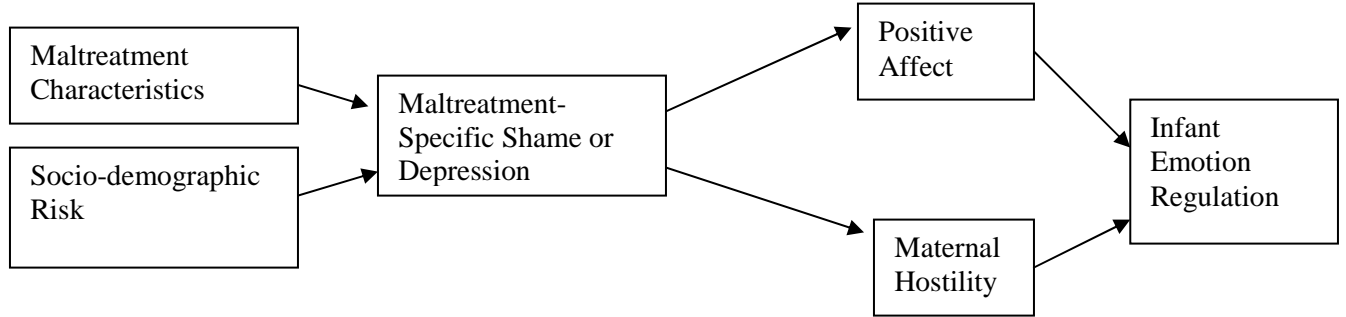
*Figure 2.* Hypothesized correlates of maltreatment-specific shame.



*Figure 3.* Hypothesized direct paths to parenting behavior.



*Figure 4.* Hypothesized model of maternal depression moderating the relationship between maltreatment-specific shame and parenting behavior.



*Figure 5.* Hypothesized indirect paths from maltreatment-specific shame to infant emotion regulation.

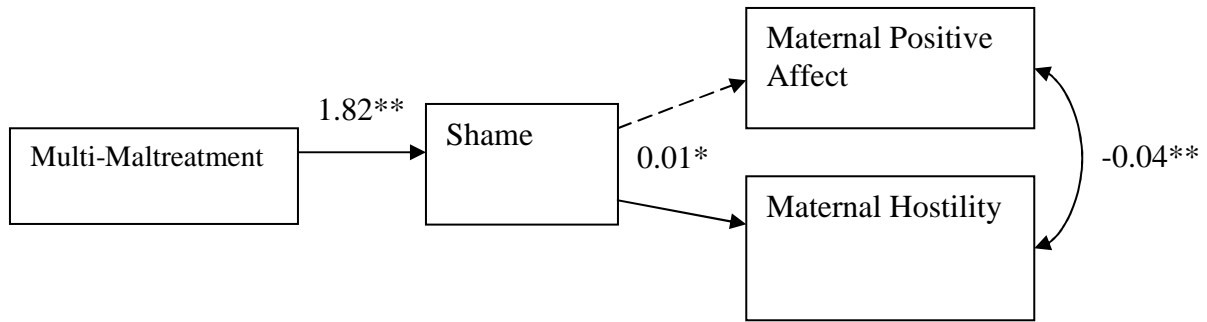


Figure 6. Direct effects between shame and parenting behavior. \*  $p < .05$ . \*\*  $p < .01$ .

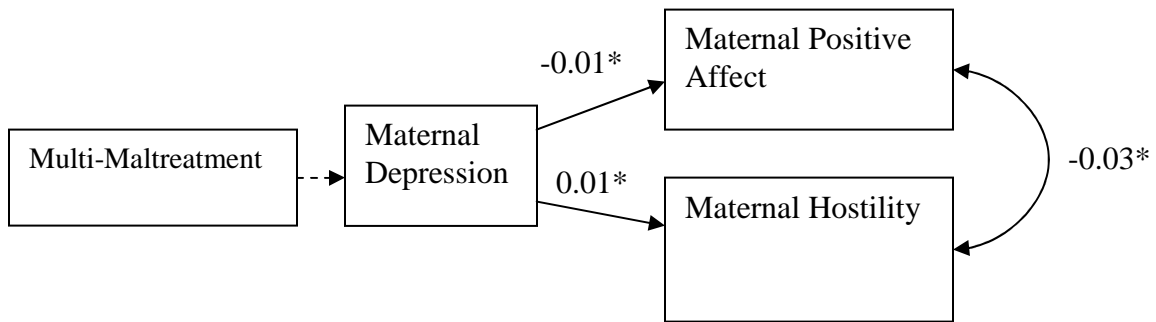


Figure 7. Direct effects between depression and parenting behavior. \*  $p < .05$ .



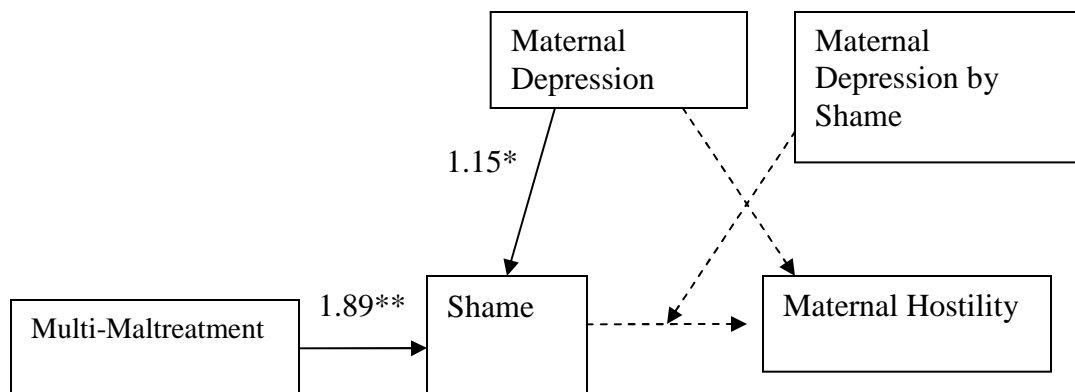


Figure 8. Depression moderating the relationship between shame and maternal hostility. \*  $p < .05$ . \*\*  $p < .01$ .

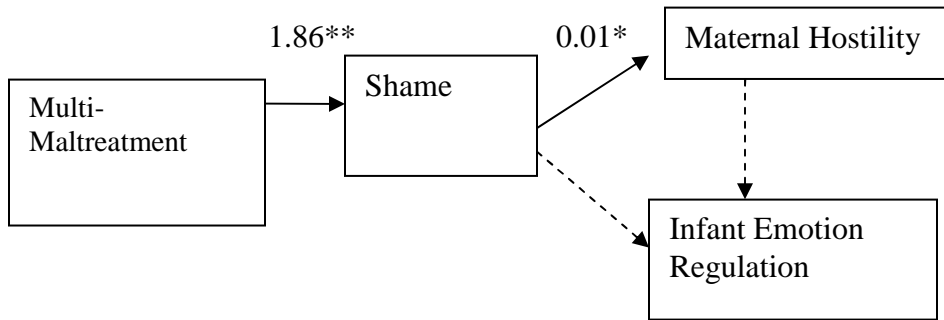


Figure 9. Direct effects of shame on maternal hostility and infant emotion regulation. \*  $p < .05$ .

\*\*  $p < .01$ .

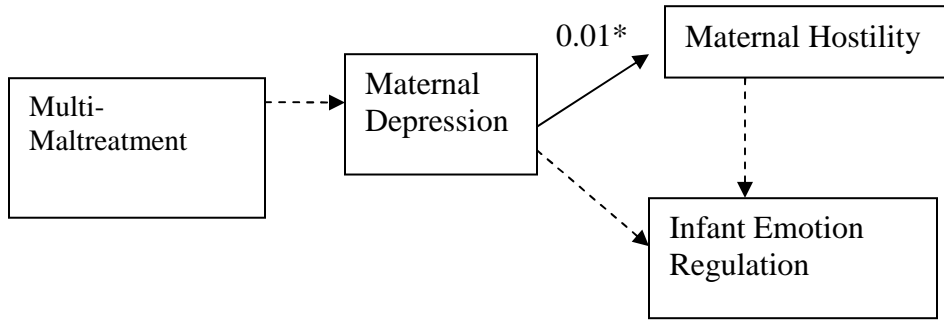


Figure 10. Direct effects of maternal depression on maternal hostility and infant emotion regulation. \*  $p < .05$ .

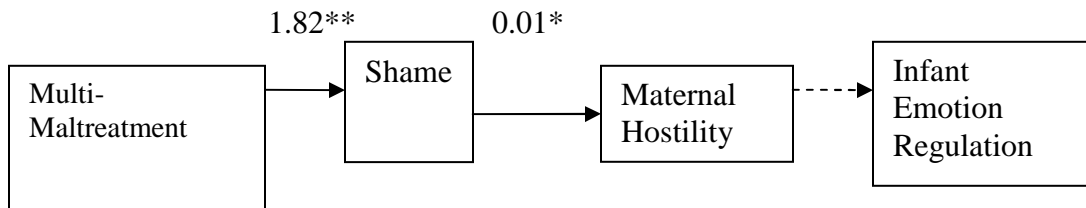


Figure 11. Indirect effects of shame on infant emotion regulation. \*  $p < .05$ . \*\*  $p < .01$ .

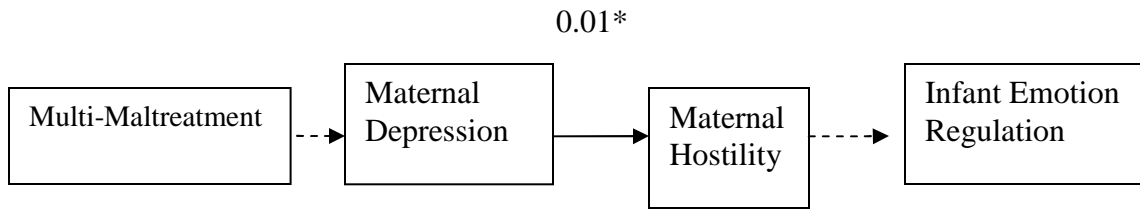


Figure 12. Indirect effects of maternal depression on infant emotion regulation. \*  $p < .05$ .

## APPENDIX C: MEASURES

DemographicsDemographics Survey for Home Visit

**I would like to start out the visit by asking you a few questions about you and your baby's everyday lives.**

**1. Who lives in the baby's household? Circle and fill #**

	Age: (# of years)	Sex: Female=1 /Male=2
<b>1= Mother</b>		
<b>2= Father</b>		
<b>3= Grandparent</b>		
<b>4= Half/Stepsibling</b>		
<b>5= Aunt/Uncle</b>		
<b>6=Cousin</b>		
<b>7=Great Grandparent</b>		
<b>8=other extended family who?</b>		
<b>9=non-family member who?</b>		

**4. What is your current marital status? (check all that apply) NOTES:**

- (1)Married  
 (2)Living with birth father  
 (3)Living with partner (not biological father)  
 (4)Divorced  
 (5)Separated  
 (6)Widowed  
 (7)Never Married

**5. If you are in a relationship, how long have you and your partner been together?**

a) \_\_\_\_\_ Years b) \_\_\_\_\_ Months

**Total # of months:** \_\_\_\_\_

**6. Mother's Age:** \_\_\_\_\_

**7. Father's Age:** \_\_\_\_\_

**8. Is your baby cared for out of your home on a regular basis?**

- (0) No  
 (1) childcare center (Total hrs/week: \_\_\_\_\_)  
 (2) child goes to someone else's home ("child care home") (non-relative)  
 (Total hrs/week: \_\_\_\_\_)  
 (3) private provider comes to my own home (Total hrs/week: \_\_\_\_\_)  
 (4)other (describe: \_\_\_\_\_)

**9. Who does childcare during a typical week in your home?**

- |  |                       |
|--|-----------------------|
| <input type="checkbox"/> (1) Self                  | Total hrs/week: _____ |
| <input type="checkbox"/> (2) Biological Father     | Total hrs/week: _____ |
| <input type="checkbox"/> (3) Grandparent           | Total hrs/week: _____ |
| <input type="checkbox"/> (4) Half/Stepsibling      | Total hrs/week: _____ |
| <input type="checkbox"/> (5) Aunt/Uncle            | Total hrs/week: _____ |
| <input type="checkbox"/> (6) Cousin                | Total hrs/week: _____ |
| <input type="checkbox"/> (7) Great Grandparent     | Total hrs/week: _____ |
| <input type="checkbox"/> (8) other extended family | Total hrs/week: _____ |
| <input type="checkbox"/> (9) non-family member     | Total hrs/week: _____ |

**10. Do you own or rent your current dwelling?**

- (1) Own
- (2) Rent
- (3) Section 8 or Public Housing
- (4) Other (Describe: \_\_\_\_\_ )

**11. In what way do you receive your income?      NOTES:**

- (1) \_\_\_ Employment
- (2) \_\_\_ Unemployment compensation
- (3) \_\_\_ Disability (workman's compensation)
- (4) \_\_\_ Social Security or SSI
- (5) \_\_\_ Aid to Families with Dependent Children (AFDC)
- (6) \_\_\_ Child support or alimony
- (7) \_\_\_ Food stamps
- (8) \_\_\_ Medicaid or Medicare
- (9) \_\_\_ WIC or Women Infants and Children
- (10) \_\_\_ Investments or Rent



**Answer the following questions for the current job for both parents. If either parent is unemployed, ask about her/his usual job held prior to unemployment.**

12. How many jobs do you currently hold? ___ (#jobs)	13. How many jobs does the baby's father currently hold? ___ (# jobs)
14. ___ (1)Employed full-time ___ (2)Employed part-time ___ (3)Staying home with the baby full-time	15. ___ (1)Employed full-time ___ (2)Employed part-time ___ (3)Staying home with the baby full-time
16. If unemployed, are you currently: ___ (1)Unable to work ___ (2)Looking for employment ___ (3)On temporary leave of absence	17. If unemployed, is baby's father currently: ___ (1)Unable to work ___ (2)Looking for employment ___ (3)On temporary leave of absence
18. Mom: What is your usual job? (be very specific)  Hollingshead score: _____	19. Dad: What is baby's father's usual job? (be very specific)  Hollingshead score: _____
Main activities of mother's job?	Main activities of father's job?
Do you supervise people at work? Yes___ No _____ if yes, how many? _____	Does father supervise people at work? Yes___ No _____ if yes, how many? _____
What industry is this in? (prompt: What does the employer sell or make?)	What industry is this in? (prompt: What does the employer sell or make?)

Think of all the income from people who live in your home. Include sources of income listed above, such as employment, child support, AFDC, SSI. I am going to give you a list of incomes. Please indicate the number of the category you fall into.

**20. Which category on this list is closest to your household income last year?**

Category (1-21) \_\_\_\_\_

**Answer the following questions for EDUCATIONAL background for both parents.**

21. How much education have you (mother) gotten? ___ (1)Less than HS degree	22. How much education has the baby's father gotten? ___ (1)Less than HS degree
--	--

___(2)HS degree or GED	___(2)HS degree or GED
___(3)Some College	___(3)Some College
___(4)AA Degree	___(4)AA Degree
___(5)Voc. or Technical Degree	___(5)Voc. or Technical Degree
___(6)Bachelor's Degree	___(6)Bachelor's Degree
___(7)Master's Degree	___(7)Master's Degree
___(8)Doctoral Degrees	___(8)Doctoral Degrees
23. Are you currently in school? ___ (0)No ___ (1)Yes	24. Is the baby's father currently in school? ___ (0)No ___ (1)Yes
25. If yes: ___ (1)High school ___ (2)GED program ___ (3)Community college (AA) ___ (4)Vocational/technical program ___ (5)Job training program (specify: _____) ___ (6)College (BA, BS program) ___ (7)Graduate school	26. If yes: ___ (1)High school ___ (2)GED program ___ (3)Community college (AA) ___ (4)Vocational/technical program ___ (5)Job training program (specify: _____) ___ (6)College (BA, BS program) ___ (7)Graduate school

#### Race or Ethnicity for Mother and BABY:

<b>27. Mother's race or ethnicity:</b> ___ (1)Caucasian ___ (2)African-American ___ (3)Latino ___ (4)Native American ___ (5)Asian-Pacific ___ (6)Bi-racial:( _____) ___ (7)Other:( _____)	<b>28. Baby's race or ethnicity:</b> ___ (1)Caucasian ___ (2)African-American ___ (3)Latino ___ (4)Native American ___ (5)Asian-Pacific ___ (6)Bi-racial:( _____) ___ (7)Other:( _____)
--	--

#### Maternal & Baby Health Questionnaire

In the next section we would like to ask you about your and your baby's health. Let's start with some questions about your health.

1. Are you currently healthy? Y\_\_\_(0)

High blood pressure \_\_\_ (1)

Diabetes \_\_\_ (2)

Asthma \_\_\_ (3)

Other:\_\_\_\_\_ \_\_\_ (4)

2. Are you taking any medications now since baby was born? N\_\_\_(0)

if yes: what? \_\_\_\_\_ dose? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Are you seeing any medical professional (PCP, nurse, therapist)  
 \_\_\_Y (1) \_\_\_N(0)

4. What is your current height : \_\_\_ (inch) 5. Current weight: \_\_\_ (lbs)

6. Do you recall your pre-pregnancy weight? \_\_\_ (lbs)

8. How old were you when you had your first period? \_\_\_ (yrs)

9. Are you currently pregnant? Y \_\_\_ (1) N \_\_\_ (0)

10. Were you sick during this last pregnancy? N \_\_\_ (0)

if yes:

High blood pressure \_\_\_ (1)

Diabetes \_\_\_ (2)

Asthma \_\_\_ (3)

Eclampsia \_\_\_ (4)

Accident/Injury \_\_\_ (5)

Infections (e.g., UTI) \_\_\_ (6)

Other: \_\_\_\_\_ \_\_\_ (7)

11. Have you been taking medications in pregnancy? N \_\_\_ (0)

if yes: what? \_\_\_\_\_ dose? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Opiates (1) Vitamins (8)

Benzos (2) Herbs (9)

SSRI (3)

Mood stab (4)

BCP (5)

Norepi (6)

12. Complications at birth? Y \_\_\_ (1) N \_\_\_ (0) what? \_\_\_\_\_

13. Baby premature? Y \_\_\_ (1) N \_\_\_ (0) weeks? \_\_\_\_\_

14. Baby in NICU? Y \_\_\_ (1) N \_\_\_ (0) 12. How long? \_\_\_\_\_ days\_ or \_\_\_\_\_ weeks  
 \_\_\_\_\_ (total # days)

15. Baby born with medical condition or disability? Y \_\_\_ (1) N \_\_\_ (0)

16. Baby current medical problem? N \_\_\_ (0)

if yes: related to:

stomach/digestive system (e.g., colic) \_\_\_ (1)

breathing/respiratory system (e.g., wheezing) \_\_\_ (2)

brain/nervous system (e.g., seizures) \_\_\_ (3)

frequent ear infections (>2) \_\_\_ (4)

other: \_\_\_\_\_ \_\_\_ (5)

developmental problem \_\_\_ (6)

ever hospitalized (except NICU) \_\_\_ (7)

17. How long was your baby in the hospital? \_\_\_\_\_ Weeks \_\_\_\_\_ Days

\_\_\_\_\_ (tot#days)

18. How old was your baby at this time? \_\_\_\_\_ Months \_\_\_\_\_ week(s)

\_\_\_\_\_ (tot#weeks)

19. Is your baby on any medications currently? N \_\_\_ (0)

if yes: what? \_\_\_\_\_ dose? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

20. Are you concerned about your baby's condition? Y\_\_\_(1) N\_\_\_(0)

21. Are you finding your baby's condition to be a problem or upsetting? Y\_\_\_(1) N\_\_\_(0)

22. Does it affect how you feel about being a parent? Y\_\_\_(1) N\_\_\_(0)

. Measurement of Baby:

23. length: \_\_\_\_\_ (inch) 24. weight: \_\_\_\_\_ (lbs) (RA DONE)

*Question # 20**Demographics-Income scale*

*Please indicate which number assigned to an income range best describes you.*

1. **Less than \$5,000**
2. **Between \$5,000-9,999**
3. **Between \$10,000-14,999**
4. **Between \$15,000-19,999**
5. **Between \$20,000-24,999**
6. **Between \$25,000-29,999**
7. **Between \$30,000-34,999**
8. **Between \$35,000-39,999**
9. **Between \$40,000-44,999**
10. **Between \$45,000-49,999**
11. **Between \$50,000-54,999**
12. **Between \$55,000-59,999**
13. **Between \$60,000-64,999**
14. **Between \$65,000-69,999**
15. **Between \$70,000-74,999**
16. **Between \$75,000-79,999**
17. **Between \$80,000-84,999**
18. **Between \$85,000-89,999**
19. **Between \$90,000-94,999**
20. **Between \$95,000-99,999**
21. **More than \$100,000**

**Maltreatment Characteristics**

**Trauma History Checklist:**

Before age 16:	AGE:			Number of times this happened:		
	0-5yrs	6-11yrs	12-16yrs	Just once	A few times	Many times
Were you ever emotionally abused or neglected, for example, being frequently shamed, embarrassed, ignored, or repeatedly told that you were 'no good'?						
Were you ever physically neglected, for example, not fed, not properly clothed, or left to take care of yourself when you were too young or ill?						
Were you ever abused or physically attacked by someone you knew, for example, a parent, boyfriend, or husband? By physically attacked, we mean hit, slapped, choked, burned, or beat up.						
Were you ever touched or made to touch someone else in a sexual way because they forced or manipulated you in some way or threatened to harm you if you didn't?						
Did you ever have oral, anal, or genital sex when you didn't want to because someone forced or manipulated you in some way or threatened to harm you if you didn't?						

- Was this by:**
- 1 = Mom
  - 2 = Dad
  - 3 = Step-Mom
  - 4 = Step-Dad
  - 5 = Mom's Boyfriend
  - 6 = Brother
  - 7 = Sister
  - 8 = Other Relative
  - 9 = Neighbor
  - 10 = Teacher
  - 11 = Stranger
  - 12 = Other \_\_\_\_\_


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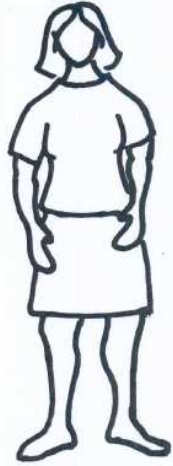

And before age 16:

	Yes	No
Did you ever see violence between family members, for example, hitting, kicking, slapping or punching?		
Were you ever bothered or harassed by sexual remarks, jokes, or demands for sexual favors by someone at school or outside your home, for example, another student on the school bus, a teacher or co-worker?		


Self-Reported Shame

**My Feelings About the Abuse**

<p><b>Rate the Pictures</b></p> <p>ID #:</p> <p>Today's Date:</p> <p><b>Instructions:</b></p> <p>Please look at each of these pictures. Rate how well the picture describes how you feel about the abuse you experienced.</p>	<p>Picture 1</p>  <p><input type="checkbox"/> not at all true    <input type="checkbox"/> a little true    <input type="checkbox"/> somewhat true    <input type="checkbox"/> mostly true    <input type="checkbox"/> very true</p>
---	---

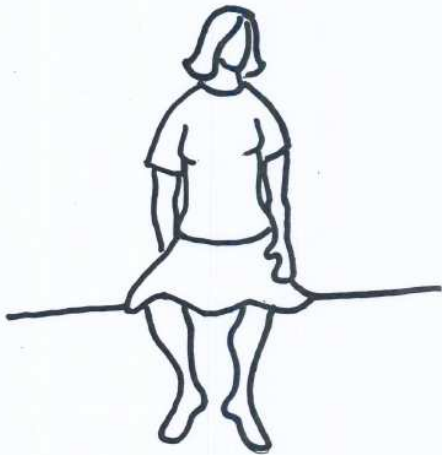
<p>Picture 2</p>  <p><input type="checkbox"/> not at all true    <input type="checkbox"/> a little true    <input type="checkbox"/> somewhat true    <input type="checkbox"/> mostly true    <input type="checkbox"/> very true</p>	<p>Picture 3</p>  <p><input type="checkbox"/> not at all true    <input type="checkbox"/> a little true    <input type="checkbox"/> somewhat true    <input type="checkbox"/> mostly true    <input type="checkbox"/> very true</p>
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Picture 4



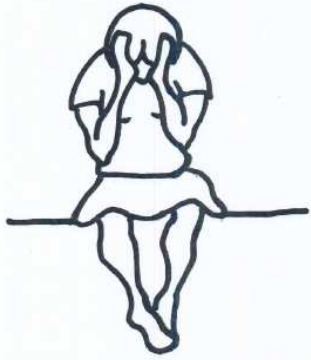
not at all true     a little true     somewhat true     mostly true     very true

Picture 5




not at all true     a little true     somewhat true     mostly true     very true

Picture 6



not at all true     a little true     somewhat true     mostly true     very true

Picture 7



not at all true     a little true     somewhat true     mostly true     very true



## How do you feel? (PPDS)

The following are statements describing how a mother may be feeling after the birth of her baby. Please indicate how much you agree or disagree with each statement.

<i>During the past 2 weeks, (please circle your answer)</i>		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1.	You had trouble sleeping even when your baby was asleep.					
2.	You got anxious over even the littlest things that concerned your baby.					
3.	You felt like your emotions were on a roller coaster.					
4.	You felt like you were losing your mind.					
5.	You were afraid that you would never be your normal self again.					
6.	You felt like you were not the mother you wanted to be					
7.	You thought that death seemed like the only way out of this living nightmare.					
8.	You lost your appetite.					
9.	You felt really overwhelmed.					
10.	You were scared that you would never be happy again.					
11.	You could not concentrate on anything.					
12.	You felt as though you had become a stranger to yourself.					
13.	You felt like so many mothers were better than you.					
14.	You started thinking that you would be better off dead.					
15.	You woke up on your own in the middle of the night and had trouble getting back to sleep.					
16.	You felt like you were jumping out of your skin.					

17.	You cried a lot for no real reason					
18.	You thought you were going crazy.					
19.	You did not know who you were anymore.					
20.	You felt guilty because you could not feel as much love for your baby as you should.					
21.	You wanted to hurt yourself.					
22.	You tossed and turned for a long time at night trying to fall asleep.					
23.	You felt all alone.					
24.	You have been very irritable.					
25.	You had a difficult time making even a simple decision					
26.	You felt like you were not normal.					
	<b>During the past 2 weeks, (please circle your answer)</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree or Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
27.	You felt like you had to hide what you were thinking or feeling toward the baby.					
28.	You felt that your baby would be better off without you.					
29.	You knew you should eat but you could not.					
30.	You felt like you had to keep moving or pacing.					
31.	You felt full of anger ready to explode.					
32.	You had difficulty focusing on a task.					
33.	You did not feel real.					
34.	You felt like a failure as a mother.					
35.	You just wanted to leave this world.					

## MACY Infant-Parent Coding System

Lauren Earls, M.S., Maria Muzik, M.D., and Marjorie Beeghly, Ph.D.

Version: Seventeenth Draft, December 31st, 2009

*Note:* The rating scales included in this scoring system were designed for scoring qualitative dimensions of parent, infant, and dyadic behavior during parent-infant interactions in unstructured (free play) tasks, structured (parent teaching) tasks, and the *Still Face* paradigm. Many of the scales were adapted from extant scales developed by: Beeghly (Parent-Toddler Social Interaction Coding system; 2006), Clark (PCERA; 1985), Huth-Bocks and Dayton (Michigan State University Family Project; 2001), Feldman (Coding Interactive Behavior; 1998), Miller (Michigan Family Study; 1998), as well as theoretical work by: Ainsworth (1971; 1974; 1978), Lyons-Ruth (1983; 1999), Crittenden, 1981, and Main and Hesse, 1990.

*Only codes relevant for the current study are included below.*

### Mom's Behavioral Codes:

***Hostile/Rejecting/Discrepant Communication:*** (As adapted from the MACY sample, Beeghly, 2006; Covert Hostility-Crittenden, 1981; Huth-Bocks & Dayton, 2001; & Miller, 1998). *Use this scale during all tasks, except the Still Face Paradigm, Still Face.* This scale measures the frequency, duration, and intensity of the mother's rejection, hostility, and/or ambivalence during interaction with her infant. Score if mother perceives rejection rather than disinterest. Manifestations include:

***Vocal expressions:*** convey hostile content or bitterness (e.g.: "You don't want to play with mommy," or "You're mad at mommy," or "You're too big to pick up."). May also use exaggerated, fast paced, or artificial-sounding tone that does not match her demands (message is "mixed") (e.g., sweet tone with harsh hands; pleasant voice with hostile intent, gentle insistence combined with indications of disgust when infant doesn't comply). Also: Teasing or taunting, such as holding a toy out of reach ("Do you want that? Come get it!") to a baby who can't crawl yet. Negative or derogatory remarks. Can be said mildly or angrily (intensely). ***Score lower if instances are more covert. Score higher if instances are angry or intense (overt).***

***Prohibitions/Restrictions (Verbal "zaps"):*** such as: "No!" "Uh uh!" "You can't chew on that" "It doesn't go there!" ***Score lower if instances are more covert. Score higher if instances angry or intense (overt).***

***Facial expressions:*** exaggerated expressions, inappropriate happiness or glee when baby is unhappy or fussy or cannot see mother's face. Eye rolling. Can be mild or intense expressions. ***Score lower if instances are more covert. Score higher if instances are angry or intense (overt).***

***Physical restrictions (Nonverbal "zaps"):*** removes toy from infant's grasp or vision while infant is attending to it; prevents infant from moving away, shakes finger or head at infant, teases infant non-verbally (e.g. pretends to give infant toy, then takes it away). Can be mild "zaps," or more intense "zaps." "The concept of maternal "zaps" during parent-child interaction was adapted from the work of Susan Landry and colleagues (e.g., Landry, Smith, and Swank, 2006). ***Score lower if instances are more covert. Score higher instances are angry or intense (overt).***

*Expressions of Affection:* pseudo-affectionate behavior that can appear similar to affectionate behavior, but which is irritating to the infant such as jabbing, poking, pinching, loud “kissing,” and which produces startles, wincing, and withdrawal by the infant. Can look affectionate and playful, but in a sharp manner that is “out of sync” with the child. (e.g. using a puppet to “kiss” the baby on his/her face repeatedly while the child attempts to withdraw). Can be mild or more intense pseudo-affection. *Score lower if instances are more covert. Score higher if instances are angry or intense (overt). Note: If infant does not respond negatively to an instance, it still counts as an instance; if infant responds negatively, score instance higher.*

**1. NO Instances of Hostile/Rejecting/Discrepant Communication**

**2. ONE or two mild instances of Hostile/Rejecting/Discrepant Communication**

**3. Several mild instances, or one angry/intense instance of Hostile/Rejecting/Discrepant Communication.** Note: if coded a 3,

**4. Recurrent mild instances of, or two angry/intense instances, or one prolonged instance of Hostile/Rejecting/Discrepant Communication**

**5. MANY instances, all associated with angry/intense affect, or several prolonged instances of Hostile/Rejecting/Discrepant Communication**

***Positive Affect/Enthusiasm/Joy:*** (Adapted from the MACY sample; Beeghly, 2006; Huth-Bocks & Dayton, 2001; & Miller, 1998). *Use this scale during all tasks.* This is a graduated scale from positive affect, to enthusiasm, to joy, with positive affect on the low end and enthusiasm/joy on the high end. Each end refers to the degree and intensity of the mother’s pleasure and enjoyment of her infant with Positive Affect representing the low degree of positive facial expressions and/or vocal tone, vocal remarks, and vocal excitement; enthusiasm representing more of these, including vocal excitement and some laughter, and joy representing the highest degree of these, including much excitement and laughter, along with playfulness, glee, wonder, and amazement regarding her infant.

**1. NO Positive Affect**

Mother’s interactions with her infant exhibit neutral, flat, or negative facial expressions, vocal tones, and remarks.

**2. Positive Affect**

Mother’s interactions with her infant exhibit positive facial expressions (including consistent smiles), vocal tones, and remarks at least half the time.

**3. Positive Affect AND Enthusiasm**

In addition to meeting the positive affect criteria (positive facial expressions, vocal tones, and remarks), mother exhibits some (less than half the time) vocal enthusiasm and laughter.

**4. SOME Enthusiasm**

In addition to meeting the positive affect criteria (positive facial expressions, vocal tones, and remarks), mother exhibits moderate (half of the time) vocal excitement and laughter.

### 5. MUCH Enthusiasm/Joy

In addition to meeting the positive affect criteria (positive facial expressions, vocal tones, and remarks), mother must meet the enthusiasm criteria (vocal excitement and laughter), as well as exhibit more than one of the following: playfulness, glee, wonder, and amazement regarding her infant.

## Infant Behavioral Codes:

**Soothability:** (Adapted from the MACY sample, Clark, 1985; Huth-Bocks & Dayton, 2001; Miller, 1998; Tronick & Weinberg, 1999). Of note: *Use this scale during the Still Face Paradigm only.* For Infant, soothability is the extent to which the infant can regulate distress. Signs of distress include: *subtle*: brief negative facial expressions (pouts, frowns), negative vocalizations (whining, fussing), autonomic stress indicators (hiccups, spit ups, sneezing); *moderate*: clear-cut or sustained negative facial expressions or vocalizations, or frequent autonomic indicators (including postural collapse) or intermittent crying; *high*: full blown crying bouts with or without anger.

### 1. NO Regulation or ESCALATING regulation

Infant may be dysregulated, or infant may be calm or nearly calm initially, escalating over time. Attempts to soothe by mother and/or to self-soothe don't work (or are absent). Infant demonstrates moderate to high instances of distress, and may even be more upset by mother's attempts to soothe

### 2. SOME Regulation

Infa2 1 (vs. 1), infant must show at least 2 calm periods, and also have 2 bouts of distress moderate or subtle distress. This infant can be occasionally calmed by mother, or by self-soothing

### 3. QUICK Regulation

Infant is clearly distressed (any form of distress) at some point, but calms quickly and stays calm. To receive a 3 (vs. a 2) this infant should be able to reengage in self-soothing, or with mother

### 4. GOOD Regulation

Infant is not at all, or subtly or fleetingly distressed, but maintains a predominantly regulated state. There are no moderate or high instances of distress

### 5. NOT APPLICABLE

Infant is not distressed, or infant is well-regulated (there are no signs of self-soothing or autonomic indicators)

***Negative Affect (Reverse coded in current study):*** (Adapted from MACY sample; Clark, 1985; Feldman, 1998). *Use this scale during all tasks.* This is a graduated scale from no negative affect to high negative affect. Instances of negative affect are: (*subtle*): brief or mild facial expressions of sadness or anger, negative vocalizations (fussing, whining); (*moderate*): clear-cut and frequent negative facial expressions, more sustained negative vocalizations (fussing), marked nonverbal indices of frustration or agitation (limb flailing), irritability; or intermittent crying; (*high*): full-blown sustained crying, clear-cut sustained indices of anger (e.g., rejection of parents while angry) Ratings are based on type of instance, as well as on frequency, duration and intensity.

**1. NO Negative Affect**

Infant exhibits positive or flat affect or a combination of the two the entire time.

**2. SOME Negative Affect**

Infant exhibits some instances of subtle negative affect, or one moderate or prolonged instance of subtle negative affect.

**3. MODERATE Negative Affect**

Infant exhibits subtle or moderate negative affect half of the time.

**4. MUCH Negative Affect**

Infant exhibits some moderate instances of negative affect along with a few high instances of negative affect, or are one prolonged instance of moderate negative affect.

**5. VERY HIGH Negative Affect**

Infant exhibits many instances of moderate to high negative affect or one long instance (e.g. inconsolable crying) of negative affect.

## APPENDIX D: HIC APPROVAL LETTER

**WAYNE STATE UNIVERSITY**

IRB Administration Office  
87 East Canfield, Second Floor  
Detroit, Michigan 48201  
Phone: (313) 577-1628  
FAX: (313) 993-7122  
<http://irb.wayne.edu>

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**CONCURRENCE OF EXEMPTION**

To: Rana Meritz  
Psychology  
5057 Woodward, 2th Floor

From: Dr. Scott Mills *S. Mills*  
Chairperson, Behavioral Institutional Review Board (B3)

Date: April 23, 2013

RE: IRB # 044213B3X

Protocol Title: Pathways Between Maternal Maltreatment Related Shame, Maternal-Infant Interactions, and Infant Emotion Regulation

Sponsor:

Protocol #: 1304011903

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The above-referenced protocol has been reviewed and found to qualify for Exemption according to paragraph #4, of the Department of Health and Human Services Code of Federal Regulations [45 CFR 46.101(b)].

- Protocol Summary Form (received in the IRB Office 4/8/2013)
- Protocol (received in the IRB Office 4/8/2013)

This proposal has not been evaluated for scientific merit, except to weigh the risk to the human subjects in relation to the potential benefits.

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- Exempt protocols do not require annual review by the IRB.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (<http://irb.wayne.edu/policies-human-research.php>).

**NOTE:** Forms should be downloaded from the IRB Administration Office website <http://irb.wayne.edu> at each use.



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**ABSTRACT****ASSOCIATIONS BETWEEN MATERNAL MALTREATMENT SPECIFIC SHAME, MATERNAL-INFANT INTERACTIONS, AND INFANT EMOTION REGULATION**

by

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The current study focuses on maltreatment-specific shame as a potential mechanism by which mothers' histories of childhood maltreatment might influence parenting and infant emotion regulation. Shame is a common reaction to childhood maltreatment, and the persistence of maltreatment-specific shame is associated with psychopathology and other psychosocial problems long after the abuse ends (Andrews, Brewin, Rose, & Kirk, 2000; Feiring, Taska, & Lewis, 2002a; Feiring & Taska, 2005). Despite being associated with psychopathology (e.g., depression, PTSD), shame is a conceptually distinct abuse-specific reaction that can interfere with self and interpersonal development (Feiring, Cleland & Simon, 2010; Feiring, Simon, Cleland, 2009; Feiring, Simon, Cleland & Barrett, 2013). Remarkably little is known about whether and how maltreatment-specific shame might affect women's postpartum adjustment, parenting, and infant emotion regulation. The current study begins to address this gap in the literature by (1) identifying factors associated with maltreatment-specific shame during the postpartum period, and (2) examining associations between mothers' maltreatment-specific shame with parenting (as measured by maternal hostility and maternal positive affect) and

infants' emotion regulation during an interactional stressor at 6-months postpartum. These associations were also explored with depression, to compare the outcomes and understand the distinct effects of shame with parenting and infant emotion regulation.

Results indicate that maltreatment-specific shame is predicted by multi-maltreatment, but not any other socio-demographic or maltreatment characteristics. Additionally, maltreatment-specific shame predicts maternal hostility, but not maternal positive affect during maternal-child interactions. Depression predicts both maternal positive affect and maternal hostility. Evidence did not support indirect relationships between shame and infant emotion regulation via parenting behaviors. The relationships between shame, parenting, and infant emotion regulation may be better understood by exploring the long-term associations between depression symptoms and shame with parenting behavior and infant emotion regulation. The current study provides evidence in support of theories that maltreatment-specific shame is related to increased hostile parenting behaviors.

**AUTOBIOGRAPHICAL STATEMENT**

The author graduated with her Bachelor of Arts with High Distinction and Highest Honors in Psychology from the University of Michigan, Ann Arbor, Michigan in May 2005. She graduated with her Master of Arts in Clinical Psychology from Wayne State University, Detroit, Michigan, in August 2011.