

The Relationship between Adolescent Mothers' Trauma and Child Attachment: A

Developmental Approach

A thesis

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ABSTRACT

Objective: The purpose of this study was to elucidate the possible relationship between maternal Post-Traumatic Stress Disorder (PTSD) and child attachment style, with a focus on adolescent mothers. This study investigates whether maternal PTSD was associated with insecure child attachments among a sample of first-time adolescent parents. Further, the present study examines whether the relationship between maternal PTSD and child attachment is moderated by a family support program targeted at young parents, Healthy Families Massachusetts (HFM). **Method:** The present study used secondary data from the Massachusetts Healthy Families Evaluation—Phase 2 (MHFE-2), a randomized controlled trial (RCT) evaluation of HFM ($N=684$). Maternal PTSD was measured using the University of California Los Angeles-Post-Traumatic Stress Disorder-Reaction Index (UCLA-PTSD-RI) when mothers were pregnant or newly parenting. The mean maternal age at the birth of the child was 18.9 years old. Child attachment was measured using the Macarthur Story Stem Battery (MSSB) with the Attachment-Focused Coding System (AFCS) when children were between 6 and 7-years of age. The analytic sample includes a subsample of MHFE-2 participants who completed both assessments ($n = 203$). **Analyses:** Regression analyses examined whether there was a significant relationship between maternal PTSD and child attachment. **Results:** Findings demonstrated no statistically significant relationship between the maternal PTSD and child attachment. **Conclusions:** Overall, this study offers thoughtful clinical implication for positive outcomes from non-significant results; meaning, no relationship between maternal PTSD and insecure child attachment strengthens and supports the idea that young mothers have the potential and are likely to be resilient amidst challenging circumstances (internal and external) and ecological risks.

Keywords: trauma, Post-Traumatic Stress Disorder (PTSD), Complex- Post-Traumatic Stress Disorder (C-PTSD), Healthy Families Massachusetts (HFM), social neglect, maltreatment, attachment, intergenerational trauma, internal working model (IWM), caregiver system.

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The Relationship between Adolescent Mothers' Trauma and Child Attachment: A
Developmental Approach

“Sometimes we encounter experiences that so violate our sense of safety, order, predictability, and right, that we feel utterly overwhelmed – unable to integrate, and simply unable to go on as before. Unable to bear reality. We have come to call these shattering experiences trauma. None of us is immune to them” – Stephen Cope

One of the critical and lasting footprints on a child is the relationship that they have with their primary caregiver. Decades of research demonstrate predictive links between child attachment and parental responsiveness (Ijzendoorn, 1995). When a primary caregiver suffers from Post-traumatic Stress Disorder (PTSD), the likelihood for their parenting practices to be compromised is greatly increased (Acereto, 2016). Further, mental representations of the relationship between a primary caregiver and child (Internal Working Models [IWMs]) form the blueprint for future relationships (Bowlby, 1969; Scharfe & Bartholomew, 1994) which may influence intergenerational patterns of maternal sensitivity and child attachment (Ijzendoorn, 1995; Ijzendoorn, Juffer & Duyvesteyn, 1995). While there is evidence for cyclical mother-child attachments, there is a gap in the literature on maternal PTSD in relation to child attachment, specifically for adolescent mothers. This study is clinically significant because it examines the potential longitudinal and intergenerational effects of PTSD and attachment. This is integral to inform preventions and interventions that enhance parental sensitivity and positive mother-child attachment.

Literature Review

The Impact of Trauma on Parenting Practices

Children's early relationships may have long-term effects on their lives. One of the critical imprints on a child is the way that the systems around them provide support. For those who have been challenged with exposure to trauma, the traumatic symptoms can greatly impact the way that they interact with the world, form relationships, and ultimately provide caregiving to their own children. Trauma is complex in that it impacts both the brain and the body. In order to understand the complexities of trauma and its potentially life-long effects, this section will include explanation and examination of varying trauma-related disorders.

Trauma is defined as an event "that involves actual or threatened death or serious injury, or threat to one's physical integrity; or witnessing an event that involves death, injury, or threat to the physical integrity of another person; or learning about the unexpected violent death, serious harm, or threat of death or injury experienced by a family member or other close associate" (American Psychiatric Association, 2013, p.271). Mohatt et al. (2014) detail that trauma is a psychological process closely connected to an event and what replaces the psychological process is a "representation" of the trauma. The representation of the trauma is the lingering weight on the survivor, where a past event disturbs or influences current symptoms (Mohatt et al., 2014). Furthermore, the expression of traumatic symptoms over a long period of time, can result in a diagnosis of PTSD.

PTSD is a psychological disorder associated with difficulty recovering from the experience of a traumatic event. PTSD symptoms can show variance over time. Generally, comorbidities frequently linked to childhood trauma, PTSD and Complex-PTSD (C-PTSD), include a) somatic symptom disorder (mind-body dualism associated with physical distress, impairment and abnormal thoughts, feelings and behaviors; American Psychiatric Association, 2013), b) Borderline Personality Disorder (BPD; personality disorder associated with

impairments in self-functioning, identity, self-direction and interpersonal functioning; Choi-Kain & Gunderson, 2015) and c) multiple personality disorders (Herman, 1997). Steiner et al. (1997) suggest that “abuse, neglect, sexual molestation, poverty, and witnessing violence” are all risks of developing a trauma-related disorder (p.357). While trauma exposure can include a range of experiences, the symptoms after experiencing trauma are often similar among survivors.

It is important to note that, one may be exposed to trauma without being diagnosed with a trauma-related disorder. The 5th Diagnostic and Statistical Manual from the American Psychiatric Association (2013) determines that an individual must meet all symptom criteria in order to be clinically diagnosed with PTSD. This is significant because PTSD is an impairing psychological disorder. Some of the most common symptoms include, but are not limited to re-experiencing (e.g., flashbacks), negative mood and/or thoughts (e.g., depressive symptoms), avoidance (e.g., suppressing memories and physical avoidance of spaces), and arousal or reactivity (e.g., easily startled, difficulty sleeping and on guard.; American Psychiatric Association, 2013; Kleinman, 2018).

Symptoms can undulate; meaning, ongoing life stressors and/or triggers to the trauma can create the expression of symptoms. PTSD may appear at any point in the 12 months following trauma exposure, although it is likely that symptoms will present within 3 months of a traumatic event (American Psychiatric Association, 2013). Nevertheless, there could be years of delayed expression in meeting full PTSD criteria. For example, it is not uncommon for symptoms to persist more than 12 months and in some cases for even more than 50 years (American Psychiatric Association, 2013). Maladaptive behaviors and coping techniques are likely to increase with these symptoms. While trauma-related disorders are often correlated with combat

veterans, the etiology of childhood trauma carries heavily weighted evidence for PTSD (Herman, 1997). Within families, trauma may become a learned pattern.

Trauma can be cyclical. Both the short-term and long-term outcomes of children's exposure to traumatic experiences are multi-layered (Cook et al., 2017). Adverse Childhood Experiences (ACEs), inclusive of various traumatic events faced during childhood (e.g., neglect, abuse, domestic violence and parental psychopathology), are predicted to disrupt neurological, cognitive, emotional and social development, as well as contribute to risky health choices and psychiatric conditions (Rhee et al., 2019). Children exposed to complex trauma often struggle with attachment, affect regulation, biological challenges, dissociation, behavioral control, cognition, and self-concept (Cook et al., 2017; Van Der Kolk, 2017; Levy & Orlans, 2014). In America, 2 out of 3 children have experienced a traumatic event before the age of 16 (American Psychological Association, 2013) and consistently, about 60% of adults report experiencing traumatic family circumstances during childhood that have carried into adulthood (e.g., abuse; National Center for Mental Health Promotion and Youth Violence Prevention, 2012). Therefore, the prevalence of trauma and ACES highlights the clinical significance and research in this field.

The effects of ACEs are long-term and significantly impact an individual's ability to be present in their own relationships. Additionally, ACEs may undercut vital psychosocial resources potentially contributing to lower levels of perceived social support and decreased self-efficacy (Nurius et al., 2016; Turner & Butler, 2003; Vranceanu et al., 2007). Survivors of interpersonal child trauma often have skewed visions of healthy relationships (Herman, 1997). Moreover, trauma has the potential to influence parenting practices such as less maternal responsiveness, adverse parenting behaviors (e.g., abusive patterns toward the child) and a decreased sense of parental control (Bert et al., 2009).

Acereto (2016) suggests that the developmental transition from child to mother requires key cognitive reorganization about the self and one's place in the external world; meaning, the caregiver is no longer seeking protection, but has now fallen into the role of protector for their child (Acereto, 2016). However, for mothers who have survived trauma, their own seeking of protection may outweigh, or cause them to be unavailable or distant from providing support to their offspring. A mother's parenting style and unique understanding of what it means to be a caregiver are highly influenced by her own attachment history. Ainsworth et al. (1978) mention four constructs of maternal caregiving and interaction: sensitivity to signals, cooperation with ongoing behavior, acceptance of age-related requirements, and physical-psychological accessibility. Because the child is highly reliant on the mother's support at the beginning of development, this can influence the mother-child interactions. A pattern of unreliable caregiving may create a less available or unpredictable parent because of their own expression of trauma.

In her book, *Trauma and Recovery*, Herman (1997) notes that "trauma is contagious" (p.141); meaning that the effects of trauma exposure may diminish a mother's sensitivity in response to her child. Likewise, maladaptive parenting practices may be reflective of the mother's own poorly developed IWM (Andersson, 2014). This is significant because a mother's prior trauma exposure can carry into interaction patterns with their children. Many (but not all) trauma-exposed mothers have insecure attachments with their children (Acereto, 2016; Bosquet et al., 2011), which may increase the likelihood of the child having a dysfunctional IWM (i.e., perception of the world; Acereto, 2016). A child's dysfunctional IWM may increase developmental vulnerabilities. However, this is not deterministic, and it should be stressed that not all mothers who have faced trauma will have insecure attachments with their children and/or poorly developed IWMs. The caregiver's power and availability to offer sensitive and responsive

support to their child is highly reliant on her own psychological resources (Bosquet et al., 2011). Clinically, this is significant because patterns of trauma, disrupted IWMs, and insecure mother-child attachments have the potential to lead to enduring negative cycles of intergenerational dysfunction.

Notably, patterns of unreliable caregiving may create a less available or unpredictable parent because of their own expression of trauma. “Social neglect” is defined as the absence of adequate caregiving during childhood and is closely tied to trauma and stressor-related disorders (The American Psychological Association, 2013). Therefore, if an individual has suffered from social neglect during their own childhood, they are more likely to beget this behavior on their own offspring. Therefore, social neglect may become a pattern through the generations. It is important to note that this is not always the case and having a strengths-based lens is crucial to supporting vulnerable children and families, as well as preventing a maladaptive cycle. Whereas there is literature on maternal trauma and child attachment, there is little focus on adolescent motherhood and the intergenerational transmission of maladaptive attachment patterns. Moreover, it is especially important to address this in light of the vulnerabilities of adolescent motherhood.

Vulnerability of Adolescent Mothers.

About 60% of adolescents are exposed to trauma (Hamblen & Barnett, 2018). Adolescent mothers are a particularly vulnerable population because they are amid two acute parallel developmental transitions: parenthood and emerging adulthood (Jacobs et al., 2016; Brooks-Gunn & Furstenberg, 1986). Therefore, it is important to recognize the developmental complexities of navigating adolescence while also transitioning into parenthood. Studies showed that the rate of adolescent pregnancy among 15- to 19-year-olds was highest in the United States

(Sedgh et al., 2015), with 33 pregnancies for every 1,000 females in 2011 (Raskin et al., 2017). Even though there has been a significant drop in rates of adolescent pregnancies, the United States reports a substantially higher rate of adolescent pregnancy and childbearing than other developed nations (Sedgh et al., 2015; Stanger-Hall & Hall, 2011; Klein, 2005). The stigma tied to early childbearing is reflected in the vulnerabilities that adolescent mothers face. For example, adolescent mothers tend to be socially isolated (Raskin et al., 2017; Gee & Rhodes, 2003), which emphasizes the ways in which their contexts may limit their supports (e.g., emotional, instrumental, informational; Raskin et al., 2017).

Adolescent pregnancy and childbearing have been deemed a public concern (Mistry et al., 2016; Stockman & Budd, 1997) because of the associations between early childbearing and concurrent and/or later experiences of poverty (Furstenberg, 1987). However, research is ambiguous about whether early childbearing leads to later poverty or whether it is fact that young mothers are more likely to have experienced poverty prior to having a child (Mistry et al., 2016; Mollborn & Dennis, 2012). In many cases, adolescent mothers have dysfunctional familial relationships, mothers who were also young child bearers, and experience significant residential mobility (Mistry et al., 2016). However, recent studies have shown that adolescent mothers are not a homogenous group and many young mothers navigate the transition to parenthood effectively (Mistry et al., 2016).

While adolescent mothers may face unique challenges, there are known protective factors (circumstances, conditions, or attributes) to help them navigate these challenges (Mistry et al., 2016). Britner and Reppucci (1997) and Stockman and Budd (1997) note that as an outcome of early childbearing, adolescent mothers have a higher likelihood of dropping out of school and are less likely to report college attendance; even among adolescent mothers who do leave school

initially, on average they return and have comparable attainment to their peers (with similar background and demographic characteristics) who delayed childbearing (Raskin et al., 2017; Mistry et al., 2016). In addition to contextual challenges, many adolescent mothers struggle with psychological vulnerabilities (e.g., childhood maltreatment, depression, social isolation; Mistry et al., 2016). Adolescents exposed to troubling life contexts may struggle the most with the transition to parenting (Coyne & D'Onofrio, 2012; Klein, 2005). Adolescent mothers' continuous traumatic experiences influence and can exacerbate their prospective parenting behaviors (Bert et al., 2009). Therefore, it is essential to have a holistic, person-centered lens of an individual's background, characteristics, and experiences in order to understand the ways in which they adapt to parenting as an adolescent (Mistry et al., 2016; Raskin et al., 2017).

Trauma can affect an individual long-term, including when becoming a parent. This trauma may affect parenting skills and parent-child attachment, both of which can affect the child. Moreover, adolescent mothers who have also previously faced trauma or attachment insecurities, may be retriggered by their own experiences as a mother (Sperlich et al., 2017). There is longstanding recognition of the significant relationship between the mother's mental health and the early attachment between mother and infant, as having strong implications for child development and wellbeing (Sperlich et al., 2017). Research has shown that early experiences of maltreatment are associated with a significant increased risk of childhood mental health challenges and other adverse outcomes (Font et al., 2019; Sperlich et al., 2017). Notably, early childbearing is closely linked with a history of childhood maltreatment for adolescent mothers (Font et al., 2019). Moreover, mothers who have faced maltreatment themselves often experience isolation, distress, and insufficient caregiving, which can influence encounters with their own child (Britner & Reppucci, 1997).

Young mothers may struggle more with parenting (or what is perceived as “good parenting” – i.e., white, middle-class perceptions of good parenting; Easterbrooks et al., 2013; Dermott & Pomati, 2016; Gewirtz, 2001; Klett-Davies, 2010). For instance, if the mother was neglected during her own upbringing, there is a higher likelihood of this impacting her own parenting techniques. Notably, caregiving takes a great deal of energy, and can result in the mother feeling helpless in her role, which can cause problems for the young mother and her child (Brooks-Gunn & Furstenberg, 1986; Raskin et al., 2017). The high demands on a primary caregiver may impact the amount of energy they put into accessing services and the ways in which they are forming attachments with their child (Brooks-Gunn & Furstenberg, 1986; Raskin et al., 2017).

Understanding child development is crucial to understanding human developmental patterns. Development includes biological, emotional and cognitive change or growth overtime, and is typically linked with age or stage of an individual. This is significant to consider because child development is influenced by caregiving (Keenan et al., 2016). Each stage of child development is shaped holistically through the many systems that are influencing the individual (e.g., family, community, culture, etc.). When considering positive child development, one must also account for caregiver behaviors.

Maternal and child brain development in connection to trauma exposure.

The brain’s developmental stage can have a strong influence on parenting abilities. Navigating the developments of both adolescence and motherhood is likely to pose challenges to a young mother whose brain does not reach full maturity until the mid-twenties or later (Costandi, 2016). More specifically, executive functioning in the brain does not reach full maturity until the late twenties (e.g., planning, decision making, and emotion regulation;

Costandi, 2016). For young mothers, this may also mean holding higher expectations than plausible for their children yet providing less stimulation for child brain development (Brooks-Gunn & Furstenberg, 1986; Stockman & Budd, 1997; Costandi, 2016; Brandt et al., 2013). This may contribute to problematic parenting-related consequences (Wamser-Nanney, 2019) and a higher likelihood for adolescent mothers to have insecure attachments with their children than mothers who delay childbearing (Cook et al., 2017; Furstenberg, 1987; Stockman & Budd, 1997; Bowlby, 1988). Therefore, awareness of the child's developmental capacity is key to providing sensitive and secure caregiving to children (Brandt et al., 2013), which contributes to secure child attachments (Bowlby, 1982).

By the time a child is two, 80% of the brain has formed (Costandi, 2016). Evidence has shown that early life experiences may have substantial effects on developing neuronal circuits which can impact an individual's life trajectory long-term (Black et al., 1998; Blakemore & Choudhury, 2006; Costandi, 2016). Therefore, the mother-child attachment can influence child neurological development. Loving relationships accompanied with mental stimulation have a strong influence on the child's proper brain development (Costandi, 2016). However, there may be challenges for a child's proper brain development, if young mothers are also impacted by trauma.

Maternal PTSD can negatively impact brain development in children. Mothers who are exposed to trauma may be disrupted in developmental processes (Brandt et al., 2013).

Accordingly, mothers dealing with trauma exposure have an increased potential for compromised caregiving, which has been related to disrupted brain development for the child (Costandi, 2016). This risks functionality for the child in all domains: academically, socially, relationally, cognitively, emotionally, and physically (Jaffee & Christian, 2014; Brandt et al.,

2013; Belsky & de Haan, 2011; Jaffee & Christian, 2014) and also puts children at increased risk for developing toxic stress (Jaffee & Christian, 2014). Therefore, the child's healthy brain development may be essential to forming secure attachments between mother and child, as well as to attenuating the likelihood of unresponsive caregiving and the potential risk of transmitting trauma from mother to child. Whereas mothers' trauma may lead her to the formation of insecure attachments with her child, this is not deterministic and therefore should be examined through the developmental lens of attachment theory.

Foundations of Attachment

Maternal traumatic exposure and PTSD can have lasting effects for both the mother and the child. Most research has focused on infant and toddler attachment, with little attention to the differences in attachment during childhood. Moreover, the effects of attachment are reliant on the time point when security is assessed and when outcomes are evaluated (Cassidy & Shaver, 2016). Attachment Theory derives from three theories of development: behavioral, psychoanalytical, and ethological (Pott, 2019; Rothbaum et al., 1995), and aims to demonstrate how characteristics of relationships become integrated into personality (Cassidy & Shaver, 2016). Attachment is described as the "strong affectional tie for special people that leads to pleasure and joy leading to comfort in times of stress" (Pott, 2019). In infancy and early childhood, parent-child relationships are interpreted as secure or insecure (Cassidy & Shaver, 2016; Bartholomew & Horowitz, 1991).

A secure attachment style allows the child to feel comfort, protection, and safety in exploration (Ainsworth, 1978). In contrast, an insecure attachment style is reflected through the reunion with the caregiver as avoidant, ambivalent, or disorganized (Ainsworth, 1978). Further, an insecure ambivalent attachment is a result of an unpredictable and inconsistent caregiver

(Ainsworth, 1978). Attachment security has been investigated closely for numerous years through Ainsworth's (1978) Strange Situation which examines child exploration, in accordance with their reactions to departure and reunion with a caregiver. For instance, an insecure ambivalent attachment style could be seen as a child having contradictory simultaneous feelings about the reunion with the parent (e.g., child expresses desire for embrace but rejects parent's hug when it occurs). Secure relationships are linked to more ideal physiological and behavioral stress regulation, as well as more adaptive self-regulation abilities (Bosquet Enlow et al., 2011). Alternatively, disruption in attachment is associated with increased vulnerability and poor self-regulation skills that persist throughout development (Bosquet Enlow et al., 2011). Therefore, loving and sensitive caregiving is more likely to afford the IWM of the self as capable and loveable; while, insecure and unpredictable caregiving is likely to lead to the formation of an IWM of the self as unworthy and undesirable (Bretherton et al., 1990).

Effective parenting has been rooted in the formation of secure attachments. Attachment can be broken down into phases during early life: 1) pre-attachment (birth to 6 weeks), 2) attachment in the making (6 weeks to 8 months), 3) clear-cut attachment (8 months to 24 months), 4) reciprocity (18 months to 1+ years; formation of the IWM), and 5) goal corrected partnership (3-4 years old; Pott, 2019). The attachment system intends to provide a sense of protection for the child from the external world (Pott, 2019). The child's attempts to maintain proximity with the maternal figure (i.e., attachment behaviors; Bowlby, 1969; Ainsworth, 1978) are activated through pain, fatigue, feeling frightened, and/or recognition that the mother is inaccessible.

The way that the primary caregiver responds to the child is critical to the formation of the attachment system. For instance, secure attachment during infancy may serve as a protective

factor throughout child development and potentially the lifespan (Hamilton, 2003). Securely attached infants commonly sustain more congenial relationships with their mothers; however, this is contingent on consistency over time in the quality of the mother-child interaction and this may be influenced by intervening events (e.g., family stress, changes in circumstances; Raikes & Thompson, 2006; Cassidy & Shaver, 2016). Therefore, the quality of the mother-child relationship is lasting and dependent on numerous factors, which is why it is important to consider the relationship between maternal PTSD, as it may influence maternal sensitivity to support a secure attachment for the child. Attachment behaviors develop through the stages of a child's life. While infant attachment is assessed behaviorally (Ainsworth, 1990), developmentally, attachment is expanded upon through language and representation during childhood (Target et al., 2003).

Early Attachment and Later Development

During early childhood, attachment is reflected through the child's psychological development (e.g., personality, emotion regulation, emotion understanding, social cognition, conscience, self-concept); this is highly dependent on a child's-maintained experience of sensitive parental care and security overtime (Cassidy & Shaver, 2016). It is important to consider that children are developing in more multifaceted and diverse environments than infants, which can lead to discrepancy of attachment organization post-infancy (Schaffer, 1996). Toddlers and kindergartners (about 3-6 yrs. old) begin social referencing (i.e., comparing their own evaluation of events with others) which allows for them to understand conflict and shared mental states (Pott, 2019); this is especially important because at this stage, children are highly responsive to parent reactions (e.g., 'am I doing the right thing?') and beginning to gain self-conscious emotions (Pott, 2019).

Research has suggested that the security of attachment is a direct predictor of developmental outcomes (e.g. emotion recognition in children; Steele et al., 2008), and also a moderator of further areas of parent-child relationships that contribute to those outcomes (Cassidy & Shaver, 2016). For example, children with secure attachments are more adept at identifying emotions in others and often empathizing (Murphy & Liable, 2013). Suess and Sroufe (2005) found significant affinities between early attachment security and personality characteristics through childhood and adolescence (e.g., with measures of emotional health, self-esteem, agency and self-confidence, positive affect, ego resiliency and social competence in interactions with peers, teachers, camp counselors, romantic partners and others). In accordance with Bowlby's IWM construct, studies demonstrated that attachment security is associated with young children's (5-7 years old) self-concept, more specifically, their conceptions of themselves as loved and loveable (e.g., Cassidy & Shaver, 2016; Target et al., 2003; Cassidy, 1988; Bowlby, 1969, 1973, 1982). In contrast, insecurely attached children often self-conceptualize by idealized, troubled, and/or dismissive self-descriptions (Target et al., 2003). Whereas, child behaviors are managed by the attachment system to seek protection, maternal behaviors are managed by the caregiving system with the motive of providing protection (George & Solomon, 1996).

Trauma, the quality of the mother-child attachment & the caregiving system

Bowlby (1988) writes, "Successful parenting is a principal key to the mental health of the next generation" (p.1). It is important to note that when the primary caregiver-child relationship is affected by trauma, this creates potential for severe compromise to the attachment relationship. If the primary caregiver is "too preoccupied, distant, unpredictable, punitive, or distressed" they may be unable to be responsive and dependable for their child (Cook et al., 2017, p.392). In response, the child's distress may be exacerbated. Attachment patterns may recur across time and

relationships, which may lead to learned response patterns (Bowlby, 1982; Hamilton, 2003).

Researchers discuss that, “early caregiving relationships provide the relational context in which children develop the earliest psychological representations of self, other, and self in relation to others” (i.e., IWM; Cook et al., 2017, p.392).

While some may say that maternal instincts are ‘natural’, it is important to have a holistic lens to understanding how caregiving styles are formed. Research shows that maternal caregiving style is likely to reflect that which the mother received as a child (Pott, 2019). Bowlby (1988) writes, “when [the child] is distressed and anxious nothing but a prolonged cuddle will do” (p.3), calling attention to the child’s need for balance between warmth, control and responsive caregiving (Maccoby et al., 1983). When sensitive caregiving is inaccessible and/or neglected, there may be significant long-term setbacks for the child. This is significant because negative attachments can be the root of the transmission of disorganized relationships, psychopathologies, and possible traumas. This can be examined through the lens of attachment trauma or, trauma in the framework of a close relationship (Brazeau et al., 2018).

Research has demonstrated that on average, mothers who come from disrupted families tend to be twice as unavailable to their children as other mothers; moreover, these mothers were very unlikely to hold, look and talk to their babies (Bowlby, 1988). The caregiving system is a biologically based motivation system and a roadmap for a parent’s protective reactions to their child (George & Solomon, 2011). However, if the roadmap is full of untrustworthy detours, the parent may not have an awareness and ability to positively execute the caregiving system. This is essential to address for adolescent mothers who also struggle with PTSD.

Maternal PTSD and consequent child attachment may be a related consideration.

Sangalang and Vang (2017) discuss parent-child relationships as potential mediators of trauma

exposure and behavioral health outcomes for children. The complexities of caregiving call for the caregiver to shift away from identifying as the seeker of care to the provider of care (George & Solomon, 2011). Research on maternal care has shown that trauma overall impacts or obstructs a mother's self-assurance. Bowlby (1988) notes that the mother's feelings and behaviors concerning her baby are grounded in a mother's prior personal experiences (e.g., those with her own primary caregiver). Still, the basis of caregiving insecurity and disorganization is isolated attachment-related fear (George & Solomon, 2011). Researchers posit that the fear is reflective of the disorganization that the mother transmits due to unsettled grief in relation to loss or abuse (George & Solomon, 2011). Cohen et al. (2008) propose this to be reflective of the cycle of violence theory which holds an intergenerational model suggesting that traumatic experiences and their aftermath are transferred within a family cross-generationally. For example, mothers who struggle with PTSD symptoms, have an increased risk of adverse parenting practices and outcomes (Cohen et al., 2008; Wamser-Nanney, 2019). Trauma affects the complex system of self-protection long-term (Herman, 1997). The effects of trauma can be highly influential to the attachment and caregiving systems which are reliant upon protection. In order to examine contextual influences on mother and child, all risk and protective factors in relation to trauma must be investigated.

Risk factors and protective factors of early motherhood and PTSD

There are numerous environmental risk and protective factors that can affect the presentation of trauma. Some of the noted risk factors to psychological trauma include but are not limited to lower socio-economic status (SES), lower educational attainment, exposure to previous or multiple traumas, childhood adversity, family psychiatric history, cultural characteristics, lack of social supports, and lower intelligence (American Psychological

Association, 2013). This is important because it is common for adolescent mothers to come from or fall into low SES, have faced ACES, have had little support socially or financially, and drop out of school (Mistry et al., 2016; Britner & Reppucci, 1997; Stockman & Budd, 1997). These common circumstances may also influence the ways in which an adolescent mother appraises trauma.

The type of trauma, duration, context, and demographics of the trauma survivors influence the clinical presentation of severity (Kleinman, 2018). The continuum of severity ranges from “asymptomatic” or no PTSD to “extreme/severely incapacitating” or full PTSD (Kleinman, 2018). These symptoms are not always linear and can waiver overtime. Essentially, parents’ personal traumas increase the risk of negative parenting practices (i.e. punitive, aggressive, and/or physical discipline; Cohen et al., 2008). Trauma may cause individuals to develop and exacerbate psychopathologies over time (Sangalang & Vang, 2017). The repetition of trauma and cumulation of multiple traumas are also likely predictors of parenting outcomes (Cohen et al., 2008). Fortunately, formal support, such as family support programs for positive parenting practices, can help reduce stress.

Home visiting is a family support model that provides home-based services and check-ins for families with one-to one individualized support (e.g., parenting information, material goods, service referrals). Notably, home visiting programs may allow for idiosyncratic supports and decreased feelings of hopelessness, helplessness, loneliness and isolation (Duggan et al., 2018; Duggan et al., 2007; Caldera et al., 2007; Gomby, 1999). There are various home visitation models; they differ in aims, delivery structure, and populations served, yet all have the purpose of offering parenting support to reduce stress, improve parenting, and enhance child development

(Easterbrooks et al., 2013); with the principal objective of fostering positive parenting (Fauth et al., 2018). Home visiting is an increasingly popular service delivery model.

Healthy Families America (HFA), one of the nation's primary evidence-based home visiting models, aims to construct and maintain community partnerships, specifically for vulnerable families during or before birth; to promote and bolster nurturing parent-child relationships; to promote healthy childhood growth and development; and to enhance family functioning by reducing risk and building protective factors (Healthy Families America, 2014). Home visitors support caregivers by affording them parent training, child health education, referral to resources, and social support (Gomby, 1999; Howard & Brooks-Gunn, 2009).

Healthy Families Massachusetts (HFM), an affiliate of HFA, is a voluntary home visiting program for first-time parents who are under the age of 21 years in Massachusetts. Families can be enrolled during pregnancy up to the child's first birthday, and services continue until the child's third birthday (Jacobs et al., 2016). Within the program, services include home visits, goal setting supports, group forums, secondary contacts, and referrals for other services provided by trained paraprofessional staff. HFM's goals are to: 1) prevent child abuse and neglect by supporting positive, effective parenting; 2) achieve optimal health, growth, and development in infancy and early childhood; 3) encourage educational attainment, job and life skills among parents; 4) prevent repeat pregnancies during the adolescent years; and 5) promote parental health and well-being. Paraprofessional home visitors make weekly visits to mothers during pregnancy and weekly home visits up to 6 months post-birth.

Researchers examined the impacts of the HFM intervention with a randomized sample of adolescent mothers (Jacobs et al., 2016). Based on evidence from a randomized controlled trial (RCT) evaluation, Jacobs et al. (2016) concluded that HFM is a positive option for adolescent

mothers during a pivotal transition from adolescence to motherhood, helping young mothers with adaptive coping techniques to stress, decreasing risky health behaviors and increasing educational attainment. This study will investigate the association between maternal PTSD and positive mother-child attachment style. Further, this study will examine whether adolescent mothers' involvement in HFM influences the relationship between maternal PTSD and child attachment style in a favorable direction.

Present Study

Whereas there is research surrounding childhood trauma in relation to attachment patterns, it is unclear whether trauma exposure leading to maternal PTSD is a significant predictor of secure or insecure attachment for offspring. Additionally, there is little research that specifically focuses on maternal PTSD for adolescent mothers. Assuming an unfavorable association between maternal PTSD and children's attachment, it is important to explore whether family support programs, specifically HFM, can attenuate these unfavorable associations to inform policy, accessibility and practice to putting young families on positive trajectories. The present study examines the following questions: (a) Is there a relationship between adolescent mothers' PTSD and their children's (6-7 years old) attachment style?; and (b) Is the relationship between adolescent mothers' PTSD and children's attachment style moderated for mothers who had access to HFM than for a comparable group of adolescent mothers who did not have access to HFM? Understanding the complexities of this association will support young families who are in similar situations and enable a more person-centered approach. Additionally, this study can support the development of informed preventive and adaptive programs, such as HFM.

I hypothesize that there will be a relationship between adolescent maternal trauma symptomatology (full PTSD/partial PTSD vs.no PTSD/no trauma) as measured through the

University of California Los Angeles-Post-Traumatic Stress Disorder- Reaction Index (UCLA PTSD-RI) and child attachment as measured through the MacArthur Story-Stem Battery-Attachment Focused Coding System (MSSB-AFCS). It is hypothesized that children of mothers categorized with PTSD (and full or partial) will have more insecure attachment than children of mothers with no PTSD (Bosquet et al., 2011; Bert et al., 2009). Research supports this hypothesis by noting that those exposed to trauma often struggle with attachment (Cook et al., 2017; Van Der Kolk, 2017). Further, I hypothesize that the association between maternal PTSD and child insecure attachment will be attenuated for mothers who had access to HFM than for mothers who did not (Cohen, Hien & Batchelder, 2008; Wamser-Nanney, 2019).

Method

Study Design

This present study uses secondary data from Massachusetts Healthy Families Evaluation –Phase 2 (MHFE-2), a longitudinal randomized controlled trial (RCT) evaluation of HFM conducted by the Tufts Interdisciplinary Evaluation Research (TIER) team. MHFE-2 investigated whether HFM helped young families achieve outcomes aligned with its five goals over the first 8 years of the children’s lives.

MHFE-2 was initiated in 2007. Participants that were deemed eligible and recruited by HFM were randomly assigned to either the program group that was able to receive HFM or a control group that could not receive HFM, but was provided information and referrals to other services. Eligibility consisted of the following: consenting females 16 years or older, no previous HFM services, speakers of either English or Spanish, and cognitive abilities to provide informed consent. At the first data collection time point (Time 1; T1), 684 mothers participated; 417 were

in the HFM program group (61%) and 267 were in the control group (39%). Participation in the study included two phases. In the first phase, mothers completed a telephone interview and provided consent to allow TIER to gain access to administrative agency data (e.g., child protective services records). This telephone interview focused on collecting information related to demographic and background characteristics, pregnancy or parenting status, information on the father of the baby, economic resources, formal and informal supports, history of pregnancy, family history of adolescent pregnancy, and depression symptomatology. In the second phase, about 70% of mothers ($n = 473$ at T1) participated in an optional in-home interview that included more detailed survey assessments, qualitative interviews, and observations of mothers and children, collecting more detailed information on HFM participation, timeline of key life events, community help-seeking behaviors, quantity and quality of supports, family and educational narratives, health behaviors, trauma and PTSD symptomatology, representations of parenting, and parenting stress.

Data were collected at six time points. At T1, interviews were completed 1-month after enrollment when mothers were pregnant or newly parenting; at Time 2 (T2) interviews were conducted 12 months after enrollment; at Time 3 (T3), interviews were done 24 months after enrollment; at Time 4 (T4), interviews were completed approximately 5 years after enrollment; at Time 5 (T5), interviews were completed close to 6 years after enrollment; and finally at Time 6 (T6) telephone interviews were completed when children were 7.5 years of age, on average (Figure 1). For the purpose of this study, maternal PTSD was assessed during the T1 in-home interview ($n=473$), and child attachment style was measured during the T5 in-home interview ($n=331$). At T5, 65% of the original T1 sample participated in the study.

Analytic Sample

MHFE-2 included first time mothers between the ages of 16 and 20 at the beginning of the program ($M=18.9$; $SD= 1.3$). At the time of enrollment (T1), 65.0% of the participants were pregnant and 18% were receiving cash assistance. Among the analytic sample, 38% identified as non-Hispanic White, while 33% of mothers identified as Hispanic, 22% of mothers identified as Non-Hispanic Black, and 7% were another race/ethnicity. Further, 81% were born on the mainland of the United States (vs. Puerto Rico or outside of the U.S.) and English was the primary language spoken in the home for 74% of participants. In terms of educational attainment, 42.1% graduated from high school or earned a GED at T1; whereas, 57.2% were still in school or were no longer attending. At T5, the child's mean age was 6.1 years old ($m=6.1$; $SD=0.5$), and 52% were male. Additionally, at T5, 38% of the children experienced at least one child maltreatment report since birth and it was noted that 2% were also in the custody of someone other than their mother (Tufts Interdisciplinary Evaluation Research, 2015).

Demographic factors

Descriptive analyses were conducted to detail mothers' background and demographic characteristics demographics were mostly comparable for this sample in relation to the overall sample of the MHFE-2 study (Table 1).

Measures

For the purpose of this study, the University of California Post-Traumatic Stress Disorder- Reaction Index (UCLA PTSD-RI) and the MacArthur Story Stem Battery with the Attachment-Focused Coding System (MSSB-AFCS), collected during the in-home interviews at T1 and T5 (Figure 1), respectively, were utilized to determine relationship between maternal PTSD and child attachment patterns.

University of California at Los Angeles Post-Traumatic Stress Disorder Reaction Index (PTSD-RI).

The UCLA PTSD-RI was used during Time 1 to assess exposure to trauma and PTSD symptomatology of participants. Since participants were between the ages of 16 and 20 at the start of the study, the adolescent version of the UCLA PTSD-RI was utilized. The PTSD-RI is a widely used measure for assessing trauma symptomatology in children and adolescents. The adolescent assessment is a self-report measure which includes questions in relation to traumatic events and 17 DSM-IV PTSD symptoms. Mothers were asked to indicate whether they experienced 13 discrete trauma experiences on a dichotomous scale (yes/no), including natural disasters, accidents, domestic violence, vicarious trauma experiences, community violence, sexual abuse, medical illness and unexpected death. There is also one open-ended question which allowed mothers to note any additional trauma-related experiences not included on the extant list. Because this data was collected prior to the publication of the DSM-5, the PTSD-RI is reflective of the DSM-IV criteria.

MHFE-2 determined participants' scores by summing the number of traumatic events (range = 0 to 13) experienced. For any endorsed traumatic events, participants were asked to rate the frequency of PTSD symptoms in the past 30 days on a 5-point Likert scale (0 = none to 4 = most of the time). PTSD diagnostics follow criterion, or standards for the mental disorder (e.g., exposure, symptoms, appraisal and coping, somatic and behavioral changes, etc.). Moreover, summary scores were created for number of symptoms endorsed for symptom criteria B, C, and D (Re-experiencing, Avoidance, and Hyperarousal) for either 1-2 times a week or 2-3 times a week. To be diagnosed with PTSD, a participant needed to first meet the diagnostic criteria A; this criteria rates how participants felt during or immediately following their most salient traumatic event. Therefore, a dichotomous variable was created indicating whether or not

participants endorsed at least one feeling on both criterion A1 and criterion A2. A similar dichotomous variable was created for all criterion A-D as well. Additionally, categorical variables were identified to note if a participant met a diagnosis of full, partial, or no PTSD. Items can be summed to form a severity score (0 to 68) which created a diagnostic categorization that maps with the DSM-IV criteria. In order to be diagnosed with PTSD, participants needed to have all computed criteria scores (A-D). To operationalize this for the present study, I created a binary measure where 1 = full or partial PTSD and 0 = no PTSD, including participants who did not experience traumatic events and thus were not assessed for PTSD, as well as those who did experience traumatic events but did not experience PTSD as a result.

The UCLA-PTSD-RI is found to have high diagnostic validity (Steinberg et al., 2004), aligning with the DSM (2013) criteria. Research has purported good to excellent internal consistency of this measure (Layne et al., 2010; Nygaard et al., 2012; Roussos et al., 2005).

The MacArthur Story Stem Battery (MSSB).

The MSSB was used for this study during Time 5 (children approx. 6-years-old) with the children of the adolescent mothers. This assessment is an interactive observation task which focuses on measuring young children's socio-emotion and attachment representations. For the purpose of this measure, children are asked to bring resolution to different narrative stories using Playmobil characters. The child in the assessment can control the characters in the story and use narrative. When necessary, interviewers may offer support to children in story completion through preset script prompts; however, children are tasked with resolving the stories independently. This storytelling and resolution provide insight to the child's mental representations. For instance, story resolutions may allude to how children assume adults respond in conflict.

In the present study, the Attachment Focused Coding Scheme (AFCS; Reiner & Splaun, 2008) was used. This coding scheme takes four stories in addition to a practice story, from the MSSB that are specific to attachment. As the assessment flows, the severity of the story increases in the need for the child to reach out for attachment support. The initial story (“Spilled Juice”) includes a child spilling the juice they are drinking¹. Secondly, the child burns their hand while waiting for food on the stove (“Burnt Hand”). The third story has the child getting a cut on their hand while reaching a shelf in the bathroom that was banned by the mother (“Bathroom Shelf”). Finally, the last story increases in severity as the child hears a sound while trying to sleep that the child believes to be a burglar (“Burglar in the Dark”). Children’s resolution to the primary theme is assessed for each individual story. For example, in “Bathroom Shelf” the child may get a band aid, but also recognize that they had disobeyed their mom’s rules.

The AFCS consists of six codes that are categorized as either mother- or child-focused codes, each scored on a 5-point scale. For the purpose of the present study, only the mother-focused codes were used because of their demonstrative relation to attachment literature. The Mother Focused Codes include a) supportive mother, b) rejecting mother, and c) attachment avoidance of mother. The AFCS includes situations of distress that support the investigation of the extent to which the child perceives their mother as a secure base (supportive or rejecting; Splaun et al., 2010). Three stories were coded with the 3 codes which aggregated to 9 codes. For each storyline within the MSSB (i.e., “Burnt Hand”), the extent of the mother-child secure attachment was assessed directionally (1-5) on the AFCS (e.g., a low score on the AFCS for the Rejecting Mother Code and the Attachment Avoidance of Mother Code was associated with a higher degree of secure attachment, and the opposite is true for the Supportive Mother Code).

¹ four stories were given but only three were used due to an administrative error

Each code inferred the way that the child expected their mother to respond or react to a particular storyline. The child's appraisal of the mother (in the story stem) was deemed reflective of the child's attachment style to their mother. All stories were video recorded by interviewers with scoring done by trained coders in the AFCS measure. Reliability of coders was assessed using intraclass correlation coefficients (ICC), where interrater reliability with the measure creator of .80 or higher was required. Using a three-step process, coders reviewed each story first without endorsing codes; then, coders reviewed the stories for a second time with notes; lastly, coders would use the AFCS scoring manual to assign code to each story. There were 25% cases that were coded by two members of the coding team.

For all codes, the inter-rater reliability mean was .88. For supportive mother, the mean reliability was .86; for rejecting mother the mean reliability among coders was .90; for attachment avoidance of mother the interrater reliability was .92; for dysregulation the mean reliability was .88; for theme and emotion avoidance, the mean score was .86; lastly, for resolution, the mean interrater reliability score was .87.

AFCS has been tested numerous times for internal and external validity and reliability. Moreover, AFCS is deemed with strong internal consistency (Reiner & Splaun, 2008). It has also been validated with other codes schemes of the MSSB: MacArthur Coding Scheme and Little Piggy Coding Scheme. All codes fell in the assumed direction (Reiner & Splaun, 2008). The AFCS has been used in a variety of different samples, including but not limited to clinical and normative populations (Reiner & Splaun, 2008).

Institutional Review Board Procedure

The present study is a secondary data analysis of de-identified data which consists of interviews and questionnaires. Therefore, a modification was made to the IRB protocol to add me, Jessica Somogie, as a Co-Investigator for the MHFE –2 Childhood Study.

Data Analysis Plan

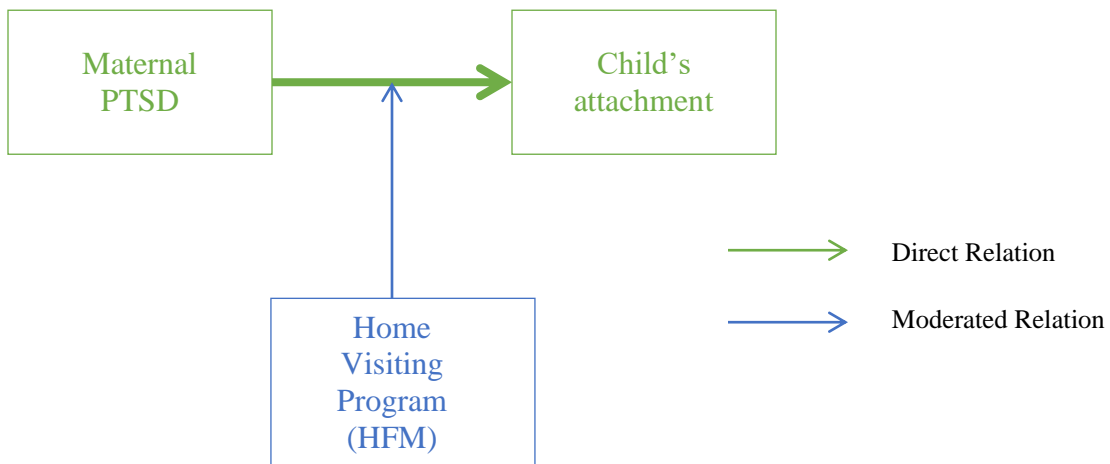
Research Question	Hypothesis	Data Analysis
RQ1: Is there a relationship between adolescent mothers' PTSD and children's attachment style?	There will be a relationship between adolescent maternal trauma symptomatology (PTSD vs. no PTSD) as measured through the UCLA PTSD-RI and child attachment as measured through the MSSB-AFCS. I hypothesize a positive relationship between maternal PTSD and children's insecure attachment, and a negative association between maternal PTSD and children's secure attachment.	Attachment style of the child will be explored as a dependent variable in relation to independent variable, maternal PTSD. An Ordinary Least Squares (OLS) regression will be used regressing attachment on PTSD. Using SPSS 26, the main effect of PTSD in relation to attachment will be analyzed.

<p>RQ2: Is the relationship between adolescent mothers' PTSD and children's attachment style different for mothers who participate in the HFM program than for comparable mothers who did not (control group)?</p>	<p>Access to home visiting services will attenuate the unfavorable association between maternal PTSD and children's insecure attachment.</p> <p>Access to home visiting services will attenuate the association between Maternal PTSD and children's secure attachment</p>	<p>HFM program status will be explored as a moderating variable in relation to the independent variable, maternal PTSD (interaction) and the dependent (outcome) variable, child attachment. A Regression analysis will be conducted using SPSS 26.</p> <p>The moderator in this situation is viewed as the variable that affects the strength or direction of the relationship between the dependent variable, child attachment and independent variable, maternal PTSD.</p>
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I will first explore the variables of interest descriptively to examine the average number of traumatic events experienced by adolescent mothers and the percentage of mothers who have partial or full PTSD, and average scores on child attachment style through the AFCS coding system. Next, I will explore the relationship between maternal PTSD and child attachment outcomes. My analysis will include the following covariates: mothers' race/ethnicity, whether or

not the mother was living with an adult relative during pregnancy or early motherhood, and age of the mother at birth. Lastly, I will run another regression examining whether participation in the HFM program moderates the association between maternal trauma and child attachment. All analyses will be run using SPSS version 26. For further analysis,

Graphic representation of the moderation research question.



Moderation: Healthy Families Massachusetts Home Visiting Service Program moderates the relation between maternal PTSD and child's attachment outcome.

Results

Descriptive Analyses

A total of 203 mothers and children were included in the analyses. The sample was predominantly Hispanic (38%) and more than half of the mothers were pregnant at enrollment (66.5%). Additionally, greater than 3 out of 4 (79.5%) of the mothers were living with an adult relative and the majority of mothers were also in a relationship (69.2%) with either the father of the baby or another partner. On average, mothers were 18.9 years-old at the birth of their child. Participants' demographics are provided in Table 1.

Maternal Exposure to PTSD and Their Child's Attachment. Table 2 illustrates the frequencies for the UCLA PTSD-RI measure, including the percentage of participants with no PTSD and PTSD (partial and full). The frequencies presented in the table show that the 50.2% of participants met the partial or full PTSD criteria ($n = 102$). The Story Stem: Attachment Avoidance of Mother demonstrated approximately normal distribution ($M=2.50$; $SD= 0.54$), as did the Story Stem: Supportive Mother ($M=2.11$; $SD=0.67$). Despite a few extreme values, these are unlikely to cause problems within the data. The Story Stem: Rejecting Mother was positively skewed ($M= 1.53$; $SD= 0.60$). This indicates multiple outliers and one potential extreme outlier; further suggesting that most values are low, and few participants had very high scores on the Rejecting Mother Code (Table 3).

Regression Analyses

Summary of sample used for findings. The tables and figures in the report focus on the analytic sample, which include 203 mothers. Due to rounding, percentages may not add up to 100 percent. Statistically significant findings were determined at a 95% confidence interval (CI) or above. The first research question that this study addresses is, is there a relationship between adolescent mothers' PTSD and children's attachment style? Results from the regression analyses indicated no statistically significant association between maternal PTSD and children's attachment on any of the three outcome measures (table 4). Inclusion of the control variables (mother race/ethnicity, mother relationship status, mother age -in years- at birth of child) did not change this and accounted for slightly more of the outcome variance (see table 4). The second research question that this study addresses is, is the relationship between adolescent mothers' PTSD and children's attachment style different for mothers who participate in the HFM program than for comparable mothers who did not (control group)? As with the main effect model,

maternal PTSD and child attachment were unrelated and were not moderated by home visiting program enrollment (table 4).

Discussion

The current study examined whether maternal PTSD for adolescent mothers was related to child attachment. I hypothesized that there would be a positive relationship between maternal PTSD and children's insecure attachment; however, findings were non-significant, meaning there was a very small relationship between these two measures. The lack of findings suggests that the experience of maternal PTSD does not necessarily lead to insecure mother-child attachment. Despite 50% of the analytic sample falling into the PTSD diagnostic category, the lack of meaningful association between maternal PTSD and insecure attachment is a potential, yet unexpected, strength in the findings. However, given the prior literature and the pertinence of understanding trauma, further investigation is needed to determine the best fit study to properly examine the longitudinal influences of trauma. Nevertheless, non-significant findings can often render important takeaways and clinical significance.

Research has shown that the experience of an adolescent mother embodies systemic challenges (e.g., low socio-economic status, unstable support systems) that are more likely to influence the mother-child attachment relationship in comparison to adult mothers and their children (Toraif, 2018). Adolescent mothers are more likely to report traumatic childhood experiences (e.g., childhood sexual abuse, intimate partner violence, etc.; Cook et al., 2017; Van Der Kolk, 2017). The mothers in the analytic sample of this study were met with various challenges that influenced their lives and potentially their firstborn child's development. Notably, half of the mothers in the analytic sample suffered from PTSD symptomatology

resulting from past traumatic experiences. To understand the etymology of PTSD, research shows that factors prior to the trauma should be assessed (e.g., psychopathologies, lack of social supports, etc.; Bryant & Guthrie, 2007). Even though the present study did not examine the factors prior to the trauma, further research should investigate these potential influences to better understand potential pathways between maternal PTSD and child attachment. These are key because, even though some symptoms may remain, most individuals who are exposed to trauma do not develop PTSD (Orr et al., 2012). However, it is useful to understand the pre-trauma vulnerabilities in order to elucidate (and likely predict) the potential for post-traumatic growth (i.e., positive change as a result of a life challenge or trauma; Calhoun & Tedeschi, 2014). It is also important to note that not all negative aspects of trauma are outcomes of it, rather there are predisposing factors to PTSD that may weigh more heavily on an individual (DiGangi et al., 2013). These vulnerabilities can be operationalized as the predispositions that influence likelihood to be affected and the inability to manage (International Strategy for Disaster Reduction, 2004; Ahmed, 2007).

Therefore, it is important to understand circumstances and factors for an individual before (i.e., pre-trauma vulnerabilities; e.g., coping styles, family relations, school variables, personal histories of depressive and/or anxiety disorders, negative affectivity [e.g., anxiety, introversion, neuroticism]; Orr et al., 2012; Soet et al., 2003) and after a trauma (i.e., post-trauma vulnerabilities; e.g., higher neuroticism, low agreeableness, strength of quality relationships; Orr et al., 2012) that may influence the development of PTSD. Most research has emphasized the importance of pre-traumatic predictors, such as cognitive abilities, coping and response styles, personality factors, psychopathologies, psychophysiological factors, and social ecological factors (e.g., poverty; DiGangi et al., 2013); however, after a trauma, there are a wide heterogeneity of

responses, ranging from resiliency (i.e., ability to maintain a state of equanimity amidst unfavorable circumstances; Ahmed, 2007) to dysfunction (Kleinman, 2018). Resiliency in the face of trauma has been associated with individual beliefs, attitudes, coping strategies, behaviors and psychosocial cohesion (Ahmed, 2007). In contrast, dysfunction has been closely linked with vulnerability, which has been divided into two areas: external factors (e.g., external shocks and environmental stresses) and internal factors (e.g., inability to cope with trauma; Ahmed, 2007; Chambers, 1989). Further investigation would be useful in order to predict and prevent vulnerabilities, as well as support growth.

Childhood sexual assault, physical abuse, and neglect are strong predictors of PTSD onset than adolescent and early adult occurrence of these events (McCutcheon et al., 2010). It has been posited that women's high rates of PTSD following trauma exposure are dependent on the type of trauma experience (Cortina & Kubiak, 2006), the number and combination of types of traumatic experiences (Hedtke et al., 2008) and the age at which trauma occurs (Olff et al., 2007). Research shows that sexual and physical abuse are strong predictors of PTSD (McCutcheon et al., 2010); for that reason, I investigated responses to specific questions (on the UCLA-PTSD-RI) in relation to sexual and physical traumas (e.g., *An adult or someone older touched private sexual body parts and being hit, punched, or kicked very hard at home*) by looking at participant endorsement percentages. I did this to examine whether these specific traumas were related to participants likelihood for remaining in the study overtime. Even though research emphasizes the high vulnerabilities of those exposed to such traumas, the present study demonstrated that the mothers who faced these traumas demonstrated little variance in retention and attrition; meaning, the number of mothers who remained in the study and endorsed having faced sexual and/or physical traumas in comparison to those who attrited, was approximately the

same. Therefore, this could imply maternal post-traumatic growth even among adverse circumstances. Additionally, this may also suggest that physical and sexual traumas were not associated with participant retention. Key to understanding findings is examining the analytic sample.

Descriptive analyses showed that more than two-thirds of the mothers in the sample were from minority groups. Despite small sample sizes, within the analytic sample, higher proportions of mothers identifying as Hispanic (53.2%) and Black (50.0%) met PTSD criteria than did White mothers (43.3%). While findings were non-significant, this brings attention to the systematic influences that may make minorities more vulnerable to adverse and traumatic experiences (e.g., neighborhood contexts), contribute to the ways in which these experiences may be appraised (e.g., perception of what is 'typical'), and provide some explanation about the resiliency and post-traumatic growth of minority groups. This may also help to interpret the non-significant findings, as mothers of minority groups who faced trauma may have demonstrated post-traumatic growth in the study and therefore maintained quality mother-child attachments.

This is important to note because of marginalization and social inequities in the United States that may have influenced participants in this study. The majority of the analytic sample were from minority populations, and the measures and models used in this study may not have best represented the present demographic (e.g., the attachment measure may have poorly assessed positive attachment for non-white mothers). Racism and discrimination can result in ethnic minority individuals being more vulnerable to negative outcomes from traumas (e.g., social and economic effects of racial prejudice or stigmatization; Jones et al., 2006). In the analytic sample, the present study demonstrated that Black and Hispanic mothers were more likely to have faced trauma than white mothers. This may have influenced participant help-

seeking behaviors, displays of traumatic symptoms or coping processes, and/or interactions with measures and assessments. Ethnicity, race and culture are central to help-seeking behaviors (Fleary et al., 2013), operationalizing “problems”, interpretations of psychological difficulties (i.e., traumas), and the idiosyncratic and subjective experiences of traumatic stress symptoms; similarly, personal identity (ethnicity, race and culture) also shapes perception of symptoms and appraisal of recovery (i.e., pessimism or hopefulness; Parson, 1985). Lack of cultural competence in the mental health field has been critical barrier for minority groups and their families (Cauce et al., 2002; Zwilllich, 2000). In the present study, the aforementioned ethnic, racial and cultural influences may have been associated with the lack of association between maternal PTSD and child attachment.

Interactions with measures and assessments may vary as well; for instance, social and contextual norms may bear on what is perceived as ‘typical’ (e.g., if asked whether PTSD symptoms occur *more often* or *less often*, these may be highly dependent on individual and contextual perception) and how severity is rated. This may have affected findings of the present study, as mothers’ appraisal and response to traumas may have reflected ecological circumstances (e.g., neighborhood, socio-economic status, race and ethnicity, etc.). Notably, mothers from more protective contexts (little vulnerability to trauma) may have rated traumatic experiences on a higher severity level because of less frequent exposure to such traumas, whereas mothers from more risk averse contexts (higher vulnerability to trauma) may have rate traumatic experiences on a lower severity level because of the higher frequency of exposure to such traumas. Without acknowledging and addressing the social inequities at play for study participants, the findings of this study are limited.

Beyond caregiver-child attachment, the children in this study were likely exposed to numerous ecological influences that were associated with their development (i.e., housing insecurity, food insecurity, economic difficulties, racial prejudice, etc.; Easterbrooks et al., 2011; Bert et al., 2009). Notably the larger longitudinal study accounted for a variety of other factors (i.e., child emotion regulation, maternal depression, etc.) which should be considered in order to provide a holistic picture of the *whole* child. More specifically, these additional factors could have had a moderating influence on the mother-child attachment in both positive and negative ways; for instance, a child may have experienced more protective or risk factors (e.g., personality traits, access to other supportive caregivers, strong emotion regulation) that contributed to the outcome of the child's attachment with the mother.

Limitations

One challenge in the present study was small sample sizes due to the particular measures analyzed and attrition between T1 and T5. Attrition is common to longitudinal research, specifically with low-income and immigrant families (Howes et al., 2011). Among those who left the study by T5, 85 (57%) met the diagnostic criteria for PTSD; among those who were retained in the analytic sample by T5, 102 (50.2%) met the diagnostic criteria for PTSD. Notably, a relatively lower proportion of participants remained in the study (50.2%) compared to those who dropped out over time (57%). This is significant because higher retention could have potentially contributed to stronger and more conclusive findings to the research questions. The findings may suggest that the participants who were struggling the most were more likely to drop out of the study, or the mothers who lost custody of their children or were more involved with child protective services were more likely to drop out. Had these mothers been present, I suspect that results would have demonstrated a stronger relationship between maternal PTSD and child

attachment. In consequence, results showed low variability on the outcome variable, so it is possible that the children with poor attachment were no longer in the study.

In T5, child attachment is assessed with the MSSB and coded using the AFCS. There are several limitations of the outcome assessment that may have accounted for the lack of associations between maternal PTSD and child attachment; however, due to the supportive literature for the MSSB, especially for maltreated children and mothers (e.g., Macfie et al., 2001), some low-income children (Emde et al., 2003) and Latino children (Schechter et al., 2007), this measure did not initially pose concern. Nevertheless, intergenerational patterns and links among trauma and attachment, as well as cultural sensitivity for variance among a diverse sample, may have been beyond the scope of this measure. For instance, whereas some studies found that trauma-related features of children's play narratives were associated with maternal experiences of violence, the narrative coherence was non-significantly associated with maternal experiences of violent trauma and related PTSD (Schechter et al., 2007).

Therefore, the MSSB measure may not best fit the unique diverse analytic sample, and better support a homogeneous European or European-American demographic (Howes et al., 2011; Selin, 2014). Meaning, within the analytic sample, Black, Hispanic and other non-White race and ethnicities made up 67% of the sample (all together); therefore, cultural and ethnic norms and influences may not be considered in the development of the measure. Additionally, through the MSSB-AFCS strong and weak attachments may not even be represented or clearly operationalized through this measure due to a lack of consideration for cultural norms. Notably, the measure does not account for subtle and/or major differences in regard to parenting practices (norms) based on cultural backgrounds. Parenting may be directly related to culture, yet there is a common assumption of care, love and direction in Western parenting practices, that is not

always common for all parental beliefs and practices (Selin, 2014). With the MSSB measure, there is not enough room for parenting variability, but rather a stronger focus on one kind of parenting (i.e., white, middle-class, western) as the model. More room for variability (e.g., attachment behaviors may have different meanings across culture and background; Howes et al., 2011) in perceived positive parenting practices may have influenced the data to find a stronger relationship between maternal trauma and child attachment. Alike other similar coding schemes, the AFCS may have been unable to account for the coder's (Tufts University research staff) vulnerabilities to interpret others based on their own biases (e.g., own attachment relationships); coders may be vulnerable to this when coding involves decision making based on the meaning (more easily influence by personal biases) of what is being said instead of the actual words that are being stated (Belur et al., 2018).

Even though this measure held overall reliability (.88 for all codes), and strong internal consistency (Reiner & Splaun, 2008), the response values for the variables leave a great deal of room for variability and inconsistency. For instance, one of the aspects of the Supportive Mother Code includes five response values: 1) *mother provides no support*, 2) *mother is hardly supportive*, 3) *mother provides either instrumental or emotional support*, 4) *mother provides instrumental support and small amount of empathy*, 5) *mother provides instrumental and great deal of emotional support*. Coders determining a value for the story stems are choosing from these responses in regard to play by the child. The response values leave a great deal of room for interpretation, bias and discrepancy. For instance, the verbiage used for each response value (i.e., *hardly supportive*) does not provide a concrete determination of how this would specifically look in a story-stem (does *hardly* mean support is shown 1-2 times, 2-3 times, etc.). Further, bias could come into play based on individual coder's predispositions (e.g., culture, education,

gender, personal experience, tone, etc.). This may cause characteristics to be imposed on someone through a subjective lens and biases imposed through a subjective interpretation. Therefore, this measure may not be the best representation of child attachment.

While the initial intention in developing the MSSB was to bring to light the intense features of the young child's inner world (Emde et al., 2003), it seems that studies have only been inclusive of the children from primarily European or European-American samples (Grey & Yates, 2014; Stadelmann et al., 2007; Oppenheim, 2006). This leaves out participants from diverse backgrounds and SES. In one study done with a large, urban African American sample, there were various challenges with the MSSB-AFCS assessment and coding system in regard to meaning-making of child and parental behaviors (Robinson & Mantz-Simmons, 2003; Robinson et al., 2000). In the present study, findings resulted in Black mothers scoring more negatively than white mothers on the rejecting mother code; therefore, the measure and coding system may have affected findings in relation to minority groups. Although the MSSB-AFCS may provide a valuable glimpse into the internal workings of the child, there is a call for more applicable coding systems that are inclusive of diverse family backgrounds (Colton, 2006).

Future directions

Future research should cross-analyze the MSSB-AFCS with other attachment coding measures (O'Connor & Byrne, 2007) to assess for reliable, unbiased and fine-tuned coding and assessment (e.g., the Manchester Child Attachment Story Test [MCAST]; Green et al., 2000; The Behaviorally based Coding System; Cassidy et al., 1992). Next steps in this research may include the additional Attachment Story stem Completion Task (ASCT; Bretherton et al., 1990) which addresses themes of caregiver protection and containment of fear and anxiety in the context of attachment (e.g., "Monster in the Bedroom"). Unlike other narrative story-completion tasks

which are often prone to influence from children's desire to please the adult, the ASCT has been found to be more successful at drawing on children's affect and meaning-making (Emde et al., 2003).

Importantly, research must consider the multi-systemic influences on adolescent mothers and their families. This includes, but is not limited to personal childhood experiences, self-appraisal processes (race, SES, sex, physical status, biological characteristics), stress engagement (neighborhood dangers, social supports, daily hassles), reactive coping methods (maladaptive and adaptive), integration of cultural goals and perceived available means (cultural or ethnic identity, sex role identity, self-efficacy, personal identity), and behavioral and health outcomes (mental illness, poor health, competence, effective parenting, healthy relationships; Spencer et al., 1997). This is important because attachment literature has demonstrated that support systems, socioeconomic conditions (e.g., mothers experiencing economic hardship may be less responsive and more punitive than their non-poor counterparts; Jackson, 2000), and ecological contexts, all play a role in maternal efficacy, responsiveness and availability (e.g., high self-efficacy and social support for low SES minority mothers has been associated with less parenting stress and positive parenting techniques; Jackson, 2000). Needless to say, maternal efficacy, responsiveness and availability have all been called protective resources for parenting stressors, and positive child attachment (Jackson, 2000; Belsky et al., 1984). Therefore, investigating these external influences may strengthen this study by examining possible moderating factors to best support a positive mother-child relationship; thus, this would be a logical next step in the research. Similarly, future research could examine other social influences on the child's development and attachment.

Even though teenage pregnancy has been examined in the literature, most of it has focused on the mothers and, with little attention on the role of the father. Whereas mothers were the focus of this study, there were no measures that accounted for the voices, histories and roles of the fathers as reported directly from them. In many cases, the father of the child was no longer a part of the mothers' life, which is not fault of the study, yet consequently, means there is a missing focus for the family-systems approach for attachment research. In this particular study, 44.8% of the participating mothers were either engaged or married to the father of the baby at the start of the study; this is significant because research shows that there is a high likelihood for these young couples to split up over time (Easterbrooks et al., 2011; Easterbrooks & Goldberg, 1984). Even though there is a dearth of research on father-child attachment, researchers have found that infants form attachments to both mothers and fathers (Steele et al., 1996). Secure father-child attachments are related to positive socioemotional outcomes, such as sociability, friendships, and fewer behavioral challenges (Brown et al., 2018; Sagi et al., 1986; Veríssimo et al., 2011; Coleman, 2003; Vershueren & Marcoen, 1999; Easterbrooks & Goldberg, 1984; Grossmann et al., 2002). Therefore, research should examine the behaviors that promote positive father-child attachment in the context of child well-being, as well as the role of paternal trauma on child attachment. Notably, caregiver states of mind and behaviors (possibly reflective of trauma) are evidenced to be two of the major determinants of caregiver-child attachment quality (Madigan et al., 2011; Main & Hesse, 1990). Therefore, the role of paternal trauma should be considered with similar significance, as researchers have shown that fathers can be sensitive as caregivers; yet, there is little determined in regard to the associated between father-child attachment relationships (Madigan et al., 2011; Grossmann et al., 2008). Therefore, investigation of the paternal-child attachment relationship (for both fathers considered primary and non-

primary caregivers) is integral to understand whether parental PTSD is associated with insecure child attachment. This is important for the positive development of children and families.

Additionally, access to records for mothers and children involvement with Department of Children and Families (DCF), provided data on maltreatment. Moreover, consent to access of external agency information (e.g. DCF) showed that by T5 38% of children had experienced at least one substantiated child maltreatment report since birth, with 2% of children no longer under the custody of their biological mother. These findings indicate that more than one-third of the children in the sample were exposed to trauma, which is further evidence that the outcome of this study may have not been very valid and may be reflective of the caregiver's own history of trauma. Therefore, more in-depth examination of these reports is needed to further investigate the transmission of trauma, resiliency and post-traumatic growth (positive process and change in perceptions of self, relationship with others, and philosophy of life; Maitlis, 2019; Joseph & Hefferon, 2013).

Finally, a thorough investigation of the role of stable housing, attachment security and maternal stability should be examined in relation to adolescent mothers living with an adult relative. This stands out for this study since, 79.5% of mothers reported that they were living with an adult relative and 20.5% were not living with an adult relative. Whereas living with an adult relative may be viewed as a support, it should also be explored through a more critical lens in order to gain the whole picture. Meaning, there is little to no attention on the potential extended family risk and protective factors or the transmission of intergenerational trauma. For instance, the environment in which the family lives may greatly influence the parenting practices (there is a bidirectional relationship between parenting and environment; Osofsky & Thompson, 2000). Therefore, it is essential to consider parenting as not limited to the dyadic relationship

between caregiver and child, but rather the broader context as well (Osofsky & Thompson, 2000; Bronfenbrenner, 1992). This includes physical context, but should also encompass the community and societal influences (Bronfenbrenner, 1992, 1979), which play a role in the adaptive parenting practices.

Cultural and ethnic mores are similarly integral to consider when addressing parenting and attachment for varying demographics. This is important for the analytic sample because there is variability among the mothers participating (33% White; 37.9% Hispanic; 21.7% Black; 7.4% Other). Therefore, without a lens of cultural sensitivity and awareness, as well as maternal inquiry, parenting practices may be viewed as norms in one culture, but not the next; this may become disentangled with the Westernized interpretation of quality parent-child attachments.

Conclusions

This study added to the body of literature on the relation between adolescent maternal trauma and PTSD, parenting practices, and children's developmental outcomes by investigating the construct of mother-child attachment, while examining the potential protective factor of home-visiting intervention services as a buffer for secure parent-child attachments. These findings are important when considering clinical significance. While the results were not significant, the literature has supported a relationship between PTSD and child attachment (Rothbaum 1995; Bowlby, 1998; Cohen et al., 2008), therefore calling for further investigation in this field in order to best support children and families. Overall, this study does find the potential for positive outcomes from non-significant results; meaning, no relationship between maternal PTSD and insecure child attachment strengthens and supports the idea that young mothers have the potential and are likely to be resilient amidst challenging circumstances (internal and external) and ecological risks.

References

- Acereto, R. N. (2016). The past in the present: Associations between attachment trauma, psychological well-being, maternal self-efficacy, and mothers' representations of caregiving (Order No. 10116347). Available from ProQuest Dissertations & Theses Global. (1802535496).
- Ahmed, A. S. (2007). Post-traumatic stress disorder, resilience and vulnerability. *Advances in Psychiatric Treatment, 13*(5), 369-375.
- Ainsworth, M. D. S. (1982). *Attachment: Retrospect and prospect*. Basic books.
- 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.
- American Academy of Pediatrics Council on Child and Adolescent Health. (1998). The role of home-visitation programs in improving health outcomes for children and families. *Pediatrics, 101*, 486–489.
- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Andersson, P. K. (2015). Quality of the relationship between origin of childhood perception of attachment and outcome of attachment associated with diagnosis of PTSD in adult Finnish war children and Finnish combat veterans from World War II (1939–1945)—DSM-IV applications of the attachment theory. *International psychogeriatrics, 27*(6), 1039-1048.

- Balaev, M. (2008). Trends in literary trauma theory. *Mosaic: A Journal for the Interdisciplinary Study of Literature*, 149-166.
- Balaji, A. B., Claussen, A. H., Smith, D. C., Visser, S. N., Morales, M. J., & Perou, R. (2007). Social support networks and maternal mental health and well-being. *Journal of Women's Health* (2002), 16(10), 1386–1396.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: a test of a four-category model. *Journal of personality and social psychology*, 61(2), 226.
- Belsky, J., & de Haan, M. (2011). Annual research review: Parenting and children's brain development: The end of the beginning. *Journal of Child Psychology and Psychiatry*, 52(4), 409-428.
- Belsky, J., Jaffee, S. R., Sligo, J., Woodward, L., & Silva, P. A. (2005). Intergenerational transmission of warm-sensitive-stimulating parenting: A prospective study of mothers and fathers of 3-year-olds. *Child development*, 76(2), 384-396.
- Belsky, J., Rovine, M., & Taylor, D. G. (1984). The Pennsylvania Infant and Family Development Project, III: The origins of individual differences in infant-mother attachment: Maternal and infant contributions. *Child development*, 718-728.
- Belur, J., Tompson, L., Thornton, A., & Simon, M. (2018). Interrater reliability in systematic review methodology: exploring variation in coder decision-making. *Sociological methods & research*, 0049124118799372.

Bert, S.C., Guner, B.M., & Lanzi, R.G. (2009). The influence of maternal history of abuse on parenting knowledge and behavior. *Family Relations*, 58, 176-187.

Black, J., Jones, T.A., Nelson, C.A., & Greenough, W.T. (1998). Neuronal plasticity and the developing brain. In N.E. Aless, J.T. Coyle, S.I. Harrison, & S. Eth (Eds.), *Handbook of child and adolescent psychiatry* (pp. 31– 53). New York: Wiley.

Blakemore, S., & Choudhury, S. (2006). Development of the adolescent brain: Implications for executive function and social cognition. *Journal of Child Psychology and Psychiatry*, 47(3-4), 296-312.

Bödeker, K., Fuchs, A., Führer, D., Kluczniok, D., Dittrich, K., Reichl, C., ... & Neukel, C. (2019). Impact of maternal early life maltreatment and maternal history of depression on child psychopathology: mediating role of maternal sensitivity?. *Child psychiatry & human development*, 50(2), 278-290.

Bohus, M. (2018, April). Borderline Personality Disorder and Post-Traumatic Stress Disorder. Slides presented at Borderline Personality Disorder Patient and Family Education Initiative Webinar: BPD and PTSD at McLean Hospital, Harvard Medical School Affiliate and Teaching Hospital, Belmont, MA.

Bosquet Enlow, Kitts, Blood, Bizarro, Hofmeister, & Wright. (2011). Maternal posttraumatic stress symptoms and infant emotional reactivity and emotion regulation. *Infant Behavior and Development*, 34(4), 487-503.

Bowlby, J. (1969). Attachment and loss: volume I: attachment. In *Attachment and Loss: Volume I: Attachment* (pp. 1-401). London: The Hogarth Press and the Institute of Psycho-Analysis.

Bowlby, J. (1973). Attachment and loss, vol. II: Separation. Basic Books.

Bowlby, J. (1982). Attachment and loss: retrospect and prospect. *American journal of Orthopsychiatry*, 52(4), 664.

Bowlby, J. (1988). A secure base: Parent-child attachment and healthy human development Basic Books, New York, NY.

Brandt, K., C. N. M., Perry, B. D., Stephen Seligman, D. M. H., & Tronick, E. (Eds.). (2013). *Infant and early childhood mental health: Core concepts and clinical practice*. American Psychiatric Pub.

Brandt, K., C. N. M., Perry, B. D., Stephen Seligman, D. M. H., & Tronick, E. (Eds.). (2013). *Infant and early childhood mental health: Core concepts and clinical practice*. American Psychiatric Pub.

Brazeau, N. (2015). The association between compromised caregiving, social support and maternal self-efficacy (Order No. 1586892). Available from ProQuest Dissertations & Theses Global. (1678107753).

Bretherton, I. (1992). The origins of attachment theory: John bowlby and mary ainsworth. *Developmental Psychology*, 28(5), 759-775.

Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). Assessing internal working models of the attachment relationship. *Attachment in the preschool years: Theory, research, and intervention*, 273, 308.

Britner, P., & Reppucci, N. (1997). Prevention of child maltreatment: Evaluation of a parent education program for teen mothers. *Journal of Child and Family Studies*, 6(2), 165-175.

Bronfenbrenner, U. (1992). *Ecological systems theory*. Jessica Kingsley Publishers.

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard university press.

Brooks-Gunn, J., & Furstenberg Jr, F. F. (1986). The children of adolescent mothers: Physical, academic, and psychological outcomes. *Developmental review*, 6(3), 224-251.

Brown, G. L., Mangelsdorf, S. C., Shigeto, A., & Wong, M. S. (2018). Associations between father involvement and father-child attachment security: Variations based on timing and type of involvement. *Journal of family psychology*, 32(8), 1015.

Buka, S. L., Stichick, T. L., Birdthistle, I., & Earls, F. J. (2001). Youth exposure to violence: Prevalence, risks, and consequences. *American journal of Orthopsychiatry*, 71(3), 298-310.

Caldera, D., Burrell, L., Rodriguez, K., Crowne, S. S., Rohde, C., & Duggan, A. (2007). Impact of a statewide home visiting program on parenting and on child health and development. *Child abuse & neglect*, 31(8), 829-852.

Calhoun, L. G., & Tedeschi, R. G. (Eds.). (2014). *Handbook of posttraumatic growth: Research and practice*. Routledge.

- Casey, B. J., Getz, S., & Galvan, A. (2008). The adolescent brain. *Developmental review*, 28(1), 62-77.
- Cassidy, J. (1988). Child-mother attachment and the self in six-year-olds. *Child development*, 121-134.
- Cassidy, J., Marvin, R. S. & the MacArthur Working Group on Attachment (1992). *Attachment organization in preschool children: Coding guidelines*, 4th edition. Unpublished manuscript, University of Virginia.
- Cassidy, J. A., & Shaver, P. R. (2016). *Handbook of attachment: Theory, research, and clinical applications*.
- Cauce, A. M., Domenech-Rodríguez, M., Paradise, M., Cochran, B. N., Shea, J. M., Srebnik, D., & Baydar, N. (2002). Cultural and contextual influences in mental health help seeking: a focus on ethnic minority youth. *Journal of consulting and clinical psychology*, 70(1), 44.
- Chambers, R. (1989). *Vulnerability, coping and policy-Introduction*.
- Choi-Kain, L., & Gunderson, J. (2015). *Borderline personality and mood disorders: Comorbidity and controversy*. New York: Springer.
- Cohen, L., Hien, D., & Batchelder, S. (2008). The Impact of Cumulative Maternal Trauma and Diagnosis on Parenting Behavior. *Child Maltreatment*, 13(1), 27-38.
- Coleman, P. K. (2003). Perceptions of parent-child attachment, social self-efficacy, and peer relationships in middle childhood. *Infant and Child Development: An International Journal of Research and Practice*, 12(4), 351-368.

Colton, A. G. (2006). The Anna Freud Centre Narrative Coding System: A study of the reliability and validity of a new coding system for the MacArthur Story Stem Battery.

University of London, University College London (United Kingdom).

Cook, A., Spinazzola, J., Ford, J., Lanktree, C., Blaustein, M., Cloitre, M., ... & Mallah, K.

(2017). Complex trauma in children and adolescents. *Psychiatric annals*, 35(5), 390-398.

Cortina, L., & Kubiak, S. (2006). Gender and Posttraumatic Stress: Sexual Violence as an

Explanation for Women's Increased Risk. *Journal of Abnormal Psychology*, 115(4), 753-759.

Costandi, M. (2016). *Neuroplasticity*. MIT Press.

Coyne, C. A., & D'Onofrio, B. M. (2012). Some (but not much) progress toward understanding

teenage childbearing: A review of research from the past decade. In *Advances in child development and behavior* (Vol. 42, pp. 113-152). JAI.

Dermott, E., & Pomati, M. (2016). 'Good' parenting practices: How important are poverty, education and time pressure?. *Sociology*, 50(1), 125-142.

DiGangi, J. A., Gomez, D., Mendoza, L., Jason, L. A., Keys, C. B., & Koenen, K. C. (2013).

Pretrauma risk factors for posttraumatic stress disorder: A systematic review of the literature. *Clinical Psychology Review*, 33(6), 728-744.

Doidge, N. (2007). The brain that changes itself: Stories of personal triumph from the frontiers of brain science. Penguin.

- Duggan, A., Caldera, D., Rodriguez, K., Burrell, L., Rohde, C., & Crowne, S. S. (2007). Impact of a statewide home visiting program to prevent child abuse. *Child abuse & neglect, 31*(8), 801-827.
- Duggan, A., Portilla, X. A., Filene, J. H., Crowne, S. S., Hill, C. J., Lee, H., & Knox, V. (2018). Implementation of evidence-based early childhood home visiting: Results from the Mother and Infant Home Visiting Program Evaluation. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
- Easterbrooks, M. A., Bartlett, J. D., Raskin, M., Goldberg, J., Contreras, M. M., Kotake, C., ... & Jacobs, F. H. (2013). Limiting home visiting effects: maternal depression as a moderator of child maltreatment. *Pediatrics, 132*(Supplement 2), S126-S133.
- Easterbrooks, M. A., Chaudhuri, J. H., Bartlett, J. D., & Copeman, A. (2011). Resilience in parenting among young mothers: Family and ecological risks and opportunities. *Children and Youth Services Review, 33*(1), 42-50.
- Easterbrooks, M. A., & Goldberg, W. A. (1984). Toddler development in the family: Impact of father involvement and parenting characteristics. *Child development, 740-752*.
- Emde, R. N., Wolf, D. P., & Oppenheim, D. (Eds.). (2003). Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent-child narratives. Oxford University Press.

- Enlow, M. B., Egeland, B., Carlson, E., Blood, E., & Wright, R. J. (2014). Mother–infant attachment and the intergenerational transmission of posttraumatic stress disorder. *Development and psychopathology*, *26*(1), 41-65.
- Fanning, J. R., Lee, R., Gozal, D., Coussons-Read, M., & Coccaro, E. F. (2015). Childhood trauma and parental style: Relationship with markers of inflammation, oxidative stress, and aggression in healthy and personality disordered subjects. *Biological psychology*, *112*, 56-65.
- Fauth, R. C., Winestone, J. G., & Goldberg, J. HOME VISITING FOR SYSTEM INVOLVED YOUNG MOTHERS.
- Fleary, S. A., Ettienne-Gittens, R., & Heffer, R. W. (2013). Perceptions of preventive health care and healthy lifestyle choices for low income families: a qualitative study. *ISRN preventive medicine*, *2013*.
- Fonagy, P. (1999). Psychoanalytic theory from the viewpoint of attachment theory and research.
- Forgash, C., & Knipe, J. (2012). Integrating EMDR and ego state treatment for clients with trauma disorders. *Journal of EMDR Practice and Research*, *6*(3), 120-128.
- Furstenberg Jr, F. F., Brooks-Gunn, J., & Morgan, S. P. (1987). Adolescent mothers and their children in later life. *Family planning perspectives*, 142-151.
- Gardner, M., & Steinberg, L. (2005). Peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: an experimental study. *Developmental psychology*, *41*(4), 625.

- Gee, C. B., & Rhodes, J. E. (2003). Adolescent mothers' relationship with their children's biological fathers: Social support, social strain and relationship continuity. *Journal of Family Psychology, 17*(3), 370.
- George, C., & Solomon, J. (1996). Representational models of relationships: Links between caregiving and attachment. *Infant Mental Health Journal, 17*(3), 198-216.
- George, C., & Solomon, J. (2011). Caregiving helplessness: The development of a screening measure for disorganized maternal caregiving. In J. Solomon, & C. George (Eds.), *Disorganized attachment and caregiving; disorganized attachment and caregiving* (pp. 133-166, Chapter xix, 427 Pages) The Guilford Press, New York, NY.
- Gewirtz, S (2001) Cloning the Blairs: New Labour's programme for the re-socialisation of working-class parents. *Journal of Education Policy 16*(4): 365–378.
- Gomby, D. S., Culross, P. L., & Behrman, R. E. (1999). Home visiting: Recent program evaluations--analysis and recommendations. *The Future of Children, 9*(1), 4.
- Green, J., Goldwyn, R., & Stanley, C. (2000). A new method of evaluating attachment representations in young school-age children: The Manchester Child Attachment Story Task. *Attachment and Human Development, 2*, 48–70.
- Grey, I. K., & Yates, T. M. (2014). Preschoolers' narrative representations and childhood adaptation in an ethn racially diverse sample. *Attachment & human development, 16*(6), 613-632.
- Grossmann, K., Grossmann, K. E., Fremmer-Bombik, E., Kindler, H., Scheuerer-Englisch, H., & Zimmermann, A. P. (2002). The uniqueness of the child–father attachment relationship:

Fathers' sensitive and challenging play as a pivotal variable in a 16-year longitudinal study. *Social development, 11*(3), 301-337.

Grossmann, K., Grossmann, K. E., Kindler, H., Zimmermann, P., Cassidy, J., & Shaver, P. R. (2008). Handbook of attachment: Theory, research, and clinical applications. *Handbook of attachment: Theory, research, and clinical applications, 857-879.*

Guterman, N. B. (2001). Stopping child maltreatment before it starts: Emerging horizons in early home visitation services. Thousand Oaks, CA: Sage Publications.

Hamblen, J., & Barnett, E. (2018). PTSD: National center for ptsd.

Hamilton, C. E. (2000). Continuity and discontinuity of attachment from infancy through adolescence. *Child development, 71*(3), 690-694.

Harlow, H. F. (1959). Love in infant monkeys. *Scientific American, 200*(6), 68-75.

Healthy Families America (2014). Healthy Families America. *2014 Annual Report*. <http://www.healthyfamiliesamerica.org>.

Hedtke, K. A., Ruggiero, K. J., Fitzgerald, M. M., Zinzow, H. M., Saunders, B. E., Resnick, H. S., & Kilpatrick, D. G. (2008). A longitudinal investigation of interpersonal violence in relation to mental health and substance use. *Journal of Consulting and Clinical Psychology, 76*(4), 633.

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
- Herman (1992). Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. *Journal of Traumatic Stress*, 5, 377-391.
- Herman, J. (1997). *Trauma and Recovery*. New York, NY: Basic Books.
- Hinde, R. (2005). Ethology and attachment theory. *Attachment for infancy to adulthood: The major longitudinal studies*, 1-12.
- Hope, E. C., & Spencer, M. B. (2017). Civic engagement as an adaptive coping response to conditions of inequality: An application of phenomenological variant of ecological systems theory (PVEST). In *Handbook on positive development of minority children and youth* (pp. 421-435). Springer, Cham.
- Hopkins, J., Gouze, K. R., & Lavigne, J. V. (2013). Direct and indirect effects of contextual factors, caregiver depression, and parenting on attachment security in preschoolers. *Attachment & human development*, 15(2), 155-173.
- Howard, K. S., & Brooks-Gunn, J. (2009). The role of home-visiting programs in preventing child abuse and neglect. *The future of Children*, 19(2), 119-146.
- Howes, C., Vu, J., & Hamilton, C. (2011). Mother-Child Attachment Representation and Relationships Over Time in Mexican-Heritage Families. *Journal of Research in Childhood Education*, 25(3), 228-247.

- International Strategy for Disaster Reduction. (2004). *Living with risk: A global review of disaster reduction initiatives* (Vol. 1). United Nations Publications.
- Jackson, A. P. (2000). Maternal self-efficacy and children's influence on stress and parenting among single black mothers in poverty. *Journal of Family Issues*, *21*(1), 3-16.
- Jacobs, F., Easterbrooks, M. A., Goldberg, J., Mistry, J., Bumgarner, E., Raskin, M., ... & Fauth, R. (2016). 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.
- Jaffee, S. R., & Christian, C. W. (2014). The Biological Embedding of Child Abuse and Neglect Implications for Policy and Practice. Social Policy Report. Volume 28, Number 1. *Society for Research in Child Development*.
- Jones, R. T., Hadder, J. M., Carvajal, F., Chapman, S., & Alexander, A. (2006). Conducting research in diverse, minority, and marginalized communities. *Methods for disaster mental health research*, 265-277.
- Joseph, S., & Hefferon, K. (2013). Post-traumatic growth: Eudaimonic happiness in the aftermath of adversity. In *Oxford Handbook of Happiness*.
- Karreman, A., & Vingerhoets, A. J. (2012). Attachment and well-being: The mediating role of emotion regulation and resilience. *Personality and Individual differences*, *53*(7), 821-826.
- Keenan, T., Evans, S., & Crowley, K. (2016). *An introduction to child development*. Sage.

- Klein, J. D. (2005). Adolescent pregnancy: Current trends and issues. *Pediatrics*, *116*(1), 281–286. <https://doi.org/10.1542/peds.2005-0999>
- Kleinman, S. (2018) An Overview of Treatments for PTSD [PowerPoint]. Retrieved from canvas online.
- Klett-Davies, M. (Ed.). (2010). *Is parenting a class issue?*. Family and Parenting Institute.
- Knipe, J. (2018). EMDR toolbox: Theory and treatment of complex PTSD and dissociation. Springer Publishing Company.
- Layne, C. M., Olsen, J. A., Baker, A., Legerski, J.-P., Isakson, B., Pašalic', A., ... Pynoos, R. (2010). Unpacking trauma exposure risk factors and differential pathways of influence: Predicting post-war mental distress in Bosnian adolescents. *Child Development*, *81*, 1053–1076.
- Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin*, *126*(2), 309–337.
- Lipschitz, D. S., Rasmusson, A. M., Anyan, W., Cromwell, P., & Southwick, S. M. (2000). Clinical and functional correlates of posttraumatic stress disorder in urban adolescent girls at a primary care clinic. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*(9), 1104-1111.
- Loeb, T. B., Joseph, N. T., Wyatt, G. E., Zhang, M., Chin, D., Thames, A., & Aswad, Y. (2018). Predictors of somatic symptom severity: The role of cumulative history of trauma and

- adversity in a diverse community sample. *Psychological Trauma: Theory, Research, Practice, and Policy*, 10(5), 491.
- Maccoby, E. E., Martin, J. A., Mussen, P. H., & Hetherington, E. (1983). Handbook of child psychology.
- Macfie, J., Cicchetti, D., & Toth, S. L. (2001). Dissociation in maltreated versus nonmaltreated preschool-aged children. *Child Abuse & Neglect*, 25(9), 1253-1267.
- Madigan, S., Benoit, D., & Boucher, C. (2011). Exploration of the links among fathers' unresolved states of mind with respect to attachment, atypical paternal behavior, and disorganized infant–father attachment. *Infant Mental Health Journal*, 32(3), 286-304.
- Main, M., & Hesse, E. (1990). Parent's unresolved traumatic experiences are related to disorganized attachment status. IN GREENBURG, M., CICCETTI, D. & CUMMINGS, E.(Eds.) Attachment in the Preschool Years: Theory, Research and Intervention.
- Maitlis, S. (2019). Posttraumatic growth at work. *Annual Review of Organizational Psychology and Organizational Behavior*, 7.
- Martin, A., & Brooks-Gunn, J. (2015). Has adolescent childbearing been eclipsed by nonmarital childbearing? *Societies*, 5(4), 734–743.
- McCutcheon, V., Sartor, C., Pommer, N., Bucholz, K., Nelson, E., Madden, P., & Heath, A. (2010). Age at trauma exposure and PTSD risk in young adult women. *Journal of Traumatic Stress*, 23(6), 811-814.

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*, 86-93.

Mohatt, Thompson, Thai, & Tebes. (2014). Historical trauma as public narrative: A conceptual review of how history impacts present-day health. *Social Science & Medicine*, *106*, 128-136.

Mol, S. S., Arntz, A., Metsemakers, J. F., Dinant, G. J., Vilters-van Montfort, P. A., &

Knottnerus, J. A. (2005). Symptoms of post-traumatic stress disorder after non-traumatic events: Evidence from an open population study. *The British Journal of Psychiatry*, *186*(6), 494-499.

Mollborn, S., & Dennis, J. A. (2012). Investigating the life situations and development of teenage mothers' children: Evidence from the ECLS-B. *Population Research and Policy Review*, *31*(1), 31-66.

Murphy, T. P., & Laible, D. J. (2013). The influence of attachment security on preschool children's empathic concern. *International Journal of Behavioral Development*, *37*(5), 436-440.

Nygaard, E., Jensen, T. K., & Dyb, G. (2012). Stability of posttraumatic stress reaction factors and their relation to general mental health problems in children: A longitudinal study. *Journal of Clinical Child & Adolescent Psychology*, *41*, 15-26. doi: 10.1080/15374416.2012.632344.

- O'Connor, T., & Gerard Byrne, J. (2007). Attachment Measures for Research and Practice. *Child and Adolescent Mental Health, 12*(4), 187-192.
- Olf, M., Langeland, W., Draijer, N., & Gersons, B. P. (2007). Gender differences in posttraumatic stress disorder. *Psychological bulletin, 133*(2), 183.
- Oppenheim, D. (2006). Child, parent, and parent–child emotion narratives: Implications for developmental psychopathology. *Development and Psychopathology, 18*(3), 771-790.
- Orlans, M., & Levy, T. M. (2014). Attachment, trauma, and healing: Understanding and treating attachment disorder in children, families and adults. Jessica Kingsley Publishers.
- Orr, S. P., Lasko, N. B., Macklin, M. L., Pineles, S. L., Chang, Y., & Pitman, R. K. (2012). Predicting post-trauma stress symptoms from pre-trauma psychophysiological reactivity, personality traits and measures of psychopathology. *Biology of mood & anxiety disorders, 2*(1), 8.
- Osofsky, J. D., & Thompson, M. D. (2000). Adaptive and maladaptive parenting: Perspectives on risk and protective factors. *Handbook of early childhood intervention, 2*, 54-75.
- Parson, E. R. (1985). Ethnicity and traumatic stress: The intersecting point in psychotherapy. *Trauma and its wake, 1*, 314-337.
- Perry-Parrish, Copeland-Linder, Webb, & Sibinga. (2016). Mindfulness-Based Approaches for Children and Youth. *Current Problems in Pediatric and Adolescent Health Care, 46*(6), 172-178.

Peterson, L., Gable, S., & Saldana, L. (1996). Treatment of maternal addiction to prevent child abuse and neglect. *Addictive Behaviors*, 21, 789–801.

Pott, M. (2019) A Closer Look at Attachment Theory [PowerPoint]. Retrieved from canvas online.

Pott, M. (2019) Principles of Attachment Theory [PowerPoint]. Retrieved from canvas online.

Raikes, H. A., & Thompson, R. A. (2006). Family emotional climate, attachment security and young children's emotion knowledge in a high risk sample. *British Journal of Developmental Psychology*, 24(1), 89-104.

Raskin, M., Easterbrooks, M.A., Fauth, R.C., Jacobs, F., Fosse, N., Goldberg, J.L., & Mistry, J. (2017). Patterns of goal attainment among young mothers in a home visiting program. *Applied Developmental Science*

Reiner, I., Keisler Splaun, A.B. (2008). Story Stems Attachment Focused Coding System. Unpublished manuscript.

Rhee, T.G., Barry, L.C., Kuchel, G.A., Steffens, D.C. and Wilkinson, S.T. (2019), Associations of Adverse Childhood Experiences with Past-Year DSM-5 Psychiatric and Substance Use Disorders in Older Adults. *J Am Geriatr Soc*, 67: 2085-2093.

Robinson, J., Hérot, C., Haynes, P., & Mantz-Simmons, L. (2000). Children's story stem responses: a measure of program impact on developmental risks associated with dysfunctional parenting. *Child Abuse & Neglect*, 24(1), 99-110.

- Robinson, J., & Mantz-Simmons, L. I. N. D. A. (2003). The MacArthur Narrative Coding System: one approach to highlighting affective meaning making in the MacArthur Story Stem Battery. *Revealing the inner worlds of young children: The MacArthur Story Stem Battery and parent-child narratives*, 81-91.
- Rothbaum, F., Rosen, K. S., Pott, M., & Beatty, M. (1995). Early parent-child relationships and later problem behavior: A longitudinal study. *Merrill-Palmer Quarterly*.
- Roussos, A., Goenjian, A. K., Steinberg, A. M., Sotiropoulou, C., Kakaki, M., Kabakos, C., ... Manouras, V. (2005). Posttraumatic stress and depressive reactions among children and adolescents after the 1999 earthquake in Ano Liosia, Greece. *American Journal of Psychiatry*, 162, 530-537. doi:10.1176/appi.ajp.162.3.530.
- Sagi, A., Lamb, M. E., & Gardner, W. (1986). Relations between Strange Situation behavior and stranger sociability among infants on Israeli kibbutzim. *Infant Behavior and Development*, 9(3), 271-282.
- Sangalang, C., & Vang, C. (2017). Intergenerational Trauma in Refugee Families: A Systematic Review. *Journal of Immigrant and Minority Health*, 19(3), 745-754.
- Schaffer, H. R. (1996). *Social development*. Blackwell Publishing.
- Scharfe, E., & Bartholomew, K. I. M. (1994). Reliability and stability of adult attachment patterns. *Personal relationships*, 1(1), 23-43.
- Schechter, D. S., Zygumt, A., Coates, S. W., Davies, M., Trabka, K. A., McCaw, J., ... & Robinson, J. L. (2007). Caregiver traumatization adversely impacts young children's

- mental representations on the MacArthur Story Stem Battery. *Attachment & Human Development, 9*(3), 187-205.
- Scott, D. (1992). Early identification of maternal depression as a strategy in the prevention of child abuse. *Child Abuse & Neglect, 16*, 345–358.
- Sedgh, G., Finer, L. B., Bankole, A., Eilers, M. A., & Singh, S. (2015). Adolescent pregnancy, birth, and abortion rates across countries: levels and recent trends. *Journal of Adolescent Health, 56*(2), 223-230.
- Selin, H. (Ed.). (2013). Parenting across cultures: Childrearing, motherhood and fatherhood in Non-Western Cultures (Vol. 7). Springer Science & Business Media.
- Sharp, L. K., & Lipsky, M. S. (2002). Screening for depression across the lifespan: a review of measures for use in primary care settings. *American Academy of Family Physicians, 66*(6), 1001–1008.
- Soet, J. E., Brack, G. A., & DiIorio, C. (2003). Prevalence and predictors of women's experience of psychological trauma during childbirth. *Birth, 30*(1), 36-46.
- Spear, L. P. (2000). The adolescent brain and age-related behavioral manifestations. *Neuroscience & Biobehavioral Reviews, 24*(4), 417-463.
- Spencer, M. B. (2007). Phenomenology and ecological systems theory: Development of diverse groups. *Handbook of child psychology, 1*.

- Spencer, M. B., Dupree, D., & Hartmann, T. (1997). A phenomenological variant of ecological systems theory (PVEST): A self-organization perspective in context. *Development and psychopathology*, 9(4), 817-833.
- Splaun, A. (2012). The brief attachment-focused coding system for story stems: A validity study (Doctoral dissertation, New School University).
- Splaun, A. K., Reiner, I., Steele, M., Steele, H., & Murphy, A. (2010). The congruence of parents' and their children's representations of their relationship. *The New School Psychology Bulletin*, 7(1).
- Stadelmann, S., Perren, S., Von Wyl, A., & Von Klitzing, K. (2007). Associations between family relationships and symptoms/strengths at kindergarten age: what is the role of children's parental representations?. *Journal of Child Psychology and Psychiatry*, 48(10), 996-1004.
- Stanger-Hall, K. F., & Hall, D. W. (2011). Abstinence-only education and teen pregnancy rates: Why we need comprehensive sex education in the US. *PloS one*, 6(10).
- Steele, H., Steele, M., & Croft, C. (2008). Early attachment predicts emotion recognition at 6 and 11 years old. *Attachment & Human Development*, 10(4), 379-393.
- Steele, H., Steele, M., & Fonagy, P. (1996). Associations among attachment classifications of mothers, fathers, and their infants. *Child development*, 67(2), 541-555.

Steinberg, A. M., Brymer, M. J., Decker, K. B., & Pynoos, R. S. (2004). The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index. *Current Psychiatry Reports*, 6, 96-100. doi: 10.1007/s11920-004-0048-2.

Steiner, H., Garcia, I. G., & Matthews, Z. (1997). Posttraumatic stress disorder in incarcerated juvenile delinquents. *Journal of the American Academy of Child & Adolescent Psychiatry*, 36(3), 357-365.

Stockman, K., & Budd, K. (1997). Directions for intervention with adolescent mothers in substitute care. *Families in Society*, 78(6), 617-623.

Suess, G. J., & Sroufe, J. (2005). Clinical implications of the development of the person. *Attachment & Human Development*, 7(4), 381-392.

Target, M., Fonagy, P., & Shmueli-Goetz, Y. (2003). Attachment representations in school-age children: The development of the Child Attachment Interview (CAI). *Journal of child psychotherapy*, 29(2), 171-186.

Toraif, N. M. (2018). The Relation between Adolescent Mothers' Trauma, Emotional Availability, and Children's Emotion Regulation (Doctoral dissertation, Tufts University).

Tufts Interdisciplinary Evaluation Research. The Massachusetts Healthy Families Evaluation- 2 (MHFE-2): A randomized controlled trial of a statewide home visiting program for young parents. Final report to the Children's Trust of Massachusetts. Medford, MA: Tufts University; 2015.

Turner, H. A., & Butler, M. J. (2003). Direct and indirect effects of childhood adversity on depressive symptoms in young adults. *Journal of youth and adolescence*, 32(2), 89-103.

- Van der Kolk, B. A. (2017). Developmental trauma disorder: toward a rational diagnosis for children with complex trauma histories. *Psychiatric annals*, 35(5), 401-408.
- Van der Kolk, B. A., Roth, S., Pelcovitz, D., Sunday, S., & Spinazzola, J. (2005). Disorders of extreme stress: The empirical foundation of a complex adaptation to trauma. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, 18(5), 389-399.
- Van Ijzendoorn, M. H. (1995). Adult attachment representations, parental responsiveness, and infant attachment: a meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological bulletin*, 117(3), 387.
- Veríssimo, M., Santos, A. J., Vaughn, B. E., Torres, N., Monteiro, L., & Santos, O. (2011). Quality of attachment to father and mother and number of reciprocal friends. *Early Child Development and Care*, 181(1), 27-38.
- Verschueren, K., & Marcoen, A. (1999). Representation of self and socioemotional competence in kindergartners: Differential and combined effects of attachment to mother and to father. *Child development*, 70(1), 183-201.
- Vranceanu, A. M., Hobfoll, S. E., & Johnson, R. J. (2007). Child multi-type maltreatment and associated depression and PTSD symptoms: The role of social support and stress. *Child abuse & neglect*, 31(1), 71-84.
- Wamser-Nanney, R. (2019). Posttraumatic Stress Disorder and Expectations of Parenthood and Children's Development. *Journal of traumatic stress*, 32(2), 277-286.

Ward, M. J., & Carlson, E. A. (1995). Associations among adult attachment representations, maternal sensitivity, and infant-mother attachment in a sample of adolescent mothers. *Child development*, 66(1), 69-79.

Zucker, M., Spinazzola, J., Blaustein, M., & Van der Kolk, B. A. (2006). Dissociative symptomatology in posttraumatic stress disorder and disorders of extreme stress. *Journal of Trauma & Dissociation*, 7(1), 19-31.

Zwillich, T. (2000). US healthcare system missing most mentally ill children and adolescents. *Washington, DC: Reuters Medical News*.

Appendices

Table 1.

Demographics for Analytic Sample (N=203)

		<i>Frequency</i>	%	Valid Percent
Race/Ethnicity	White	67	33.0	33.0
	Hispanic	77	37.9	37.9
	Black	44	21.7	21.7
	Other	15	7.4	7.4
	Total	203	100.00	100.00
Live with adult relative	Yes	159	78.3	79.5
	No	41	20.2	20.5
	Total	200	98.5	100.0
	Missing	3	1.5	
Mother's Pregnancy Status	Pregnant at enrollment	135	66.5	66.5
	Parenting at enrollment	68	33.5	33.5
	Total	203	100.0	100.0
Relationship status	Single	62	30.5	30.8
	Dating father of baby	38	18.7	18.9
	Engaged or married to father of baby	90	44.3	44.8
	Other Partner	11	5.4	5.5
	Total	201	99.0	100.0
	Missing	2	1.0	
	N	Minimum	Maximum	Mean
Mother age (yrs.) at birth of child	203	15.8	21.4	18.9

Table 2.

Descriptive Statistics for UCLA Post-Traumatic Stress Disorder Reaction Index at Time 1 (n = 203); PTSD met (full or partial) = 1, PTSD not met (not met or no trauma) = 0

		<i>N</i>	Valid Percent
Valid	PTSD Criteria Met (full or partial)	102	50.2
	PTSD Criteria Not Met (No PTSD)	101	49.8
	Total	203	100

Table 3.*Means and Standard Deviations for Macarthur Story Stem Battery at Time 5 (n= 203)*

	<i>n</i>	Range Statistic	Mean	Std. deviation statistic	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
Attachment Avoidance of Mother	203	3.0	2.5	.54	.10	.17	-.26	.34
Rejecting Mother	203	3.3	1.53	.60	1.52	.17	2.64	.34
Supportive Mother	203	2.67	2.11	.67	.16	.17	-.64	.34
Valid N (listwise)	203							

Table 4.

Ordinary least squares (OLS) regression analysis exploring the relationship between maternal PTSD and child attachment

Variable	<i>Supportive Mother</i>			<i>Rejecting Mother</i>			<i>Attachment Avoidance of Mother</i>		
	<i>B (SE)</i>	<i>t</i>	<i>R₂</i>	<i>B (SE)</i>	<i>t</i>	<i>R₂</i>	<i>B (SE)</i>	<i>t</i>	<i>R₂</i>
Step 1: Main Effects									
PTSD	.094 (.094)	1.001	.005	.031(.084)	.366	.001	-.123 (.075)	-1.64	.013
Step 2: Covariates									
PTSD	.099 (.095)	1.04		.046 (.083)	.551	.079	-.130 (.077)	-1.69	.029
Mother age (in years) at birth of child	-.061 (.038)	-1.615		-.042 (.033)	-1.265		.025 (.030)	.835	
Mother Race/Ethnicity: Black	-.118 (.131)	-.904		.387 (.115)	3.36		.128 (.106)	1.20	
Mother Race/Ethnicity: Hispanic	-.001 (.115)	-.004		.066 (.101)	.658		.025 (.093)	.270	
Mother Race/Ethnicity: Other	-.065(.194)	-.334		-.048 (.170)	-.282		.071 (.157)	.455	
Mother is Single	.007 (.103)	.072		-.116 (.090)	-1.29		.089 (.083)	1.07	

Note: non-Hispanic White mothers are omitted category.

Figure 1.

MHFE—2 Project timeline with the data collected at each point used for this study

