

Running head: IPV, RISK, AND RESILIENCE IN CHILD EMOTION REGULATION

Risk and Resilience in Child Emotion Regulation: Investigating Intimate Partner Violence,
Parenting Stress, and Social Support in a Home Visiting Program for Young Mothers

A thesis submitted by

Emily Zhang

In partial fulfillment of the requirements for the degree

Master of Arts

in

Child Study & Human Development

Tufts University

May 2018

Abstract

This thesis examined intimate partner violence (IPV), parenting stress, mothers' perceptions of social support, and children's emotion regulation in a sample that may be at risk for IPV. It also investigated whether the Healthy Families Massachusetts (HFM) home visiting program moderated relations between mothers' perceptions of social support and child emotion regulation, as social support has been shown to be a valuable protective factor against IPV. A non-significant trend suggested that sexual coercion positively predicted child emotion dysregulation, though parenting stress and social support did not moderate the relations between IPV and child emotion regulation. In addition, a non-significant trend found that the home visiting program moderated relations between mothers' perceptions of social support and child emotion dysregulation, suggesting that HFM's home visiting services may be valuable in promoting social support for the mother. These findings suggest resilience in the presence of adversity among young families experiencing IPV. Future studies might examine factors behind resilience, such as how strengths within the mother (self-advocacy skills, positive parenting, and healthy coping mechanisms) might buffer negative effects of IPV, and how home visiting programs promote these strengths.

Keywords: Intimate partner violence, adolescent mothers, child emotion regulation, parenting stress, social support, Healthy Families Massachusetts

Acknowledgements

I would like to extend my sincere gratitude to my thesis advisor Ann Easterbrooks, for providing continuous support throughout the process of writing this thesis from start to finish. Your guidance has been vital to not only the progress of my thesis but also to the development of my research and academic endeavors. I would also like to thank my committee members Rachel Chazan Cohen and Ellen Pinderhughes – I am greatly appreciative of your time, expertise, and insightful feedback. Ellen, who has also been my academic advisor for the past five years – thank you for being a dedicated and thoughtful mentor. Other people I have been grateful for throughout the process of writing this thesis include: Martha Pott, for all of your energy towards supporting me and the group of thesis students this past year, Meera Menon, for providing me with statistical analysis support, and friends and family, for inspiring me to pursue my interests and for continuing to challenge me every day.

Table of Contents

Introduction.....	1
Literature Review.....	3
Theoretical Frameworks	3
Adolescent Parenting	5
Child Emotion Regulation	8
Conflict and Intimate Partner Violence	9
Possible Explanatory Mechanisms Linking IPV and Child Emotion Regulation	13
Parenting Stress.....	15
Maternal Social Support	18
Promoting Resilience: Prevention and Interventions.....	19
The Current Study.....	25
Research Questions and Hypotheses	25
Methods.....	27
Participants.....	28
Measures & Constructs.....	29
Data Analysis	34
Preliminary Analyses	34
IRB Approval.....	35
Results.....	36
Discussion.....	39
IPV and Child Emotion Regulation	40
IPV, Parenting Stress, and Child Emotion Regulation	42
IPV, Mothers' Perceptions of Social Support, and Child Emotion Regulation.....	42
The Effects of Home Visiting on Mothers' Perceptions of Social Support and Child Emotion Regulation.....	44
Limitations	46
Future Directions	50
Conclusions.....	53
References.....	55

Tables 68

 Table 1. Data collection time points. 68

 Table 2. Statistical analyses used for thesis. 69

 Table 3. Initial correlation analyses among independent variables, moderators, and dependent variables. 70

 Table 4. Initial correlation analyses among controls and independent/dependent variables. 71

 Table 5. Mother and child demographic information. 72

 Table 6. Descriptive analyses for IPV and child emotion regulation. 73

 Table 7. Sexual coercion and child emotion regulation (ERC: Dysregulation Subscale) regression results. 74

 Table 8. Social support X HVS/RIO moderation predicting child emotion regulation (Story Stem Dysregulation). 75

Figures 76

 Figure 1. Ecological Systems Model (Bronfenbrenner and Morris, 2006). 76

 Figure 2. Conceptual framework for the current study. 77

 Figure 3. Hypothesized Graph for Parenting Stress and Social Support in Relations between IPV and Child Emotion Regulation/Dysregulation. 78

 Figure 4. Relations between IPV: Sexual Coercion and Child Emotion Regulation (ERC Dysregulation Subscale). 79

 Figure 5. HVS/RIO Differences in the Relations between Mothers’ Perceptions of Social Support and Child Emotion Regulation (Story Stem Dysregulation). 80

Appendices 81

 Appendix I: Conflict Tactics Scale – Partner (Revised, Short Form) Subscale Items 81

 Appendix II: Child Emotion Regulation Checklist (ERC): Dysregulation Subscale Items 82

 Appendix III: Attachment-Focused Coding for Story Stems: Dysregulation Subscale Scores 83

 Appendix IV: Parenting Stress Index Items. 84

 Appendix V: Personal Network Matrix: Mother’s Perceptions of Social Support. 86

Risk and Resilience in Child Emotion Regulation: Investigating Intimate Partner Violence, Parenting Stress, and Social Support in a Home Visiting Program for Young Mothers

Introduction

Parenting is often a challenge for adolescent mothers, who tend to be primary caregivers of their children and who are often provided with inadequate resources for support. Current literature on adolescent mothers is largely deficit-based, with claims that adolescent parenting may perpetuate intergenerational cycles of disadvantage and that mothers may be at risk for limited education, poverty, unstable relationships, and high levels of depression (Lewin, Hodgkinson, Water, Prempeh, Beers, & Feinberg, 2015). Research also highlights that these effects on the mother may hinder the healthy social and emotional development of their young children – children of adolescent parents have been documented to be at increased risk for drug use, gang membership, school dropout, and adolescent parenthood when they are older (Pogarsky, Thornberry, & Lizotte, 2006). A strong focus has been placed on these cycles of disadvantage, with less research examining possible supports and sources of resilience for young mothers and their children when exposed to adverse experiences.

This thesis examines mothers and children in the context of intimate partner violence (IPV). IPV may have detrimental implications for both the mother and her family (Bekaert & Smith-Battle, 2016; Letourneau et al., 2013). Intimate partner violence (IPV), defined as violence between romantic partners, may include physical, sexual, psychological or emotional abuse. Young adolescent mothers are disproportionately affected – women with non-traditional family structures (e.g. step family, single parent), low income, and adolescent parenthood place these mothers at greater risk for being in violent relationships (Halpern, Spriggs, Martin, & Kupper, 2009; Kaukinen & Powers, 2015). Further, since adolescent mothers have complex and

varying relationship patterns with their romantic partners (Raskin, Fosse, Fauth, Bumgarner, & Easterbrooks, 2016), they may lack father support or sufficient resources for parenting. These factors of low social support and resources may induce greater parenting stress on young mothers, thus limiting the emotional and psychological availability of caregivers (Gustafsson & Cox, 2012). As a result, IPV may have intergenerational implications, affecting not only the mother but also the child's healthy social development, even in infancy (Gibson, Callands, Magriples, Divney, & Kershaw, 2015). It is particularly important to examine these effects in young children, as early intervention provides a valuable opportunity to buffer the effects of exposure to IPV.

Given that IPV is pervasive among young families, the field must work to identify supports and early interventions. Though children may experience heightened vulnerability to environmental stressors, the plasticity of the brain at a young age maximizes the opportunity for effective preventative interventions (Easterbrooks, Katz, Kotake, Stelmach, & Chaudhuri, 2015). Furthermore, many studies that are deficit-based fail to recognize the heterogeneity among adolescent mothers and may mask the diversity among parent backgrounds, risk factors, and strengths (Mistry, Easterbrooks, Fauth, Raskin, Jacobs, & Goldberg, 2016). It is also necessary to examine social support in the context of parenting and adolescent motherhood as a potential buffer against negative implications of IPV. Given the potential for early intervention, this study aims to understand the nuances of IPV, parenting stress, mothers' perceptions of social support, and young children's emotional regulation, as well as the efficacy of a home visiting program that may foster resilience and buffer the effects of IPV within the family.

Literature Review

Theoretical Frameworks

Exposure to IPV in a child's life may be related to a variety of complex and interrelated factors present in the child's environment. Thus, a contextual approach may be helpful in examining the relations between IPV, parenting stress, and child outcomes. The Ecological Systems Theory, as illustrated in the graphic (Figure 1) suggests that different levels of systems and contexts exist in a child's environment that influence each other and the individual (Bronfenbrenner and Morris, 2006). The microsystem examines individual relationships, such as the parent-child relationship, whereas the mesosystem and macrosystem address larger influences, such as policy. Development is the result of these unique person-context interactions. This model highlights the complexity of interactions between the child and context, as well as the interaction between the contexts (e.g. family and school) and may be useful to frame the parent-child relationship in the context of the mother-partner relationship.

This study primarily examines IPV, parenting stress, social support, and child emotion regulation through the lens of the Relational Developmental Systems perspective, which expands upon Ecological Systems Models and emphasizes the mutually influential relations between the individual and the context (Lerner & Schmid, 2013). Developmental regulations in this theory are considered "rules" or processes that determine exchanges between individuals and their contexts, and when these developmental regulations are mutually beneficial between the individual and context, they are seen as healthy and adaptive. This framework also highlights plasticity in human development, considering temporality and changing contexts as individual and context relations continue. Therefore, this model may allow us to examine IPV, parenting stress, parent perceptions of social support, and child outcomes in a relational and bidirectional

context from a strengths-based perspective. For example, this model highlights how stress and conflict from the mother's intimate relationships may spillover into her child's life, but also examines how external systems of social support, such as a home visiting program or close friends, may also change these interrelated systems.

Research in the field has also used Family Systems Theory to highlight how families may relate with one another through interdependence of members' thinking, feeling, and functioning (Minuchin, 1985). Family members may often share similar feelings due to unconscious reactivity and response within the system. This theory has largely been applied to clinical therapy (Kolbert, Crothers, & Field, 2013), but also relates specifically to the transmission of family violence. Through the lens of Family Systems Theory, researchers may view IPV as a pattern of ongoing interactions that continually creates risk for more violence, as violence itself may eventually become the source of resentment and conflict (Burge, Katerndahl, Wood, Becho, Ferrer, & Talamantes, 2016). Furthermore, Family Systems Theory shows how children's emotional development, including emotion regulation, may be influenced by family interactions, including parent-child relationships, parent dynamics, and the interrelations between these relationships (Frankel, Umemura, Jacobvitz, & Hazen, 2015). For example, Frankel et al. (2015) highlight how stress from marital conflict may spill over into children's emotion regulation outcomes. In addition, experiences of IPV in the family may increase a child's risk for maltreatment (Moore & Florsheim, 2008; Maughan & Cicchetti, 2002). However, these systems also have the potential to support children through adversity. For example, the presence of social support in the mother's life may improve child emotional and behavioral outcomes despite the presence of IPV (Pinto et al., 2016).

Other existing frameworks have also examined the impacts of different stressors and relations between systems. The Cumulative Stress Model (or the Diathesis-Stress Model) explains how accumulation of different environmental, biological, and genetic stressors may interact and lead to the development of psychopathology once stressors reach a certain threshold (McEwen, 1998). Thus, multiple stressors present in the family, such as IPV and parenting stress, may interact and impact child outcomes. Some literature has examined the cumulative impacts of child maltreatment, parenting stress, and IPV on child social and emotional functioning (Maneta, White, & Mezzacappa, 2017; Taylor, Guterman, Lee, & Rathouz, 2009). However, it is also important to note that variation may exist within these different stressors and risk factors among individuals, and thus, the Cumulative Stress Model may not fully capture adaptive functioning in early-life adversity (Daskalakis, Bagot, Parker, Vinkers, & Kloet, 2013).

Adolescent Parenting

Some of the research studying adolescent mothers and their children documents the negative experiences and outcomes of adolescent parenthood, focusing on intergenerational cycles of disadvantage, poor social-emotional outcomes for children, and risk for adverse childhood experiences (Lewin et al., 2015; Bekaert & Smith-Battle, 2016; Pogarsky et al., 2006). However, resilience perspectives allow researchers to take a strengths-based approach in examining how individuals may successfully adapt to adverse circumstances. Broadly, resilience can be defined as the successful adaptation to disturbances or adversities that may threaten functioning or development (Masten, 2013). This concept captures the ways multiple systems in a child's life may influence each other in interactive ways to promote a child's healthy development. For example, social support from friends and family may provide emotional and physical support for the mother and child, buffering negative child outcomes when IPV is

present within a family. Furthermore, examining resilience and protective factors acknowledges heterogeneity that exists within the population of young adolescent mothers that better captures adaptive functioning.

Families may be a source of protective factors and resilience for young children. In a review by Howell (2011), multiple family-level protective factors were examined for resilience in young preschool age children. Having at least one warm, loving and involved parent fostered resiliency. Furthermore, the mother's ability to provide and model healthy coping mechanisms and conflict resolution strategies to her child were beneficial in reducing child socioemotional problems. Strategies included emotion-focused coping and problem-focused coping strategies. Maternal mental health and well being are also protective factors in maternal mental health and children's emotional and behavioral problems for mothers experiencing IPV (Pinto, Correia-Santos, Levendosky, & Jongenelen, 2016). Thus, it may be beneficial for interventions to also target maternal mental health, as maternal depression from IPV significantly affects child outcomes (Gustafsson & Cox, 2012). In addition, effective parenting and secure caregiver-child attachment relationships may buffer negative outcomes, since attachment is the child's framework for future relationships.

High partner involvement and cooperative parenting has been positively associated with healthy child social and emotional functioning. Research has found that stable biological father presence promoted family stability and emotional regulation in toddlers (Bocknek, Brophy-Herb, Fitzgerald, Schiffman, & Vogel, 2014). Father involvement and high father-mother relationship quality were also related to social competence in children and decreased child behavioral problems, though conflict in mother-father relationships in high father involvement reduced these positive effects (Easterbrooks, Raskin, & McBrian, 2014). High levels of conflict between

the mother and her partner may negatively affect child outcomes, such attachment and emotion regulation (Owen & Cox, 1997; Frankel et al., 2015). Since adolescent parents experience low rates of union stability and involvement of other partners (Raskin et al., 2016), young adolescent mothers may be at risk for high conflict relationships or IPV.

Positive parenting, such as sensitivity and responsiveness, may moderate the relations between IPV and child outcomes. In a study of 4-5 year old children, mothers' positive parenting was found to moderate the relation between IPV and explicit memory functioning; the negative relation between IPV and preschoolers' memory functioning was weaker when mothers showed greater positive parenting strategies (Jouriles, Brown, McDonald, Rosenfield, & Leahy, 2008). Thus, positive parenting strategies may buffer the negative effects of IPV in children's memory functioning. Recent literature has also highlighted various protective factors in mother-partner relationships that may promote positive child social and emotional outcomes despite conflict and trauma. For example, positive co-parenting may be a protective factor for both adolescent parents and their children (Lewin et al., 2015). Lewin et al. (2015) suggested that increased cooperation in these parents separate from their romantic, legal, or financial relationships might promote positive child outcomes. Other studies showed similar outcomes in parent cooperation (Camara and Resnick, 1989; Frank, Kewon, & Sanders, 2015). In a study of divorced parents, researchers highlighted how the level of conflict in parents was less predictive of children's adjustment than the degree of cooperation and type of conflict resolution (Camara and Resnick, 1989). Thus, cooperation between parents and positive co-parenting relationships may act as a strong protective factor for child behavioral outcomes.

Child Emotion Regulation

Theories have suggested that child social and emotional functioning, particularly emotion regulation, develops in ways that are largely influenced and modeled by children's primary caregivers. Emotion regulation is an important developmental task that requires the help of a parent. Thus, adolescent mothers and their relationships with significant others may have an impact on a child's social and emotional outcomes through parenting and parenting stress. In particular, the presence of IPV with a partner in the mother's life may provide an important context for examining how these child outcomes are affected by trauma and adverse experiences within the family.

Emotion regulation develops in the early years of infancy and childhood, and is defined as the processes by which a child learns to cope with heightened levels of positive and negative emotions (Kopp, 1989). This skill is developed through intrinsic (e.g., temperament, biological factors) and extrinsic (e.g., caregivers, attachment) factors and is related to other dimensions of self-regulation and control that develop during childhood (Calkins & Hill, 2007). Emotion regulation is typically learned and taught by the caregiver, who has a significant impact on the way their children learn to manage their emotions (Kopp, 1989). The Mutual Regulation Model of infant-adult interaction may explain how infants organize and communicate their emotions – emotional expressions of the infant and the caregiver mutually regulate their interactions and a large determinant of children's development is through this interactive communication system (Tronick, 1989). A healthy adaptation of this model may allow the child learn to develop coping strategies for dealing with stress.

Some studies have documented how children frequently exposed to negative emotions and conflicts within the family may show difficulties in emotion regulation (Maughan and

Cicchetti, 2002; Frankel et al., 2015). For example, research has suggested that children living with a parent who is depressed or children who are witnesses to or victims of domestic violence experience greater difficulty in managing emotions, which may then affect a child's psychosocial well-being and social and emotional competences (Thompson and Calkins, 1996). However, Thompson and Calkins (1996) also suggested that these risks may be a double-edged sword – a child living in a home with domestic conflict may encounter circumstances that require them to manage their emotional arousal, but also encounter conditions that make effective emotion regulation difficult to achieve. Therefore, it may be important to assess a child's context and parent relationships to promote healthy development both socially and emotionally.

Protective factors, such as parent perceptions of social support, may be taken into account to examine how supports may promote emotion regulation development among children with adverse experiences. Fusco (2015) suggested the potential protective factor of emotional support, which was a significant mediator of the relations between IPV and socioemotional problems in children. Though emotional support was shown to be a protective factor against these problems, concrete support (e.g., financial support) was not found to have the same benefits. Thus, although IPV may have negative influences on child attachment and emotion regulation, protective factors, such as strong maternal emotional support for the child, may lower these risks.

Conflict and Intimate Partner Violence

A number of stressors may affect child emotion regulation, especially among young, first time mothers. High conflict relationships between the mother and her partner may lead to significant stress within a family, affecting both the mother and her child (Owen & Cox, 1997). In particular, young mothers are at high risk for both long-term single parenthood and IPV (Bekaert & Smith Battle, 2016; Levesque and Chamberland, 2016; Harrykissoo, Vaughn, &

Wiemann, 2002). Fusco (2015) explored socioemotional problems in children exposed to IPV and suggested that the lack of safety and security when IPV was present put children at risk to challenges in attachment. In this study, socioemotional functioning consisted of self-regulation, compliance, communication, adaptive functioning, autonomy, affect, and interaction with people. Children exposed to IPV were less likely to show positive development in these areas.

Research that has explored IPV has suggested that adolescent mothers may be at risk for dating violence because of a lack of understanding or normalization of the incident (Herman, 2013). Similarly, Rothman, Mandel & Silverman (2007) explored the partner-abusive father's perceptions of IPV on the child and found that abusive fathers tended to normalize the incident and showed little intention to reduce the behaviors. Thus, both survivors and perpetrators of IPV may have a lack of understanding of the effects of IPV on their relationship and on their children. Further, literature has highlighted the detrimental effects of IPV on young women and how exposure to IPV in adolescence may significantly alter their life courses (Lindhorst & Oxford, 2008). Adolescent mothers experiencing IPV were associated with greater levels of adult IPV, and women who reported both adolescent IPV and adult IPV reported highest mean levels of depressive symptoms (Lindhorst and Oxford, 2008).

A wealth of literature documents the impact of IPV on adolescent mothers' levels of depression (Lindhorst and Oxford, 2008; Rodriguez, Valentine, Ahmed, Eisenman, Sumner, Heilemann, & Liu, 2010) and its implications for parenting practices or child outcomes (Gustafsson and Cox, 2012; Gibson, Callands, Magriples, Divney, & Kershaw, 2014). In a study of Latina mothers, depression was significantly higher for IPV-exposed mothers (45.7%) than non-IPV-exposed mothers (24.6%, Rodriguez et al., 2010). However, this study also found that mothers' social support was associated with lower depression, while IPV, perceived stress, and

avoidant coping behaviors were associated with higher depression. In the context of IPV, maternal depression may impact infant temperament and parenting competence, suggesting that the dynamics of IPV are disadvantageous for both parent and child outcomes (Gibson et al., 2014). Many of these studies call for a greater need for IPV and depression screenings and interventions (Rodriguez et al., 2010; Gustafsson and Cox, 2012; Gibson et al., 2014).

Stress and anger as a result of IPV may also spill over into the parent-child relationship, affecting the child's developmental outcomes. Although some research suggests that mothers exposed to IPV may compensate by being more sensitive to and supportive of their children (Letourneau, Fedick, & Willms, 2007), increasing evidence has found that IPV negatively affects parenting behaviors and child outcomes (Cummings and Davies, 2010). The stress and trauma of IPV experienced by the mother may impact their children's social emotional development – particularly attachment styles and emotional regulation – in significant ways through interacting family systems. High levels of IPV may increase maternal depressive symptoms, which was directly associated with maternal harsh or intrusive parenting behaviors (Gustafsson and Cox, 2012). Thus, IPV has a significant impact on parenting through its impact on maternal well being. Research has also highlighted how the presence of IPV in a mother's life may disrupt mother-child attachment (Letourneau et al., 2013). Furthermore, different types of IPV victimization have had differential effects of child outcomes. For example, in a study of IPV exposure during a child's first 12 months of life, Easterbrooks et al. (2015) found that minor physical assault (both mother and partner perpetrated) was associated with higher behavioral problems in children. Severe psychological aggression was also positively related to behavioral problems. Generally, children exposed to IPV have increased levels of externalizing and

internalizing behavior problems (Howell, 2011). As a result, IPV between mothers and their partners may often have negative implications for children.

Factors affecting family context may result in differential impacts of IPV within the family. McDonald et al. (2016) found differential effects of the family environment (e.g., income, ethnicity, maternal educational level, number of children) on posttraumatic stress symptoms and psychopathology symptoms (internalizing and externalizing problems). For example, children of mothers who had higher levels of education were more likely to be maladjusted with moderate sensitivity to environmental factors than asymptomatic with low sensitivity to environmental factors. This study highlights the importance of examining various contextual factors within the family when studying IPV to understand its different relations with child outcomes, as heterogeneity exists within the population.

Relational Developmental Systems and Family Systems Theory may explain how IPV operates within a family and its later impacts. IPV within a family may have multiple cyclical influences across generations. For example, research has revealed how mothers who experienced IPV were at a heightened risk for maltreating their children, and maternal parenting stress was associated with a risk for child maltreatment (Taylor et al., 2009). Thus, stress of IPV may spillover into the parent-child relationship through parenting behaviors. The presence of child maltreatment that spills over as a result of IPV may further exacerbate child behavioral problems. For example, child maltreatment in the form of physical violence has been found to moderate the relationship between severe psychological aggression in IPV and child behavioral problems – children who experienced both IPV and maltreatment presented greater behavior problems (Easterbrooks et al., 2015). In addition, those who have been exposed to either child maltreatment or IPV as children are at an increased risk of being future victims or perpetrators in

the future (Valentino et al., 2012; Bekaert & Smith-Battle, 2016). More research is necessary to examine ways in which family and parenting programs may intervene and disrupt the cyclical nature of these adverse experiences.

Possible Explanatory Mechanisms Linking IPV and Child Emotion Regulation

Multiple models exist to explain the relationships between IPV and child outcomes, such as child emotion regulation. These mechanisms are often informed by ecological frameworks, particularly Family Systems Theory, and may be beneficial in not only understanding how adversity affects mothers and children, but also understanding how researchers and practitioners might be able to promote adaptive outcomes in the presence of adversity.

Attachment. Attachment theory suggests that the relationship between primary caregivers and children are critical to a child's development, as this relationship provides the child with protection as well as a secure base to explore and learn about the world around them (Ainsworth & Bell, 1970). Through the work of John Bowlby and Mary Ainsworth, this theory provides an important framework for examining children and their understanding of social relationships (Bretherton, 1992). Initially, Bowlby's work was critical in rejecting existing psychoanalytic explanations about a child's libidinal tie to the mother – he proposed that this dependency on primary caregivers was a natural, healthy function, even in adulthood (Bowlby, 1958). Ainsworth & Bell (1970) furthered Bowlby's work on attachment and found that maternal sensitivity and responsiveness were associated with attachments that were viewed as healthy and secure. A secure attachment was defined by a warm and nurturing relationship between the primary caregiver and child in which the child received protection, comfort, and a secure environment for exploring their social world (Ainsworth et al., 1978).

Today, attachment theory is used to describe social functioning across the lifespan in peer relationships, marital relationships, and adult patterns (Bretherton, 1992). Attachment may have long-term impacts that extend into adulthood (Bowlby, 1958). Thus, this theory provides a valuable framework in the current study to understand how children may learn from or be affected by their parents. Since adolescent parenthood may disrupt normal adolescent development in the United States, it is possible that this disruption may impact the emotional and cognitive capacity that facilitates secure mother-child attachments (Flaherty and Sadler, 2011). Further, mothers who are in healthy relationships with their partners and experience greater social support have been associated with secure attachments with their children, whereas mothers in high conflict relationships have been associated with lower maternal sensitivity and insecure attachments with their children (Owen and Cox, 1997; Jacobson and Frye, 1991). Therefore, the attachment framework may be a possible explanatory mechanism for understanding healthy child social functioning and development for children whose mothers and families have been exposed to stressors such as IPV or high conflict relationships, as attachment is the basis for learning social and emotional skills.

Emotional Security Hypothesis. Emotional security is developed as a product of past experiences in the child's attachment relationship, and influences the child's expectations for the caregiver. The emotional security hypothesis suggests that young children are highly affected by IPV because their parents (typically their primary caregivers) are preoccupied by IPV and are thus less emotionally available for the child (Davies & Cummings, 1994). As a result, the mother may be a less reliable attachment figure for the child. Insecure attachment has been related to an increased risk for socioemotional problems, such as limited emotion regulation. In particular, IPV and child maltreatment may disrupt mother-child attachment and lead to poor emotion

regulation skills (Letourneau et al., 2013; Cicchetti and Barnett, 1992; McDonald et al., 2016). Furthermore, relational trauma has been shown to have direct connections between traumatic attachment, inefficient right brain development, and maladaptive infant and adult mental health (Schore, 2001). Thus, trauma the mother experiences may also affect her maternal sensitivity and availability for the child.

Social Learning Theory. Bandura's Social Learning Theory of aggression suggests that children may learn and model conflict resolution behaviors that they learn from their social environments (Bandura, 1978). Since children who are exposed to IPV are usually within close proximity to the occurrence of IPV, it is possible that the child may not develop healthy coping mechanisms, as healthy conflict resolution has not previously been modeled as frequently as the violent behaviors at home. Research has found that mothers experiencing IPV are more likely to show maternal harsh and intrusive parenting behaviors; therefore, children may be more likely to show externalizing behaviors as well (Gustafsson & Cox, 2012).

Parenting Stress

Parenting stress may be a possible factor in the relations between IPV and child outcomes. Adolescent mothers may experience a number of stressors including limited education and poverty (Lewin et al., 2015) and depression (Thomason, Volling, Flynn, McDonough, Marcus, Lopez, & Vazquez, 2014; Huang, Costeines, Kaufman, & Ayala, 2013). Parenting stress in particular has been defined as reactions of distress to the parenting role, including parent perceptions of caregiving stress, social isolation, and unhappiness, perceiving the child as difficult, or perceiving parent-child interactions as negative, unrewarding, or distant (Abidin, 1992).

Sources of parenting stress for adolescent mothers may differ from older mothers (Secco and Moffat, 2009), and may arise from a number of factors. Adolescent mothers experience low rates of union stability and often lack the support of father involvement (Raskin et al., 2016; Easterbrooks et al., 2014). In a study of parenting stress among adolescent mothers, situational (e.g., social support), infant (e.g., difficult temperament) and maternal (e.g., emotionality) characteristics significantly predicted parenting stress as well as maternal depression, with difficult temperament and social support as the most salient predictors of parenting stress (Secco and Moffat, 2009). Other literature suggests that parenting stress may also affect parent perceptions of a difficult child (Mash and Johnston, 1983). Thomason et al. (2014) highlighted bidirectional effects between parenting stress and maternal depressive symptoms, indicating that these stressors have a significant impact on both the mother and the child. Therefore, parenting stress may have unique interactive and bidirectional effects on other areas of parenting and parent-child relationships, as highlighted in systems theories of development.

However, much of the literature that does exist on parenting stress primarily documents its implications for children (Mackler, Kelleher, Shanahan, Calkins, Kean, & O'Brien, 2015; Huth-Bocks and Hughes, 2008; Magill-Evans & Harrison, 2010). One study found that parenting stress among adolescent mothers also may contribute to children's risk for developmental delay from birth to age five years in areas of fine motor skills, problem solving, and personal-social skills (Lehr et al., 2015). In particular, children ages 3-4 and boys were at increased odds of delay in language and personal-social development (Lehr et al., 2015). Parenting stress may affect a number of factors related to maternal well being, parenting behaviors, and child outcomes. For example, in research that has examined the relations between parenting stress, perceived social support, and maternal depression on child outcomes, maternal depression was

found to be a significant mediator between parenting stress and infant development (Huang et al., 2013).

Parenting stress is common among adolescent mothers who experience high levels of IPV, as being a new parent may be a stressful time to fulfill new childcare demands and effects of IPV may spillover to the parent-child relationship (Gustafsson & Cox, 2012). Parenting stress has a strong direct effect on child behavioral and emotional problems in families where children are exposed to IPV (Huth-Bocks & Hughes, 2007). Stressors may also impact parenting practices. For example, mothers and fathers who experienced IPV showed fewer positive and more negative childrearing behaviors than families with no IPV, and parenting stress was also found to be related to more negative and less positive parenting behaviors (Holden & Ritchie, 1991). This study found that maternal stress and paternal irritability in families that experienced IPV were reliable predictors in child behavior problems for young children, including internalizing behavior problems, more difficult temperaments, and aggressive behaviors.

Literature has also highlighted the relations between IPV, parenting stress, and child outcomes (Owen, Kaslow & Thompson, 2006; Renner and Boel-Studt, 2013). Parenting stress has been shown to mediate the relationship between exposure to psychological IPV and internalizing behaviors in children age 6-12 years old (Renner and Boel-Studt, 2013). In addition, in a study of low-income African American families with children ages 8-12, Owen et al. (2006) found that IPV influences child adjustment both directly and indirectly through their mothers' experiences of parenting stress. Parenting stress was a significant mediator for both children's internalizing and externalizing problems in relation to IPV. Although a significant number of these studies focus on children in middle childhood, fewer studies examine these relationships between IPV, parenting stress, and child outcomes in early childhood. Even less

literature examines these relations in the context of adolescent parenting, and few studies examine low parenting stress as a buffer in the relations between IPV and child outcomes.

Maternal Social Support

Literature has highlighted the risk for IPV, maternal depression, and parenting stress for young adolescent mothers as well as some of its root causes, such as lack of resources and social support (Lewin et al., 2015). However, the presence of social support has been shown to also significantly buffer the negative effects of these adversities on maternal mental health and parenting. One study highlighted that although depression was significantly higher for IPV-exposed mothers (45%) than non-IPV-exposed mothers (24.6%) for Latina mothers, mothers' social support was associated with lower levels of depression (Rodriguez et al., 2010). Similarly, studies of parenting stress among adolescent mothers has found that situational (e.g., social support), infant (e.g., difficult temperament) and maternal (e.g., emotionality) characteristics significantly predicted parenting stress as well as maternal depression, with social support as one of the most salient predictors of reduced parenting stress (Secco and Moffat, 2009). High levels of perceptions of social support among mothers have also been negatively associated with women's PTSD symptoms and psychological stress, while parenting stress was positively associated with these outcomes among women experience IPV (Pinto et al., 2016).

Furthermore, a theoretical framework for understanding help-seeking processes among survivors of IPV examined individual, interpersonal, and sociocultural factors that influence decision making at each stage of the recovery process provided evidence that women with greater social support may perceive IPV to be less threatening and may increase a mother's ability to seek help from formal sources (Liang et al., 2005). Social support has been found to counter parenting stress and the adversity of IPV by increasing coping skills to deal with

violence and create alternatives to the current abusive relationship, as well as reduce the risk of poor perceived mental health, physical health, anxiety, current depression, PTSD symptoms, and suicide attempts (Coker et al., 2002). Although social support may promote the mother's parenting, IPV usually isolates mothers from important social relationships and reduces a mother's sense of self worth. Thus, social support must be examined in the context of IPV to understand how social support and IPV might interact. A mother's social support has the ability to promote maternal mental health and decrease the effects of parenting stress, and may be a valuable protective factor in promoting adjustment for women and children experiencing IPV.

Promoting Resilience: Prevention and Interventions

A variety of interventions exist to buffer the effects of IPV or to help adolescent parents. The goals and outcomes of each of the programs vary on parent-focused outcomes or child-focused outcomes, though many programs incorporate both. A number of these interventions target parent education, case management, counseling, or home visiting, and take place in a variety of settings, such as the home, school, hospital, or community center (Schwartz and O'Sullivan, 2007). As indicated by the literature, it is important to have interventions exist in multiple contexts and different systems, in line with Bronfenbrenner's Ecological Systems Theory. The vast majority of these interventions focus on developing positive parenting skills to improve child outcomes, reducing parenting stress, and reducing the risk of violence within the family (Barlow et al., 2006; Barnett, Duggan, Devoe, & Burrell, 2002; Kagawa, Deardorff, Garcia-Guerra, Knauer, Schnaas, Neufield, & Fernald, 2017; Altafim and Linhares, 2016).

It is also important to note that these studies primarily targeted adolescent parents. Literature suggests that it is important to tailor interventions to a specific population. Lewin et al. (2015) highlight the importance of cultural adaptations in intervention and prevention programs

for program efficacy. A general, universal approach to an intervention may not be as beneficial. For example, a randomized control trial of a group-based parenting education program found that a generalized parenting approach did not benefit adolescent mothers in rural Mexico – though participation in this program led to an improvement for adult mothers, researchers found that the program did not address the needs of adolescent parents in improving parenting behaviors and child cognitive development outcomes (Kagawa et al., 2017). However, culturally adapted interventions have been shown to improve parent and child outcomes (Barlow et al., 2006; Barnett et al., 2002).

Many of these interventions may benefit both parents and their children (Jacobs, Easterbrooks, Goldberg, Mistry, Bumgarner, Raskin, Fosse, & Fauth, 2015; Clewell, Brooks-Gunn, & Benasich, 1989; Kagawa et al., 2017). In a study of child-related outcomes of various adolescent parenting programs (including school-based interventions, hospital-based interventions, and home-based programs), parenting education approaches and childcare interventions were most common and helpful (Clewell et al., 1989). This research highlighted that free childcare services provided benefits to both the mother and the child, and was a crucial factor in mothers' decisions to continue their education.

Family-level interventions are helpful in reducing parenting stress and promote co-parenting skills (Raskin et al., 2016). Many existing interventions emphasize the importance of father involvement in the support and care for the child (Raskin et al., 2016; Lewin et al., 2015; Florsheim et al., 2012). In an adaptation of Family Foundations, Strong Foundations tailored a co-parenting intervention to specifically address the needs of adolescent parents (Lewin et al., 2015). This intervention consisted of 2-hour group educational sessions about communication, problem solving skills, and relaxation techniques for parents to work together. Though this

program was largely focused on violence prevention, other interventions have that promoting co-parenting may decrease IPV in early months (Florsheim et al., 2012).

Home-visiting programs have also been beneficial in increasing parenting knowledge and improving health outcomes. Maternal social support has also been found to have a significant effect on mother-child attachment, which may have important implications for home visiting programs that provide professional, empathic, and developmentally appropriate support for low support families (Jacobson & Frye, 1991). In a randomized control trial evaluation of a program tailored for American Indian adolescent parents based off of Healthy Families America, 41 prenatal and infant care lessons were delivered in participants' homes from 28 weeks gestation to 6 months post-partum (Barlow et al., 2006). Home-visiting services were found to promote childcare knowledge, skills, and involvement among this population. Other studies have produced similar results – in a home-visiting program targeting African American adolescent mothers' parenting and health outcomes, home visits increased parenting behavior scores, though no direct benefits for parenting stress or mental health were found (Barnet et al., 2002). Home visits were implemented by volunteers in the community who received training and provided a parenting curriculum based on attachment, social support, and positive child development promoted by nurturing and responsive parenting. Although home-visiting programs may have beneficial impacts for increasing parenting knowledge and involvement, more interventions should also address maternal mental health for more significant program impacts, especially since maternal mental health may be a protective factor for child outcomes and resilience (Howell, 2011).

Programs and interventions that specifically target family violence, IPV, and child maltreatment also focus on parenting behaviors, but include more mental health supports and

therapy. In a meta-analysis of several universal violence and child maltreatment prevention programs for parents, Altafim and Linhares (2016) found that all programs aimed to prevent violence and maltreatment by promoting positive parenting practices. Some of these programs targeted anger management, mental health, parents' perceptions of social support, and family conflict. Altafim and Linhares (2016) suggested that providing transportation, supervision by practitioners, and structured interventions provided an increased perception of social support from parents. Thus, a combination of increased access, guidance from health professionals, and consistency increased parent resources. Furthermore, this meta-analysis suggested that programs may also benefit child behavioral outcomes – 90% of the programs included in the meta-analysis that assessed child behavior showed improvements in outcomes (Altafim and Linhares, 2016). Another intervention specifically for both adult survivors and children of domestic violence included a 9-week group intervention to increase parenting skills, coping abilities, and safety planning skills, and reduce stress; this intervention successfully reduced blame and trauma symptoms, as well as parents' feelings of isolation, stress, and health problems (Sullivan, Egan, & Gooch, 2004).

Other programs that focus on IPV are commonly described as domestic violence interventions and commonly include therapy (Hackett, McWhirter, & Leshner, 2015; Asen and Fonagy, 2017). Common types of intervention included advocacy, empowerment, parent-child, play therapy, and cognitive behavioral therapy (Hackett et al., 2015). In addition, playful exercises and activities through role-play, theatrical masks, and body-mind scans and maps allowed family members to integrate experiences and reflection to increase awareness of thoughts, feelings, and different perspectives to break cycles of family violence (Asen and Fonagy, 2017). Though these therapeutic interventions are helpful, Hackett et al. (2015)

highlighted the importance of increasing public attention around IPV to increase access and availability of resources for families experiencing violence.

Massachusetts Healthy Families Evaluation (MHFE). The current study focuses on a randomized control trial evaluation of a statewide home visiting program, Healthy Families Massachusetts (HFM), an affiliate of Healthy Families America. This program serves all first-time parents under the age of 21 and provides parenting support, information, and services to parents through home visits, goal-setting activities, group activities, and referrals. The program's goals include preventing child abuse and neglect by supporting positive parenting, achieving optimal health and development for infants and young children, promoting parent educational, career, and life skills, and promoting parental health and well-being (Tufts Interdisciplinary Evaluation Research, 2017). Families that participated in home visiting demonstrated better child preschool outcomes, experienced lower rates of homelessness, reported fewer parent depressive symptoms, and claimed greater parent self-advocacy skills. In general, HFM was reported to have led reductions in parenting stress, risky behaviors, and increased mothers' educational attainment. Thus, home-visiting programs may provide benefits to both mothers and children.

Summary

A review of the literature demonstrates how young adolescent mothers are at greater risk for IPV and parenting stress – these stressors in the mother's life may stem from lack of resources, poverty, and social support (Lewin et al., 2015), and may also be unique to adolescent mothers (Secco and Moffat, 2009). As highlighted by Family Systems Theory, the negative effects of IPV and parenting stress may spill over into the parent-child relationship and child functioning. These different stressors may have negative consequences on children's emotion regulation, as caregivers are important figures in helping children to establish self regulation,

especially during early years (Kopp, 1989). Mothers who are experiencing IPV are often under increased stress, which may impact their caregiving and responsiveness to their children's needs (Gustafsson & Cox, 2012).

Currently, a bulk of the research in this area focuses on negative consequences of IPV on family functioning – in order to understand how these negative effects might be buffered, there is need for more research that examines these issues among adolescent parents and their children, who are particularly understudied in research related to IPV and child emotion regulation. Studies that exclusively examine risk factors and highlight negative outcomes may not always capture heterogeneity within the population that may address potential protective factors for these families. Some interventions including parent education, therapy, and home-visiting aim to foster resilience in these families, though more research is necessary to determine the specific benefits of different programs. Thus, this thesis intended to examine parenting stress as a moderator of the relations between IPV and emotion regulation and also examined how mothers' perceptions of social support may buffer the negative implications of IPV on child emotion regulation. In addition, this study explored whether participation in Healthy Families Massachusetts moderated the relations between mothers' social support and child emotion regulation to examine program effects.

The Current Study

This research aimed to develop a more nuanced understanding of the effects of IPV, parenting stress, and mothers' perceptions of social support in children's emotion regulation. It also aimed to explore how the HFM home visiting program might affect the relation between mothers' perceptions of social support and child emotion regulation, using systems theories, such as Relational Developmental Systems, as frameworks to explain these relations. Different systems including the mother-partner relationship, parenting stress, external social support, and home-visiting services may interact and impact child emotion regulation. This thesis intended to expand on literature within these systems and HFM's home visiting program, while also examining program effects in these areas (see Figure 2).

Research Questions and Hypotheses

RQ1: Does the presence of intimate partner violence (IPV) in a mother's life predict a child's emotion regulation?

H1: The presence of IPV significantly predicts a child's emotion regulation and dysregulation – higher levels of IPV will be correlated with greater child emotion dysregulation.

RQ2: Do (1) parenting stress and (2) social support moderate the relations between IPV in the mother's life and child emotion regulation?

H2: Parenting stress and social support are significant moderators in the relationship between IPV and emotion dysregulation (as shown in Figure 3).

(1): Mothers with high parenting stress will show a stronger relation between IPV and child emotion dysregulation than mothers with low parenting stress.

(2): Mothers with high social support will show a weaker relation between IPV and child emotion dysregulation than mothers with low social support.

RQ3: Does the Healthy Families home visiting program moderate the relations between mothers' perceptions of social support and child emotion regulation?

H3: For mothers who participate in the home visiting program (HVS), as mothers' perceptions of social support increases, child emotion dysregulation decreases.

Methods

This research involved a secondary data analysis of a longitudinal randomized control trial evaluation of Healthy Families Massachusetts (HFM), a newborn home-visiting program for all first-time young parents under the age of 21. HFM aims to promote positive health and development through home visits, goal setting activities, referrals and resources, and group-based activities. Its five primary goals are to: (1) reduce child abuse and neglect by supporting positive and effective parenting practices; (2) achieve optimal health and development in infancy and early childhood; (3) increase life skills, educational and career attainment in parents; (4) prevent repeat pregnancy during teen years; and (5) promote parental health and well being (Tufts Interdisciplinary Evaluation Research, 2015).

Although HFM is meant to serve all first time mothers under the age of 21, data selected for the randomized control trial evaluation (Massachusetts Healthy Families Evaluation, MHFE) only included a subset of adolescent mothers. Eligibility criteria for MHFE included mothers who were 16 or older, English or Spanish speaking, and who had not previously received Healthy Families services. The mothers eligible for the study were randomly assigned by the Children's Trust Massachusetts who implement HFM, to receive either the HFM home visiting services (HVS), or to the control group who received referrals to other home visiting programs and services and a monthly packet of child development information (RIO). Mothers enrolled into the evaluation while pregnant or shortly after childbirth and participated in data collection from 2008-2015 at 5 different time points (refer to Table 1 for specific data collection time points). The current study used data from Time 3 to Time 5 of data collection (T3-T5).

Participation in the original evaluation included a phone interview, access to data from several state public agencies (e.g., Department of Children and Families and the Department of

Public Health), in-home interviews and assessments, and online/in-person surveys at five time points, with consent if they were 18 or older. Mothers younger than 18 provided assent with parent consent. Children who gave assent participated in a variety of observational activities (e.g., mother-child interactions, play activities). Relevant to the current study, children participated in an Attachment Story Stem Task that involved a narrative completion activity assessing children's mental representations of attachment for data collection at T5.

Participants

The evaluation included two samples: the Impact Study sample and the Integrative Study sample, which will be used for the current study. According to Tufts Interdisciplinary Evaluation Research (2015), the Impact Study sample ($N = 704$) consisted of mothers who provided at least one source of data (either a 30 minute phone interview or agency data release). Of the mothers who enrolled in the Impact Study sample, 690 mothers also released agency data. The Integrative Study subsample included mothers who also participated in an additional 2-2.5 hour in-person interview in their homes. Of the original 704 mothers, 433 (62%) were assigned to the HVS group and 271 (38%) were assigned to the RIO group. Integrative sample size decreased over time due to attrition (T1 = 684, T2 = 564, T3 = 594, T4 = 490, T5 = 445).

Mothers ranged from ages 16-21 at the start of the study. In the full sample, mothers were an average of 18.6 years old at enrollment and 18.8 years old ($SD = 1.3$) at childbirth. The full sample of mothers was racially and ethnically diverse – 37% identified as non-Hispanic White, 36% Hispanic, 19% non-Hispanic Black, and 8% non-Hispanic “other.” By T4, children were typically preschool age and by T5, children were around kindergarten age. The average age of children at T5, which will be used for the current study, was 6.09 years ($SD = 0.54$). 53% children were male.

Measures & Constructs

Intimate Partner Violence (T3). Data for the mother's experiences of IPV were collected from T2-T5 of the data collection in the original evaluation. For the purposes of this thesis, IPV assessments at T3 were used to measure the mother's experiences of IPV during toddlerhood. The participating mother completed the Conflict Tactics Scale – Partner (CTS2S), which measured the extent to which partners engaged in psychological or physical attacks with each other (Straus & Douglas, 2004). This self-report questionnaire is a short form based on the revised Conflict Tactics Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) and consisted of 20 items that described specific acts perpetrated by the responder and by the partner. For example, “I insulted or swore or shouted or yelled at my partner,” or, “My partner insulted or swore or shouted or yelled at me.” These items were included in subscales distinguishing whether the perpetrator was the mother or the partner. Participants also indicated the number of times each item occurred in the past year (“Once” = 1, “Twice” = 2, “3-5 Times” = 4, “6-10 Times” = 8, “11-20 Times” = 15, and “More than 20 Times” = 25), or whether it had occurred previously but not in the past year. To measure total exposure to violence, participants were asked about all partners they were with within the past year, and subscales used in this thesis included both mother-perpetrated and partner-perpetrated items on the subscale to provide a full picture of the occurrence of IPV.

Subscales of IPV included negotiation, physical assault, psychological aggression, injury, and sexual coercion. For the purposes of this thesis, I will use physical assault (e.g., “My partner pushed, shoved, or slapped me”), psychological aggression (e.g., “I destroyed something belonging to my partner or threatened to hit my partner”), injury (e.g., “I had a sprain, bruise, or small cut, or felt pain the next day because of a fight with my partner,”) and sexual coercion

(“My partner used force (like hitting, holding down, or using a weapon) to make my partner have sex,”). These subscales may be valuable to assess separately because psychological aggression may be a common, everyday measure of IPV that is often hidden, whereas physical assault and injury may be more infrequent but more visible.

The Conflict Tactics Scale is one of the most common scales used in research for measuring IPV and has been used in a number of studies examining adolescent IPV, particularly for adolescent mothers (Fusco, 2015; Gibson et al., 2015; Halpern et al., 2009; Lindhorst and Oxford, 2008). The short form used in the current study is validated against the full version of the Conflict Tactics Scale when controlling for socioeconomic status, social desirability, and gender of the participant (Straus and Douglas, 2004), and has relatively high internal consistency within the MHFE sample ($\alpha = 0.84$).

Emotion Regulation (T5). Child emotion regulation was examined in this thesis to examine children’s self-regulation of negative affect. This study proposes to use two different measures of emotion regulation, one based on mother-report and another based on child observation.

Emotion Regulation Checklist, Dysregulation Subscale (T5). Emotion regulation was assessed at T5 by mother-report of the children’s ability to regulate emotions. Mothers completed an adapted version of the Emotional Regulation Checklist (ERC, Cicchetti & Shields, 1997). The ERC includes ratings of 24 items about how often a child exhibited a certain behavior were completed on a 1-4 scale (1 = Rarely/Never, 4 = Almost Always). The original measure had 2 subscales: Lability/Negativity (e.g., “shows wide mood swings”) and emotion regulation (e.g., “is a cheerful child, seems upbeat and happy”). Lability/Negativity measures the child’s susceptibility to mood swings, anger reactivity, and intensity of emotions, whereas Emotion

Regulation measures emotional understanding and empathy. Higher scores on the Lability/Negativity subscale indicate greater dysregulation, whereas higher scores on the Emotion Regulation subscale indicate socially appropriate emotional displays and empathy. MHFE also created a third subscale, “Dysregulation,” which combined 12 items from both of the original subscales (e.g., “Is easily frustrated”) to address the issue of a low Cronbach’s α for the Emotion Regulation subscale. In the MHFE study sample at T5, Cronbach’s α were as follows: Emotion Regulation, $\alpha = 0.62$; Lability/Negativity, $\alpha = 0.83$; and Dysregulation, $\alpha = 0.84$. For the purposes of this thesis, a mean score the Dysregulation subscale was used.

As a checklist originally developed to assess children who have experienced maltreatment or who are low income, this measure assessed processes related to emotion regulation, such as intensity, flexibility, and situational appropriateness of emotional expressions. The ERC has been used in pre-school and school-age children who have experienced abuse or maltreatment in other research (Thronback and Muller, 2015; Langevin, Hebert, & Cossette, 2015). It has also been validated among a sample of 6-12 year olds (Cicchetti & Shields, 1997).

Story Stem Battery, Dysregulation Subscale (T5). At T5, children were asked to participate in the MacArthur Story Stem Battery (MSSB), an interactive observational task designed to capture children’s mental representations of attachment through storytelling (Holmberg, Robinson, Corbitt-Price, & Weiner, 2007). In these narrative completion tasks of four different story stems, interviewers presented children with Playmobil characters and set-up for a story, and children were asked complete the narrative on their own. For example, the “Spilled Juice” narrative told the story of a child who spilled the juice he or she was drinking. The MSSB is designed to capture the child’s internal working models (e.g., how children are able to cope with negative emotions, how the child expects adults to respond in dilemmas).

MHFE primarily used the story stem task to assess children's attachment representations; thus, the Attachment Focused Coding Scheme (AFCS; Reiner & Splaun, 2008) was used to code these tasks.

This coding scheme included several codes (three mother-focused codes and three child-focused codes) that were each coded on a 5-point scale. Mother-focused codes include "Supportive Mother", "Rejecting Mother", and "Attachment Avoidance of Mother", while child-focused codes included "Dysregulation", "Theme and Emotion Avoidance", and "Resolution." For the purposes of this thesis, only the child-focused Dysregulation code was used. The Dysregulation scale measured the level of emotional organization or disorganization in the child's response to story stems (1 = No aggression, 5 = Extremely violent or bizarre behavior). The inter-rater reliability for Dysregulation was quite high ($\alpha = 0.88$). In addition, this task has been used in "high risk" samples in both clinical and typical populations (Reiner and Splaun, 2008).

Parenting Stress (T3). Parenting stress was measured by the Parenting Stress Index Short Form (PSI-SF), a 36 item self-report questionnaire (Abidin, 1995). These items or statements were rated on a scale of 1-5, with 1 indicating "strongly disagree" and 5 indicating "strongly agree." For example, these items included "I feel trapped by my responsibilities as a parent," or "My child rarely does things for me that makes me feel good." The PSI-SF included several subscales: Parental Distress (e.g., "I often have the feeling that I cannot handle things very well"), Parent-Child Dysfunctional Interaction (e.g., "My child is not able to do as much as I expected"), Difficult Child (e.g., "My child seems to cry or fuss more often than most children"). A total score was also calculated by summing all subscale scores to indicate overall parenting stress, and was used for the current study. The PSI-SF is one of the most common

scales for measuring parenting stress and has also been used for adolescent mothers and families experiencing IPV (Huang et al., 2014; Huth-Bocks and Hughes, 2008). The PSI-SF has adequate test-retest reliability (0.68-0.85, Abidin, 1995) and the total score measure has very high internal consistency within the MHFE sample ($\alpha = 0.93$).

Mothers' Perceptions of Social Support (T1 & T3). Mothers' perceptions of social support were measured in this study using the Personal Network Matrix (PNM), a self-report questionnaire that assessed mothers' support networks and perceptions of reliability within these networks (Trivette & Dunst, 1988). Continuous scores were calculated on the following subscales: Breadth of Social Circle, Frequency of Contact, Depth of Social Circle, and Dependability of Social Support. Dependability of Social Support included a family subscale, extrafamilial subscale, formal subscale, and total score. For the purposes of this thesis, the total score for Dependability of Social Support was used. This was a mean score of ratings using a 5-point Likert scale (1 = Not at all, 2 = Sometimes, 3 = Occasionally, 4 = Most of the Time, 5 = All of the time) for 23 possible sources of social support (partners, neighbors, friends, therapists, doctors, and social service agencies).

Mothers' perceptions of social support at T3 were used to assess whether social support buffered the relations between IPV and child emotion regulation. Cronbach's α at T3 for dependability of social support was .72. Mothers' perceptions of social support at T1 were used to address whether the home visiting program moderated the relations between mothers' perceptions of social support and child emotion regulation to assess social support effects while they were still receiving Healthy Families Services. Cronbach's α at T1 for dependability of social support was high, at .97.

Maternal depression. Maternal depression was used as a control in this thesis for questions related to parenting stress, as measures of maternal depression and parenting stress were correlated. Depression was measured through the Center for Epidemiological Studies Depression Scale (CES-D), a 20-item self-report questionnaire meant to measure depressive symptoms within a general population (Herge, Landoll, & La Greca, 2013). Mothers were asked to rate how frequently they experienced a depressive symptom in the last week (“My sleep was restless,”) using a 4-point Likert scale (1 = “not at all”, and 4 = “a lot”). The CES-D has strong psychometric properties among diverse groups and was found to be reliable in the general population ($\alpha = .85$) and among clinically-depressed adults ($\alpha = .90$).

Data Analysis

Data were analyzed using IBM SPSS Statistics. Descriptive statistics such as means, medians, and frequencies were computed for all variables, and correlations were run among all variables to examine collinearity. This thesis used linear regression models to determine the relations between IPV, parenting stress, and child emotion regulation, and also examined HFM program effects in parent perceptions of social support (see Table 2).

A standard set of control variables including maternal age at childbirth, target child’s age (at T5), maternal race/ethnicity, and target child’s sex were used for all current study analyses, as done with previous MHFE studies (Tufts Interdisciplinary Evaluation Research, 2017). Research questions that did not involve program participation controlled for HVS/RIO.

Preliminary Analyses

While conducting preliminary analyses, initial correlations were run across all variables. Table 3 shows the relations between the independent variables, moderators, and dependent variables, and Table 4 shows the relations between control variables, independent variables, and

dependent variables. Total scores of maternal depression were significantly correlated with total scores of parenting stress ($r = 0.291, p < 0.001$). Thus, analyses were run with and without maternal depression for RQ2 (*Do levels of parenting stress and mothers' perceptions of social support moderate the relations between IPV and child emotion regulation?*), as controlling for maternal depression may take away variance in parenting stress. Since baseline maternal depression at T1 between HVS/RIO groups differed, maternal depression was included as a control for RQ3 when assessing the home visiting program.

Dichotomous variables were created for parenting stress and mothers' perceptions of social support prior to running moderated regression analyses in RQ2. Histograms indicated normal distributions of both variables. These variables were dichotomized from the original variables using a median split for comparable sample sizes. The total sum score of parenting stress had a median of 75.0 and a mean of 73.7 ($SD = 18.3$) across 389 mothers at T3, with scores ranging from 36-134. Mothers with a score of 75.0 or below were categorized as "low parenting stress" (0, $n = 200$) and mothers with a score above 75.0 were categorized as "high parenting stress" (1, $n = 189$). Social support was also dichotomized by median of 1.92 (mean = 1.98, $SD = 0.764$) into "low social support" (0, $n = 202$) and "high social support" (1, $n = 203$). In a sample of 405 mothers at T5, social support scores ranged from 0.27-4.

IRB Approval

The research protocol for this thesis was approved by the Tufts University Institutional Review Board on October 30, 2017.

Results

Descriptive Analyses

Initial analyses examined demographic information of the Impact sample and descriptive information for the variables of interest. Of the 704 mothers originally participating in the MHFE study, 433 mothers were assigned to HVS and 271 mothers were assigned to the control, or RIO. Descriptive information about the mother included age at childbirth, race, baseline education levels, and baseline clinical levels of depression, presented in Table 5. Child sex and age at T5 were also reported. Sample sizes varied by analysis and were reported according to each model.

Of the four types of IPV (psychological aggression, physical assault, injury, and sexual coercion), psychological aggression was most common and had the greatest variance, with 84.4% mothers reporting at least one incident of psychological aggression happening in the past year. The prevalence of an IPV behavior occurring at least once in the past year was quite high among other types of IPV as well: 32.8% mothers reported physical assault, 22.5% mothers reported injury, and 16.2% mothers reported sexual coercion. However, physical assault, injury, and sexual coercion had less variation and fewer incidents than psychological aggression. Table 6 provides further descriptive information for types of IPV experienced by mothers in the past year at T3 and child emotion regulation scores at T5.

Research Question 1: Does intimate partner violence in a mother's life predict children's emotion regulation?

Linear regression analyses were conducted to examine whether IPV (psychological aggression, physical assault, injury, and sexual coercion) at T3 predicted a child's emotion regulation at T5. Although there were no significant results among all four types of IPV and two measures of child emotion regulation, a trend was found in the relations between sexual coercion

and child scores on the ERC Dysregulation subscale ($n = 293$), as shown in Figure 4. The overall model was marginally significant, $F(10, 282) = 1.764, p = .067$. In this model, sexual coercion was a significant predictor of child emotion regulation ($\beta = .012, p < .05$). The adjusted R^2 value of .025 indicated that sexual coercion explained 2.5% of variance. Results are presented in Table 6.

Other models did not show IPV (psychological aggression, physical assault, or injury) as significant predictors of child emotion regulation using the ERC Dysregulation subscale or the Story Stem Dysregulation subscale, nor did sexual coercion predict child emotion regulation using the Story Stem Dysregulation subscale.

Research Question 2: Do (1) parenting stress and (2) mothers' perceptions of social support moderate the relations between IPV and child emotion regulation?

To investigate whether parenting stress and social support affected the relations between IPV and child emotion regulation, I ran several moderated regression analyses. Controls were entered in the first step of the regression analysis: program participation, maternal education, age at childbirth, race, target child's age at T5, and target child's sex. The type of IPV and parenting stress or social support were entered in the second step, and the interaction term was entered in the third step. Analyses were run twice: once controlling for maternal depression and another without controlling for maternal depression. Contrary to the hypothesis, no significant interactions were found between IPV subscales and parenting stress or mothers' perceptions of social support in predicting child emotion regulation outcomes.

Research Question 3: Does the Healthy Families home visiting program moderate the relations between mothers' perceptions of social support and child emotion regulation?

To address this research question, a moderated regression analysis was used to determine whether there was a significant interaction between baseline mothers' perceptions of social support (T1) and participation in the home visiting program at T1 (HVS/RIO), controlling for maternal depression, maternal education, age at childbirth, race, target child's age at T5, and target child's sex. Data for social support were obtained from T1 to assess its relations while mothers were still receiving Healthy Families Services. Although no significant results were found, a trend emerged: the interaction between mothers' perceptions of social support and participation in the home visiting program predicted child dysregulation subscale scores on the Story Stem Dysregulation subscale ($n = 252, \beta = -.218, p = .098$), accounting for 8.4% of the variance ($R^2 = .084, F(12,239) = 2.910, p < .01$). The R^2 change was 0.01 (full results in Table 8). Figure 5 presents the graphed analysis, and shows that among mothers who participated in home visiting services (HVS), mothers' perceptions of social support were negatively related to child emotion dysregulation. That is, increased perceptions of social support were related to lower levels of child emotion dysregulation. However, mothers in the control group (RIO) showed a positive relation between perceptions of social support and child emotion dysregulation, suggesting that higher levels of social support was related to greater levels of child emotion dysregulation. No significant results were found in the model with the ERC Dysregulation subscale.

Discussion

Extensive literature has documented the negative consequences of IPV on parenting behaviors and child outcomes (Cummings and Davis, 2010; Gustafsson and Cox, 2012; Easterbrooks et al., 2015), as supported by the spillover hypothesis that parent stressors such as IPV may also affect the child. This study intended to understand parenting stress, maternal perceptions of social support, and children's emotion regulation in a sample that may be at risk for IPV. It also aimed to examine program effects of Healthy Families Massachusetts (HFM) on mothers' perceptions of social support, an important protective factor against IPV. Relational Developmental Systems Theory suggests that the interactions between the mother and her intimate partner may also affect the way the mother parents and interacts with her children. This model explains how IPV may have a direct effect on child emotion regulation through exposure to IPV or a negative family climate, and how IPV may also have indirect effects on child emotion regulation by impacting other areas of the mother's life, such as parenting stress and social support. It also highlights the interactive and bi-directional effects of these systems, such as how social support may buffer the detrimental effects of IPV. For example, home-visiting programs may support mothers and children by promoting positive parenting practices and by fostering resilience in the presence of adversity.

Distributions of IPV were as expected – psychological aggression had the most variance and highest prevalence, suggesting that psychological aggression and emotional abuse was common among young mothers' relationships with their significant others that they reported in the past year. This may have important implications for mothers' mental health and parenting stress, and may be interesting for future studies to examine further, as descriptive correlations also found that it had the strongest impact of all four types of IPV on parenting stress (Table 4).

While there was a relatively high prevalence of other types of IPV within the sample (physical assault, injury, and sexual coercion), these types occurred much less frequently than psychological aggression. These findings highlight how smaller, everyday acts of emotional aggression may have a more severe impact on the mother than the less frequent severe physical altercations the mother reported for IPV.

Contrary to the proposed framework and hypotheses, no significant relations were found among IPV, parenting stress, social support, and children's emotion regulation. Some studies have found similar results: Letourneau et al. (2013) found that despite the presence of some spillover effects in the mother-child relationship from the mother's experiences of IPV, mothers tended to compensate for exposure to IPV in mother-child interactions. That is, mothers were more sensitive to their infant's cues and many mothers reported having a stronger relationship with their child because of their experience with IPV. Thus, taking a deficit lens in examining IPV's effects on the family may limit researchers in understanding the full context of a child's development, as there is capacity for resilience in the context of the adversity or IPV.

IPV and Child Emotion Regulation

This study explored whether the mother's experiences of IPV in the past year predicted children's emotion regulation and hypothesized that IPV may increase children's emotion dysregulation potentially due to stress from IPV spilling over into children's lives, a negative family climate, and externalizing behaviors modeled at home, as suggested by Family Systems Theory (Minuchin, 1985) and Social Learning Theory (Bandura, 1978). This thesis proposed that the stress of IPV might directly affect child emotion regulation development. Contrary to this hypothesis, IPV did not have any direct effects on child emotion regulation. Findings were non-significant, though a trend was found between sexual coercion and child emotion regulation on

the ERC Dysregulation subscale. It is possible that sexual coercion has a greater effect on child emotion dysregulation than other forms of IPV. It may be the case that increased stress from experiencing sexual coercion may spillover into the child's emotion regulation development in a more severe manner than other forms of IPV.

Though literature in the field has found a number of negative associations between IPV and maternal depression, parenting behaviors, and child outcomes, such as behavior regulation and child maltreatment (Easterbrooks et al., 2015; Langevin, Hebert, & Cossette, 2015; Fosco & Grych, 2013), this study did not fully support the hypothesis that IPV increases child emotion dysregulation. Non-significant findings in this thesis suggest that other areas of the child's life may be affecting child emotion regulation that buffer the negative effects of IPV documented in the literature, and that children may be resilient despite the presence of stressors within the family. Although it could be possible that child emotion regulation is not directly impacted by a mother's experiences of IPV, it is more likely that other contexts and people in the child's life had a greater protective effect that mitigate negative consequences of IPV and family conflict, such as close and supportive relationships (Easterbrooks et al., 2014). In addition, different childcare contexts, such as daycare settings or other family members, may buffer children against the negative impacts of IPV because the child may be exposed to caregivers who are not preoccupied with similar stressors. It is also possible that the accumulation of other stressors associated with IPV and adolescent parenting may have a more direct effect on child emotion regulation difficulties and were not accounted for in this study (e.g., child maltreatment and neglect, Taylor et al., 2009). Literature has demonstrated that family conflict or negative climates within the household, which are typically also present within families experiencing IPV, may affect child emotion regulation difficulties as well (Fosco & Grych, 2012).

IPV, Parenting Stress, and Child Emotion Regulation

This study hypothesized that IPV would be less likely to be associated with child emotion dysregulation among mothers with low parenting stress when compared to mothers with high parenting stress because the stress of IPV may spillover into the mother's parenting attitudes or behaviors. However, parenting stress as a moderator of the relations between IPV and child emotion regulation was non-significant. Although some research has supported parenting stress as a pathway in which IPV affects child adjustment (Owen et al., 2006), this study did not reveal any moderation effects in the ways parenting stress and IPV may affect child emotion regulation. Despite the lack of significant findings, it is interesting to note that all IPV variables (psychological aggression, physical assault, injury, and sexual coercion) were correlated with parenting stress in initial descriptive analyses – future studies might examine whether IPV and parenting stress together may affect other parenting behaviors and child outcomes outside of child emotion regulation. For example, IPV may have a greater effect on other areas of the child's life outside of emotion regulation, such as child behavioral adjustment. It may be possible that IPV present in the mother's life affects externalizing behaviors modeled to the child more so than internalizing behaviors. Furthermore, it is possible that other factors may explain the relations between IPV and child emotion regulation, such as child maltreatment, parenting behaviors, and maternal sensitivity (Owen et al., 2006; Holmes, 2013).

IPV, Mothers' Perceptions of Social Support, and Child Emotion Regulation

In this thesis, I examined the potential for mothers' perceptions of social support to moderate the relations between IPV and child emotion dysregulation, hypothesizing that high levels of social support may buffer the negative effects of IPV on child outcomes. However, social support was not a significant moderator in the relations between IPV and child emotion

dysregulation, suggesting that social support did not have the hypothesized positive effect. As highlighted by bi-directional relations of different systems in Relational Developmental Systems Theory, studies have found while social support may make IPV appear to be less threatening to mothers, mothers who experience IPV may also feel isolated from their friends and family and may lack healthy coping mechanisms due to their lack of support (Coker et al., 2002). Thus, it may be interesting to examine the interactive effects of social support and IPV in two different groups among mothers who experience IPV and among mothers who do not, since it is possible that the effects of social support may vary between these groups of mothers.

Although research has demonstrated the benefits of maternal social support against the detrimental effects IPV on mother and child outcomes (Pinto et al., 2016; Coker et al., 2002), much of the literature in the area of social support, IPV, and maternal and child outcomes is not specific to young adolescent mothers. Adolescent mothers may have different perceptions of social support – for example, it is possible that grandparent care may not be perceived as social support by the mother. Thus, the meaning of social support may differ specifically for adolescent mothers when compared to older mothers. Further, though IPV may sometimes isolate mothers from their social support networks, among young adolescent mothers, it is possible that other areas of the mother's life also affect her level of social support that made social support's effect on the relations between IPV and child emotion regulation non-significant. For example, adolescent mothers often have fewer resources, education, income and opportunities to foster social connections in comparison to older mothers (Lewin et al., 2015). Thus, social support may be a more significant moderator in an area of the mother's life outside of IPV and child outcomes.

The Effects of Home Visiting on Mothers' Perceptions of Social Support and Child Emotion Regulation

This research also intended to examine whether the Healthy Families Massachusetts home visiting program moderated the relations between a mother's baseline perceptions of social support at T1 and child emotion regulation. Baseline perceptions of social support provided information on social support while the mother was still receiving Healthy Families services. Although no significant interactions were found, a trend emerged in the interaction between mothers' perceptions of social support and participation in the home visiting program: Mothers who were enrolled in home visiting services showed a negative relation between a mother's perceptions of social support and child emotion dysregulation, whereas mothers who were enrolled into the control group showed a positive relation between mothers' perceptions of social support and child emotion dysregulation. These findings suggest that home visiting services may have a positive impact in promoting mothers' perceptions of social support and healthy child emotion regulation. Contrary to the literature, findings also suggest that among mothers who are not enrolled into the home visiting program, greater social support is related to higher levels of child emotion dysregulation. It is possible that mothers who were not in the home visiting program had social networks that negatively influenced child emotion regulation and led to greater levels of emotion dysregulation, though more research is required to understand this trend. Since this finding was only marginally significant, a number of other factors may have also led to the positive relation between social support and child emotion dysregulation; for example, other factors in the child's life, such as the presence of other caregivers and child temperament, may have impacted child emotion dysregulation.

Among mothers enrolled into home visiting services, it is possible that the home visiting program promoted positive parenting practices that fostered healthy emotion regulation development among young children, thus explaining the negative relation between mothers' perceptions of social support and child emotion dysregulation. Although data suggest this trend between mothers' perceptions of social support and participation in the home visiting program on child emotion dysregulation, this study was not able to fully understand the specific factors related to home visiting programs that might promote healthy child emotion regulation. For example, knowledgeable and professional support or empathic and sensitive home visitors may contribute to a mother's perceptions of social support and provide the mother with greater parenting supports to promote healthy development of child emotion regulation. Understanding these specific factors may help future practitioners tailor their interventions to best support mothers and children experiencing adversity.

More research is required to examine whether the home visiting program's benefits are extensive enough to be a protective factor against other stressors that adolescent mothers face, such as IPV, since this thesis did not examine mothers' perceptions of social support, the home visiting program, and child emotion regulation within the context of IPV. Since literature has demonstrated that social support may be highly beneficial to mothers experiencing IPV (Pinto et al., 2016; Coker et al., 2002), future programs and interventions that focus on adolescent mothers should work towards providing more formal types of social support to buffer the negative effects of IPV on mothers and children. Though Healthy Families Massachusetts is not a violence-reduction program, literature has suggested that greater attention to IPV may allow home visiting programs to have further reaching impacts on areas such as parenting stress, since IPV has been found to mediate the associations between home visiting program effects on mothers' parenting

distress and risky behaviors (Easterbrooks, Fauth, & Lamoreau, 2017). Furthermore, it may be interesting to examine whether social support mediates the relations between home visiting programs and the mother and child's adverse experiences or adjustment.

Limitations

A number of methodological and conceptual limitations were considered for this thesis. Methodological limitations included limitations related to the measures and data analysis, whereas conceptual limitations examined possible limitations in the frameworks and assumptions for this thesis.

Methodological Limitations. It is possible this study did not yield significant findings due to the way IPV was measured. This study did not measure child exposure to IPV, which likely would have had a stronger direct effect on the child. Previous studies have demonstrated that exposure to IPV was related to child emotional and behavior problems (Harding, Morelen, Thomassin, Bradbury & Shaffer, 2013). It is possible that examining direct exposure and indirect exposure separately may show different effects on the child. Direct child exposure to IPV may increase externalizing problems, such as behavior regulation, due to aggressive behaviors modeled by the mother and her partner, whereas indirect exposure may have more subtle and indirect effects on emotion regulation due to parenting stress and spillover effects of IPV.

The MHFE sample of mothers and time points for the data also may not have accurately captured the effects of IPV, parenting stress, and maternal social support on children's emotion regulation. Given that the sample sizes for mothers who experienced injury and sexual coercion were minimal, it is possible that there was not sufficient variance in chronicity of IPV to determine a significant relation between IPV and child emotion regulation, since very few mothers reported continuous IPV throughout the year. Furthermore, children who were assessed

for emotion regulation were on average six years old, and IPV was measured four years beforehand. Thus, a host of other factors in within the child's life may have impacted child emotion regulation in these four years of development. In the span of four years, it is also very possible that the mother was no longer in a relationship with her partner.

The measure used for IPV, the Conflict Tactics Scale 2, provided limited information on the nuances and pervasiveness of IPV. This scale primarily examined aggressive behaviors and actions that one partner perpetrated against another. Thus, it was unable to fully capture the fear, threats, and intimidation that perpetrators typically use to abuse their power and control over another (National Center on Domestic and Sexual Violence, 2013). In addition, although the mother differentiated self-perpetrated and partner-perpetrated acts on the measure, we are unable to determine the intentions or motivations of these specific acts. For example, it is possible that the reported act could have occurred in self-defense. Future measures examining IPV might examine mother's perceptions and interpretations of aggressive behaviors to better capture coercion and stress present in IPV.

Further, this study used the Parenting Stress Index to measure parenting stress, though this measure is highly correlated with maternal depression. This study accounted for maternal depression in the set of controls for research questions examining parenting stress, but future research should examine other measures of parenting stress may better capture the experience of adolescent mothers. Maternal depression may be a part the experience of parenting stress, but it is difficult to distinguish in the current study whether parenting stress or maternal depression has a greater effect in the relations between IPV and child emotion regulation by only using the Parenting Stress Index.

It might also be possible to consider different statistical models to understand the relations among IPV, parenting stress, mothers' perceptions of social support, and child emotion regulation. This study used dichotomous variables for parenting stress and social support in the moderated regression analyses, which may not provide as detailed descriptions of how social support and parenting stress moderate the relations between IPV and child emotion regulation. In addition, parenting stress in particular may be a possible mediator of a mother's experiences of IPV and child emotion regulation, as previous studies have highlighted that parenting stress mediated the relationship between exposure to psychological IPV and internalizing behaviors (Renner & Boel-Studt, 2012). It is possible that parenting stress may be a pathway within this data set that explains the associations between IPV and child emotion regulation, instead of being a moderator of IPV and child emotion regulation.

Conceptual Limitations. Some underlying assumptions may have contributed to the non-significant findings in this study. For example, a primary conceptual framework in this thesis assumed that mothers were the primary caregivers of their children, which is not always the case. Furthermore, parenting stress captures the mother's attitudes towards parenting but may not necessarily capture her parenting behaviors. It is possible that the mother compartmentalizes stress from IPV and parenting and does not let it affect her children. This possibility highlights the importance of examining support for mothers and children experiencing IPV from a strengths-based context. Literature that has examined family violence around the world has illustrated how individual, family, community, and cultural strengths emerged as an important component of overcoming IPV (Asay, DeFraine, Metzger, & Moyer, 2015).

Since this thesis did not examine children's direct exposure to IPV, the study's hypotheses are based on the assumption that the stress and internalizing aspects of IPV within

the mother ultimately affect child emotion regulation, instead of physical parenting behaviors or violence where the child is a witness. A study that might more specifically examine this phenomenon might explore whether mother-partner interactions affect child outcomes through the mother-child relationship dynamic and their interactions with each other.

Though literature has not demonstrated differences between mother-perpetrated and father-perpetrated IPV (e.g., Harding et al., 2013), it may be interesting to examine differences between mother-perpetrated IPV and partner-perpetrated IPV on child emotion regulation among the MHFE sample of adolescent mothers who are often single and with partners other than the biological father. Though mother and partner-perpetrated acts of IPV tend to be correlated, it is possible that the mother-perpetrated IPV behaviors have a greater impact on the child because the child may view their mother, who is likely to be their primary caregiver, modeling aggressive behaviors. However, partner-perpetrated IPV may increase the mother's parenting stress and parent perceptions of social support and may impact child emotion regulation in a more indirect manner. It is also unclear what the motivations behind reported violence were for both the mothers and her partner. For example, the measures did not ask mothers to indicate whether specific acts were in self-defense or not.

The severity of IPV was also not considered in this thesis. Smaller, everyday acts of IPV (e.g., verbal threats) may be a more continuous stressor for the mother than severe acts (e.g., a physical fight) that might occur less frequently. Patterns of IPV have shown that smaller acts tend to increase tension before a larger argument erupts. Thus, it is likely that severity of IPV may also have differential effects on children and their emotion regulation. Future studies specifically examining these types of IPV and their relations to child emotion regulation may

develop a more nuanced understanding of IPV's effects on children rather than lumping these acts into an overall category of IPV.

The focus of this research was on negative consequences of IPV on children's emotion regulation and the possible benefits of external social support, but did not fully examine protective factors within mother herself. As previously mentioned, it is possible that findings in this thesis were non-significant because mothers were able to compartmentalize the stress from IPV and parenting and did not let it affect her children, which indicates the importance of examining resilience within mothers and children experiencing IPV from a strengths-based context. Few research studies have examined qualities of strength and resilience among mothers experiencing IPV, especially among adolescent mothers. For example, it is possible that secure mother-child attachment relationships or a strong sense of self-advocacy among mothers experiencing IPV may buffer the negative consequences of these adverse experiences on parenting stress and child emotion regulation. There is potential for adaptive functioning and resilience in children's emotion regulation among families exposed to adversity – in this particular context, it may be beneficial to understand these sources of resilience and apply this knowledge to parenting interventions and support for adolescent mothers experiencing IPV. Family interventions in particular have the potential to provide mothers and their partners with parenting skills, healthy coping mechanisms and conflict resolution, and greater self-efficacy (Howell, 2011).

Future Directions

Future research should examine protective factors that buffer the negative impacts of IPV on children's emotion regulation. Since mothers may not always be primary caregivers of their children, it may be helpful for future studies to examine caregiver contexts as a protective factor

against IPV in a mother's life. It is likely that with adolescent mothers experiencing IPV may have other caregivers that may act as a protective factor against the mothers' spillover stress from IPV, since the mothers are young and typically still living at home. The presence of IPV is not often the sole source of conflict in the child's life, as IPV also usually indicates a history of high levels of family conflict and increased acceptance of violence in relationships (Franklin & Kercher, 2012). Thus, examining other support figures in the child's life may be helpful, such as father involvement, childcare services, or extended family. For example, siblings and relatives may be a source of resilience and support for children experiencing adversity. Likewise, it may be possible that other positive qualities from relationships emerged in the mother's lives, which were not examined in this thesis. For instance, it is possible that mothers may be experiencing abuse from the father of the baby but not her current partner, or vice versa. Literature has highlighted the need for family systems approaches to examine family-wide, interparental, and parenting dimensions within a broader family systems model to gain a more complete understanding of children's regulation, as family climate may affect sensitive responses in caregiving (Fosco & Grych, 2012). Examining other family contexts may provide researchers and practitioners with a greater understanding of possible supports for young mothers and their children.

Another way to assess the impacts of parenting stress and social support may be to separately examine mothers who experienced IPV and those who did not, since it may be the case that mothers who did not experience IPV have different levels of parenting stress and perceptions of social support when compared to mothers who did experience IPV. For example, formal social support in the form of a parenting program may provide mothers with resources for childcare and leaving a potentially abusive relationship may be perceived as more helpful among

mothers experiencing IPV than mothers who are not. In addition, all four types of IPV were correlated with parenting stress and physical assault was significantly correlated with mothers' perceptions of social support in preliminary analyses – future studies might examine how IPV, parenting stress, and social support might affect other areas of the child's life, or perhaps even the mother-child relationship. Having a better understanding of mother and child functioning may promote interventions that are sensitive to the mother and child's experiences and needs.

Maternal depression was also an area of the mother's life that should be considered more in depth in relation to parenting stress and social support when examining the effects of IPV. For this thesis, maternal depression was correlated with almost all the variables examined. Extensive literature regarding maternal depression has suggested that IPV is associated with increased maternal depression and harsh parenting behaviors, and may exacerbate the negative consequences of IPV on children (Gustafsson & Cox, 2012; Lindhorst & Oxford, 2008; Rodriguez et al., 2010). Maternal depression was found to be significantly correlated with parenting stress, so perhaps different measures of parenting stress that are not as related to maternal depression may be beneficial to use to fully determine the specific effects of parenting stress and the effects of maternal depression. However, parenting stress and maternal depression may share similar symptoms and thus it may be interesting to examine how these two factors interact and are measured. Future studies might qualitatively examine how parenting stress and maternal depression might be related, and how social support might buffer these two effects.

Lastly, since this study worked with mothers who were racially and ethnically diverse, it is important to examine potential cultural differences that may arise in the interpretation and meaning of IPV behaviors assessed. It is possible that current definitions and measures like the Conflict Tactics Scale may not fully capture the experience of IPV, as cultural diversity may

affect the way people understand, describe, and report their experiences. Different family values, conflict resolution strategies, and family hierarchies may differ among people in different cultural groups and may have important implications for understanding how IPV affects the mother. For example, IPV has been shown to have differential impacts on depression outcomes across cultural groups (White & Satyen, 2015). Recent literature has argued for the importance of understanding cultural context in risk markers and perpetration of IPV, and may vary across individualistic and collectivist cultures (Mallory et al., 2016). Research has advocated for more community-based participatory research (CBPR) for more culturally-specific knowledge in addressing IPV among different communities and cultures (Mankowski, Galvez, & Glass, 2010). CBPR has also been helpful in developing more sensitive instruments for measuring IPV and may provide communities with greater awareness and knowledge for addressing these issues in a culturally sensitive manner (White, Yuan, Cook & Abbey, 2012). Thus, future research should also address the cross-cultural validity of the Conflict Tactics Scale and perhaps develop more sensitive measures to adequately capture young mothers' experiences.

Conclusions

The findings of this thesis suggest that a deficit perspective in examining IPV may not have as much explanatory power as examining possible supports and protective factors among families experiencing adversity. Analyses suggested that IPV is not a significant predictor in children's emotion regulation. Furthermore, parenting stress and social support did not seem to have significant interactive effects with IPV that might exacerbate or buffer negative child outcomes in relation to IPV. However, analyses examining the interactive effects of mothers' perceptions of social support and participation in the home visiting program revealed promising implications. Home visiting programs are valuable opportunities for mothers to learn about

resources and engage with others about child and family health promotion. This external network of a home visiting program may also provide a new context for mothers and children that is separate from the mother's family and social network. Although Healthy Families Massachusetts is not explicitly a violence-reduction program, home-visiting programs should consider addressing IPV among young mothers, as mothers in this sample experienced a high prevalence of IPV, which may affect areas such as maternal well being and parenting stress. In general, there is a greater need to research how parenting programs and interventions might support the healthy development of young children and promote resilience in the presence of family stressors, such as IPV, as these programs have the potential to enhance parenting skills and promote child and maternal health (Howell, 2011). Future studies might examine other protective factors against IPV and child emotion dysregulation, such as caregiver contexts and parenting interventions.

References

- Abidin, R. R. (1992). The determinants of parenting behavior. *Journal of Clinical Child Psychology, 21*(4), 407–412.
- Abidin, R. (1995). *Parenting Stress Index, Third Edition*. Odessa, FL: Psychological Assessment Resources, Inc.
- Ainsworth, M. D., & Bell, S. M. (1970). Attachment, exploration, and separation: Illustrated by the behavior of one-year-olds in a strange situation. *Child Development, 41*(1), 49-67.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Lawrence Erlbaum: Oxford.
- Altafim, E. R. P., & Linhares, M. B. M. (2016). Universal violence and child maltreatment prevention programs for parents: A systematic review. *Psychosocial Intervention, 25*(1), 27–38.
- Asay, S. M., DeFrain, J., Metzger, M., & Moyer, B. (2016). Implementing a Strengths-Based Approach to Intimate Partner Violence Worldwide. *Journal of Family Violence, 31*(3), 349–360.
- Asen, E., & Fonagy, P. (2017). Mentalizing family violence part 2: Techniques and interventions. *Family Process, 56*(1), 22–44.
- Bandura, A. (1978). Social learning theory of aggression. *Journal of Communication, 28*(3), 12–29.
- Barlow, A., Varipatis-Baker, E., Speakman, K., Ginsburg, G., Friberg, I., Goklish, N., ... Walkup, J. (2006). Home-visiting intervention to improve child care among American Indian adolescent mothers: A randomized trial. *Archives of Pediatrics & Adolescent Medicine, 160*(11), 1101–1107.
- Barnet, B., Duggan, A. K., Devoe, M., & Burrell, L. (2002). The effect of volunteer home visitation for adolescent mothers on parenting and mental health outcomes: A randomized trial. *Archives of Pediatrics & Adolescent Medicine, 156*(12), 1216–1222.

- Bekaert, S., & Smith Battle, L. (2016). Teen mothers' experience of intimate partner violence: A metasynthesis. *Advances in Nursing Science*, *39*(3), 272–290.
- Bilancia, S. D., & Rescorla, L. (2010). Stability of behavioral and emotional problems over 6 years in children ages 4 to 5 or 6 to 7 at time 1. *Journal of Emotional and Behavioral Disorders*, *18*(3), 149–161.
- Bocknek, E. L., Brophy-Herb, H. E., Fitzgerald, H. E., Schiffman, R. F., & Vogel, C. (2014). Stability of biological father presence as a proxy for family stability: Cross-racial associations with the longitudinal development of emotion regulation in toddlerhood. *Infant Mental Health Journal*, *35*(4), 309–321.
- Boeckel, M. G., Viola, T. W., Daruy-Filho, L., Martinez, M., & Grassi-Oliveira, R. (2017). Intimate partner violence is associated with increased maternal hair cortisol in mother–child dyads. *Comprehensive Psychiatry*, *72*, 18–24.
- Bowlby, J. (1958). The nature of the child's tie to his mother. *The International Journal of Psycho-Analysis*, *39*(5), 350-373.
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*, *28*(5), 759–775.
- Bronfenbrenner, U., & Morris, P. A. (2007). The bioecological model of human development. In *Handbook of Child Psychology*. John Wiley & Sons, Inc.
- Burge, S. K., Katerndahl, D. A., Wood, R. C., Becho, J., Ferrer, R. L., & Talamantes, M. (2016). Using complexity science to examine three dynamic patterns of intimate partner violence. *Families, Systems & Health*, *34*(1), 4.

- Calkins, S. D., & Hill, A. (2007). Caregiver influences on emerging emotion regulation: Biological and environmental transactions in early development. In *Handbook of emotion regulation* (pp. 229–248). New York, NY, US: Guilford Press.
- Camara, K. A., & Resnick, G. (1989). Styles of conflict resolution and cooperation between divorced parents: effects on child behavior and adjustment. *The American Journal of Orthopsychiatry*, 59(4), 560–575.
- Cicchetti, D., & Barnett, D. (1991). Attachment organization in maltreated preschoolers. *Development and Psychopathology*, 3, 397–411.
- Clewell, B. C., Brooks-Gunn, J., & Benasich, A. A. (1989). Evaluating child-related outcomes of teenage parenting programs. *Family Relations*, 38(2), 201–209.
- Coker, A. L., Smith, P. H., Thompson, M. P., McKeown, R. E., Bethea, L., & Davis, K. E. (2002). Social Support Protects against the Negative Effects of Partner Violence on Mental Health. *Journal of Women's Health & Gender-Based Medicine*, 11(5), 465–476.
- Cummings, E. M., & Davies, P. T. (2010). *Marital conflict and children: An emotional security perspective*. New York: Guilford Press.
- Daskalakis, N. P., Bagot, R. C., Parker, K. J., Vinkers, C. H., & de Kloet, E. R. (2013). The three-hit concept of vulnerability and resilience: towards understanding adaptation to early-life adversity outcome. *Psychoneuroendocrinology*, 38(9), 1858–1873.
- Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin*, 116(3), 387–411.
- Easterbrooks, M. A., Fauth, R. C., & Lamoreau, R. (2017). Effects of a Home Visiting Program on Parenting: Mediating Role of Intimate Partner Violence. *Journal of Interpersonal Violence*, 1–21.

- Easterbrooks, M. A., Katz, R. C., Kotake, C., Stelmach, N. P., & Chaudhuri, J. H. (2015). Intimate partner violence in the first two years of life: Implications for toddlers' behavior regulation. *Journal of Interpersonal Violence, 1-23*.
- Easterbrooks, M. A., Raskin, M., & McBrian, S. F. (2014). Father involvement and toddlers' behavior regulation: Evidence from a high social risk sample. *Fathering; Harriman, 12(1), 71-93*.
- Flaherty, S. C., & Sadler, L. S. (2011). A review of attachment theory in the context of adolescent parenting. *Journal of Pediatric Health Care, 25(2), 114-121*.
- Frank, T. J., Keown, L. J., & Sanders, M. R. (2015). Enhancing father engagement and interparental teamwork in an evidence-based parenting intervention: A randomized-controlled trial of outcomes and processes. *Behavior Therapy, 46(6), 749-763*.
- Frankel, L. A., Umemura, T., Jacobvitz, D., & Hazen, N. (2015). Marital conflict and parental responses to infant negative emotions: Relations with toddler emotional regulation. *Infant Behavior and Development, 40, 73-83*.
- Franklin, C. A., & Kercher, G. A. (2012). The Intergenerational Transmission of Intimate Partner Violence: Differentiating Correlates in a Random Community Sample. *Journal of Family Violence, 27(3), 187-199*.
- Fusco, R. A. (2015). Socioemotional problems in children exposed to intimate partner violence: Mediating effects of attachment and family supports. *Journal of Interpersonal Violence, 1-18*.
- Gibson, C., Callands, T. A., Magriples, U., Divney, A., & Kershaw, T. (2015). Intimate partner violence, power, and equity among adolescent parents: Relation to child outcomes and parenting. *Maternal and Child Health Journal, 19(1), 188-195*.

- Graham-Bermann, S. A., & Hughes, H. M. (2003). Intervention for children exposed to interparental violence (IPV): Assessment of needs and research priorities. *Clinical Child and Family Psychology Review, 6*(3), 189–204.
- Gustafsson, H. C., Cox, M. J., & The Family Life Project Key Investigators. (2012). Relations among intimate partner violence, maternal depressive symptoms, and maternal parenting behaviors. *Journal of Marriage and Family, 74*(5), 1005–1020.
- Hackett, S., McWhirter, P. T., & Leshner, S. (2016). The therapeutic efficacy of domestic violence victim interventions. *Trauma, Violence, & Abuse, 17*(2), 123–132.
- Halpern, C. T., Spriggs, A. L., Martin, S. L., & Kupper, L. L. (2009). Patterns of intimate partner violence victimization from adolescence to young adulthood in a nationally representative sample. *Journal of Adolescent Health, 45*(5), 508–516.
- Harrykissoon, S. D., Rickert, V. I., & Wiemann, C. M. (2002). Prevalence and patterns of intimate partner violence among adolescent mothers during the postpartum period. *Archives of Pediatrics & Adolescent Medicine, 156*(4), 325–330.
- Herge, W. M., Landoll, R. R., & La Greca, A. M. (2013). Center for Epidemiologic Studies Depression Scale (CES-D). In M. Gellman, & R. Turner (Eds.), *Encyclopedia of Behavioral Medicine* (pp. 366–367). New York: Springer. Retrieved from http://link.springer.com/content/pdf/10.1007/978-1-4419-1005-9_732.pdf
- Herrman, J. W. (2013). How teen mothers describe dating violence. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 42*(4), 462–470.
- Holden, G. W., & Ritchie, K. L. (1991). Linking extreme marital discord, child rearing, and child behavior problems: Evidence from battered women. *Child Development, 62*(2), 311–327.
- Holmberg, J., Robinson, J., Corbitt-Price, J., & Wiener, P. (2007). Using narratives to assess

competencies and risks in young children: Experiences with high risk and normal populations.

Infant Mental Health Journal, 28(6), 647–666. <http://doi.org/10.1002/imhj.20158>

Holmes, M. R. (2013). Aggressive behavior of children exposed to intimate partner violence: An examination of maternal mental health, maternal warmth and child maltreatment. *Child Abuse & Neglect*, 37(8), 520–530.

Howell, K. H. (2011). Resilience and psychopathology in children exposed to family violence. *Aggression and Violent Behavior*, 16(6), 562–569.

Huang, C. Y., Costeines, J., Kaufman, J. S., & Ayala, C. (2014). Parenting stress, social support, and depression for ethnic minority adolescent mothers: Impact on child development. *Journal of Child and Family Studies*, 23(2), 255–262.

Huth-Bocks, A. C., & Hughes, H. M. (2008). Parenting stress, parenting behavior, and children's adjustment in families experiencing intimate partner violence. *Journal of Family Violence*, 23(4), 243–251.

Jacobs, F., Easterbrooks, A., & Mistry, J. (2015). *The Massachusetts Healthy Families Evaluation-2 (MHFE-2): A randomized, controlled trial of a statewide home visiting program for young parents*. Tufts Interdisciplinary Evaluation Research (TIER).

Jacobs, F., Easterbrooks, M. A., Goldberg, J., Mistry, J., Bumgarner, E., Raskin, M., ... Fauth, R. (2015). Improving adolescent parenting: Results from a randomized controlled trial of a home visiting program for young families. *American Journal of Public Health*, 106(2), 342–349.

Jouriles, E. N., Brown, A. S., McDonald, R., Rosenfield, D., Leahy, M. M., & Silver, C. (2008). Intimate partner violence and preschoolers' explicit memory functioning. *Journal of Family Psychology*, 22(3), 420–428.

- Kagawa, R. M. C., Deardorff, J., García-Guerra, A., Knauer, H. A., Schnaas, L., Neufeld, L. M., & Fernald, L. C. H. (2017). Effects of a parenting program among women who began childbearing as adolescents and young adults. *Journal of Adolescent Health, 61*(5), 634–641.
- Kaukinen, C. E., & Powers, R. A. (2015). The role of economic factors on women's risk for intimate partner violence: A cross-national comparison of Canada and the United States. *Violence Against Women, 21*(2), 229–248.
- Kolbert, J. B., Crothers, L. M., & Field, J. E. (2013). Clinical interventions with adolescents using a family systems approach. *The Family Journal, 21*(1), 87–94.
- Kopp, C. B. (1989). Regulation of distress and negative emotions: a developmental view. *Developmental Psychology, 25*(May 89), 343–354.
- Langevin, R., Hébert, M., & Cossette, L. (2015). Emotion regulation as a mediator of the relation between sexual abuse and behavior problems in preschoolers. *Child Abuse & Neglect, 46* (Supplement C), 16–26.
- Lehr, M., Wecksell, B., Nahum, L., Neuhaus, D., Teel, K. S., Linares, L. O., & Diaz, A. (2016). Parenting stress, child characteristics, and developmental delay from birth to age five in teen Mother–Child Dyads. *Journal of Child and Family Studies, 25*(3), 1035–1043.
- Lerner, R. M., & Callina, K. S. (2013). Relational developmental systems theories and the ecological validity of experimental designs. *Human Development, 56*(6), 372–380.
- Letourneau, N. L., Fedick, C. B., & Willms, J. D. (2007). Mothering and domestic violence: A longitudinal analysis. *Journal of Family Violence, 22*, 649 – 659.
- Letourneau, N., Morris, C. Y., Secco, L., Stewart, M., Hughes, J., & Critchley, K. (2013). Mothers and infants exposed to intimate partner violence compensate. *Violence and Victims; New York, 28*(4), 571–86.

- Lévesque, S., & Chamberland, C. (2016). Intimate partner violence among pregnant young women: A qualitative inquiry. *Journal of Interpersonal Violence, 31*(19), 3282–3301.
- Lewin, A., Hodgkinson, S., Waters, D. M., Prempeh, H. A., Beers, L. S., & Feinberg, M. E. (2015). Strengthening positive coparenting in teen parents: A cultural adaptation of an evidence-based intervention. *The Journal of Primary Prevention, 36*(3), 139–154.
- Liang, B., Goodman, L., Tummala-Narra, P., & Weintraub, S. (2005). A Theoretical Framework for Understanding Help-Seeking Processes Among Survivors of Intimate Partner Violence. *American Journal of Community Psychology, 36*(1–2), 71–84.
- Lindhorst, T., & Oxford, M. (2008). The long-term effects of intimate partner violence on adolescent mothers' depressive symptoms. *Social Science & Medicine, 66*(6), 1322–1333.
- Mackler, J. S., Kelleher, R. T., Shanahan, L., Calkins, S. D., Keane, S. P., & O'Brien, M. (2015). Parenting stress, parental reactions, and externalizing behavior from ages 4 to 10. *Journal of Marriage and Family, 77*(2), 388–406.
- Magill-Evans, J., & Harrison, M. J. (2001). Parent-child interactions, parenting stress, and developmental outcomes at 4 Years. *Children's Health Care, 30*(2), 135–150.
- Mallory, A. B., Dharnidharka, P., Deitz, S. L., Barros-Gomes, P., Cafferky, B., Stith, S. M., & Van, K. (2016). A meta-analysis of cross cultural risk markers for intimate partner violence. *Aggression and Violent Behavior, 31*, 116–126.
- Maneta, E. K., White, M., & Mezzacappa, E. (2017). Parent-child aggression, adult-partner violence, and child outcomes: A prospective, population-based study. *Child Abuse & Neglect, 68*, 1–10.
- Mankowski, E. S., Galvez, G., & Glass, N. (2011). Interdisciplinary Linkage of Community Psychology and Cross-Cultural Psychology: History, Values, and an Illustrative Research and

Action Project on Intimate Partner Violence. *American Journal of Community Psychology*, 47(1–2), 127–143.

Mash, E. J., & Johnston, C. (1983). Parental perceptions of child behavior problems, parenting self-esteem, and mothers' reported stress in younger and older hyperactive and normal children. *Journal of Consulting and Clinical Psychology*, 51(1), 86–99.

Masten, A. S. (2014). Global perspectives on resilience in children and youth. *Child Development*, 85(1), 6–20.

Maughan, A., & Cicchetti, D. (2002). Impact of child maltreatment and interadult violence on children's emotion regulation abilities and socioemotional adjustment. *Child Development*, 73(5), 1525–1542.

McDonald, S. E., Shin, S., Corona, R., Maternick, A., Graham-Bermann, S. A., Ascione, F. R., & Herbert Williams, J. (2016). Children exposed to intimate partner violence: Identifying differential effects of family environment on children's trauma and psychopathology symptoms through regression mixture models. *Child Abuse & Neglect*, 58, 1–11.

McEwen, B.S. (1998). Allostasis and allostatic load. *Annals of the New York Academy of Sciences; Stress, adaptation, and disease*, 840, 33–44.

Minuchin, P. (1985). Families and individual development: Provocations from the field of family therapy. *Child Development*, 56(2), 289–302.

Mistry, J., Easterbrooks, M. A., Fauth, R. C., Raskin, M., Jacobs, F., & Goldberg, J. (2016). Heterogeneity among adolescent mothers and home visiting program outcomes. *Children and Youth Services Review*, 65(Supplement C), 86–93.

Moore, D. R., & Florsheim, P. (2008). Interpartner conflict and child abuse risk among African American and Latino adolescent parenting couples. *Child Abuse & Neglect*, 32(4), 463–475.

- National Center for Domestic and Sexual Violence. (2013). Power and Control Wheel. Retrieved from <http://www.ncdsv.org/images/powercontrolwheelnoshading.pdf>.
- Owen, A. E., Thompson, M. P., & Kaslow, N. J. (2006). The mediating role of parenting stress in the relation between intimate partner violence and child adjustment. *Journal of Family Psychology, 20*(3), 505–513.
- Owen, M. T., & Cox, M. J. (1997). Marital conflict and the development of infant–parent attachment relationships. *Journal of Family Psychology, 11*(2), 152–164.
- Pinto, R. J., Correia-Santos, P., Levendosky, A., & Jongenelen, I. (2016). Psychological Distress and Posttraumatic Stress Symptoms: The Role of Maternal Satisfaction, Parenting Stress, and Social Support Among Mothers and Children Exposed to Intimate Partner Violence. *Journal of Interpersonal Violence, 1*-23.
- Pogarsky, G., Thornberry, T. P., & Lizotte, A. J. (2006). Developmental outcomes for children of young mothers. *Journal of Marriage and Family, 68*(2), 332–344.
- Raskin, M., Fosse, N. E., Fauth, R. C., Bumgarner, E., & Easterbrooks, M. A. (2016). Relationship types among adolescent parents participating in a home-visiting program: A latent-transition analysis. *Journal of Family Psychology, 30*(3), 375–385.
- Reiner, I., Keisler Splaun, A.B. (2008). Story Stems Attachment Focused Coding System. Unpublished manuscript.
- Renner, L. M., & Boel-Studt, S. (2013). The relation between intimate partner violence, parenting stress, and child behavior problems. *Journal of Family Violence, 28*(2), 201–212.
- Rodríguez, M. A., Valentine, J., Ahmed, S. R., Eisenman, D. P., Sumner, L. A., Heilemann, M. V., & Liu, H. (2010). Intimate partner violence and maternal depression during the perinatal period: A longitudinal investigation of Latinas. *Violence Against Women, 16*(5), 543–559.

- Rothman, E. F., Mandel, D. G., & Silverman, J. G. (2007). Abusers' perceptions of the effect of their intimate partner violence on children. *Violence Against Women, 13*(11), 1179–1191.
- Schore, A. N. (2001). The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal, 22*(1–2), 201–269.
- Schwarz, D. F., & O'Sullivan, A. L. (2007). State of the art reviews: Intervening to improve outcomes for adolescent mothers and their children. *American Journal of Lifestyle Medicine, 1*(6), 482–489.
- Secco, M. L., & Moffatt, M. E. K. (2009). Situational, maternal, and infant influences on parenting stress among adolescent mothers. *Issues in Comprehensive Pediatric Nursing, 26*(2), 103–122.
- Shields, A., & Cicchetti, D. (1997). Emotion regulation among school-age children: the development and validation of a new criterion Q-sort scale. *Developmental Psychology, 33*(6), 906.
- Straus, M. A., & Douglas, E. M. (2004). A short form of the Revised Conflict Tactics Scales, and typologies for severity and mutuality. *Violence and Victims, 19*(5), 507-521.
- Straus, M. A., Hamby, S. L., Boney-McCoy, S., & Sugarman, D. B. (1996). The Revised Conflict Tactics Scales (CTS2): Development and preliminary psychometric data. *Journal of Family Issues, 17*, 283-316.
- Sullivan, M., Egan, M., & Gooch, M. (2004). Conjoint interventions for adult victims and children of domestic violence: A program evaluation. *Research on Social Work Practice, 14*(3), 163–170.
- Taylor, C. A., Guterman, N. B., Lee, S. J., & Rathouz, P. J. (2009). Intimate partner violence, maternal stress, nativity, and risk for maternal maltreatment of young children. *American Journal of Public Health; Washington, 99*(1), 175–83.

- Thomason, E., Volling, B. L., Flynn, H. A., McDonough, S. C., Marcus, S. M., Lopez, J. F., & Vazquez, D. M. (2014). Parenting stress and depressive symptoms in postpartum mothers: Bidirectional or unidirectional effects? *Infant Behavior and Development, 37*(3), 406–415.
- Thompson, R. A., & Calkins, S. D. (1996). The double-edged sword: Emotional regulation for children at risk. *Development and Psychopathology, 8*, 163-182.
- Thornback, K., & Muller, R. T. (2015). Relationships among emotion regulation and symptoms during trauma-focused CBT for school-aged children. *Child Abuse & Neglect, 50*(Supplement C), 182–192.
- Trivette, C., & Dunst, C. (1988). Personal Network Matrix. In C. Dunst, C. Trivette, & A. Deal, *Enabling and empowering families: Principles and guidelines for practice*. Cambridge, MA: Brookline Books.
- Tronick, E. Z. (1989). Emotions and emotional communication in infants. *American Psychologist, 44*(2), 112–119.
- Tufts Interdisciplinary Evaluation Research (2017). *The Massachusetts Healthy Families Evaluation-2 Early Childhood (MHFE-2EC): Follow-up study of a randomized, controlled trial of a statewide home visiting program for young parents. Final report to Massachusetts Department of Public Health, Children's Trust of Massachusetts*. Medford, MA: Tufts University.
- Valentino, K., Nuttall, A. K., Comas, M., Borkowski, J. G., & Akai, C. E. (2012). Intergenerational continuity of child abuse among adolescent mothers: Authoritarian parenting, community violence, and race. *Child Maltreatment, 17*(2), 172–181.
- White, J. W., Yuan, N. P., Cook, S. L., & Abbey, A. (2013). Ethnic Minority Women's Experiences with Intimate Partner Violence: Using Community-Based Participatory Research to Ask the Right Questions. *Sex Roles, 69*(3–4), 226–236.

White, M. E., & Satyen, L. (2015). Cross-cultural differences in intimate partner violence and depression: A systematic review. *Aggression and Violent Behavior, 24*, 120–130.

Tables

Table 1

Data collection time points.

Time	Duration of data collection	Number of months after enrollment*
T1	February 2008-February 2010	1 month
T2	April 2009-April 2011	12 months
T3	March 2010-August 2012	24 months
T4	December 2012-June 2014	60 months
T5	July 2014-December 2015	74 months

* For interview data collection

Table 2

Statistical analyses used for thesis.

Research Question	Analyses*
RQ1: Does intimate partner violence (IPV) in a mother's life predict a child's emotion regulation?	<i>Linear regressions</i> Independent variables (IV): IPV (T3) Dependent variables (DV): Child emotion regulation (T5)
RQ2: Do (1) parenting stress and (2) parent perceptions of social support moderate the relations between IPV and child emotion regulation?	<i>Moderated regression analyses</i> <u>Model 1:</u> IV: IPV (T3) DV: Child emotion regulation (T5) Moderator: Parenting stress (T3) <u>Model 2:</u> IV: IPV (T3) DV: Child emotion regulation (T5) Moderator: Social support (T3)
RQ3: Does the Healthy Families Massachusetts home visiting program moderate the relations between mothers' perceptions of social support and child emotion regulation?	<i>Moderated regression analysis</i> IV: Social support (T1) DV: Child emotion regulation (T5) Moderator: HFM services (HVS/RIO) (T1)

* For full description of variables, see Measures and Constructs.

Table 3

Initial correlation analyses among independent variables, moderators, and dependent variables.

Dependent Variables: Child Emotion Regulation (T5)		
Independent Variables (T3)	ERC Dysregulation Subscale	Story Stem Dysregulation
IPV: Psychological aggression	.074 (289)	.044 (251)
IPV: Physical assault	.013 (294)	.005 (258)
IPV: Injury	.047 (298)	.019 (260)
IPV: Sexual coercion	.104 (298)	-.003 (260)
Moderators (T3)		
Parenting stress	.250** (288)	.068 (254)
Mother's social support	-.010 (310)	.007 (258)
Moderators (T3)		
Independent Variables (T3)	Parenting Stress (<i>n</i>)	Social Support (<i>n</i>)
IPV: Psychological aggression	.263** (380)	.051 (391)
IPV: Physical assault	.198** (383)	-.102* (396)
IPV: Injury	.162** (387)	-.094 (400)
IPV: Sexual coercion	.140** (387)	-.031 (400)

* = correlation is significant at the 0.05 level

** = correlation is significant at the 0.01 level

Table 4

Initial correlation analyses among controls and independent/dependent variables.

Controls	IPV (T3)				Child emotion regulation (T5)	
	Psych	Physical	Injury	Sexual	ERC	Story Stem
HVS/RIO	-.016 (391)	.015 (396)	.038 (400)	-.038 (400)	.016 (421)	.000 (329)
Mother age	.055 (391)	-.005 (396)	.002 (400)	-.061 (400)	-.029 (420)	.032 (328)
Mother race	-.107* (390)	.004 (395)	-.030 (399)	-.088 (399)	.027 (419)	.024 (328)
Child sex	-.057 (391)	.091 (396)	.041 (400)	.012 (400)	-.171** (421)	-.263** (329)
Child age	-.033 (304)	.016 (309)	.042 (313)	.011 (313)	-.047 (421)	-.139* (329)
Maternal depression	.160** (384)	.153** (389)	.131** (393)	.133** (393)	.168** (415)	.100 (323)

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

Note: Number of participants is indicated in parentheses.

Table 5
 Mother and child demographic information.

Construct	Variable	<i>N</i>	Percent	Mean	<i>SD</i>	Range
Maternal age	Age (in years) at childbirth	694		18.8	1.28	15.0 – 21.4
Maternal race	White	701	36.8%			
	Black		19.0%			
	Hispanic		36.1%			
	Other		8.1%			
Maternal education	Dropped out	675	22.2%			
	In school (HS)		37.0%			
	Graduated (HS/GED)		40.7%			
Maternal depression	Clinical levels of depression at T1 (Y/N)	672	Y: 37.6% N: 62.4%			
Child age	Age (in years) at T5	445		6.09	.54	4.7 – 7.8
Child sex	Female	696	47.4%			
	Male		52.6%			

Table 6

Descriptive analyses for IPV and child emotion regulation.

Intimate Partner Violence (T3)					
Type of IPV	<i>N</i>	Prevalence	Mean	<i>SD</i>	Range
Psychological aggression	391	84.4% (330)	23.5	24.4	0-50
Physical assault	396	32.8% (130)	4.19	13.4	0-50
Injury	400	22.5% (90)	1.74	5.82	0-50
Sexual coercion	400	16.2% (65)	1.38	5.11	0-50
Child Emotion Regulation Scores (T5)					
Measure	<i>N</i>	Mean	<i>SD</i>	Range	
ERC: Dysregulation	421	1.79	0.546	1-3.67	
Story Stem: Dysregulation	329	1.66	0.863	1-5	

Table 7

Sexual coercion and child emotion regulation (ERC: Dysregulation Subscale) regression results.

	<i>B</i>	<i>SE B</i>	β
(Intercept)	2.736	.750	
Sexual coercion	.012*	.006	.118
HVS/RIO	.025	.065	.022
Maternal age	-.008	.032	-.018
Maternal education (in school)	-.094	.094	-.084
Maternal education (graduated)	-.060	.095	-.054
Maternal race (Black)	-.066	.092	-.049
Maternal race (Hispanic)	.011	.078	.010
Maternal race (Other)	-.254	.133	-.199
Child age	-.104	.062	-.100
Child sex	-.155*	.064	-.141
R ²	.025		

* $p < .05$

Table 8

Social support X HVS/RIO moderation predicting child emotion regulation (Story Stem Dysregulation).

	<i>B</i>	<i>SE B</i>	<i>β</i>
Social support	.171	.101	.163
HVS/RIO	.425	.294	.247
Social support X HVS/RIO	-.218*	.131	-.307
R ²	.025		

* Trend, $p < 0.1$

Figures

Figure 1. Ecological Systems Model (Bronfenbrenner and Morris, 2006).

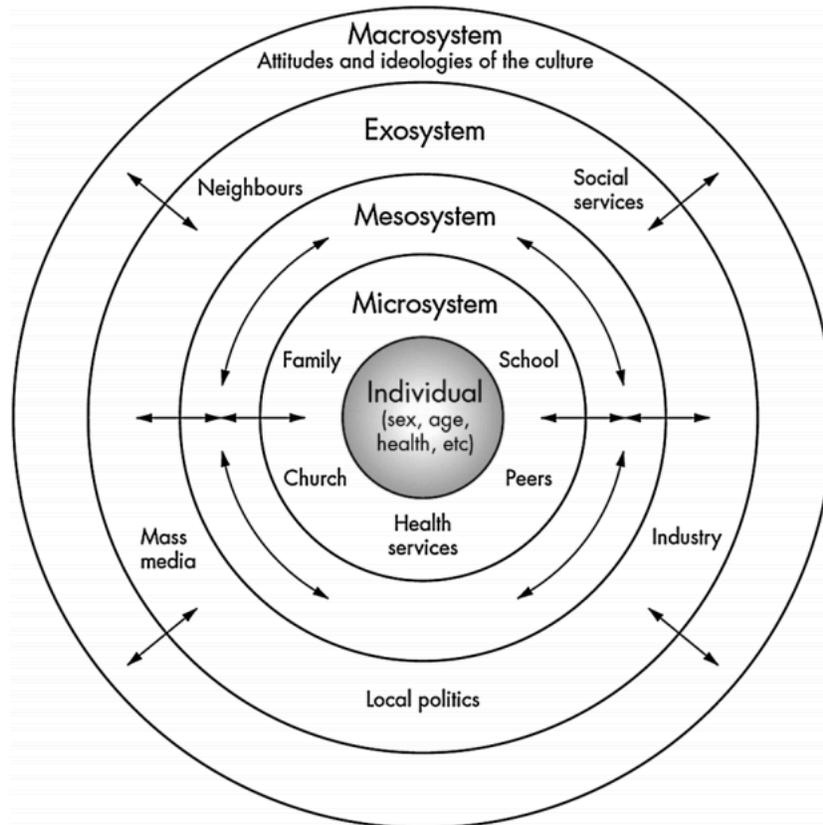
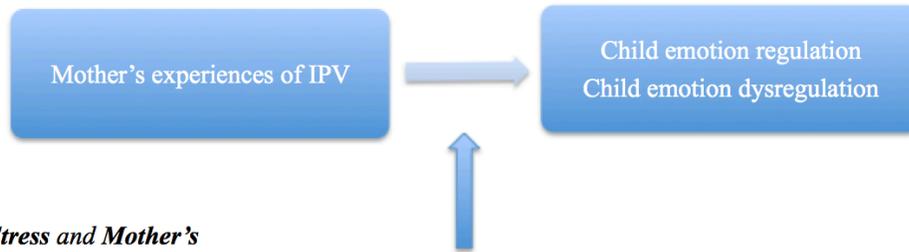


Figure 2. Conceptual framework for the current study.

1. *The relations between IPV and child emotion regulation/dysregulation*



2. *Parenting Stress and Mother's Perceptions of Social Support as moderators of IPV and child emotion regulation/dysregulation*

3. *HFM as a moderator of mother's perceptions of social support and child emotion regulation/dysregulation*

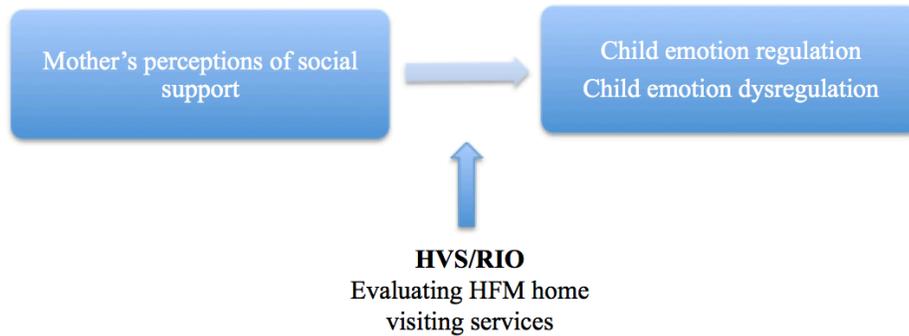


Figure 3. Hypothesized Graph for Parenting Stress and Social Support in Relations between IPV and Child Emotion Regulation/Dysregulation.



Figure 4. Relations between IPV: Sexual Coercion and Child Emotion Regulation (ERC Dysregulation Subscale).

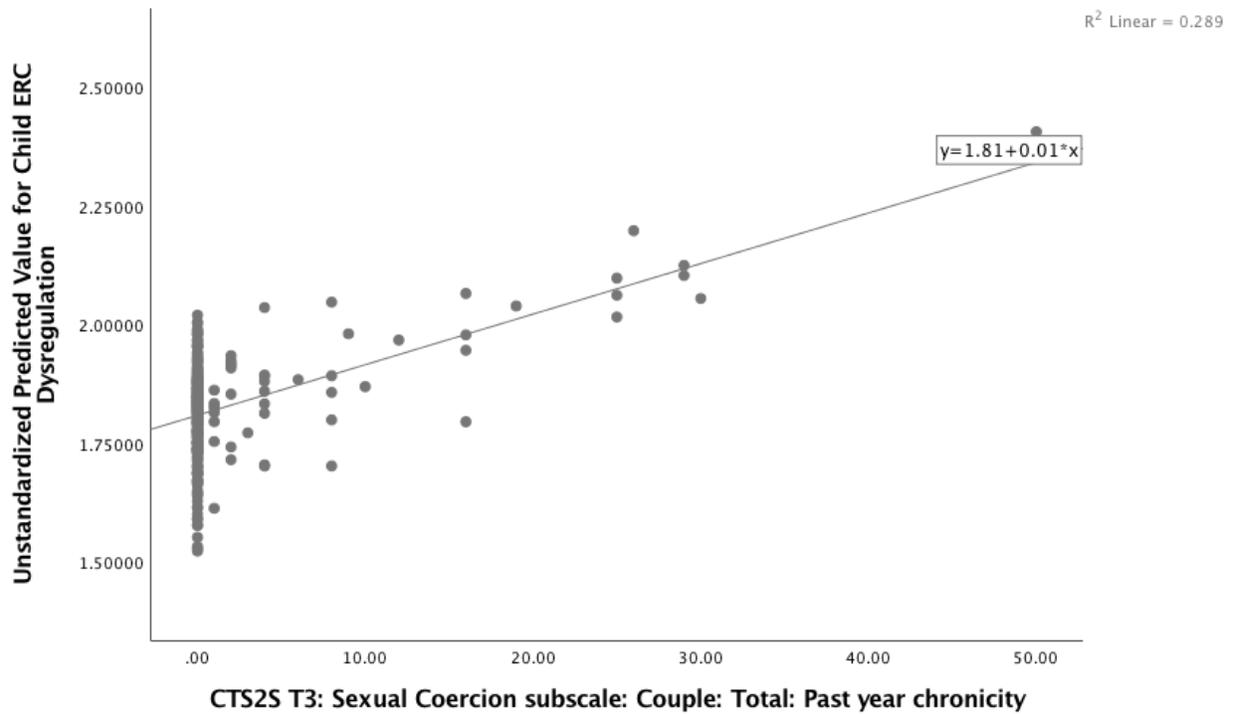
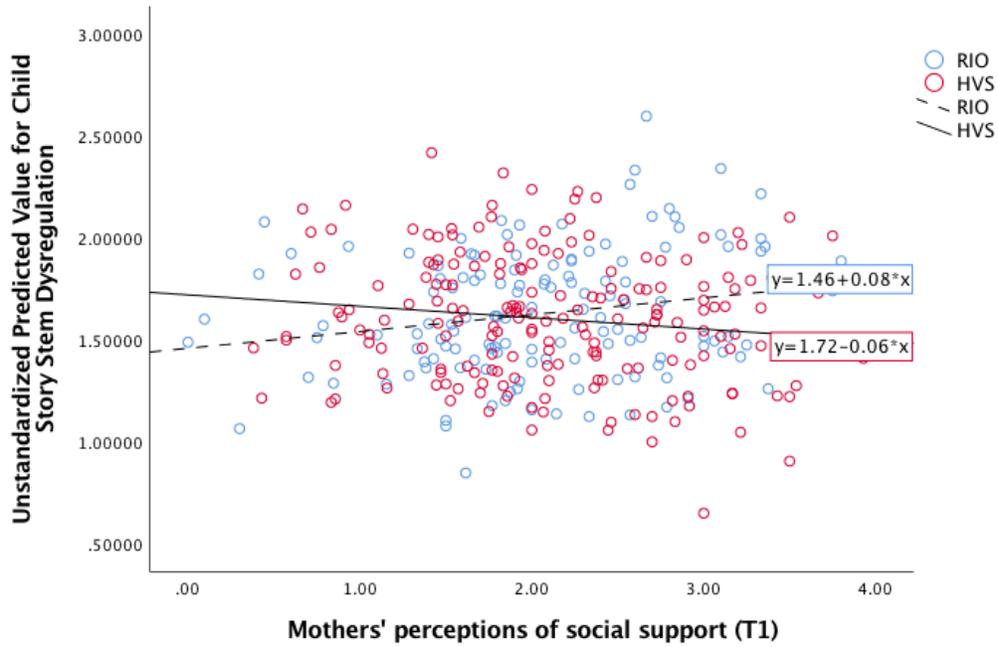


Figure 5. HVS/RIO Differences in the Relations between Mothers' Perceptions of Social Support and Child Emotion Regulation (Story Stem Dysregulation).



Appendices

Appendix I: Conflict Tactics Scale – Partner (Revised, Short Form) Subscale Items

This thesis examined IPV using the Conflict Tactics Scale – Partner (Short Form). Subscales used in this thesis include psychological aggression, physical assault, injury, and sexual coercion perpetrated by both the mother and her partner. Scores on each subscale reflect past year chronicity, the estimated number of times behaviors occurred (ranging from 0-50).

Psychological Aggression subscale: Couple

- I insulted or swore or shouted or yelled at my partner.
- I destroyed something belonging to my partner or threatened to hit my partner.
- My partner insulted or swore or shouted or yelled at me.
- My partner destroyed something belonging to me or threatened to hit me.

Physical Assault subscale: Couple

- I pushed, shoved, or slapped my partner.
- I punched or kicked or beat- up my partner.
- My partner pushed, shoved, or slapped me.
- My partner punched or kicked or beat me up.

Injury subscale: Couple

- I had a sprain, bruise, or small cut, or felt pain the next day because of a fight with my partner.
- I went to see a doctor (M.D.) or needed to see a doctor because of a fight with my partner.
- My partner had a sprain, bruise, or small cut or felt pain the next day because of a fight with me.
- My partner went to see a doctor (M.D.) or needed to see a doctor because of a fight with me.

Sexual Coercion subscale: Couple

- I used force (like hitting, holding down, or using a weapon) to make my partner have sex.
- I insisted on sex when my partner did not want to or insisted on sex without a condom (but did not use physical force).
- My partner used force (like hitting, holding down, or using a weapon) to make me have sex.
- My partner insisted on sex when I did not want to or insisted on sex without a condom (but did not use physical force).

Appendix II: Child Emotion Regulation Checklist (ERC): Dysregulation Subscale Items

A mean score of all the items that were rated from 1-4 was created for the Dysregulation subscale variable. High scores on the dysregulation subscale indicate greater dysregulation.

1. Shows wide mood swings (child moves quickly from a positive to a negative mood, so the way s/he is feeling can be hard to predict or expect).
2. Transitions well from one activity to another; doesn't become angry, anxious, distressed, or overly excited when moving from one activity to another. (reverse scored)
3. Can recover quickly from upset or distress (for example, doesn't pout, stay in a bad mood, seem anxious or sad after becoming upset). (reverse scored)
4. Is easily frustrated.
5. It is easy for this child to become very angry or have a tantrum.
6. Is able to delay gratification or wait a little while for something s/he wants, such as a favorite treat; hassled-control. (reverse scored)
7. Easily has outbursts of energy and excitement that are unpleasant or disruptive.
8. Responds angrily when adults set limits or make rules.
9. Is overly eager ("in your face") when trying to get others to play with him/her.
10. Is impulsive; speaks or acts before thinking what will happen.
11. Shows excitement that others find annoying, intrusive or disruptive.
12. Shows negative emotions when trying to get others to play with him/her.

Appendix III: Attachment-Focused Coding for Story Stems: Dysregulation Subscale Scores

The MacArthur Story Stem Battery (MSSB) included four narrative completion tasks (“Spilled Juice”, “Burnt Hand”, “Bathroom Shelf”, and “Burglar in the Dark”). In the first story, “Spilled Juice,” the child in the story spills the juice he or she was drinking. In the second story, “Burnt Hand” the child in the story burns his or her hand while waiting for food on the stove. In the third story, “Bathroom Shelf,” the child in the story cuts his or her hand while reaching a shelf on the bathroom that was prohibited by the mother in the story. Finally, in “Burglar in the Dark” the child in the story hears a noise while trying to sleep and believes it to be a burglar. Within each story, children are assessed for whether they resolve the primary story theme within each story (e.g., in “Spilled Juice” the child in the story gets more juice; in “Burnt Hand” the child in the story’s burnt hand dealt with; in “Bathroom Shelf,” the child in the story gets a bandaid for his or her hand and addresses the fact that he or she disobeyed the mother in the story; in “Burglar in the Dark,” the child in the story’s fear over the noise is resolved).

Dysregulation scores:

- 1 = Child shows no aggressive or bizarre content
- 2 = Child shows minimally aggressive or bizarre content
- 3 = Child shows more extreme verbal aggression, minor physical aggression, or magical thinking
- 4 = Child shows severe versions of physical violence
- 5 = Child shows extreme violence and bizarre dysregulated behavior

Adapted from MHFE-2EC Code Book.

Appendix IV: Parenting Stress Index Items

A total score of these items on all subscales was used for this thesis.

Subscale: Parental Distress

1. I often have the feeling that I cannot handle things very well.
2. I find myself giving up more of my life to meet my child's needs than I ever expected.
3. I feel trapped by my responsibilities as a parent.
4. Since having this child, I have been unable to do new and different things.
5. Since having a child, I feel that I am almost never able to do things that I like to do.
6. I am unhappy with the last purchase of clothing I made for myself.
7. There are quite a few things that bother me about my life.
8. Having a child has caused more problems than I expected in my relationship with my partner.
9. I feel alone and without friends.
10. When I go to a party, I usually expect not to enjoy myself.
11. I am not as interested in people as I used to be.
12. I don't enjoy things as I used to.

Subscale: Parent-Child Dysfunctional Interaction

13. My child rarely does things for me that makes me feel good.
14. Most times I feel that my child does not like me and does not want to be close to me.
15. My child smiles at me much less than I expected (Do not answer for infants less than 6 weeks old).
16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.
17. When playing, my child doesn't often giggle or laugh (Do not answer for infants less than 4 months old).
18. My child doesn't seem to learn as quickly as most children.
19. My child doesn't seem to smile as much as most children (Do not answer for infants less than 6 weeks).
20. My child is not able to do as much as I expected.
21. It takes a long time and it is very hard for my child to get used to new things.
22. I feel that I am... (good parent...).
23. I expected to have closer and warmer feelings for my child than I do and this bothers me.
24. Sometimes my child does things that bother me just to be mean.

Subscale: Difficult Child

25. My child seems to cry or fuss more often than most children.
26. My child generally wakes up in a bad mood.
27. I feel that my child is very moody and easily upset.

28. My child does a few things which bothers me a great deal.
29. My child reacts very strongly when something happens that my child doesn't like.
30. My child gets upset easily over the smallest thing.
31. My child's sleeping or eating schedule was much harder to establish than I expected.
32. I have found that getting my child to do something or stop doing something is...
33. Think carefully and count the number of things which your child does that bother you.
For example, cries, is had to put to bed, has feeding problems, overactive, whites, etc.
(circle the number of things).
34. There are some things my child does that really bother me a lot.
35. My child turned out to be more of a problem than I had expected.
36. My child makes more demands on me than most children.

Subscale: Defensive Responding

37. I often have the feeling that I cannot handle things very well.
38. I find myself giving up more of my life to meet my child's needs than I ever expected.
39. I feel trapped by my responsibilities as a parent.
40. There are quite a few things that bother me about my life.
41. Having a child has caused more problems than I expected in my relationship with my partner.
42. I feel alone and without friends.
43. I am not as interested in people as I used to be.

Appendix V: Personal Network Matrix: Mother's Perceptions of Social Support

Mothers indicated dependability of social support for each item on a 5-point Likert scale (1 = Not at all, 2 = Sometimes, 3 = Occasionally, 4 = Most of the time, 5 = All of the time). A mean total score across all subscales below was calculated to capture a mother's perceptions of social support.

Subscale: Dependability of Social Support: Family

- 1: Spouse or Partner
- 3: My Parents
- 4: Spouse or Partner's Parents
- 5: My Sister / Brother
- 6: My Spouse or Partner's Sister / Brother
- 7: Other Relatives

Subscale: Dependability of Social Support: Extrafamilial

- 8: Friends
- 9: Neighbors
- 10: Church Members
- 12: Co-workers
- 13: Baby Sitter

Subscale: Dependability of Social Support: Formal

- 11: Minister, Priest, or Rabbi
- 14: Day Care or School
- 15: Private Therapist for Child
- 16: Child / Family Doctors
- 17: Early Childhood Intervention Program
- 18: Hospital / Special Clinics
- 19: Health Department
- 20: Department of Social Services or Welfare
- 21: Other Agencies
- 22: Healthy Families
- 23: Other