

PARENTAL FACTORS AND CHILD EMOTIONAL REGULATION: THE
MODERATING ROLE OF PARENTAL WARMTH

A DISSERTATION

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN THE GRADUATE SCHOOL OF THE
TEXAS WOMAN'S UNIVERSITY

DEPARTMENT OF FAMILY SCIENCES
COLLEGE OF PROFESSIONAL EDUCATION

BY

MOLLY LANGE B.S., M.A.

DENTON, TEXAS

DECEMBER 2019

Copyright © 2019 Molly Lange

ABSTRACT

MOLLY LANGE

PARENTAL FACTORS AND CHILD EMOTIONAL REGULATION: THE MODERATING ROLE OF PARENTAL WARMTH

DECEMBER 2019

Parental factors of stress, mental health, use of punitive punishment, and social support have been found to be significantly associated with child emotional regulation (Calkins, Smith, Gill, & Johnson, 1998; Chazan-Cohen et al., 2009; Mathis & Bierman, 2015; Maughan, Cicchetti, Toth, Rogosch, 2007; Morris, Silk, Steinberg, Myers, & Robinson, 2007; Mortensen & Barnett, 2018; Wilson, 2017). Parental warmth may buffer this relationship (Wang, Wang, Xing, 2018b). This type of research is specifically needed in at-risk populations in order to help buffer the negative effects experienced within this population, especially in regard to child socioemotional outcomes. Through an attachment lens, this study has utilized a longitudinal design to examine the moderating role of parental warmth in the relationship between parental factors and child emotional regulation. Specifically, this study utilized the data of mothers and children from the Early Head Start Research and Evaluation Project to consider how parental stress, parental mental health, parental use of punitive behavior, and parental social support are associated with child emotional regulation. Additionally, maternal parental warmth was examined as a moderator among these variables. This study found that parental factors (i.e. parental stress, parental mental health, parental use of punitive punishment and

parental social support) were significantly associated with child emotional regulation in an at-risk population, particularly parental mental health and parental use of punitive punishment. Additionally, although parental warmth did not play a moderating role among the considered variables, parental warmth was significantly associated with child emotional regulation.

TABLE OF CONTENTS

	Page
ABSTRACT	ii
LIST OF TABLES	vi
 Chapter	
I. INTRODUCTION	1
II. LITERATURE REVIEW	6
Attachment Theory	6
Emotional Regulation.....	8
Child Emotional Regulation and Attachment	10
Parental Influence on Attachment and Child Emotional Regulation	11
Parental Stress and Child Emotional Regulation	12
Parental Mental Health and Child Emotional Regulation	13
Parent Punitive Punishment and Child Emotional Regulation	14
Parental Social Support and Child Emotional Regulation.....	15
Parental Warmth as a Protective Factor	16
At Risk Populations	18
Other Influential Factors on Child Emotional Regulation	19
Demographic Variables	20
Family Conflict	20
The Current Study.....	21
III. METHODOLOGY	23
Sample.....	23
Measures.....	27
Parental Stress	27
Parental Mental Health	27
Parental Punitive Behavior	28
Social Support.....	29
Emotional Regulation.....	29
Maternal Parental Warmth.....	30
Control Variables.....	31
Analysis Plan	32
IV. RESULTS.....	35

Preliminary Analysis.....	35
Descriptive Information	36
Regression Models.....	38
RQ 1: Parental Factors and Child Emotional Regulation	38
RQ 2: Moderation Effects of Parental Warmth.....	40
Summary	46
V. DISCUSSION.....	48
Parental Factors and Child Emotional Regulation.....	48
Moderation Effects.....	52
Strengths and Limitations.....	54
Implications and Future Research.....	58
Conclusion	61
REFERENCES.....	65
APPENDICES.....	
A. Measures.....	79

LIST OF TABLES

Table	Page
1. Participants Reports for Independent, Dependent, and Control Variables:	
Descriptive Statistics.....	36
2. Participant Descriptive Statistics	38
3. Correlations Among Study Variables	38
4. Regression Models Predicting Emotional Regulation with IVs and Control	
Variables	40
5. Moderation Hierarchical Regression Model: Parental Stress/Parental Warmth	
and Emotional Regulation.....	42
6. Moderation Hierarchical Regression Model: Parental Mental Health/Parental	
Warmth and Emotional Regulation	43
7. Moderation Hierarchical Regression Model: Parental Use of Punitive	
Punishment/Parental Warmth and Emotional Regulation	44
8. Moderation Hierarchical Regression Model: Parental Social Support/Parental	
Warmth and Emotional Regulation	45

CHAPTER I

INTRODUCTION

“Children’s experience, expression, and management of emotion develop in an interpersonal context, and we do not have an adequate understanding of how the family – the earliest and most potent interpersonal context—shapes children’s emotion regulation.” (Fosco & Grych, 2012, p. 558)

Emotional regulation is crucial for optimal socioemotional child development (Gresham & Gullone, 2012; Gross, 2015; Hu et al., 2014; Mennin, Holaway, Fresco, Moore, & Heimberg, 2007; Schore & Schore, 2014). Emotional regulation has been linked to general well-being, mental health, social aptitude, and interpersonal abilities (Darling-Churchill & Lippman, 2016; Gresham & Gullone, 2012; Gross, 2015; Hu et al., 2014; Mennin et al., 2007; Schore & Schore, 2014). Conversely, inhibited emotion regulation strategies have been linked to psychological difficulties, such as depression and anxiety (Gresham & Gullone, 2012; Hu et al., 2014; Mennin et al., 2007). In fact, Schore and Schore (2014) suggest that affect dysregulation is at the root of all psychological and psychiatric disorders. At-risk children and families who experience chronic stressors are more likely to have inhibited emotional regulation strategies, and thus, the above negative outcomes are exacerbated (Chazan-Cohen et al., 2009; Evans & Kim, 2013; Mathis & Bierman, 2015; Schore, 2001). Therefore, given the impact of emotional regulation on general well-being and mental health and the increased risk of

inhibited emotional regulation in at-risk populations, a greater understanding must be gained of how emotional regulation is achieved.

Interpersonal attachment experiences are the context in which children's emotional regulation is shaped (Barrasso-Catanzaro & Eslinger, 2016; Fosco & Grych, 2012). Consistent positive, emotionally attuned, warm, and sensitive attachment experiences contribute to positive brain development (Schore, 2000b; Siegel, 2015). From positive brain development, specific socioemotional abilities, like emotional regulation, are successfully developed (Barrasso-Catanzaro & Eslinger, 2016; Fishbane, 2007; Hughes et al., 2015; Siegel, 2003; Schore, 2000b). Negative attachment experiences within these early years, when the brain's development is so sensitive to stress, increase the risk of later socioemotional disorders (Barrasso-Catanzaro & Eslinger, 2016; Schore, 2000b), such as inhibited emotional regulation. At-risk populations with families and children living in poverty tend to experience more stressors and negative attachment experiences and thus are at a higher risk of developing poor emotional regulation outcomes (Barrasso-Catanzaro & Eslinger, 2016; Brady-Smith et al., 2013; Marti, Bonillo, Jane, Fisher, & Duch, 2016; Whittaker, Harden, See, Meisch, & Westbrook, 2011).

Based on new brain technologies, advances in science, and extensive research, it is known that a secure attachment relationship is the foundation for the development of child emotional regulation (Barrasso-Catanzaro & Eslinger, 2016; Fishbane, 2007; Hughes, Golding, & Hudson, 2015; Schore, 2000a; Schore, 2012; Schore & Sieff, 2015; Siegel, 2003; Siegel, 2012; Zimmer-Gembeck et al., 2017). However, the nature of these

social attachment experiences that contribute to optimal brain development and emotional regulation is less understood (Schor, 2000b). Research must explore what factors influence this attachment relationship in order to gain a better understanding of the development of social and emotional processes that occur in the early years of life (Schor, 2000b).

There has been vast research done in an effort to better understand child emotional regulation (Barrasso-Catanzaro & Eslinger, 2016; Fishbane, 2007; Hughes, Golding, & Hudson, 2015; Schor, 2000a; Schor, 2012; Schor & Sieff, 2015; Siegel, 2003; Siegel, 2012; Siegel, 2015; Zimmer-Gembeck et al., 2017). Research continually points to the significance of the parent-child relationship, emphasizing the importance of parental warmth and parental sensitivity in promoting optimal emotional regulation (Schor, 2000a; Siegel, 2015; Zimmer-Gembeck et al., 2017). Additionally, much of the research has indicated that certain inhibiting parental factors, such as lack of parental social support, parental stress, parental mental health and parental use of punitive punishment, negatively influence child emotion regulation, especially within an at-risk population (Brady-Smith et al., 2013; Evans & Kim 2013, McLeod & Shanahan, 1993; Morris, Silk, Steinberg, Myers, & Robsinson, 2007; Schor, 2001; Stack, Serbin, Enns, Ruttle, & Barrieau, 2010; Whittaker et al., 2011). Yet, coming to a consensus on how these different influencing factors work together or correlate with positive emotional development has not been agreed upon (Fosco & Grych, 2012). Given the influence of these factors (parental warmth, parental stress, parental mental health, parental use of punitive punishment, and parental social support) on the parent-child attachment

relationship and child emotional regulation, as well as the fact that none of these factors work in isolation, more research must be done in an effort to better understand how these factors work together.

Gaining a better understanding of how these inhibiting parental factors (parental stress, parental mental health, parental use of punitive punishment and parental social support), protective factors (parental warmth), and child emotional regulation work together within an at-risk population is crucial in order for mental health professionals to help families develop and implement useful science-informed strategies and practices that contribute to healthy emotional development and regulation (Marti et al., 2016; Paschall et al., 2019; Siegel, 2015). Researchers and scholars recently pointed to the need for research that considers the process, or the circumstances and conditions around how variables are related (Anderson, Durtschi, Soloski, & Johnson, 2014; Whittaker et al., 2011; Marti et al., 2016). Simply knowing that two variables (X and Y) are related is less helpful than knowing under what circumstances this relationship happens (Anderson, Durtschi, Soloski, & Johnson, 2014). In the research, the use of a moderator allows for examination of the circumstances or process around a relationship and pinpoints practical interventions that can be used to influence the relationship between variables (Anderson, Durtschi, Soloski, & Johnson, 2014). Again, there is a great need for this type of research that focuses on practical preventative interventions to further support healthy relationships, particularly in at-risk populations to help buffer the negative effects experienced within this population on child outcomes (Marti et al., 2016; Paschall et al., 2019). This type of research, that focuses on the process of how variables interact, is

crucial to further the study of families (Anderson, Durtschi, Soloski, & Johnson, 2014).

The implications for children and families are significant and long lasting.

This study seeks to contribute to our understanding of how influential parental factors, as well as protective factors, work together to impact the development of child emotional regulation within the parent-child attachment relationship within an at-risk population. Specifically, through an attachment theory lens, the current study considers how the protective factor of parental warmth buffers the effect of inhibiting parental factors (i.e. parental social support, parental stress, parental mental health, and parental use of punitive punishment) on child emotional regulation within the mother-child attachment relationship in a low-income at-risk population.

CHAPTER II

LITERATURE REVIEW

Attachment Theory

Initial attachment theory and research, founded by John Bowlby, suggests that infants form a biologically driven, or innate attachment with their primary maternal caregivers (Bretherton, 1992; Salter Ainsworth & Bowlby, 1991; Schore, 2000a). This attachment relationship is established based on instinctive, self-preserving behaviors and serves as the context from which an infant experiences emotional connections and disconnections with the primary caregiver (Schore, 2000a). Bowlby posited that these emotional experiences within the attachment relationship help the infant establish a sense of safety and security from which the child the can experience the world and relationships (Bowlby, 1957; Main, Hesse, & Hesse, 2011; Salter Ainsworth & Bowlby, 1991). If these experiences within the attachment relationship prove to be consistently safe, secure, sensitive, nurturing, and responsive, a secure attachment is developed. However, if the attachment relationship lacks affection, care, safety, and security, a type of insecure attachment is developed between the infant and the caregiver (Ainsworth, Bell, & Stayton, 1974; Parsons, Young, Murray, Stein, & Kringelbach, 2010; Salter Ainsworth & Bowlby, 1991; Schore, 2000a). The goal of the attachment system is to gain access to an emotionally available and responsive attachment figure, who offers a warm, close, consistent, and continuous attachment experience. This type of attachment is the

foundation from which the child grows up to be a mentally and emotionally healthy individual (Bowlby, 1951; Bretherton, 1992; Schore, 2000a).

Bowlby suggested that the attachment system within the child is especially active within the first three years of life, and that these attachment relationships formed in infancy continue to affect the way in which the child experiences and views interpersonal relationships throughout their life (Schore, 2000a). Bowlby referred to this concept as internal working models. These internal working models contribute to whether the child later perceives relationships as safe or unsafe (Salter Ainsworth & Bowlby, 1991; Bretherton, 1990). Additionally, they contribute to the child's ability to emotionally regulate, or recognize and communicate emotions within a close relationship (Shaver, Collins, & Clark, 1996). Current research in interpersonal neurobiology and attachment theory is examining the relationships between early childhood attachment experiences and emotional regulation.

Interpersonal neurobiology considers how relationship experiences physically alter neural connections in the brain (Fishbane, 2007; Siegel, 2003). Interpersonal neurobiology provides scientific support, through electroencephalograms (EEGs) and neuroimaging data, for how attachment theory works, shaping the structure of the emotional brain through early attachment relationships (Schore, 2000a; Schore & Sieff, 2015). Relationship experiences that provide attunement and attentiveness are present in secure parent-child attachment relationships and contribute to the healthy development of the child's right brain (Fishbane, 2007; Hughes, Golding, & Hudson, 2015; Schore, 2000a; Schore, 2012; Siegel, 2003; Siegel, 2012). The right hemisphere of the brain

controls emotional functioning and affect regulation, facilitates attachment functions, and is impacted by emotional exchanges particularly in the early years of life (Schor, 2001). The right hemisphere of the brain is dominant in children through their first three years of life (Schor, 2000a), requiring high amounts of positively regulated experiences within the attachment relationship for optimal maturation and development (Barrasso-Catanzaro & Eslinger, 2016; Schor, 2000a; Schor, 2001; Siegel, 2015). Conversely, within these early years of life, the brain is equally as vulnerable to adverse and dysregulating experiences, which negatively influence the attachment system (Schor, 2001). However, if the ideal is achieved, positive emotional exchanges marked by parental warmth, sometimes called emotional responsivity, and sensitivity are foundational for a child's secure attachment and ability to emotionally regulate (Fishbane, 2007; Hughes et al., 2015; Siegel, 2003). This emotional regulation, as it relates to the attachment relationship, is the focus of the current study.

Emotional Regulation

Although widely studied, scholars define emotional regulation in many different ways, leading to conceptual confusion over the term and its definition (Gross, 2015). Research focused specifically on children often refers to emotional regulation as the behaviors or strategies implemented by a child in an effort to control and communicate emotions and arousal, especially negative emotions (NICHD Early Child Care Research Network, 2004; Zimmer-Gembeck et al., 2007). A key component to emotional regulation is the ability to consider the emotion within its context and respond in a contextually and socially appropriate manner (Morris et al., 2007). The goal is not

necessarily to regulate all strong emotions as emotions have an adaptive function. For example, a strong negative emotion of fear can be extremely beneficial if the environment is dangerous (Morris et al., 2007). Thus, the objective of emotional regulation is for the child to effectively deal with stress, emotions, and mood in a contextually appropriate manner (Gross, 2015).

The process through which emotional regulation is achieved varies depending upon the age of the individual (Gross, 2015). In the first year of life, infants can self-regulate through thumb sucking or through the use of a pacifier (Santrock, 2009). However, this early on, children rely greatly on caregivers to help them regulate their emotions, such as when a parent rocks, sings to, pats, et cetera a child to help calm him/her (Santrock, 2009). Overall, children largely depend on parents, through the parent-child attachment relationship, to help regulate and soothe their emotions (Santrock, 2009).

Further along in infancy, children develop greater abilities to regulate their emotions by controlling their mind and body, such as diverting their attention or distracting themselves (Gross, 2015; Santrock, 2009). By the second year of life, children are able to use language to better verbally articulate their emotions and feelings. Additionally, they are able to shift or influence the environment to help regulate their emotions (Gross, 2015; Santrock, 2009). By the age of three, emotional regulation strategies are greater and include adaptability, controlling emotional tone, and controlled behavioral reactions (Bayley, 1993; Porter, Wouden-Miller, Silva, & Porter, 2003). The

current study examines child emotional regulation through observing for these strategies (adaptability, controlling emotional tone, and controlled behavioral reactions).

Child Emotional Regulation and Attachment

Although the strategies by which a child displays emotional regulation change, the influence of the parent or caregiver on the child's emotional regulation remains stable and impactful (Bowlby, 1969; Gross, 2015). The attachment relationship is the foundation on which a child's capacity for emotional regulation emerges and develops (Darling-Churchill & Lippman, 2016; Zimmer-Gembeck et al., 2017). A secure attachment relationship, possessing the aforementioned qualities of safety, security, sensitivity, emotional responsivity and warmth, fosters the development of adaptive patterns of socioemotional functioning, such as emotional regulation. This secure and sensitive relationship acts as a co-regulator, assisting the child in effectively coping with emotionally challenging events and stressors (Schore, 2000a; Zimmer-Gembeck et al., 2017). Conversely, an insecure attachment relationship that lacks affection, care, safety, and security inhibits socioemotional functioning (Zimmer-Gembeck et al., 2017). At-risk populations that experience chronic stressors and poverty are at a greater risk of forming insecure attachment relationships and deficits in socioemotional functioning (Chazan-Cohen et al., 2009; Evans & Kim, 2013; Mathis & Bierman, 2015; McLeod & Shanahan, 1993; Schore, 2001).

The current study examines child emotional regulation by the child's adaptability, emotional tone, and stability of biobehavioral self-regulation interactions (Bayley, 1993; Porter et al., 2003). Adaptability, positive emotional tone, and cooperation will indicate

greater emotional regulation. Negative or irritable emotional tone and frustrated or unstable behavior will indicate poorer emotional regulation (Bayley, 1993; Porter, et al., 2003).

Parental Influence on Attachment and Child Emotional Regulation

The development of the right brain that controls attachment and emotional regulation is experience dependent, specifically within the attachment relationship (Schore, 2001). A child's brain within the early childhood years is molded by the child's environment and interactive experiences between the child and the caregiver (Schore, 2001). These experiences can have a positive and negative impact on the development of regulatory systems. Negative attachment experiences inhibit the development of efficient emotional regulation, while positive attachment experiences contribute to the development of efficient emotional regulation (Schore, 2001). Many factors can influence these attachment experiences. Parental factors are particularly influential on the parent-child attachment dyad and thus should be considered when exploring child emotional regulation within the attachment relationship (Schore, 2001).

Factors that affect the parent will also affect the way in which the parent is able to be present in the attachment relationship. Past studies have shown that even subtle shifts in maternal behavior can affect the attachment relationship (Champoux, Byrne, DeLizio, & Suomi, 1992). For example, if the parent has high levels of stress, is struggling with her mental health, or is lacking social support, these inhibiting factors will shift how physically and emotionally available the parent is able to be for the child (Morris et al., 2007). If the parent is being affected in ways that shift presence and availability within

the attachment relationship, the relationship will be affected. Additionally, negative interactions, such as punitive punishment, are more likely within the attachment relationship if these inhibiting parental factors are present (Mathis & Bierman, 2015). These inhibiting parental factors, such as stress, poor mental health, increased punitive punishment, and lack of parental warmth, tend to be more prevalent in at-risk populations (Evans & Kim, 2013; McLeod & Shanahan, 1993). As reviewed above, the attachment relationship influences child emotional regulation, and therefore parental factors and behaviors that affect the parent unit of the attachment dyad will also influence child emotional regulation (Champoux et al., 1992; Morris et al., 2007; Schore, 2001; Stack et al., 2010). Therefore, when considering child emotional regulation specifically within an at-risk population, parental influences must be considered (Schore, 2001). This study examines the relationship between parental factors and child emotional regulation.

Parental Stress and Child Emotional Regulation

Parental stress is both a direct and an indirect inhibitor to child emotional regulation (Mathis & Bierman, 2015; Morris et al., 2007; Crnic & Low, 2002). Mathis and Bierman (2015) found that parenting stress was directly related to lower levels of child emotional regulation in an at-risk Early Head Start population of preschoolers and their mothers. Similarly, also in an at-risk population, parental stress expressed when children were 14 months old was directly linked to less emotionally regulated children at five years of age (Chazan-Cohen et al., 2009). Parenting stress has also been shown to impact child emotional regulation indirectly through positive parenting behaviors, such as parental warmth and sensitivity (Mathis & Bierman, 2015; Whittaker, Harden, See,

Meisch, & Westbrook, 2011). For example, one study by Patterson and Fisher (as cited by Mathis & Bierman, 2015), found that parents who reported minor parenting stresses on a daily basis displayed higher negative responses toward their children, which was then associated with higher emotional dysregulation in their children. Additionally, research has shown that when parents experience daily stress, their children display atypical patterns of the release of cortisol, which is the hormone released in response to stress or danger. Chronic exposure to stress, and thus heightened cortisol levels, has been found to hinder child regulatory functions (Brennan et al., 2008). The current study seeks to further support the existing literature by examining the relationship between parental stress and child emotional regulation within an at-risk population. Additionally, the current study extends the existing literature by considering the moderating effect of parental warmth on the relationship between parental stress and child emotional regulation.

Parental Mental Health and Child Emotional Regulation

Parental mental health is included amongst the influential parental factors associated with child emotion regulation. When maternal depression is present within the home, it significantly impacts child emotion regulation (Maughan, Cicchetti, Toth, Rogosch, 2007; Morris et al., 2007; Wilson, 2017). Parental mental health affects many aspects of parenting, including how well the mother is able to emotionally respond to her child, parenting practices, and the overall emotional climate of the family (Field, Healy, Goldstein, & Guthertz, 1990; Hops et al., 1987; Morris et al., 2007). Depressed mothers are often less likely to display positive affect. Conversely, depressed mothers are more

likely to be misattuned to their child's emotional states and affect, responding more often with anger and sadness (Field et al., 1990; Hops et al., 1987; Morris et al., 2007). Because of these reasons, children of depressed mothers tend to have less ability to emotionally regulate (Radke-Yarrow, Nottlemann, Belmont, & Welsh, 1993). One longitudinal study found that young children whose mothers displayed depressive symptoms were more likely to display emotional dysregulation (Morris et al., 2007; NICHD Early Child Care Research Network, 2004). To further support existing research, the current study examines the relationship between parental mental health and child emotional regulation in an at-risk population, while also examining parental warmth as a possibly moderator within this relationship.

Parent Punitive Punishment and Child Emotional Regulation

Parental use of punitive punishment within the parent-child attachment relationship has been linked to deficits in child emotional regulation and has been shown to be more prevalent within at-risk populations (Evans & Kim, 2013; McLeod & Shanahan, 1993; Morris et al., 2007; Mortensen & Barnett, 2018; Stack et al., 2010; Wang, Wang, Wang, & Xing, 2018a; Wang, Wang, & Xing, 2018b). Punitive punishment can include both psychological aggressiveness and physical punishment, such as intense scolding or physically restraining, slapping, or spanking (Caldwell & Bradley, 2001; Wang et al., 2018b). Punitive parental behaviors tend to increase emotional arousal or dysregulation in children and are often associated with ineffective emotion regulation strategies (Morris et al., 2007). Calkins, Smith, Gill, and Johnson (1998) found that negative maternal behaviors, such as scolding, hand slapping, and

pushing, were related to poor emotion regulation in 24-month-old toddlers. Likewise, with-in a socioeconomically disadvantaged population, harsh parenting at 14-months of age was found to be a significant predictor of lower emotional regulation at 36-months of age (Mortensen & Barnett, 2018). Similar associations were found among elementary populations when considering parental corporal punishment. Child emotion dysregulation was predicted by parental corporal punishment (Wang et al., 2018a). Wang et al. (2018a), suggest that this finding is due to poor quality parent-child relationships in the child's early years, marked by insensitive and unpredictable parenting and emotionally insecure children. Also considering elementary age children, Wang et al. (2018b) found further support for the negative effects of corporal punishment on child emotion regulation, while also suggesting the possibility of protective factors between negative parenting behaviors and child emotion regulation. This notion of protective factors is examined in this study. First, the current study seeks additional support for the relationship between parental punitive behaviors and child emotional regulation. Secondly, in an effort to develop process focused research, this study seeks to extend literature by examining parental warmth as a moderator, or protective factor, within this relationship in an at-risk population.

Parental Social Support and Child Emotional Regulation

Parental social support is often researched in relation to the other influential parental factors. Parenting practices and processes are often associated with parental social support (Coyl, Newland, & Freeman, 2010; Geens & Vandebroek, 2014). For instance, parental social support is associated with positive parent-child attachment

interactions, as well as less use of physical discipline (Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998; Coyl et al., 2010; Crockenberg, 1981; Jennings, Stagg, & Connors, 1991). Parental social support is also considered a predictor of parental mental health and well-being (Bost et al., 1998; Cairney, Boyle, Offord, & Racine, 2003; Weiss, 2002). Parental social support is also examined as a protective factor against the negative effects of parental mental health on parenting processes (Geens & Vandenbroeck, 2014). Thus, the presence of parental social support is associated with parental factors that are often associated with positive child emotional regulation. However, research has not yet considered how parental social support directly impacts child emotional regulation on its own. This study extends the previous literature by examining how parental support is directly related to child emotional regulation within an at-risk population.

Parental Warmth as a Protective Factor

Parental factors influence child emotional regulation. However, a larger picture of this relationship must be considered through the use of protective factors. Protective factors are variables that buffer the effects between independent and dependent variables (Wang et al., 2018b). Scholars and researchers across both mental health and child development acknowledge the need for research focusing on the process and interaction between variables in order to develop practical and useful interventions to assist individuals and families (Marti et al., 2016; Whittaker et al., 2011; Anderson et al., 2014). This is especially necessary in at-risk populations that experience greater stressors in parenting, attachment relationships, and child socioemotional outcomes (Marti et al., 2016; Paschall et al., 2019). Towards this effort, researchers have begun to use mediators

and moderators (i.e. protective factors) in research to better understand the relationship between parental factors and emotional regulation (Marti et al., 2016; Whittaker et al., 2011).

Parental warmth is a key component of a secure attachment relationship (Ainsworth et al., 1974; Parsons et al., 2010; Salter Ainsworth & Bowlby, 1991; Schore, 2000a). Attachment theory suggests that parental warmth is the agent that repairs disruptions or negative experiences within the attachment relationship. Additionally, parental warmth has been positively associated with child emotional regulation across ethnic groups (Brady-Smith et al., 2013; Morris et al., 2007; Morris et al., 2017). Given the essential and reparative role that parental warmth plays in the attachment relationship, it must be considered when examining the relationship between parental factors and child emotional regulation.

Recent research has suggested parental warmth as a protective factor between parental factors and child emotional regulation (Marti et al., 2016; Wang et al., 2018b; Whittaker et al., 2011). However, findings have been inconsistent. Within an at-risk Latino population, no significant findings were reported in regard to parental warmth mediating the relationship between risk factors and child emotional regulation (Marti et al., 2016). However, in another study, maternal sensitivity, which included parental warmth, was found to be a significant mediator in the relationship between parental stress and child social emotional development (Whittaker et al., 2011). Wang et al. (2018b) found that maternal parental warmth played a minimal moderating role in the relationship between parental harsh discipline and child emotional regulation in their study conducted

in China. However, Wang et al. (2018b) is the only current study that specifically considers this relationship while using parental warmth as a moderator. The current study expands current literature by further examining parental warmth as a protective factor within the relationship between parental factors and child emotional regulation within an at-risk population.

At Risk Populations

The U.S. Census Bureau (2018) reported that in 2017, 12.3% of people in the United States lived in poverty. Poverty and its impact on individuals and families is significant and often leads to lifelong cognitive, socioemotional and physical health deficits (Evans & Kim, 2013). Poverty often creates stress within the family unit, which leads to deficits in parenting, and consequently poor child outcomes, especially in regard to socioemotional outcomes (Chazan-Cohen et al., 2009; Evans & Kim, 2013). Thus, the above parental factors, attachment relationships, and child emotional regulation are all impacted within this at-risk population.

Poverty impacts the family environment, parents, and parenting behaviors. Families of poverty tend to have more family conflict, family separation, and exposure to violence (Evans & Kim, 2013). Research shows that parents who experience poverty are more likely to exhibit stress and poor mental health (McLeod & Shanahan, 1993). Specifically, maternal depression is correlated with poverty (Evans & Kim, 2013). Poverty also impacts parenting behaviors. Mothers of poverty tend to use more punitive punishment and exhibit less emotional responsiveness and warmth (Evans & Kim 2013, McLeod & Shanahan, 1993).

In addition to family environment and parental factors, poverty also impacts the child and the parent-child relationship (McLeod & Shanahan, 1993; Schore, 2001). Children from low-income families experience higher amounts of physical, psychological, and psychosocial stressors, or adverse experiences (McLeod & Shanahan, 1993; Schore, 2001). Chronic exposure to these stressors leads to poor development of self-regulatory processes, such as emotional regulation (Evans & Kim, 2013; Mathis & Bierman, 2015; Schore, 2001). Research has also linked parental stress to lower child emotional regulation in low-income families, providing further support for the notion that the effects of poverty pass down from parent to child (Chazan-Cohen et al., 2009; Mathis & Bierman, 2015). Additionally, the parent-child attachment relationship itself has been shown to be impacted by chronic exposure to stressors in at-risk populations (Schore, 2001).

The prevalence of poverty in the United States creates a very specific population that requires attention. Poverty has direct implications on parental factors, the parent-child attachment relationship, and child emotional regulation within low-income families. The current study examines the relationship between parental factors and child emotional regulation within the attachment relationship in a low-income at-risk population.

Other Influential Factors on Child Emotional Regulation

Several other influential factors related to parental factors (parental stress, parental mental health, parental use of punitive punishment, and parental social support) and child emotional regulation must be controlled for. These factors include: demographic variables and family conflict.

Demographic Variables

Several common demographic variables have been shown to be related to child emotional regulation, including: mother's age, mother's race/ethnicity, and child's gender. Age has been associated with different parenting practices that influence emotional regulation. For example, teenage child bearers in an at-risk population have been found to be less supportive, and more detached, negative, hostile and intrusive toward their children (Berlin, Brady-Smith, & Brooks-Gunn, 2002). Additionally, minority teenage parents have been found to be more detached or direct in their parenting interactions with their children, which influences child outcomes such as emotional regulation (Brady-Smith et al., 2013). Race has been indirectly associated with higher risk of emotional difficulties, due to the increased likelihood of poverty in minority populations (Raver, 2004). Race has also been associated with varying parenting strategies, such as directedness, harshness, or supportiveness, that influence child outcomes and development across different ethnic groups (Brady-Smith et al., 2013). Lastly, child gender has been shown to impact emotional regulation processes and strategies (Brody & Hall, 2008). Consequently, the above demographic variables are controlled for in the current study.

Family Conflict

Family conflict refers to the amount of aggression, open expressions of anger, and conflictual interactions within the family environment (Moos & Moos, 2002). The number of displayed positive or negative emotions within the family has been associated with the emotional security of children (Morris et al., 2007). More negative emotional

climates filled with high amounts of negative emotional expressions and unpredictable emotional expressions lead to less emotional security in children (Morris et al., 2007). These negative expressions of anger do not need to be directed at the child to have an impact. In fact, research suggests that even listening to or witnessing expressed anger can put a child at risk for emotional deficits (Lemerise & Dodge, 1993). Similarly, research has continually supported the link between marital conflict and low emotional child regulation (Fosco & Grych, 2012; Frankel, Umemura, Jacobvitz, & Hazen, 2015; Porter et al., 2003). Family environment and conflict play influential roles on a child's emotional security and regulation. Consequently, it is important to control for family conflict when considering child emotional regulation.

The Current Study

The current study utilized a longitudinal design to examine the impact of negative maternal parental factors on child emotional regulation within the mother-child attachment relationship. Additionally, the moderating role of maternal parental warmth on this relationship was examined. The following research questions were tested:

1. Are maternal parental factors significantly associated with child emotional regulation?
 - a. Is maternal parental stress significantly associated with child emotional regulation?
 - b. Is maternal mental health significantly associated with child emotional regulation?

- c. Is maternal use of parental punitive behavior significantly associated with child emotional regulation?
 - d. Is maternal social support significantly associated with child emotional regulation?
- 2. Does maternal parental warmth moderate the relationship between maternal parental factors and child emotional regulation?
 - a. Does maternal parental warmth moderate the relationship between maternal parental stress and child emotional regulation?
 - b. Does maternal parental warmth moderate the relationship between maternal mental health and child emotional regulation?
 - c. Does maternal parental warmth moderate the relationship between maternal use of parental punitive behavior and child emotional regulation?
 - d. Does maternal parental warmth moderate the relationship between maternal social support and child emotional regulation?

CHAPTER III

METHODOLOGY

Sample

The present study used data from the Early Head Start Research and Evaluation project (Administration for Children and Families, 2002a). The Early Head Start Research and Evaluation project was a thorough, large-scale, random-assignment national evaluation of the Early Head Start program, designed to evaluate the impact of the program on the children and families served through it (Administration for Children and Families, 2002a). The study was conducted by the Early Head Start Research Consortium, Mathematica Policy Research, Inc. (MPR) and Columbia University's Center for Children and Families at Teachers College in the following three phases: Birth to Three Phase, Pre-Kindergarten Follow-up Phase, and Elementary School Follow-Up Phase. (Administration for Children and Families, 2002a).

The Birth to Three Phase, which the current study considered, was a Congressionally mandated portion of the project, carried out between 1996-2001 (Administration for Children and Families, 2002a). This portion of the project was conducted nationally, across 17 different Early Head Start research program sites. Participants for the study were selected from families who applied to these 17 Early Head Start programs. In the recruiting process, program sites were asked to recruit families to their program as usual. The only difference in the recruiting process was that twice as

many applications were accepted for children than could be enrolled in the Early Head Start programs. From these applications, 3,001 families were randomly assigned to participate in either Early Head Start services (1,513 families) or a control group (1,488 families) (Administration for Children and Families, 2002a). Families in the control group were offered outside community services but were not allowed to receive Early Head Start services. Both control groups and program groups were found to be equivalent at baseline and at each assessment time, indicating that random assignment was successful for this study. Additionally, although participants did drop-out throughout the study, the numbers were similar between the two groups (Administration for Children and Families, 2002a).

Data considering the impact of the Early Head Start program on child and family functioning were collected through the following means: direct child assessments, observation of parent-child relationships, observation of the home environment, parent interviews, and parent services (PSI) follow-up interviews (Administration for Children and Families, 2002a). Child assessments, observations, and parent interviews were collected by MPR trained field interviewers when the children of interest were 14, 24, and 36 months old (Administration for Children and Families, 2002b). Data relating to the services families received (PSI-Follow Up Interviews) were collected at 6, 15, 26 months after program enrollment, as well as when the family exited the program. The majority of the PSI-Follow Up interview were conducted by MPR trained field staff via phone (Administration for Children and Families, 2002b).

Participants represented a diverse racial/ethnic makeup, were low-income at baseline and had a child within the age range of prenatal (i.e. the mother sought services before the child was born) to under one year of age (Administration for Children and Families, 2002a; Administration for Children and Families, 2002b) Families in both the control group and program group were demographically comparable at baseline and at all assessment points (Administration for Children and Families, 2002a). At the time of enrollment, the following characteristics were found for the primary caregivers seeking services. Of the primary caregivers seeking services, 99 percent were mothers. The average age of mothers was 23 years old. One-third of enrolled families were African American, one-fourth were Hispanic, and about one-third were Caucasian. The majority of participants spoke English as their primary language. In regard to education, almost half of the primary caregivers did not have a high school diploma. One-fourth of the mothers were employed; nearly one-fourth of the mothers were in some type of school or training program; about half of the mothers were neither employed nor in school. Living arrangements included the following: one-fourth lived with a spouse, about one-third lived with other adults, and about one-third lived with their children only. The majority of the enrolled families were receiving some kind of public assistance. Nearly half of the enrolled mothers were at risk for depression, as measured by the Center for Epidemiological Studies Depression scale (Ross, Mirowsky, & Huber, 1983). Children enrolled in the programs had the following characteristics. Half of the enrolled children were under 5 months of age, and sixty-one percent were the firstborn child (Administration for Children and Families, 2002a).

Although this dataset was gathered between 1996-2001, the richness and breadth of the data provides a unique opportunity for exploratory research, specifically pertaining to an at-risk population. The depth of areas evaluated within a large and diverse at-risk population utilizing a longitudinal design makes this dataset unique and valuable for current research. Specifically, for the current study, this dataset examines several influential maternal parental factors, as well as child emotional regulation for children over a span of time. This longitudinal design allows for stronger conclusions to be drawn in regards to relationships observed.

The current study specifically considered focus children birth to three years old (864 Females, 884 Males) and their biological mothers ($N = 1,748$, $M = 22.72$, $SD = 5.77$, $Min = 14$, $Max = 40$). Of this subsample, 38.5% identified as White, 32.1% identified as African American, 23.8% identified as Hispanic, and 3.8% identified as Other. In regard to education, 45% of the mothers completed less than 12 years of schooling, 28% of mothers completed 12 years of school or obtained a GED, and 23.2% of mothers completed more than 12 years of schooling. Family income percentages were reported as follows: 3.9% made \$5k or less, 4.4% made between \$5k and \$10k, 6.2% made between \$10k and \$15k, 6.4% made between \$15k and \$20k, 7.2% made between \$20k and \$25k, 6.2% made between \$25k and \$30k, 6.5% made between \$30k and \$35k, 5.3% made between \$35k and \$40k, 5.9% made between \$40k and \$50k, 8.6% made between \$50k and \$75k, 3.8% made between \$75k and \$100k, 1.7% made between \$100k and \$200k, .3% made more than \$200k.

Measures

Parental Stress

Parental stress was assessed through data collected using the Parental Distress Subscale of the Parenting Stress Index- Short Form (PSI-SF), which was modified from the Parenting Stress Index (Abidin, 1990; Abidin, 1995). The PSI-SF is a 36-item scale which measures the parents' level of distress in their role as a parent due to personal factors. Parental distress was assessed at 14 months. Mothers were asked if they agreed or disagreed (recoded to 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *DK*, 4 = *Agree*, and 5 = *Strongly Agree*) with statements such as, "You often have the feeling that you cannot handle things very well," and "You feel trapped by your responsibilities as a parent," and "You feel alone without friends." Items were reverse coded in order that higher scored indicated higher levels of distress. The sum of these items was used to indicate the level of distress. The PSI-SF, specifically the Parental Distress Subscale, has been found to be a valid and reliable measure to assess stress within the parent-child relationship (Abidin, 1990; Roggman, Moe, Hart, & Forthun, 1994). Additionally, the PSI-SF has been found to have high internal consistency and adequate factor structure when used in an at-risk Early Head Start population (Reitman, Currier, & Stickle, 2002).

Parental Mental Health

Parental mental health was assessed by data collected using the Center for Epidemiologic Studies Short Form Depression Scale (Ross, Mirowsky, & Huber, 1983) at 14 months in the Parent Interview. This scale was modified from the Center for Epidemiological Studies' Depression scale (CES-D) which measures depressive

symptoms in a general population (Radloff, 1977). The items chosen for the CES-D Short Form were based off of a preliminary factor analysis, which resulted in the selection of 12 items for the final index (Ross et al., 1983). The items selected asked how often (1 = *rarely or never [less than 1 day]*, 2 = *some or a little [1-2 days]*, 3 = *occasionally or moderate [3-4 days]*, or 4 = *most or all [5-7 days]*) participants felt the following ways: bothered by things that usually do not bother you; you did not feel like eating or your appetite was poor; you could not shake off the blues, even with help from family and friends; you had trouble keeping your mind on what you were doing; depressed; that everything you do is an effort; fearful; your sleep was restless; you talked less than usual; you felt lonely; you felt sad; and you could not get “going” (Ross et al., 1983). The aforementioned items were added together for a total score. The Center for Epidemiologic Studies Short Form Depression Scale has been found to have adequate reliability ($\alpha = .85$) for women (Ross et al., 1983).

Parental Punitive Behavior

Punitive parenting behavior was assessed by data collected through the Nonpunitive Scale (Lack of Hostility Scale) from the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 2001). The Nonpunitive Scale (Parental Lack of Hostility Scale) is a 5-item subscale that measured parent’s use of punitive parenting as observed by the interviewer during in the home interview at 14 months. Through observing parent-child interactions during the home interview, interviewers were asked to record responses (*Yes* = 1 and *No* = 0) to the following items: parent does not shout at child, parent does not express annoyance with or hostility to

child, parent neither slaps nor spans child during visit, parent does not scold or criticize child during visit, parent does not interfere or restrict child more than 3 times. Items were reverse coded so that a higher subscale score indicated greater use of punitive punishment and a lower subscale score indicated a lesser use of punitive punishment. The sum of the above items was the total subscale score. The HOME has been evaluated by multiple research groups and has been found to have adequate interrater reliability, test-retest reliability, split-half reliability, internal consistency, and concurrent validity (Totsika & Sylva, 2004).

Social Support

Biological mothers' positive relationships was assessed by three items taken from the Parent Services Follow-Up Interviews (PSI). Participants were asked to respond with yes (1) or no (0) to the following questions: do you have someone to confide in if you are having a personal problem or feeling anxious, nervous or depressed; have you had contact with family in the last 2 weeks; and do you have a close friend. The first question was asked during the 15-month PSI; the second and third questions were asked during the 6-month PSI. Items were summed for a total social support score.

Emotional Regulation

Emotional regulation was assessed by data collected through the Emotional Regulation Subscale of the Bayley Scales of Infant Development (BSID) Behavioral Rating Scales (Bayley, 1993). The focus child was assessed by the interviewer through using a 5-point scale (1 = *less positive behavior* to 5 = *more positive behavior*) during the child's completion of the BSID measure at 36-months. The interviewer assessed the

following: the child's ability to adjust to change in tasks and test materials, the child's negative affect, the child's frustration with tasks throughout the assessment, and the child's ability to cooperate throughout the assessment (Bayley, 1993). Emotional regulation was computed as the mean of the scores. This scale has been found to be a valid scale in measuring emotional regulation in recent research, especially within an at-risk Early Head Start population (Bradey-Smith et al., 2013; Paschall et al., 2019; Porter et al., 2003). The Behavior Rating scale of the BSID has been reported to have an average reliability of .88 (Nellis & Gridley, 1994). Internal reliability was reported to be .90 in the current dataset at the 36-month data collection (Administration for Children and Families, 2002b).

Maternal Parental Warmth

Maternal parental warmth was used as a moderator in the analysis. Data from the Emotional Responsivity subscale of the Home Observation for Measurement of the Environment (HOME) will be used to assess maternal parental warmth (Caldwell & Bradley, 2001). Parental warmth was measured at 14 months, and was the sum of 7 observation only items, as observed by the interviewer during at home visits. The following items were summed and coded (1 = *Yes*, 2 = *No*) to compile this subscale: the parent spontaneously vocalized to the child twice, the parent responded verbally to child's verbalizations, the parent told the child the name of an object or person during the visit, the parent spontaneously praised the child at least twice, the parent's voice conveyed positive feelings toward the child, the parent caressed or kissed the child at least once, and the parent responded positively to praise of the child offered by the visitor

(Caldwell & Bradley, 2001). Again, the HOME has been found to have adequate interrater reliability, test-retest reliability, split-half reliability, internal consistency, and concurrent validity (Totsika & Sylva, 2004).

Control Variables

There were three demographic variables used as controls in the analysis (mother's age, mother's race/ethnicity, and focus child's gender). First, mothers were asked their date of birth, from which each mother's age was computed. Second, mothers were asked what race/ethnicity they considered themselves to be [1 = *White*, 2 = *African American*, 3 = *Hispanic*, 4 = *Other*]. Third, mothers were asked the gender of their child (focus child; 1 = *male*, 2 = *female*).

In addition to the demographic control variables, family conflict was used as a control variable in the analysis. Family conflict was assessed by data collected at 14 months through the Conflict subscale of the Family Environment Scale (FES; Moos & Moos, 2002). This subscale was made up of 5 items, measured on a 4-point scale, on which 4 indicated a higher level of agreement to statements given. Parents were asked to respond to statements such as: "we fight a lot" and "we hardly ever lose our tempers." Responses for the statement, "we hardly ever lose our tempers" were reverse coded in order that a 4 response indicated a high level of conflict. The mean of all 5 items was used to determine overall family conflict. FES subscales have been reported to have acceptable internal consistencies within a diverse sample, as well as adequate test-retest reliabilities and long-term stabilities (Moos, 1990). Additionally, FES subscales are

reported to have adequate content, face, construct, concurrent and predictive validity (Moos, 1990).

Analysis Plan

Five separate hierarchical multiple regressions using SPSS were used to test the research questions (Cohen, Cohen, West, & Aiken, 2003). This model allowed for examination of the moderating role of parental warmth in the relationship between parental factors and child emotional regulation. Through multiple hierarchical regressions and the use of an interaction term (predictor variable x moderator), this model allowed for evaluation of the moderator to determine if the presence of the moderator in each equation explained significantly more variance than the predictor and moderating variables alone (Anderson et al., 2014; Cohen et al., 2003; Yeatts, Martin, & Petrie, 2017).

Prior to conducting the analysis, all variables were assessed for departures from normality and for missingness (Field, 2013; Yeatts et al., 2017). This was done through assessing plots and skewness and kurtosis coefficients to ensure they were within acceptable ranges (Field, 2013). Additionally, missingness was assessed, using Little's MCAR test, to ensure it was random. Next, assumptions of multiple regression were tested for (Cohen et al., 2003; Field, 2009). A normal distribution of residuals was tested for through looking at a P-P plot. Homoscedasticity, the assumption of homogeneity of variance around the regression line, was tested through a scatterplot of residuals. A linear relationship between predictor and outcomes variables was also tested for through a scatterplot. Multicollinearity was tested through SPSS using correlations, in order to

assure that there was no perfect relationship between predictor variables and that they are not too highly correlated. Additionally, VIF values in the calculated Coefficients Table were assessed to ensure they are below 2. Lastly, model fit was also examined through the Adjusted R^2 (Field, 2009).

To check the above assumptions in SPSS, the following steps were taken (Field, 2009). Once the regression analysis was selected, the “Statistics” button was selected. “Estimates” and “model fit” were then selected. Additionally, “Collinearity Diagnostics” was selected, followed by “Continue.” Next, “Plots” was selected, followed by placing “*ZPRED” in the “X box” and the residual values “*ZRESID” in the Y box. Additionally, the “Normal Probability” plot was selected before clicking “Continue” (Field, 2009).

After the above steps, the multiple hierarchical regression analyses was run. First, a power analysis was run in order to determine if an adequate amount of statistical power was present. Second, all continuous predictor and moderator variables were mean centered to avoid non-essential multicollinearity. Third, an interaction item was created by multiplying predictor and moderator variables together (Cohen et al., 2003). In SPSS, this was done through creating a new variable.

Lastly, a hierarchical multiple regression was conducted. This was done in SPSS through the following steps. First, going to “Analyze,” then “Regression,” and then “Linear.” Second, outcome variables were placed in the “Dependent” box. Third, the predictor and moderator variables were placed in the “Independent(s)” box. Fourth, once “Next” was clicked, the interaction items were placed into the second block. Placing the

predictor and moderator variables in prior to the interaction item was essential. Fifth, under “Statistics,” the “R squared change” was selected, followed by “Continue” and “OK” (Anderson et al., 2014). Finally, the results were interpreted, with particular attention given to the statistical significance of the interaction term; if the interaction term was significant, moderation was present (Yeatts et al., 2017).

CHAPTER IV

RESULTS

Preliminary Analysis

Initially, analyses were conducted on all variables to assess for departures from normality and for missingness. Many variables did not meet the assumption of normality, which biases results and makes it difficult to use in analysis. According to Field's (2013) more stringent recommendations for skewness and kurtosis coefficients, all variables were outside acceptable ranges, with the exception of parental stress, child emotional regulation and family conflict (see Table 1). The variables were unable to be transformed because of the ceiling effect in many variables. However, Kline (2011) suggests that normally distributed samples fall within an absolute value of 3 for skewness and 10 for kurtosis. Accordingly, all data fall within normal distributions for Kline's broader recommendations for normal distributions. Participants who did not complete emotional regulation measures were not included in the analysis ($n = 1,229$). Participants who were not mothers ($n = 17$) were also trimmed from the data. The total number of remaining participants was 1,748. Total missingness was 10.89%. It was determined by Little's MCAR test that the missingness was completely at random ($\chi^2(159) = 146.41, p = .754$).

Table 1

Participants Reports for Independent, Dependent, and Control Variables: Descriptive Statistics (N = 1,748)

Variables	<i>M</i>	<i>SD</i>	Range	N	Skewness	<i>Kurtosis</i>
Independent Variables						
Parental Stress	27.26	9.42	12-59	1,566	.68	.08
Parental Mental Health	8.64	6.84	0-36	1,543	1.14	1.27
Parental Use of Punitive Punishment	4.57	.97	0-5	1,462	-2.53	6
Parental Social Support	.89	.21	0-1	1,261	-1.74	2.43
Dependent Variable						
Child Emotional Regulation	3.92	.76	1-5	1,748	-.79	.39
Moderator						
Parental Warmth	6.00	1.44	0-7	1,458	-1.72	2.69
Control Variable						
Family Conflict	1.73	.54	1-3.8	1,325	.90	.73

Note. Mother's Age (*M* = 22.72. *SD* = 5.77, Min = 14, Max = 40)

Descriptive Information

Means and standard deviations were calculated and are presented in Table 1. Frequencies were calculated for categorical variables (see Table 2). Correlation analyses were conducted for all study variables to assess bivariate relationships (see Table 3). Due to the large size of the current sample, and to reduce Type-1 error rate, the significance level was set to $\alpha = .01$. The results of the correlation analysis revealed significant but very weak correlations among study variables ($p < .01$), as indicated in Table 3 (Evans, 1996).

All study variables except parental social support ($r = 0, p < .01$) were associated with the outcome variable (child emotional regulation; parental stress, $r = -.07, p < .01$;

parental mental health, $r = -.10, p < .01$; parental use of punitive punishment, $r = -.11, p < .01$; parental warmth, $r = .11, p < .01$; family conflict, $r = -.08, p < .01$). In other words, as parental stress increased at 14 months, child emotional regulation decreased at 36 months. Likewise, as parental mental health increased (poorer mental health) at 14 months, child emotional regulation decreased at 36 months. As parental use of punitive punishment scores increased at 14 months, child emotional regulation decreased at 36 months. Similarly, as parental warmth increased at 14 months, child emotional regulation increased at 36 months. Lastly, as family conflict increased at 14 months, child emotional regulation decreased at 36 months.

All study variables except parental social support ($r = .06, p < .01$) were associated with the moderator variable (parental warmth; parental stress, $r = -.14, p < .01$; parental mental health, $r = -.10, p < .01$; parental use of punitive punishment, $r = -.20, p < .01$; child emotional regulation, $r = .11, p < .01$; family conflict, $r = -.08, p < .01$). In other words, as parental stress increased at 14 months, parental warmth decreased at 14 months. Likewise, as parental mental health increased (poorer mental health) at 14 months, parental warmth decreased at 14 months. As parental use of punitive punishment scores increased at 14 months, parental warmth decreased at 14 months. As parental warmth increased at 14 months, child emotional regulation increased at 36 months. Lastly, as family conflict increased at 14 months, parental warmth decreased at 14 months.

Table 2

Participant Descriptive Statistics (N = 1,748)

Variables	Frequency	Valid Percent
Focus Child Gender		
Male	884	50.6
Female	864	49.4
Mother's Race		
White	673	39.2
African American	561	32.7
Hispanic	416	24.2
Other	67	3.9

Note. Frequency totals that do not equal 1,748 indicate missing data; Mother's Age ($M = 22.72$, $SD = 5.77$, Min = 14, Max = 40).

Table 3

Correlations Among Study Variables

	1	2	3	4	5	6	7
1. Parental Stress	-						
2. Parental Mental Health	.42*	-					
3. Parental Use of Punitive Punishment	-.15*	-.13*	-				
4. Parental Social Support	-.19*	-.13*	.04	-			
5. Child Emotional Regulation	-.07*	-.10*	.11*	0	-		
6. Parental Warmth	-.14*	-.10*	.20*	.06	.11*	-	
7. Family Conflict	.26*	.30*	-.04	-.11*	-.08*	-.08*	-

* $p < .01$.

Regression Models

RQ 1: Parental Factors and Child Emotional Regulation

Research question one assessed how maternal parental factors at 11-20 months were associated with child emotional regulation at 36 months. To address this research

question, a linear regression was conducted to evaluate the relationship between all predictor variables (i.e. parental stress, parental mental health, parental use of punitive punishment, and parental social support) and child emotional regulation (DV). Residual plots were normal and acceptable. The results indicated that all predictor variables together explained 2% of variance in emotional regulation ($F = 6.79, p < .01$). Inspection of the individual predictors indicated that parental mental health ($\beta = -.11, p < .01$) and parental use of punitive punishment ($\beta = -.11, p < .01$) were significant.

A linear regression was also conducted with control variables (i.e. family conflict, mother's age, mother's race and gender of focus child; see Table 4). The overall model was significant, accounting for 8% of variance in emotional regulation ($F = 7.63, p < .01$). The first step indicated that the control variables accounted for 5% of variance in emotional regulation ($F = 8.63, p < .01$). Inspection of the individual variables indicated that family conflict ($\beta = -.10, p < .01$) and gender of focus child were significant ($\beta = .21, p < .01$). The second step indicated that the predictor variables (i.e. parental stress, parental mental health, parental use of punitive punishment and parental social support) together explained 2% of variance in emotional regulation ($F = 7.63, p < .01$). Inspection of the individual predictors indicated that gender of the focus child ($\beta = .21, p < .01$) and parental use of punitive punishment were significant ($\beta = -.13, p < .01$). These results indicated that the control variables account for additional variance (5%) in emotional regulation separate from the variance accounted for by the predictor variables (2%). When such little overall variance is being accounted for in the first place, adding more variables (i.e. the control variables added here) often causes variables to drop out. This

should be noted when considering these results, as parental mental health was no longer significant once the control variables were added to the analysis. Due to this, caution should be taken when interpreting these results in order to avoid excluding a factor that may still be somewhat contributing to the small variance.

Table 4

Regression Models Predicting Emotional Regulation with IVs and Control Variables.

	<i>R</i> ²	<i>B</i>	<i>SE</i>	β	<i>p</i>
Step 1	.05**				
Family Conflict		-.14	.05	-.10	<.01
Mother's Age		.00	.00	.03	.36
Race – African American		-.01	.06	-.01	.86
Race– Hispanic		-.10	.06	-.05	.12
Race - Other		.04	.12	.01	.77
Child Gender		.32	.05	.21	<.01
Step 2	.08**				
Family Conflict		-.13	.05	-.09	.01
Mother's Age		.00	.00	.02	.50
Race – African American		-.01	.06	-.01	.85
Race – Hispanic		-.14	.07	-.08	.03
Race – Other		-.02	.12	-.00	.90
Child Gender		.32	.05	.21	<.01
Parental Stress		.01	.00	.07	.05
Parental Mental Health		-.01	.00	-.08	.02
Parental Use of Punitive Punishment		.12	.03	.13	<.01
Parental Social Support		-.03	.13	-.01	.78

Note. White served as the reference group for race; Child gender was coded as 1 = female, 0 = male.

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

RQ2: Moderation Effects of Parental Warmth

Research question two assessed if maternal parental warmth at 14 months moderated the relationship between maternal parental factors at 11-20 months and child emotional regulation at 36 months. To address this research question, four separate

hierarchical regression models were conducted to evaluate the moderation effect of parental warmth on the relationship between each predictor variable (i.e. parental stress, parental mental health, parental use of punitive behavior, and parental social support) and child emotional regulation (DV). It was confirmed that the homoscedasticity assumption was met (i.e. residuals were equal across levels of the DV). All predictor variables were mean centered in order to avoid non-essential multicollinearity. Regression models were constructed following the previously stated moderation procedures (Cohen, Cohen, West, & Aiken, 2003), which included the following steps. In the first step of each regression, the outcome variable (child emotional regulation), moderator (parental warmth), and one of the parental factor predictor variables (parental stress, parental mental health, parental use of punitive punishment, or parental social support) were entered. In the second step, a parental factor x parental warmth interaction term was entered. For example, to test the moderation effect of parental warmth on the relationship between parental stress and child emotional regulation, the first step of the regression analysis included child emotional regulation (dependent box), parental stress and parental warmth. In the second step, parental stress x parental warmth interaction term was entered. The presence of moderation was determined by examining the statistical significance of the interaction term; if the interaction term was statistically significant, moderation was present.

The first hierarchical regression considered how the interaction between parental stress and parental warmth moderates the relationship between parental stress and child emotional regulation (see Table 5). The results indicated that there was 2% of variance explained in the DV (child emotional regulation; $F = 7.95, p < .01$); however, the

interaction term was not significant ($\beta = -.05$, $p = .06$), indicating that parental warmth at 14 months did not significantly moderate the relationship between parental stress at 14 months and child emotional regulation at 36 months. Inspection of the individual predictors indicated that parental warmth ($\beta = .11$, $p < .01$) was the only significant variable in the model. In other words, as parental warmth at 14 months increased by one standard deviation, emotional regulation at 36 months increased by .11 standard deviations. Therefore, parental warmth was not a significant moderator in the model, it but was significantly associated with the DV (child emotional regulation).

Table 5

Moderation Hierarchical Regression Model: Parental Stress/Parental Warmth and Emotional Regulation

	R^2	B	SE	β	p
Step 1	.01**				
Parental Stress		-.00	.00	-.04	.13
Parental Warmth		.06	.01	.10	<.01
Step 2	.02**				
Parental Stress		-.00	.00	-.04	.10
Parental Warmth		.06	.01	.11	<.01
Parental Stress x Parental Warmth		-.00	.00	-.05	.06

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

The second hierarchical regression considered how the interaction between parental mental health and parental warmth moderates the relationship between parental mental health and emotional regulation (see Table 6). The results indicated that there was 2% variance explained in the DV (emotional regulation; $F = 10.18$, $p < .01$), however the interaction term was not significant ($\beta = -.03$, $p = .30$), indicating that parental warmth at 14 months did not significantly moderate the relationship between parental mental health

at 14 months and child emotional regulation at 36 months. Inspection of the individual predictors indicated that parental warmth ($\beta = .11, p < .01$) and parental mental health ($\beta = -.08, p < .01$) were significant. In other words, again, as parental warmth at 14 months increased by one standard deviation, child emotional regulation at 36 months increased by .11 standard deviations. Likewise, as parental mental health at 14 months increased by one standard deviation, child emotional regulation at 36 months decreased by -.08 standard deviations (poorer mental health, lower child emotional regulation). Therefore, again, parental warmth was not a significant moderator in the model, but both parental warmth and parental mental health individually were significantly associated with the DV (child emotional regulation).

Table 6

Moderation Hierarchical Regression Model: Parental Mental Health/Parental Warmth and Emotional Regulation

	R^2	B	SE	β	p
Step 1	.02**				
Parental Mental Health		-.01	.00	-.08	<.01
Parental Warmth		.06	.01	.11	<.01
Step 2	.02**				
Parental Mental Health		-.01	.00	-.08	<.01
Parental Warmth		.06	.01	.11	<.01
Parental Mental Health x Parental Warmth		-.00	.00	-.03	.30

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

The third hierarchical regression considers how the interaction between parental use of punitive punishment and parental warmth moderates the relationship between parental use of punitive behavior and emotional regulation (see Table 7). The results indicated that there was 2% variance explained in the DV (emotional regulation; $F =$

10.14; $p < .01$); however, the interaction term was not significant ($\beta = .02$, $p = .82$), indicating that parental warmth at 14 months did not significantly moderate the relationship between parental use of punitive punishment at 14 months and child emotional regulation at 36 months. Inspection of the individual predictors indicated that parental use of punitive punishment ($\beta = -.10$, $p < .01$) and parental warmth ($\beta = .10$, $p < .01$) were significant. In other words, as parental use of punitive punishment scores at 14 months increased by one standard deviation, child emotional regulation at 36 months decreased by .10 standard deviations. Similarly, as parental warmth at 14 months increased by one standard deviation, child emotional regulation at 36 months increased by .10 standard deviations. Therefore, parental warmth was not a significant moderator in the model, but both parental use of punitive punishment and parental warmth were individually significantly associated with the DV (child emotional regulation).

Table 7

Moderation Hierarchical Regression Model: Parental Use of Punitive Punishment/Parental Warmth and Emotional Regulation

	R^2	B	SE	β	p
Step 1	.02**				
Parental Use of Punitive Punishment		.07	.02	.09	<.01
Parental Warmth		.05	.01	.09	<.01
Step 2	.02**				
Parental Use of Punitive Punishment		.08	.02	.10	<.01
Parental Warmth		.05	.01	.10	<.01
Parental Use of Punitive Punishment x Parental Warmth		.01	.01	.02	.82

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

The fourth hierarchical regression considers how the interaction between parental social support and parental warmth moderates the relationship between parental social support and emotional regulation (see Table 8). The results indicated that there was 2% variance explained in the DV (emotional regulation; $F = 5.47, p < .01$); however, the interaction term was not significant ($\beta = .03, p = .37$), indicating that parental warmth did not significantly moderate the relationship between parental social support and child emotional regulation. Inspection of the individual predictors indicated that parental warmth ($\beta = .12, p < .01$) was the only significant variable in the model. Thus, as parental warmth at 14 months increased by one standard deviation, emotional regulation at 36 months increased by .12 standard deviations. Therefore, parental warmth was not a significant moderator in the model, but it was significantly associated with the DV (child emotional regulation).

Table 8

Moderation Hierarchical Regression Model: Parental Social Support/Parental Warmth and Emotional Regulation

	R^2	B	SE	β	p
Step 1	.01**				
Parental Social Support		-.04	.11	-.01	.72
Parental Warmth		.07	.02	.12	<.01
Step 2	.02**				
Parental Social Support		-.04	.11	-.01	.75
Parental Warmth		.07	.02	.12	<.01
Parental Social Support x Parental Warmth		.07	.08	.03	.37

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

The four separate hierarchical regressions were also conducted with control variables (i.e. family conflict, mother's age, mother's race and gender of focus child). For

all regression models, the first step indicated that the control variables accounted for about 5% of variance in emotional regulation ($p < .01$). Inspection of the individual control variables indicated that family conflict and gender of focus child were the only significant control variables ($p < .01$). For all regression models, the second step indicated that predictor variables together explain about 1-2% variance in emotional regulation ($p < .01$). Likewise, the third step indicated no additional variance explained by the interaction term for all models. These results indicate that in each of the four separate regression models, the control variables account for additional variance (5%) in emotional regulation separate from the variance accounted for by the predictor variables (1-2%).

Summary

Overall, statistical analysis revealed the following findings. Correlations between study variable were significant; however, the correlations were very weak. Additionally, there were issues with meeting the assumptions of normality across many of the study variables. However, due to the large sample size, statistically significant results were found. Therefore, caution must be taken when interpreting results.

Parental stress, parental mental health, parental use of punitive punishment and parental social support together at 11-20 months explain a statistically significant amount of variance in child emotional regulation at 36 months. However, parental mental health and parental use of punitive punishment were the only significant individual contributors to the variance in child emotional regulation. In other words, poorer parental mental health and higher use of punitive punishment at 14 months were both individually found

to be associated with lower child emotional regulation at 36 months. Once control variables were considered in the above relationship, additional variance in child emotional regulation was found, indicating that family conflict at 14 months and gender of the focus child were also significant contributors to variance in child emotional regulation at 36 months.

In the second set of regression analyses, parental warmth was not found as a significant moderator in any of the hierarchical regression analyses. However, parental warmth was found to be significantly associated with child emotional regulation. In other words, as parental warmth increased at 14 months, child emotional regulation increased at 36 months. This finding was consistent across all models. Additionally, increased parental mental health (poorer mental health) at 14 months, was found to be associated with lower child emotional regulation at 36 months. Similarly, higher parental use of punitive punishment at 14 months was found to be associated with lower child emotional regulation at 36 months. Lastly, when considering control variables in the above analysis, additional variance in child emotional regulation was found, indicating that family conflict and gender of the focus child were again significant contributors to variance in child emotional regulation. The higher family conflict was at 14 months, the lower child emotional regulation at 36 months, and female children were found to have higher emotional regulation.

CHAPTER V

DISCUSSION

The current longitudinal study used an attachment theory lens to consider the moderating role of parental warmth on the relationship between parental factors (i.e. parental stress, parental mental health, parental use of punitive punishment, and parental social support) and child emotional regulation, while controlling for mother's age, mother's race, gender of the focus child, and family conflict. Five multiple hierarchical regressions were used to assess the above relationships in a diverse Early Head Start at-risk population of 1,748 mothers and their biological children who were between the ages of prenatal to 3 years of age. The first research question assessed whether the parental factors of parental stress, parental mental health, parental use of punitive punishment and parental social support at 11-20 months explained any variance in child emotional regulation outcomes at 36 months. Additionally, the second research question assessed the moderating role of parental warmth at 14 months on the relationship between the above parental factors and child emotional regulation.

Parental Factors and Child Emotional Regulation

There were several significant findings when assessing how maternal parental factors are associated with child emotional regulation in an at-risk population. To assess for significant associations between the predictor variables (parental stress, parental mental health, parental use of punitive punishment, and parental social support) and child

emotional regulation (DV), a linear regression was conducted. The results indicated that all parental factors together at 11-20 months explained a significant amount of variance in child emotional regulation at 36 months. This aligns with existing literature and research that suggests that factors that affect the parent, such as parental stress, parental mental health, and parental social support, will also affect the way in which the parent is able to be in the parent-child attachment relationship. Thus, parental factors will influence use of punitive punishment and overall child emotional regulation (Morris et al., 2007; Mathis & Bierman, 2015). These findings were true for the at-risk population used in the current study, which also further supported previous research that suggests an increased risk for inhibiting parental factors in at-risk populations (Evans & Kim, 2013; McLeod & Shanahan, 1993).

Upon further inspection of the individual parental factors, it was found that parental mental health and parental use of punitive punishment at 14 months were the only predictor variables that were significantly associated with child emotional regulation at 36 months. This aligns with existing literature and research that suggests factors (such as parental mental health) that impact how emotionally or physically responsive the parent is able to be to the child and his/her emotional needs will affect the parent-child attachment relationship, and thus child emotional regulation (Barrasso-Cantanzaro & Eslinger, 2016; Evans & Kim, 2013; Field et al., 1990; Fishbane, 2007; Fosco & Grych, 2012; Hops et al. 1987; McLeod & Shanahan, 1993; Morris et al., 2007; Schore, 2000a; Schore, 2000b; Schore, 2001; Siegel 2015; Zimmer-Gembeck et al., 2017). Previous literature has emphasized this relationship between parental mental health and child

emotional regulation, suggesting that children of depressed mothers tend to have less ability to emotionally regulate (Maughan, Cicchetti, Toth, & Rogasch, 2007; Morris et al., 2007; Radke-Yarrow, Nottlemann, Belmont, & Welsh, 1993; Wilson, 2017).

Furthermore, previous research has shown that parents in poverty are at a greater risk of exhibiting poor mental health, particularly maternal depression (McLeod & Shanahan, 1993; Evans & Kim, 2013). The current study's findings add support to this relationship, specifically within an at-risk population.

Additionally, previous literature suggested that use of punitive punishment tends to be more present if a parent is experiencing hindering parental factors such as low parental mental health (Mathis & Bierman, 2015). The current study's findings of parental mental health and parental use of punitive punishment as being significant associations provides further support for this notion. Furthermore, previous research suggests that at-risk populations are at a greater risk of parental use of punitive punishment that is linked to deficits in child emotional regulation (Evans & Kim, 2013; Calkins, Smith, Gill, & Johnson, 1998; McLeod & Shanahan, 1993; Morris et al., 2007; Mortensen & Barnett, 2018, Stack et al., 2010; Wang et al., 2018a; Wang et al., 2018b). The findings of the current study also support this notion.

Previous research has pointed to the relationship between parental stress and child emotional regulation (Mathis & Bierman, 2015; Morris et al., 2007; Crnic & Low, 2002). However, the current study did not find a significant individual relationship between these two variables. Additionally, previous research had not considered the direct association between parental social support and child emotional regulation. The current

study sought to address this potential relationship, however, no relationship was found. This may have been due to the lack of adequate parental social support measure used in the current study. Therefore, future research should continue to explore this potential relationship with the use of a more adequate social support measure.

When the above linear regression was conducted with control variables (i.e. family conflict, mother's age, mother's race, and gender of focus child), the results indicated that all parental factors and control variables together explained a significant amount of variance in child emotional regulation within the at-risk population considered. Upon inspecting the individual variables in the first step, results indicated that the control variables accounted for a significant amount of variance in child emotional regulation, however family conflict at 14 months and gender of the focus child were the only control variables significantly associated with child emotional regulation at 36 months. This finding further supports previous research that suggests that negative emotional climates, unpredictable emotional expressions, and marital conflict all lead to less emotional security and more emotional deficits in children, specifically in at-risk populations (Evans & Kim, 2013; Fosco & Grych, 2012; Frankle, Umemura, Jacobvitz, & Hazen, 2015; Lemerise & Dodge, 1993; Morris et al., 2007; Porter et al., 2003). Similarly, previous research also suggests gender differences in emotional regulation processes and strategies (Brody & Hall, 2008).

Results in the second step indicated that the parental factors accounted for a significant amount of variance separate from the variance accounted for by the control variables. Upon inspecting the individual variables, results indicated that gender of the

focus child and parental use of punitive punishment were the only variables that remained significantly associated with child emotional regulation. However, when explaining a relatively small amount of variance with a large number of variables, significant variables can drop off. In other words, although family conflict was no longer listed as a significant variable in step two, it still may be a significant variable. Therefore, caution must be taken when interpreting these results. Caution should particularly be taken when interpreting these results given that previous research has found a significant association between family conflict and child emotional regulation (Fosco & Grych, 2012; Frankle et al., 2015; Lemerise & Dodge, 1993; Morris et al., 2007; Porter et al., 2003).

Moderation Effects

The current study sought to expand the usefulness of previous research through the use of a moderator, parental warmth. This was the first known study to utilize a longitudinal design to explore the moderating effect of parental warmth within an at-risk population. The use of a moderator in analyses has recently been encouraged by scholars and researchers, focusing on the process and interaction between variables in order to pinpoint practical and useful interventions to assist individuals and families (Marti et al., 2016; Whittaker et al., 2011; Anderson et al., 2014). This is especially crucial to better understand how to help at-risk populations who experience higher stressors. Previous research suggests the importance of parental warmth within the parent-child attachment relationship, as well as in regard to child emotional regulation (Ainsworth et al., 1974; Brady-Smith et al., 2013; Morris et al., 2007; Morris et al., 2017; Parsons et al., 2010; Schore, 2000a). In an effort to better understand the relationship and interaction between

parental factors and emotional regulation in an at-risk population, this longitudinal study sought to examine if parental warmth buffered this relationship.

Overall, unlike limited previous research, parental warmth was not found to be a significant moderator in the relationship between parental factors (parental stress, parental mental health, parental use of punitive punishment and parental social support) and child emotional regulation (Wang et al., 2018b). However, parental warmth at 14 months was consistently, across all models, found to be significantly associated with child emotional regulation at 36 months. This indicates that although it was not a buffer in the relationships between parental factors and child emotional regulation, it was significantly associated with child emotional regulation as a predictor variable. In other words, the presence of parental warmth within the parent-child attachment relationship at 14 months is often associated with higher child emotional regulation at 36 months. Therefore, the significance of parental warmth should not be dismissed, but rather considered as an important factor in influencing child emotional regulation. This finding further supports previous research that states the significance of parental warmth on child emotional regulation, suggesting that the more parental warmth there is in the parent-child attachment relationship, the greater the child's emotional regulation (Brady-Smith et al., 2013; Morris et al., 2007; Morris et al., 2017). Previous literature focusing on parental warmth within at-risk populations has been inconclusive, with some research finding parental warmth was not significant (Marti et al., 2016). However, the findings of the current study suggest that parental warmth is significantly associated with child emotional regulation within an at-risk population. Future research should seek to replicate

the current study, utilizing a longitudinal design within an at-risk population in an effort to gain more clarification on the long-lasting impact of parental warmth in relation to parental factors and child emotional regulation.

Strengths and Limitations

The current study, through a longitudinal design, sought to address the moderating role of parental warmth on the relationship between parental factors and child emotional regulation within an at-risk population. There were several strengths to the current study, allowing this current study to make some significant contributions to existing research and literature focusing on parental factors and child emotional regulation. First, in an effort to address a need in research to explore and learn more about the moderating role of parental warmth within an at-risk population, a large secondary data set was chosen. This data set allowed for maternal parental warmth to be examined across a large diverse population of low-income mothers across the country, rather than focusing on smaller single community or neighborhood samples.

Second, the current study utilized a longitudinal design, which allowed for a unique and crucial exploration of the development of child emotional regulation over time. Child emotional regulation progresses and is shaped largely by context. Thus, it is crucial to try and understand what factors are going to impact this growth and development as time passes. Additionally, this design also provides insight into how factors interact with each other over time to influence future child emotional regulation development. A longitudinal design allows for consideration of this complex process over time in an effort to gain understanding of developmental trajectories. Gaining knowledge

of the relationship between early factors and later emotional regulation abilities is also helpful in order to encourage and implement early intervention. If research is able to identify precursors or factors that predict later emotional regulation abilities, early intervention addressing these predictive factors will be beneficial in positively affecting child emotional regulation later in development. Lastly, a longitudinal design also allows for consideration of the contribution of context and the lasting impact a positive parent-child attachment relationship has on later child emotional regulation abilities.

Third, research and literature have highlighted the need for process focused research that will equip educators and clinicians with practical tools that highlight how variables work together. In other words, it is not enough to know that parental factors influence child emotional regulation, research must turn to consider what factors might positively influence the relationship between the two. This research attempted to do that. Although parental warmth was not found as a significant moderator in the current study, these findings are still useful in the process of beginning to learn about potential moderators on the relationship between inhibiting parental factors and child emotional regulation.

Fourth, the current study is one of the few studies that considered the potential moderating role of parental warmth on the relationship between inhibiting parental factors and child emotional regulation, especially within a large-scale, diverse, at-risk population. Although parental warmth was not found to be a significant moderator, parental warmth was consistently found to be associated with child emotional regulation. Again, this finding is consistent with previous literature and research (Brady-Smith et al.,

2013; Morris et al., 2007; Morris et al., 2017). Therefore, although parental warmth was not found as a significant moderator, this association between parental warmth and child emotional regulation indicates that parental warmth plays a significant role in child emotional regulation and should be focused on clinically and in research and education. Research should continue to investigate the potential moderating role of parental warmth using a better set of data and a more comprehensive measure of child emotional regulation, especially within at-risk populations, as it would give clinicians a tangible way to help positively impact child emotional regulation, as well as families as a whole, and buffer inhibiting factors that tend to be more prevalent in at-risk populations.

Fifth, using a large data set allowed for a broad picture of the relationship between parental factors, maternal warmth, and child emotional regulation to be examined. Much previous research focuses on the significance of parental warmth and individual parental factors alone. However, the reality is, these parental factors often co-exist. Therefore, a strength of the current study was the ability to consider how these factors work together in association with child emotional regulation.

Despite the above strengths, several limitations exist in the current study. First, the secondary data used presented several statistical challenges. The data did not meet more stringent recommendations for normality. These limitations create challenges in regard to data analysis, results, and interpretation.

Second, stronger parental social support and child emotional regulation measures would have yielded richer results in regard to these two constructs. The parental social support measure consisted of three summed dichotomous items. that likely did not

adequately assess the variable or completely capture the full extent of the construct of parental social support. Dichotomous measures are less desirable than interval/ratio, giving less information than Likert-type scales. This places limits on interpretability. Future research would benefit from exploring the relationship between parental social support and child emotional regulation through the use of a more reliable and valid parental social support measure. Although the Emotional Regulation Subscale of the BSID has been used by many researchers utilizing the Early Head Start Research and Evaluation Project dataset, this measure of emotional regulation is not widely used outside of this type of research, and in fact has been questioned on its quality and adequacy in measuring child emotional regulation (Bocknek, Brophy-Herb, & Banerjee, 2009). Furthermore, in research done on the quality and adequacy of available child emotional regulation scales specifically to be used in large-scale national studies of children's well-being, the BSID is left unmentioned (Halle & Darling-Churchill, 2016). Therefore, although the current study was not able to utilize a different observational measure of child emotional regulation, future research would benefit from utilizing a more thorough measure that considers child emotional regulation across several settings, rated by varying people (e.g. parent, childcare provider, teacher, observer, etc.) and that is adequate for a diverse large-scale sample (Bocknek et al., 2009; Darling-Churchill & Lippman, 2016; Halle & Darling-Churchill, 2016).

Third, although the models produced statistically significant results, across all models the amount of variance found in child emotional regulation was very small, and perhaps only significant due to the large sample sized used in the study. Therefore,

caution must be used in interpreting results. However, given that previous research has found associations between the considered parental factors (parental stress, parental mental health, parental social support, parental use of punitive punishment and parental warmth) and child emotional regulation, these factors should continue to be examined in future research, perhaps using more adequate measures, as previously mentioned. Forth, previous literature and research often consider parental warmth as an aspect of parental sensitivity (Wang et al., 2018b). Perhaps future research would benefit from utilizing a parental sensitivity measures that encapsulate a broader joint concept of parental warmth and parental sensitivity.

Implications and Future Research

Within the context of the above limitations, there are several implications from the current study for researchers, parent and family educators, and mental health clinicians. For researchers, although parental warmth was not found as a significant moderator, it was consistently found to be associated with child emotional regulation, indicating that parental warmth plays a significant and long-lasting role in child emotional regulation. This finding is significant for researchers in that it should encourage continued research using moderators to investigate within an at-risk population the potential moderating role of parental warmth, or some other variable (e.g. parental sensitivity). Research focusing on the moderating role of variables informs clinicians of tangible ways to positively impact child emotional regulation, as well as families as a whole. In other words, it is not enough to know what factors inhibit child emotional regulation, future research must continue to consider variables that can act as protective

factors in that relationship. Research like this would provide clinicians with practical information and tools to inform their practice and interventions.

There are also several implications for parent and family educators. The found significance of parental warmth in relation to child emotional regulation, highlights the importance of the parent-child attachment relationship and the impact of early positive interactions. Therefore, when educating parents and families on child development and emotional regulation, educators should focus on informing parents and families of the importance of a secure attachment relationship that possesses parental warmth.

Additionally, educators should focus on encouraging parental warmth in the parent-child attachment relationship from an early time, which will ideally help deter future child emotional regulation difficulties. Educators can help families focus on developing a quality parent-child attachment relationship marked with parental warmth, rather than focusing on teaching behavior modification methods. Focusing on practical ways to increase parental warmth will give families a positive way to enhance current relationships within the family that will ultimately contribute to future child regulation abilities.

However, since parental warmth did not seem to moderate the relationship between inhibiting parental factors and child emotional regulation, a focus on parental warmth should not be done at the exclusion of addressing other inhibiting parental factors or family conflict. Thus, educators should also be encouraged to teach preventative measures that address these other inhibiting factors as well. For example, the current study provided further support to existing research that within at-risk populations, lower

child emotional regulation is associated with poor parental mental health, increased family conflict, and higher use of punitive punishment. Therefore, given the above findings, when educators working with at-risk populations are teaching on child wellness and child emotional regulation, a systemic approach must be taken. Children do not operate in isolation and parents must be encouraged to consider how their own factors might contribute to their child's emotional wellness. Focus should be given to educating families and parents on the importance of self-care and whole family wellness, as well as educating parents on alternative positive discipline techniques, other than punitive punishment.

The current study also has several implications for mental health clinicians. Mental health clinicians should also consider the significance of parental warmth in relation to child emotional regulation. Again, this finding highlights the importance of the parent-child attachment relationship and the impact of early positive interactions. Therefore, when working with families struggling with children who have inhibited emotional regulation, clinicians can help families focus on the quality of the parent-child attachment relationship by enhancing parental warmth. Rather than focusing on behavior modification of the child, clinicians should take a more systemic perspective and focus on fostering a warm and emotionally in-tune family environment and interactions between the parent and the child, that will likely be associated with increased future emotional regulation. Helping a parent learn how to be emotionally attuned, warm, and responsive to her child are practical interventions a clinician can focus on to impact child emotional regulation.

Again, since parental warmth did not seem to moderate the relationship between inhibiting parental factors and future child emotional regulation, a focus on parental warmth should not be done at the exclusion of addressing other inhibiting parental factors or family conflict. Therefore, given that at-risk populations are more likely to possess inhibiting factors such as poor parental mental health, increased family conflict and higher use of punitive punishment, clinicians working with this population should focus on strengthening parent-child and family relationships in an effort to lessen family conflict, rather than focusing solely on the focus child. The clinical focus should not be the child to the exclusion of the parent and whole family. Clinicians should also assess parental mental health and work to improve parental mental health, rather than solely focusing on the child or the parent-child relationship.

Overall, parental factors were found to be associated with child emotional regulation. Therefore, in order to best assist families and gain a full picture of child emotional regulation development, researchers, educators and mental health clinicians must continually consider a broader picture of child emotional regulation when working with families from at-risk populations who are at a greater risk of possessing inhibiting parental factors.

Conclusion

Parental factors, such as parental stress, parental mental health, parental use of punitive punishment, and parental social support have been found to be significantly associated with child emotional regulation (Calkins et al., 1998; Chazan-Cohen et al., 2009; Mathis & Bierman, 2015; Maughan, Cicchetti, Toth, Rogasch, 2007; Morris et al.,

2007; Mortensen & Barnett, 2018; Wilson, 2017). At-risk populations have an increased risk of possessing these inhibiting parental factors and thus decreased child emotional regulation (Chazan-Cohen et al., 2009; Evans & Kim, 2013; Mathis & Bierman, 2015; McLeod & Shanahan, 1993; Schore, 2001). Parental warmth has been shown to be significantly associated with future child emotional regulation and has recently been considered as a moderator in the relationship between inhibiting parental factors and child emotional regulation (Wang et al., 2018b). This was one of the first studies to utilize a longitudinal design to examine through an attachment lens the moderating role of parental warmth on the relationship between parental factors and child emotional regulation within a large-scale, diverse, at-risk population. Using multiple hierarchical regressions, this study utilized the data of mothers and children from the Early Head Start Research and Evaluation Project to examine how parental stress, parental mental health, parental use of punitive punishment, and parental social support are associated with child emotional regulation. Furthermore, maternal parental warmth was examined as a moderator among these parental factors and child emotional regulation. Family conflict, mother's age, mother's race, and gender of the focus child were controlled for in the above analyses.

Overall, there were several small, yet significant, findings when assessing the relationship between maternal parental factors and child emotional regulation. Parental stress, parental mental health, parental use of punitive punishment, and parental social support together were found to contribute to a significant amount of variance in later child emotional regulation. After examining each individual factor, parental mental health

and parental use of punitive punishment at 14 months were the only variables that significantly contributed to variance in child emotional regulation at 36 months. In other words, the results suggested that poorer parental mental health and greater use of punitive punishment were both over time individually associated with decreased child emotional regulation. When control variables were added to the above model, additional variance in child emotional regulation was found. This additional variance indicated that family conflict and gender of the focus child also significantly contributed to variance in future child emotional regulation.

In the second set of regression analyses that considered the moderating role of parental warmth on the relationship between parental factors and child emotional regulation, parental warmth was not found to be a significant moderator in any of the hierarchical regression models. This result suggested that parental warmth at 14 months did not buffer the relationship between parental factors and child emotional regulation. However, across all models, parental warmth at 14 months was found to be significantly associated with later child emotional regulation at 36 months. Therefore, results suggested that as parental warmth increased, over time child emotional regulation also increased. Additionally, similar to the first set of linear regressions, parental mental health, parental use of punitive punishment, family conflict, and gender of the focus child were all found to be individually associated with child emotional regulation. In other words, poorer mental health was significantly associated with future lower child emotional regulation; higher use of parental punishment was significantly associated with future lower child emotional regulation; higher family conflict was significantly

associated with future lower child emotional regulation; and female children displayed higher emotional regulation than male children.

REFERENCES

- Abidin, R. R. (1990). *Parenting Stress Index Short Form Test Manual*. Charlottesville, VA: Pediatric Psychology Press.
- Abidin, R. R. (1995). *Parenting Stress Index, Third Edition: Professional Manual*. Odessa, FL: Psychological Assessment Resources, Inc.
- Administration for Children and Families. (2002a). *Making a difference in the lives of infants and toddlers and their families: The impact of Early Head Start programs on young children and their families: Vol. 1. Final Technical Report*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from <https://www.acf.hhs.gov/opre/resource/making-a-difference-in-the-lives-of-infants-and-toddlers-and-their-families-0>
- Administration for Children and Families. (2002b). *Making a difference in the lives of infants and toddlers and their families: The impact of Early Head Start: Vol. II. Final Technical Report*. Washington, DC: U.S. Department of Health and Human Services. Retrieved from <https://www.acf.hhs.gov/opre/resource/making-a-difference-in-the-lives-of-infants-and-toddlers-and-their-families-1>
- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. (Eds.). (1974). *Infant-mother attachment and social development: Socialization as a product of reciprocal responsiveness to signals*. Cambridge University Press, London.

- Anderson, J. R., Durtschi, J. A., Soloski, K. L., & Johnson, M. D. (2014). Mediation and moderation: Conceptual foundations and analytical applications. In R.B. Miller & L. N. Johnson (Eds.), *Advanced methods in family therapy research: A focus on validity and change* (347-364). New York, NY: Routledge.
- Barrasso-Catanzaro, C., & Eslinger, P. J. (2016). Neurobiological bases of executive function and social-emotional development: Typical and atypical brain changes. *Family Relations*, 65(1), 108-119. doi:10.1111/fare.12175
- Bayley, N. (1993). *Bayley Scales of Infant Development, Second Edition: Manual*. New York, NY: The Psychological Corporation, Harcourt Brace & Company.
- Berlin, L. J., Brady-Smith, C., & Brooks-Gunn, J. (2002). Links between childbearing age and observed maternal behaviors with 14-month-old in the Early Head Start Research and Evaluation Project. *Infant Mental Health*, 23(1-2), 104-129. doi:10.1002/imhj.10007
- Bocknek, E. L., Brophy-Herb, H. E., & Banerjee, M. (2009). Effects of parental supportiveness on toddlers' emotion regulation over the first three years of life in a low-income African American sample. *Infant Mental Health Journal*, 30(5), 452-476. doi:10.1002/imhj.20224

- Bost, K. K., Vaughn, B. E., Washington, W. N., Cielinski, K. L., & Bradbard, M. R. (1998). Social competence, social support, and attachment: Demarcation of construct domains, measurement, and paths of influence for preschool children attending Head Start. *Child Development*, 69(1), 192-218. doi:10.1111/j.1467-8624.1998.tb06143.x
- Bowlby, J. (1951). Maternal care and mental health. *Bulletin of the World Health Organization*, 3(3), 355-533.
- Bowlby, J. (1957). An ethological approach to research in child development. *British Journal of Medical Psychology*, 30, 230-240.
- Bowlby, J. (1969). *Attachment and loss: Attachment*. New York, NY: Basic Books.
- Brady-Smith, C., Brooks-Gunn, J., Tamis-LeMonda, C. S., Ispa, J. M., Fuligni, A. S., Chazan-Cohen, R., & Fine, M. A. (2013). Mother-infant interactions in Early Head Start: A person-oriented within-ethnic group approach. *Parenting: Science and Practice*, 13(1), 27-43. doi:10.1080/15295192.2013.732430
- Brennan, P. A., Pargas, R., Walker, E. F., Green, P., Newport, D. J., & Stowe, Z. (2008). Maternal depression and infant cortisol: influences of timing, comorbidity and treatment. *Journal of Child Psychology and Psychiatry*, 49(10), 1099-1107. doi:10.1111/j.1469-7610.2008.01914.x
- Bretherton, I. (1990). Communication patterns, internal working models, and the intergenerational transmission of attachment relationships. *Infant Mental Health Journal*, 11(3), 237-252. doi:10.1002/1097-0355(199023)11:3<237::AID-IMHJ2280110306>3.0.CO 2-X

- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*, 28(5), 759-775. doi:10.1037/0012-1649.28.5.759
- Brody, L. R., & Hall, J. A. (2008). Gender and emotion in context. In M. Lewis, J. M. Haviland, & L. F. Barrett (Eds), *Handbook of emotions* (3rd ed., pp. 395-408). New York, NY: The Guilford Press.
- Cairney, J., Boyle, M., Offord, D. R., & Racine, Y. (2003). Stress, social support and depression in single and married mothers. *Social Psychiatry and Psychiatric Epidemiology*, 38(8), 442-449. doi:10.1007/s00127-003-0661-0
- Caldwell, B. M., & Bradley, R. H. (2001). *HOME inventory and administration manual*. (3rd ed.). University of Arkansas for Medical Sciences and University of Arkansas at Little Rock.
- Calkins, S. D., Smith, C. L., Gill, K. L., & Johnson, M. C. (1998). Maternal interactive style across contexts: Relations to emotional, behavioral and physiological regulation during toddlerhood. *Social Development*, 7(3), 350-369. doi:10.1111/1467-9507.00072
- Champoux, M., Byrne, E., DeLizio, R., & Suomi, S. J. (1992). Motherless mothers revisited: Rhesus maternal behavior and rearing history. *Primates*, 33, 251-255.
- Chazan-Cohen, R., Raikes, H., Brooks-Gunn, J., Ayoub, C., Pan, B. A., Kisker, E. E., Roggman, L., & Fuligni, A. S. (2009). Low-income children's school readiness: Parent contributions over the first five years. *Early Education and Development*, 20(6), 958-977. doi:10.1080/1040928090336240

- Cohen, J., Cohen, P., West, S. G., Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Coyl, D. D., Newland, L. A., & Freeman, H. (2010). Predicting preschoolers' attachment security from parenting behaviours, parents' attachment relationships and their use of social support. *Early Child Development and Care*, 180(4), 499-512. doi:10.1080/03004430802090463
- Crnic, K., & Low, C. (2002). Everyday stresses and parenting. In M. H. Bornstein (Ed.), *Handbook of Parenting: Practical issues in parenting* (pp. 243-267). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Crockenberg, S. B. (1981). Infant irritability, mother responsiveness, and social support influences on the security of infant-mother attachment. *Child Development*, 52(3), 857-865. doi:10.2307/1129087
- Darling-Churchill, K. E., & Lippman, L. (2016). Early childhood social and emotional development: Advancing the field of measurement. *Journal of Applied Developmental Psychology*, 45, 1-7. doi:10.1016/j.appdev.2016.02.002
- Evans, J. D. (1996). *Straightforward statistics for the behavioral sciences*. Pacific Grove, CA: Books/Cole Publishing Co.
- Evans, G. W., & Kim, P. (2013). Childhood poverty, chronic stress, self-regulation, and coping. *Child Development Perspectives*, 7(1), 43-48. doi:10.1111/cdep.12013
- Field, A. (2009). *Discovering statistics using SPSS*. Thousand Oaks, CA: Sage Publications.

- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Thousand Oaks, CA: Sage Publications.
- Field, T., Healy, B., Goldstein, S., & Guthertz, M. (1990). Behavior-state matching and synchrony in mother-infant interactions of nondepressed versus depressed dyads. *Developmental Psychology*, 26(1), 7-14. doi:10.1037/0012-1649.26.1.7
- Fishbane, M. D. (2007). Wired to connect: Neuroscience, relationships, and therapy. *Family Process*, 46(3), 395-412. doi:10.1111/j.1545-5300.2007.00219.x
- Fosco, G. M., & Grych, J. H. (2012). Capturing the family context of emotion regulation: A family systems model comparison approach. *Journal of Family Issues*, 34(4), 557-578. doi:10.1177/0192513X12445889
- Frankel, L. A., Umemura, T., Jacobvitz, D., & Hazen, N. (2015). Marital conflict and parental responses to infant negative emotions: Relations with toddler emotional regulation. *Infant Behavior and Development*, 40, 73-83. doi:10.1016/j.infbeh.2015.03.004
- Geens, N., & Vandenbroeck, M. (2014). The (ab)sense of a concept of social support in parenting research: A social work perspective. *Child and Family Social Work*, 19(4), 491-500. doi:10.1111/cfs.12048
- Gresham, D., & Gullone, E. (2012). Emotion regulation strategy use in children and adolescents: The explanatory roles of personality and attachment. *Personality and Individual Differences*, 52(5), 616-621. doi:10.1016/j.paid.2011.12.016
- Gross, J. J. (2015). Emotion regulation: current status and future prospects. *Psychological Inquiry*, 26(1), 1-26. doi:10.1080/1047840X.2014.940781

- Halle, T. G., & Darling-Churchill, K. E. (2016). Review of measures of social and emotional development. *Journal of Applied Developmental Psychology*, 45, 8-18. doi:10.1016/j.appdev.2016.02.003
- Hu, T., Zhang, D., Wang, J., Mistry, R., Ran, G., & Wang, X. (2014). Relation between emotion regulation and mental health: A meta-analysis review. *Psychological Reports: Measures and Statistics*, 114(2), 341-362. doi:10.2466/03.20.PR0.114k22w4
- Hops, H., Biglan, A., Sherman, L., Arthur, J., Friedman, L., & Osteen, V. (1987). Home observations of family interactions of depressed women. *Journal of Consulting and Clinical Psychology*, 55(3), 341-346. doi:10.1037/0022-006X.55.3.341
- Hughes, D., Golding, K. S., & Hudson, J. (2015). Dyadic Developmental Psychotherapy (DDP): The development of the theory, practice and research base. *Adoption & Fostering*, 39(4), 356-365. doi:10.1177/0308575915610943
- Jennings, K. D., Stagg, V., & Connors, R. E. (1991). Social networks and mothers' interactions with their preschool children. *Child Development*, 62(5), 966-978. doi:10.1111/j.1467-8624.1991.tb01583.x
- Kline, R. B. (2011). *Principles and practice of structural equation modeling*. London: The Guilford Press.
- Lemerise, E. A., & Dodge, K. A. (1993). The development of anger and hostile interactions. In M. Lewis, & J. Haviland (Eds), *Handbook of emotion* (pp. 537-546). New York, NY: The Guilford Press.

- Main, M., Hesse, E., & Hesse, S. (2011). Attachment theory and research: Overview with suggested application to child custody. *Family Court Review*, 49(3), 426-463.
doi:10.1111/j.1744-1617.2011.01383.x
- Marti, M., Bonillo, A., Jane, M. C., Fisher, E. M., & Duch, H. (2016). Cumulative risk, the mother-child relationship, and social-emotional competence in Latino Head Start children. *Early Education and Development*, 27(5), 590-622.
doi:10.1080/10409289.2016.1106202
- Mathis, E. T. B., & Bierman, K. L. (2015). Dimensions of parenting associated with child prekindergarten emotion regulation and attention control in low-income families. *Social Development*, 24(3), 601-620. doi:10.1111/sode.12112
- Maughan, A., Cicchetti, D., Toth, S. L., & Rogosch, F. A. (2007). Early-occurring maternal depression and maternal negativity in predicting young children's emotion regulation and socioemotional difficulties. *Journal of Abnormal Child Psychology*, 35(5), 685-703. doi:10.1007/s10802-007-9129-0
- McLeod, J. D., & Shanahan, M. J. (1993). Poverty, parenting, and children's mental health. *American Sociological Review*, 58(3), 351-366. doi:10.2307/2095905
- Mennin, D. S., Holaway, R. M., Fresco, D. M., Moore, M. T., & Heimberg, R. G. (2007). Delineating components of emotion and its dysregulation in anxiety and mood psychopathology. *Behavior Therapy*, 38(3), 284-302.
doi:10.1016/j.beth.2006.09.001

- Moos, R. H. (1990). Conceptual and empirical approaches to developing family-based assessment procedures: Resolving the case of the Family Environment Scale. *Family Process, 29*(2), 199-208. doi:10.1111/j.1545-5300.1990.00199.x
- Moos, R. H., & Moos, B. S. (2002). *Family Environment Scale*. Redwood City, CA: Mind Garden.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotional regulation. *Social Development, 16*(2), 361-388. doi:10.1111/j.1467-9507.2007.00389.x
- Morris, A. S., Criss, M. M., Silk, J. S., & Houlberg, B. J. (2017). The impact of parenting on emotion regulation during childhood and adolescence. *Child Development Perspectives, 11*(4), 233-238. doi:10.1111/cdep.12238
- Mortensen, J. A., & Barnett, M. A. (2018). Emotional regulation, harsh parenting, and teacher sensitivity among socioeconomically disadvantaged toddlers in child care. *Early Education and Development, 29*(2), 143-160. doi:10.1080/10409289.2017.1371560
- Nellis, L. & Gridley, B. E. (1994). Review of the Bayley Scales of Infant Development-Second Edition. *Journal of School Psychology, 32*(2), 201-209. doi:10.1016/0022-4405(94)90011-6
- NICHD Early Child Care Research Network. (2004). Affect dysregulation in the mother-child relationship in the toddler years: Antecedents and consequences. *Development and Psychology, 16*(1), 43-68. doi:10.1017/S0954579404044402

- Parsons, C. E., Young, K. S., Murray, L., Stein, A., & Kringelbach, M. L. (2010). The functional neuroanatomy of the evolving parent-infant relationship. *Progress in Neurobiology*, 91(3), 220-241. doi:10.1016/j.pneurobio.2010.03.001
- Paschall, K. W., Mastergeorge, A. M., & Ayoub, C. C. (2019). Associations between child physical abuse potential, observed maternal parenting, and young children's emotion regulation: Is participation in Early Head Start protective?. *Infant Mental Health Journal*, 40(2), 169-185. doi:10.1002/imhj.21767
- Porter, C. L., Wouden-Miller, M., Silva, S. S., & Porter, A. E. (2003). Marital harmony and conflict: Links to infants' emotional regulation and cardiac vagal tone. *Infancy*, 4(2), 297-307. doi:10.1207/S15327078IN0402_09
- Radke-Yarrow, M., Nottelmann, E., Belmont, B., & Welsh, J. D. (1993). Affective interactions of depressed and nondepressed mothers and their children. *Journal of Abnormal Child Psychology*, 21(6), 683-695. doi:10.1007/bf00916450
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385-401. doi:10.1177/014662167700100306
- Raver, C. C. (2004). Place emotional self-regulation in sociocultural and socioeconomic contexts. *Child Development*, 75(2), 346-353. doi:10.1111/j.1467-8624.2004.00676.x

- Reitman, D., Currier, R. O., & Stickle, T. R. (2002). A critical evaluation of the Parenting Stress-Index-Short Form (PSI-SF) in a head start population. *Journal of Clinical Child and Adolescent Psychology*, 31(3), 384-392.
doi:10.1207/S15374424JCCP3103_10
- Roggman, L. A., Moe, S. T., Hart, A. D., & Forthun, L. F. (1994). Family leisure and social support: Relations with parenting stress and psychological well-being in Head Start parents. *Early Childhood Research Quarterly*, 9(3-4), 463-480.
doi:10.1016/0885-2006(94)90020-5
- Ross, C. E., Mirowsky, J., & Huber, J. (1983). Dividing work, sharing work, and in-between: Marriage patterns and depression. *American Sociological Review*, 48(6), 809-823. doi:10.2307/2095327
- Salter Ainsworth, M. D., & Bowlby, J. (1991). An ethological approach to personality development. *American Psychologist*, 46(4), 333-341. doi:10.1037/0003-066X.46.4.333
- Santrock, J. W. (2009). *Life-span development* (12th ed.). New York: NY: McGraw-Hill.
- Schore, A. N. (2000a). Attachment of the regulation of the right brain. *Attachment & Human Development*, 2(1), 23-47. doi:10.1080/146167300361309
- Schore, A. N. (2000b, June). *Parent-infant communication and the neurobiology of emotional development*. Paper presented at the Head Start National Research Conference, Washington, DC.

- Schore, A. N. (2001). Effects of a secure attachment relationship on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, 22(1-2), 7-66. doi:10.1002/1097-0355(200101/04)22:1<7::AID-IMHJ2>3.0.CO;2-N
- Schore, A. N. (2012). *The science of the art of psychotherapy* (1st ed.). New York: NY: W.W. Norton.
- Schore, J. R., & Schore, A. N. (2014). Regulation theory and affect regulation psychotherapy: A clinical primer. *Smith College Studies in Social Work*, 84(2-3), 178-195. doi:10.1080/00377317.2014.923719
- Schore, A. N., & Sieff, D. F. (2015). On the same wave-length: How our emotional brain is shaped by human relationships. In: Seiff, D. F. (Ed.) *Understanding and Healing Emotional Trauma: Conversations with Pioneering Clinicians and Researchers* (111-136). New York, NY: Routledge.
- Shaver, P. R., Collins, N., & Clark, C. L. (1996). Attachment styles and internal working models of self and relationship partners. In J. O. Garth, & J. Fletcher (Eds), *Knowledge structures in close relationships: A social psychological approach* (pp. 25-61). Mahwah, NJ: L. Erlbaum Associates.
- Siegel, D. J. (2003). In Hartzell M. (Ed.), *Parenting from the inside out: How a deeper self-understanding can help you raise children who thrive*. New York: NY: J.P. Tarcher/Putnam.
- Siegel, D. J. (2012). *The developing mind: How relationships and the brain interact to shape who we are* (2nd ed.). New York: NY: Guilford Press.

- Siegel, D. J. (2015). Interpersonal Neurobiology as a lens into the development of wellbeing and resilience. *Children Australia*, 40(2), 160-164.
doi:10.1017/cha.2015.7
- Stack, D. M., Serbin, L. A., Enns, L. N., Ruttelle, P. L., & Barrieau, L. (2010). Parental effects on children's emotional development over time and across generations. *Infants & Young Children*, 23(1), 52-69. doi:10.1097/iy.0b013e3181c97606
- Totsika, V., & Sylva, K. (2004). The Home Observation for Measurement of the Environment revisited. *Child and Adolescent Mental Health*, 9(1), 25-35.
doi:10.1046/j.1475-357X.2003.00073.x
- U.S. Census Bureau. (2018). *Income and poverty in the United States: 2017* (Report No. P60-263). Retrieved from
<https://www.census.gov/library/publications/2018/demo/p60-263.html>
- Wang, M., Wang, Y., Wang, F., & Xing, X. (2018a). Parental corporal punishment and child temperament: Independent and interactive predictors of child emotion regulation in China. *Journal of Interpersonal Violence*, 1-19.
doi:10.1177/0886260518817058
- Wang, Y., Wang, M., & Xing, X. (2018b). Parental harsh discipline and child emotional regulation: The moderating role of parental warmth in China. *Children and Youth Services Review*, 93(C), 283-290. doi:10.1016/j.childyouth.2018.07.035
- Weiss, M. J. (2002). Hardiness and social support as predictors of stress in mothers of typical children, children with autism, and children with mental retardation. *Autism*, 6(1), 115-130. doi:10.1177/1362361302006001009

- Whittaker, J. E. V., Harden, B. J., See, H. M., Meisch, A. D., & Westbrook, T. R. (2011). Family risks and protective factors: Pathways to Early Head Start toddlers' social-emotional functioning. *Early Childhood Research Quarterly*, 26(1), 74-86. doi:10.1016/j.ecresq.2010.04.007
- Wilson, T. W. (2017). Does exposure to persistent maternal depression alter the developing brain's empathetic circuitry?. *Journal of the American Academy of Child & Adolescent Psychiatry*, 56(1), 8-9. doi:10.1016/j.jaac.2016.10.015
- Yeatts, P. E., Martin, S. B., & Petrie, T. A. (2017). Physical fitness as a moderator of neuroticism and depression in adolescent boys and girls. *Personality and individual differences*, 114, 30-35. doi:10.1016/j.paid.2017.03.040
- Zimmer-Gembeck, M. J., Webb, H. J., Pepping, C. A., Swan, K., Merlo, O., Skinner, E. A., Avdagic, E., & Dunbar, M. (2017). Review: Is parent-child attachment a correlate of children's emotion regulation and coping?. *International Journal of Behavioral Development*, 41(1), 74-93. doi:10.1177/0165025415618276

APPENDIX A

Measures

EHS RESEARCH AND EVALUATION PROJECT MEASURES DOCUMENTATION

sort code: 625=Par Intv -Parent Wellbeing

Scale Name: **Parenting Stress Index-Short Form**

scale acronym: PSI-SF

Subscale Name: PSI-SF Parental Distress		subscale acronym PD
14 month	24 month	36 month
Parent data waves: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Father data waves:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Scale Variables: B1P_PD	B2P_PD	B3P_PD
RelatedVariables: B1P_PD90	B2P_PD90; Father: B2D_PD	
SourceVariables: B1P103A - L	B2P103A - L Father: B2D304A - L	B3P103A - L
<p>Subscale Notes: Parental Distress measures the level of distress the parent is feeling in his or her role as a parent stemming from personal factors, including a low sense of competence as a parent, stress because of perceived restrictions stemming from parenting, depression, and lack of social support.</p> <p>The parent answered whether he or she agreed or disagreed with statements such as, "You often have the feeling that you cannot handle things very well," and "You feel trapped by your responsibilities as a parent," and "You feel alone and without friends."</p> <p>Item responses are coded on a 5-point scale, with 5 indicating high levels of parental distress. Scores on the 12-item subscale can range from 12 to 60.</p> <p>Define BnP_PD as the sum of the 12 items, BnP103A--BnP103L, using imputed values for missings.</p> <p>If BnP_PD is nonmissing and is 36 then BnP_PD90 is set equal to 1. Else if BnP_PD is nonmissing and less than or equal to 36 then BnP_PD90 is set equal to 0. Otherwise, BnP_PD90 is set to missing.</p>		

SECTION 11

HOW PARENT HAS BEEN FEELING

11.1 In general, would you say your health is . . .

MOS 1.3

Excellent, 01
 Very good, 02
 Good, 03
 Fair, or 04
 Poor? 05

11.2

CESD
SHORT

I am going to read a list of ways you may have felt or behaved. Looking at the categories on this card, please tell me how often you have felt this way during the past week.

SHOW
CARD
16

How often during the past week have you felt (READ STATEMENT)--would you say: rarely or never, some or a little of the time, occasionally or a moderate amount of time, or most or all of the time? **REPEAT FOR B-L AND CIRCLE ONE CODE FOR EACH.**

PROBE: During the last 7 days.

CODE ONLY ONE RESPONSE FOR EACH STATEMENT.

	RARELY OR NEVER (LESS THAN 1 DAY)	SOME OR A LITTLE (1-2 DAYS)	OCCASIONALLY OR MODERATE (3-4 DAYS)	MOST OR ALL (5-7 DAYS)
A. Bothered by things that usually don't bother you	01	02	03	04
B. You did not feel like eating; your appetite was poor	01	02	03	04
C. That you could not shake off the blues, even with help from family and friends	01	02	03	04
D. You had trouble keeping your mind on what you were doing	01	02	03	04
E. Depressed	01	02	03	04
F. That everything you did was an effort	01	02	03	04
G. Fearful	01	02	03	04
H. Your sleep was restless	01	02	03	04
I. You talked less than usual	01	02	03	04
J. You felt lonely	01	02	03	04
K. You felt sad	01	02	03	04
L. You could not get "going"	01	02	03	04

EHS RESEARCH AND EVALUATION PROJECT MEASURES DOCUMENTATION

sort code: 650=Par Intv - HOME scale

Scale Name: **Home Observation for Measurement of the Environment (HOME) - Infant/Toddler** scale acronym: IT HOME

Subscale Name: HOME: Total Score (with additional NLSY items)		subscale acronym: BnP_HOME	
	14 month	24 month	36 month
Parent data waves:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Father data waves:		<input type="checkbox"/>	<input type="checkbox"/>
Scale Variables:	B1P_HOME	B2P_HOME	
RelatedVariables:			
SourceVariables:	B1PF01-B1PF14, B1PA12, B1P803R, B1PA01BR, B1PA01AR, B1PA01HR, B1PF16, B1PA01ER, B1PA02R, B1PA01DR, B1PA01GR, B1PA11R, B1PA07R, B1PA06R, B1PA04R, B1PA05R, B1P707FR, B1PA01FR	B2PF01-B2PF14, B2PA12, B2P803R, B2PA01BR, B2PA01AR, B2PA01HR, B2PF16, B2PA01ER, B2PA02R, B2PA01DR, B2PA01GR, B2PA11R, B2PA07R, B2PA06R, B2PA04R, B2PA05R, B2P707FR, B2PA01FR	
Subscale Notes: HOME Total Score -- measures the cognitive stimulation and emotional support provided by the parent in the home environment. The total includes all of the 31 items included in the 5 subscales (including one that was dropped) out of the original 45 items. The maximum potential score is 31. Total Home is the sum of items BnPF01-BnPF14, BnPA12, BnP803R, BnPA01BR, BnPA01AR, BnPA01HR, BnPF16, BnPA01ER, BnPA02R, BnPA01DR, BnPA01GR, BnPA11R, BnPA07R, BnPA06R, BnPA04R, BnPA05R, BnP707FR, BnPA01FR. If 25 percent or more of the items are missing within the subscale, set the subscale score to missing. If fewer than 25 percent are missing, set the missing items to the average subscale item score. The subscale score is the sum of the items in the subscale.			

Subscale Name: HOME: Nonpunitive (Parental Lack of Hostility) Scale		subscale acronym: BnP_NPUN	
	14 month	24 month	36 month
Parent data waves:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Father data waves:		<input type="checkbox"/>	<input type="checkbox"/>
Scale Variables:	B1P_NPUN	B2P_NPUN	
RelatedVariables:			
SourceVariables:	B1PF10, B1PF11, B1PF12, B1PF13, B1PF14	B2PF10, B2PF11, B2PF12, B2PF13, B2PF14	
Subscale Notes: HOME Non Punishiveness/ Hostility (Parental Lack of Hostility) Subscale (5 items-- observation only) BnP_NPUN is the sum of items BnPF10, BnPF11, BnPF12, BnPF13, BnPF14 (All items coded as Yes=1 No=0) 12. Parent does not shout at child 13. Parent does not express annoyance with or hostility to child 14. Parent neither slaps nor spanks child during visit 16. Parent does not scold or criticize child during visit 17. Parent does not interfere or restrict child more than 3 times If 25 percent or more of the items are missing within the subscale, set the subscale score to missing. If fewer than 25 percent are missing, set the missing items to the average subscale item score. The subscale score is the sum of the items in the subscale.			

15. Imagine that you have a personal problem and are feeling nervous, anxious, or depressed. Is there someone you can confide in when you are feeling this way?
- YES 1
 NO (GO TO 18) 0
 DON'T KNOW (GO TO 18) 8
 REFUSED (GO TO 18) 9
- 15a. How many people do you know in whom you can confide when you have a personal problem?
- PEOPLE WHO CAN CONFIDE IN
 DON'T KNOW 98
 REFUSED 99
- 15b. (How many of these people/Does this person) live in your household?
- PEOPLE IN HOUSEHOLD
 WHO CAN CONFIDE IN
17. **INTERVIEWER: IF 15 EQUALS "YES," READ 17, OTHERWISE GO TO 18:** Thinking about the last time you confided in (this person/one of these people), how helpful was confiding in (that person/those people/him/her)? Was it . . .
- Very helpful 1
 Somewhat helpful 2
 Not very helpful 3
 Not at all helpful 4
 DON'T KNOW 8
 REFUSED 9

Based upon 1,866 valid cases out of 2,977 total cases.

P019: PSI 6: Have a Close Friend

Location: 978-979 (width: 2; decimal: 0)

Variable Type: numeric

(Range of) Missing Values: -8 , -7 , -6 , -5 , -4 , -3 , -2 , -1

Notes: Derivation: Raw variable from PSI.

Notes: Data Waves: PSI: 6 months

- 171 -

- Study 03804 -

Value	Label	Unweighted Frequency	%
0	(0) No	245	8.2 %
1	(1) Yes	1,620	54.4 %
-5	-5/.E=missing item	1,111	37.3 %
-1	-1/.A=DK	1	0.0 %

Based upon 1,865 valid cases out of 2,977 total cases.

P0110: PSI 6: Had Contact w/Family Last 2 Weeks

Location: 980-981 (width: 2; decimal: 0)

Variable Type: numeric

(Range of) Missing Values: -8 , -7 , -6 , -5 , -4 , -3 , -2 , -1

Notes: Derivation: Raw variable from PSI.

Notes: Data Waves: PSI: 6 months

Value	Label	Unweighted Frequency	%
0	(0) No	177	5.9 %
1	(1) Yes	1,688	56.7 %
-5	-5/.E=missing item	1,111	37.3 %
-1	-1/.A=DK	1	0.0 %

Based upon 1,865 valid cases out of 2,977 total cases.

EHS RESEARCH AND EVALUATION PROJECT MEASURES DOCUMENTATION

sort code: 800=Child: Bayley

Scale Name: **Bayley Scales of Infant Development (BSID) Behavioral Rating Scales** **scale acronym:** BSID BRS

Developer or Publisher: Bayley, The Psychological Corporation, Harcourt Brace & Company, 1993.

Citation: Bayley, Nancy. Bayley Scales of Infant Development, Second Edition: Manual. New York: The Psychological Corporation, Harcourt Brace & Company, 1993.

items available in documentation no
restricted files yes

Scale notes: Bayley Behavior Rating Scale (BRS) measures the child's behavior during the Bayley MDI assessment. The BRS is one of the three component scales of the Bayley Scales of Infant Development-- Second Edition (Bayley 1993). The interviewer assesses the child's behavior by scoring items on a 5-point scale, with 5 indicating more positive behavior (for example, less frustration and more cooperation).

Subscale Name:	BSID BRS - Emotional Regulation			subscale acronym	REG
	14 month	24 month	36 month		
Parent data waves:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Father data waves:		<input type="checkbox"/>	<input type="checkbox"/>		
Scale Variables:	B1R_REG	B2R_REG	BnR_REG		
RelatedVariables:	(B1R_ENG)	(B2R_ENG)	(B3R_ENG)		
SourceVariables:	B1R2_2, B1R2_3, B1R2_5, B1R2_8, B1R2_9, B1R2_12, and B1R2_13	B2R2_2, B2R2_3, B2R2_5, B2R2_8, B2R2_9, B2R2_12, and B2R2_13	B3R2_2, B3R2_3, B3R2_5, B3R2_8, B3R2_9, B3R2_12, and B3R2_13		
Subscale Notes:	Emotional Regulation measures the child's ability to change tasks and test materials; negative affect; and frustration with tasks during the assessment. BnR_REG (emotional regulation) is the mean of items BnR2_2, BnR2_3, BnR2_5, BnR2_8, BnR2_9, BnR2_12, and BnR2_13, corresponding to Bayley Behavior Rating Scale items 6, 8, 10, 14, 15, 21, and 30. Note: reverse code item 2_2 (Bayley item 6) so that 1=5, 2=4, 3=3, 4=2, and 5=1. Bayley items 18, 19, and 29 were not administered. If 25 percent or more of the items are missing within a subscale, set the subscale score to missing. If fewer than 25 percent are missing, set the missing items to the average subscale item score. Define the subscale score as the mean of the items in the subscale.				

Subscale Name:	BSID BRS - Orientation/Engagement			subscale acronym	ENG
	14 month	24 month	36 month		
Parent data waves:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Father data waves:		<input type="checkbox"/>	<input type="checkbox"/>		
Scale Variables:	B1R_ENG	B2R_ENG	BnR_ENG		
RelatedVariables:	(B1R_REG)	(B2R_REG)	(B3R_REG)		
SourceVariables:	B1R2_1 B1R2_4 B1R2_6 B1R2_7 B1R2_11	B2R2_1 B2R2_4 B2R2_6 B2R2_7 B2R2_11	B3R2_1 B3R2_4 B3R2_6 B3R2_7 B3R2_11		
Subscale Notes:	Orientation/ Engagement measures the child's cooperation with the interviewer during the assessment; positive affect; and interest in the test materials. BnR_ENG (orientation/engagement) is the mean of items BnR2_1, BnR2_4, BnR2_6, BnR2_7, and BnR2_11, corresponding to Bayley Behavior Rating Scale items 5, 9, 11, 13, and 20. Note: BnR2_10 (Bayley item 17) was dropped. Bayley items 12, 16, and 19 were not administered. If 25 percent or more of the items are missing within a subscale, set the subscale score to missing. If fewer than 25 percent are missing, set the missing items to the average subscale item score. Define the subscale score as the mean of the items in the subscale.				

2. BAYLEY BEHAVIOR RATING SCALE ORIENTATION/ ENGAGEMENT AND EMOTIONAL REGULATION SCALES

COMPLETE THESE ITEMS ABOUT THE CHILD AS SOON AFTER COMPLETING THE BAYLEY AS POSSIBLE.

BnR2_1 2.1: Bayley BRS item # 5
BnR2_2 2.2: Bayley BRS item # 6
 BnR2_3 2.3: Bayley BRS item # 8
 BnR2_4 2.4: Bayley BRS item # 9
 BnR2_5 2.5: Bayley BRS item # 10
 BnR2_6 2.6: Bayley BRS item # 11
 BnR2_7 2.7: Bayley BRS item # 13
 BnR2_8 2.8: Bayley BRS item # 14
 BnR2_9 2.9: Bayley BRS item # 15
 BnR2_10 2.10: Bayley BRS item # 17
 BnR2_11 2.11: Bayley BRS item # 20
 BnR2_12 2.12: Bayley BRS item # 21
 BnR2_13 2.13: Bayley BRS item # 30

(Item definitions omitted because copyright does not allow us to reproduce them. Each scored on a scale of 1 to 5.)

The Orientation/ Engagement scale includes items 2.1, 2.4, 2.6, 2.7, and 2.11, corresponding to Bayley Behavior Rating Scale items 5, 9, 11, 13, and 20. Note: 2.10 (Bayley item 17) was dropped. Bayley items 12, 16, and 19 were not administered.

The Emotional Regulation scale includes items 2.2, 2.3, 2.5, 2.8, 2.9, 2.12, and 2.13, corresponding to Bayley Behavior Rating Scale items 6, 8, 10, 14, 15, 21, and 30. Note: reverse code item 2.2 (Bayley item 6) so that 1=5, 2=4, 3=3, 4=2, and 5=1. Bayley items 18, 19, and 29 were not administered.

Bayley Behavior Rating Scale, Second Edition—Behavior rating scale
 Bayley, N. (1993). Bayley Scales of Infant Development, Second Edition, Manual. New York: The Psychological Corporation, Harcourt Brace & Company.

(following item not in early versions of CRB - affects 14-month & 24-month))

2.14 BAYLEY CONDUCTED IN:

BnR1Lang
 ENGLISH 01
 SPANISH 02
 OTHER LANGUAGE (SPECIFY) 99

_ _ _

EHS RESEARCH AND EVALUATION PROJECT MEASURES DOCUMENTATION

sort code: 650=Par Intv - HOME scale

Scale Name: Home Observation for Measurement of the Environment (HOME) - Infant/Toddler **scale acronym:** IT HOME

Developer or Publisher: Caldwell and Bradley

Citation: Caldwell, Bettye M., and Robert H. Bradley. Administration Manual: Home Observation for Measurement of the Environment. Little Rock, AR: University of Arkansas at Little Rock, 2003. **items available in documentation** yes
restricted files yes

Scale notes: Home Observation for Measurement of the Environment (HOME) measures the quality of stimulation and support available to a child in the home environment (Bradley and Caldwell 1984). Information needed to score the inventory is obtained through a combination of interview and observation conducted in the home with the child's parent while the child is present.

Subscale Name: HOME: Emotional Responsivity (Parental Warmth)		subscale acronym BnP_EMO
	14 month	24 month
Parent data waves:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Father data waves:		<input type="checkbox"/>
Scale Variables:	B1P_EMO	B2P_EMO
Related Variables:		
Source Variables:	B1PF01-B1PF03, B1PF07-B1PF09, B2PF01-B2PF03, B2PF07-B2PF09, B1PA12, B2PA12	
Subscale Notes: HOME Emotional Response Summary Score is available at the 14 and 24 month time periods. BnP_EMO is the sum of items BnP_F01-BnP_F03, BnP_F07-BnP_F09, BnP_A12 14-, 24-month HOME Emotional Response Subscale (7 items- Observation only): (All items coded as Yes=1 No=0) 1. Parent spontaneously vocalized to child twice 2. Parent responds verbally to child's verbalizations 3. Parent tells child name of object or person during visit 4. Parent spontaneously praises child at least twice 5. Parent's voice conveys positive feelings toward child 6. Parent caresses or kisses child at least once 7. Parent responds positively to praise of child offered by visitor If 25 percent or more of the items are missing within the subscale, set the subscale score to missing. If fewer than 25 percent are missing, set the missing items to the average subscale item score. The subscale score is the sum of the items in the subscale.		

**SECTION 1: APPLICATION INFORMATION
APPLICANT DEMOGRAPHICS**

Complete this section for the parent or other person (hereafter referred to as Applicant) with primary responsibility for care of applying children. This section should also be completed if the applicant is a pregnant woman. This section provides demographic information about the applicant, including: race, language skills, education, and employment. Skip to question 1.8 if Preface has been completed for this applicant.

1.1 Applicant's name: _____
Last name First name MI

1.2 Date of birth: ____/____/____ 1.3 Social security number: _____
MM DD YY

computed: HA1- age (top and bottom side)

1.4 Gender: ☐ Male ☐ Female

1.5 Address: _____
(Mark all that apply) Street Phone
☐ Living Here
☐ Mailing Address Town/City State Zip Code
☐ Pick-up Address

1.6 Other Address: _____
(Mark all that apply) Street Phone
☐ Living Here
☐ Mailing Address Town/City State Zip Code
☐ Pick-up Address

1.7 Is there another adult who has major responsibility for the care of the applying children?

☐ No
☐ Yes-->Who? _____
Last name First name MI

1.8 What race/ethnicity do you consider yourself to be? (Mark only one)

HA1-8
100 ☐ White (non-Hispanic) 300 ☐ Hispanic (specify):
200 ☐ Black (non-Hispanic) 301 ☐ Mexican/Chicano ☐ Cuban
300 ☐ American Indian; Tribal affiliation 304 ☐ Central American 305 ☐ Other: _____
302 ☐ Eskimo 306 ☐ Puerto Rican
303 ☐ Aleut
307 ☐ Other, specify: _____ 400 ☐ Asian or Pacific Islander (specify):
308 ☐ Chinese ☐ Guamanian
309 ☐ Filipino ☐ Japanese
310 ☐ Korean ☐ Asian Indian
311 ☐ Samoan ☐ Hawaiian
312 ☐ Vietnamese ☐ Other: _____
☐ Biracial/multiracial
Specify races: _____

☒ Do you speak a language other than English at home?

☐ No ☐ Yes, Spanish ☐ Yes, other, Specify

1.9 What language(s) do you speak at home?

HA1-9-1 Primary HA1-9-2 Secondary
1 ☐ English
2 ☐ Spanish
3 ☐ Other

1.10 HSFS INTERVIEWER: How well does the applicant speak English?

HA1-10
1 ☐ Very well 2 ☐ Well 3 ☐ Not Well 4 ☐ Not at all

SECTION 1: APPLICATION INFORMATION
APPLICANT DEMOGRAPHICS

1.11 Have you previously been enrolled in Head Start or other childhood development program? Please specify which program(s) and date(s) of attendance.

- HA1-11 (Any?) 0/1 HA1-11-a (count of types)
- ☐ No
- ☐ Yes, Early Head Start from ___/___/___ to ___/___/___
- ☐ Yes, Parent and Child Center (PCC) from ___/___/___ to ___/___/___
- ☐ Yes, Comprehensive Child Development Program (CCDP) from ___/___/___ to ___/___/___
- ☐ Yes, Head Start Family Child Care Program from ___/___/___ to ___/___/___
- ☐ Yes, Head Start Migrant Program from ___/___/___ to ___/___/___
- ☐ Yes, Head Start Home-based / Homevisit for 3 - 5 yr olds from ___/___/___ to ___/___/___
- ☐ Yes, Head Start Center-based for 3 - 5 yr olds from ___/___/___ to ___/___/___
- ☐ Yes, other : Specify _____ from ___/___/___ to ___/___/___

1.12 What is your marital status?

- HA1-12
- 1 ☐ Single
- 2 ☐ Married
- 3 ☐ Separated
- 4 ☐ Divorced
- 5 ☐ Widowed
- 6 ☐ Cohabiting

1.13 What is the highest level of education you have completed? (Mark only one)

- HA1-13
- ☐ No school completed
- 04 ☐ Less than 4th grade
- 05 ☐ 5th-8th grade
- 06 ☐ 9th grade
- 07 ☐ 10th grade
- 08 ☐ 11th grade
- 09 ☐ 12th grade (no diploma)
- 10 ☐ High school graduate (high school) diploma or equivalent, e.g., GED
- 11 ☐ Some college (but no degree)
- 12 ☐ Associate degree in college
- 13 ☐ Bachelor's degree
- 14 ☐ Master's degree
- 15 ☐ Doctorate degree

1.14 What is your primary occupational status? (Mark only one)

- HA1-14-1, HA1-14-2
- 1 ☐ Paying job
- 11 ☐ Full-time (more than 34 hours weekly)
- 12 ☐ Part-time
- 13 ☐ Seasonal
- 14 ☐ (unspecified)
- 2 ☐ In school
- 21 ☐ Towards high school diploma/GED
- 22 ☐ Towards trade/business qualification
- 23 ☐ Towards college degree
- 24 ☐ Towards postgraduate degree
- 25 ☐ Other: Specify _____
- 26 ☐ (unspecified)
- 3 ☐ In job training program
- 31 ☐ Training program with salary
- 32 ☐ Training program without salary
- 33 ☐ (unspecified)
- 4 ☐ Unemployed
- 41 ☐ With past employment experience; time since last job: _____ months
- 42 ☐ With no previous job experience
- 43 ☐ (unspecified)
- 5 ☐ Other
- 51 ☐ Homemaker
- 52 ☐ Retired
- 53 ☐ Unable to work due to disability
- 54 ☐ (unspecified)
- HA1-14-10 (unemployed)

1.15 Have you ever attended vocational training or a trade or business school? ☐ Yes ☐ No (skip to 1.17)

HA1-15

1.16 If Yes, did you receive a certificate or license? ☐ Yes ☐ No

HA1-16

1.17 Have you ever participated in a government training program? ☐ Yes ☐ No (skip to 1.19)

HA1-17

**SECTION 4: APPLICATION INFORMATION
FAMILY COMPOSITION AND RESOURCES**

Each family submitting an application should complete Section 4. Section 4 provides additional information related to the applying family including: family type, financial status and social supports. The box below provides a working definition of family which should be used for purposes of completing this section.

FAMILY: A family is composed of: (1) a pregnant woman or (2) 2 or more people who: (a) reside in the same household; and (b) are related either by blood, marriage, adoption or commitment. A child's biological or adoptive parent or other focal adult who resides outside of the household may also be included.

4.1 Please tell me which of the following descriptions best fits your family: *(Read list and check only one)*

- HA4-1
- 01 ☐ Two parent family (married or common law)
 02 ☐ Single parent family (mother figure only)
 03 ☐ Single parent family (mother figure only) living with partner
 04 ☐ Single parent family (father figure only)
 05 ☐ Single parent family (father figure only) living with partner
 06 ☐ Other relatives
 07 ☐ Foster family
 99 ☐ Other: Specify _____

4.2 How many adults are there in your family? _____ adults

HA4-2 (reported)

4.3 How many children are there in your family? _____ children

HA4-3 (reported)

4.4 What is your family's yearly gross income? \$ _____

HA4-4

4.5 What time period is this income based on? *(Mark only one)*

HA4-5

- 1 ☐ Previous 12 months
 2 ☒ Last calendar year

1 = Less than \$3,000
 2 = \$3,000 - < \$6,000
 3 = \$6,000 - < \$12,000
 4 = \$12,000 - < \$18,000
 5 = \$18,000 - < \$24,000
 6 = \$24,000 - < \$30,000
 7 = \$30,000 or more

4.6 How many adults contributed to this income? _____ adults

HA4-6 (reported)

4.7 Many families receive services or financial assistance from one or more programs or agencies. Does your family receive any of the following types of services or financial assistance? *(Read list and mark all that apply)*

HA4-7-01 ☐ Medical financial assistance (i.e. Medicaid/Medicare)

HA4-7-02 ☐ AFDC

HA4-7-03 ☐ Food Stamps

HA4-7-04 ☐ WIC

HA4-7-05 ☐ Supplemental Security Income (SSI)

~~HA4-7-06~~ ☐ Foster care/Adoption subsidy

☐ Unemployment insurance

☐ Public housing assistance

☐ Energy program assistance

☐ EPSDT

☐ Child support/alimony

☐ Other: Specify HA4-7-08

HA4-7-07

HA4-7-08

HA4-7-09

HA4-7-10

HA4-7-11

HA4-7-12

HA4-7-10 ☐ None of the above

HA4-7-N number of types of financial assist/services received

4.8 Has your family applied to receive Supplemental Security Income (SSI)?

HA4-8

- ☐ Yes ☐ No

**SECTION 2: APPLICATION INFORMATION
EARLY HEAD START ELIGIBLE CHILDREN**

FOCUS CHILD

Fill out Section 2 for each child in the family eligible to receive direct services through Early Head Start. Section 2 provides specific information about each eligible child in the applying family. If the applicant is currently pregnant, please fill out this section for her new baby as soon as possible after the baby is born. If the applicant is currently pregnant and has no eligible children, check the box below and skip to Section 3.

☐ Applicant is currently pregnant and has no eligible children (skip to 3.1)

2.1 Child 1 name:

Last name First name MI

2.2 Date of birth:

MM DO YY
(complete: HA2-mths-top-coded)

2.3 Social security number:

2.4 Gender:

☐ Male ☒ Female

also HA2-sex: M, F

2.5 Other Address:

(Mark all that apply)

☐ Living Here

☐ Mailing Address

☐ Pick-up Address

Street Phone

Town/City State Zip Code

2.6 What is this child's relationship to you (i.e., the applicant, who is the primary care provider)? (Mark one)

HA2-6

☐ Biological Child

☐ Adoptive Child

☐ Foster Child

☐ Step Child

☐ Relative: Specify _____

☐ Other: Specify _____

64

2.7 What race/ethnicity do you consider this child to be? (Mark only one)

HA2-7

☐ White (non-Hispanic)

300 Hispanic (specify):

☐ Black (non-Hispanic)

301 ☐ Mexican/Chicano ☐ Cuban

☐ American Indian: Tribal affiliation _____

304 ☐ Central American ☐ Other: _____

☐ Eskimo

302 ☐ Puerto Rican

☐ Aleut

800 ☐ Other, specify: _____

400 Asian or Pacific Islander (specify):

☐ Chinese

☐ Guamanian

☐ Filipino

☐ Japanese

☐ Korean

☐ Asian Indian

☐ Samoan

☐ Hawaiian

☐ Vietnamese

☐ Other: _____

☐ Biracial/multiracial

Specify races: _____

~~2.8~~ Does this child speak a language other than English at home?

☐ No

☐ Yes, Spanish

☐ Yes, other: Specify _____

☐ Not applicable

2.8 What language(s) does the child speak at home?

HA2-8.1

Primary language: ☐ English

☐ Spanish

☐ Other

2.9 How well does this child speak English?

HA2-9

☐ Very well

☐ Well

☐ Not Well

☐ Not at all

☐ Not applicable

6.9

FES

SHOW
CARD
1

I'm going to read you some statements about how the people who live with you get along and settle arguments. For each statement, please tell me if you strongly agree, mildly agree, mildly disagree, or strongly disagree with it for your household.

(READ ITEM) Do you strongly agree, mildly agree, mildly disagree, or strongly disagree with this?

CODE ONLY ONE RESPONSE FOR EACH STATEMENT.

		STRONGLY AGREE	MILDLY AGREE	MILDLY DISAGREE	STRONGLY DISAGREE
BIP69A	A. We fight a lot	04	03	02	01
BIP69B	B. We hardly ever lose our tempers	04	03	02	01
BIP69C	C. We sometimes get so angry we throw things	04	03	02	01
BIP69D	D. We often criticize each other	04	03	02	01
BIP69E	E. We sometimes hit each other	04	03	02	01

FES reproduced by special permission of the Publisher, Mind Garden, Inc.,
www.mindgarden.com, from the Family Environment Scale by Rudolf H. Moos and
Bernice S. Moos. Copyright 1974, 1994, and 2002 by Rudolf Moos. All rights reserved.
Further reproduction is prohibited without the Publisher's written consent.