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Cumulative Risk as a Moderator of the Association between Intimate Partner Violence and  
Maternal Parenting Behaviors with Infants

by

Erin Gallagher, M.S.

Doctoral Dissertation

Submitted to the Department of Psychology

Eastern Michigan University

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Clinical Psychology

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August 16, 2011

Ypsilanti, MI

## ACKNOWLEDGEMENTS

This dissertation project would not have been possible without the guidance, assistance, and investment of many important people. First and foremost, I would like to express my deepest gratitude and appreciation for my mentor, Dr. Alissa Huth-Bocks, who has provided me with the utmost support, caring, direction, and knowledge in numerous important domains throughout my graduate education. In addition to her aid in this specific dissertation project where she consistently provided timely feedback and helpful input, she has helped me to grow in both professional and personal realms. She has been a tremendous role model, supervisor, professor, colleague, and friend. Her unending warmth, generosity, willingness to listen, openness to ideas, and ability to provide honest feedback has undoubtedly contributed to my success throughout graduate school in too many ways to be named, but which will always be remembered and cherished. I am beyond thankful for her support, wisdom, and knowledge, all of which have made my graduate education especially positive, enjoyable, and memorable. Importantly, I am also grateful to Alissa for her generous financial support of this data collection and dissertation project, which was made possible through her many hours of grant writing (resulting in time away from her own family!), and for her support and input in helping me to obtain my own research grant as well.

I would also like to thank the rest of my dissertation committee, who have all contributed in unique and important ways. I would like to thank Dr. Heather Janisse for her thoughtfulness in various ways to examine my dataset, and her unique contributions to my statistical analyses. I would like to thank Dr. Tom Schmitt for his patience, input, and support throughout my statistical analyses, and his responsiveness to all of my questions, big or small. I

would like to thank Dr. Sylvia Norris-Jones for her invaluable input about relationship processes, child development, and high risk families, and her willingness to invest time into a project within the psychology department. I feel incredibly fortunate to have such a knowledgeable and approachable committee, and could not have completed this project without each of them.

Additionally, I want to thank my main partners in this research endeavor: Kylene Krause, Sarah Ahlfs-Dunn, and Syreeta Scott. I could not have completed this project without their major contribution to the collection and supervision of these research data, as well as their emotional support throughout stressful times in the research lab and graduate school. They have become great friends throughout this time, and I will never forget our many meaningful conversations, laughs, trips, and memories. I will really miss seeing them on a regular basis, and will always remember them as an important part of my graduate school journey.

Endless thanks also go to the large number of dedicated and caring undergraduate and graduate research assistants who have worked on this project over the years, and made data collection possible. They have each spent endless hours recruiting subjects, interviewing families, and entering, coding, and scoring these data. They have each made working on this project especially enjoyable, memorable, and fun. I want to extend a special thanks to Katherine Guyon, Melissa Swartzmiller, Angela Joerin, Kristine Cramer, and Alexandra Busuito for investing valuable time and effort into coding the mother-infant interaction data that was used in this study. Coding the data on my own would not have been possible, and their willingness to learn with me through the tedious process made it all the more special and exciting.

I'm also beyond grateful to the participants of this project, including the families, mothers, and children, for letting us into their lives and homes for research purposes specifically. It takes a tremendous amount of courage and strength to be open and honest about various life experiences, and without their willingness, this research would not be possible.

I would like to thank my amazing network of friends from all stages of my life, my cohort members, and Justin, who have helped tremendously in keeping me balanced, having fun, and remembering not to take day-to-day life for granted throughout graduate school. I will always cherish their support, as well as each experience, memory, and laugh we've had along the way.

Finally, I would like to thank my immediate and extended family, but especially my parents and two brothers, for their continued support, encouragement, confidence, and enthusiasm in my work and graduate education. Without them, I would not be who I am today.

## ABSTRACT

The primary objective of this study was to broaden psychological and scientific understanding of the lasting effects of intimate partner violence (IPV) on maternal parenting behaviors in families with infants. This study used longitudinal data to examine these associations. Much is to be gained from exploring the association between IPV and maternal parenting behaviors in families with infants because IPV is known to negatively impact a wide range of parenting capacities, as well as the social-emotional adjustment of young children. This study also examined an accumulation of social-contextual risk factors as a moderator between the chronicity and severity of IPV experiences and observed maternal parenting behaviors with infants. Very few studies have examined this particular model, and almost no research has examined these associations in homes with infants as compared to homes with older children. This study was also unique in that it used a variety of methodologies to assess the previously mentioned variables. Maternal report was used to assess IPV over four time periods, an observed mother-infant interaction task was used to measure maternal parenting behaviors when infants were 1 year old, and maternal self-report was used to assess numerous social-contextual risk factors over the transition to parenthood. Findings did not support a direct association between IPV experiences and maternal parenting behaviors. Instead, results indicated a direct effect between cumulative risk and maternal positive and negative parenting behaviors, providing empirical support for the cumulative risk model. Surprisingly, cumulative risk did not moderate the association between IPV experiences and maternal parenting behaviors. Implications for these findings and directions for future research are discussed.

*Keywords:* cumulative risk, intimate partner violence, parenting, infants, moderator

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## INTRODUCTION

Research has documented that 20% to 38% of women experience intimate partner violence (IPV) during their lifetime (Tjaden & Thoennes, 2000), and approximately 12% of women are victims of IPV in any given year (Straus & Gelles, 1986). For the purposes of consistency, IPV will be defined here only as male-to-female adult partner violence. While researchers have become increasingly aware of the presence of female-to-male partner violence in intimate relationships, the vast majority of research has focused on male-to-female partner violence, and it is generally agreed upon in the literature that females experience more of all types of IPV than men (Coker et al., 2002). More specifically, female victims of IPV report suffering more severe injuries and experiencing more fear and distress related to IPV than men (Cascardi, Langhinrichsen, & Vivian, 1992; Mataud, 2007), and 80% of individuals murdered by their spouses are women murdered by men (Tjaden & Thoennes, 2000). In fact, research has documented that American women are more likely to be killed, beaten, or sexually assaulted by a partner than a stranger (Tjaden & Thoennes, 2000). Due to the high prevalence of partner abuse, IPV is now formally recognized as a significant social and public health problem (Epstein, 1999), and the function of violence and its impact on women, children, and families has been increasingly examined in research over the last few decades.

For example, research has documented that women who have experienced more IPV appear to suffer more mental health problems (Roberts, Williams, Lawrence, & Raphael, 1998), and children exposed to violence in their homes tend to display more social-emotional difficulties (Fantuzzo et al., 1991; Holden & Ritchie, 1991; McCloskey, Figueredo, & Koss, 1995). However, children are also likely to be indirectly affected by violence through its impact on parenting capacities, a crucial and long-term predictor of child social-emotional outcomes

(Zeanah, Boris, & Scheeringa, 1997). While researchers have clearly documented the numerous deleterious effects of IPV on both women and children, research is less conclusive regarding the relationship between IPV and parenting capacities, as this association is more complex and is likely influenced by numerous other environmental, or social-contextual, factors.

Prior research examining IPV and parenting has varied considerably; some researchers have defined IPV differently by assessing different facets of violence, such as psychological, physical, and/or sexual abuse, and the history or chronicity of a woman's IPV experiences overtime has been examined in various ways as well (Bogat, Levendosky, Theran, Von Eye & Davidson, 2003; Tjaden & Thoennes, 2000). Similarly, the construct of parenting has been defined differently across studies, and different research methodologies have been used to study parenting and its outcomes (Holden & Ritchie, 1991; Huth-Bocks & Hughes, 2008; Katz & Windecker-Nelson, 2006; Levendosky & Graham-Bermann, 1998; 2000). Additionally, parenting in the context of IPV has been examined in homes with children of various age groups and, most commonly, in homes with preschool and school-age children. Thus, very little research has examined the impact of various types of IPV experiences across the transition to parenthood, such as the association between IPV and parenting capacities in families with pregnant women or infants, suggesting the need for further research in this area. Furthermore, almost no research has examined the association between IPV experiences and parenting in families with infants while simultaneously considering multiple contextual influences on the broader family system, such as various risk factors that may impact this association. However, the cumulative risk model argues that often an *accumulated* set of adverse experiences or conditions in the environment may impact important family outcomes (Sameroff, 1993).

Thus, the present study examined the relationship between various types of IPV experiences across the transition to parenthood and maternal parenting behaviors with infants. This study was guided by multiple developmental theories, including the cumulative risk model; cumulative contextual risk was examined as a moderator of the relationship between IPV and parenting behaviors. Risk factors comprising cumulative risk examined in the present study included maternal psychopathology, maternal age, socioeconomic status, number of children in the home, racial minority status, and cohabitation (i.e., partners living together but unmarried).

In the following chapters, there will be a comprehensive review of the literature examining (a) IPV experiences across the transition to parenthood, (b) parenting in young children, (c) parenting outcomes in the context of IPV across the transition to parenthood, and (d) social-contextual risk factors that are documented to be associated with both IPV and parenting capacities that may impact the association between these constructs. Next, the aims and hypotheses for the current study will be presented, as well as a description of the research design, study methodology, data analytic results, and a discussion of the findings.

## CHAPTER 1: IPV ACROSS THE TRANSITION TO PARENTHOOD

Importantly, research has shown that women may be particularly vulnerable to partner abuse during the childbearing years; for example, violence appears to increase during pregnancy and beyond (Jasinski & Kantor, 2001; Stewart, 1994; Torres et al., 2000). In fact, initial episodes of IPV have been reported especially during the first trimester of pregnancy, and 1 in 12 men batter a female partner during this time (Straus & Gelles, 1990). Because individuals tend to be less violent as they age, IPV tends to occur more frequently early in romantic relationships when women are more likely to become pregnant or have young children (Bradbury & Lawrence, 1999). Straus and Gelles (1990) proposed that pregnancy could also be a stressor that reinforces feelings of inadequacy or jealousy from a male partner, resulting in increased battering, possibly related to escalating financial worries, the woman's decreased physical and emotional availability during pregnancy, or doubts about paternity, to name a few (Bacchus, Mezey, & Bewley, 2006). As a result, millions of young children are parented by battered women each year (Fantuzzo, Boruch, Beriama, & Atkins, 1997), and these children may suffer numerous physical and social-emotional difficulties due to the pervasive impact of violence on crucial aspects of the family system, including parenting. Thus, it is essential to better understand the specific effects of IPV in homes with very young children, as these children are most vulnerable and dependent on their caregivers.

### **Severity of IPV**

In order to gain a more complete understanding of the experience of IPV among families, it is important to understand the definition of severity and various types of violence. First, for the purposes of this study, it is essential to distinguish between IPV and the construct of marital conflict. While the two constructs may appear similar, considerably more research has

examined the consequences of marital conflict, or marital discord, than IPV (Cummings, 1994; Emery, 1982; Holden, Stein, Ritchie, Harris, & Jouriles, 1998). In general, marital conflict is considered to be less severe and less threatening to individuals than IPV per se. For example, marital conflict may include general disagreements, arguments, and dissatisfaction between partners, but does not necessarily involve threats to an individual's safety or integrity, as typically found in cases of IPV. Thus, it is essential to understand the consequences of more threatening and severe forms of marital discord, such as overt violence, on different aspects of the family system.

Different researchers have also defined IPV differently across studies by either including or excluding different facets of violence. A commonly used definition of IPV includes only physical assault or physical injury, or behaviors that threaten, attempt, or actually inflict physical harm (Tjaden & Thoennes, 2000). A second way to define IPV is to include both physical assault and sexual assault or coercion, including rape by a partner. Finally, a third and less commonly used definition for IPV is one that also includes psychological and/or emotional violence, either by itself or in addition to physical and/or sexual violence, such as insulting or degrading comments, vindictive and spiteful behavior, threats to harm the victim and/or the victim's children, or inducing fear of bodily injury or death. Current research shows that it is rare for physical or sexual partner violence to exist without psychological abuse (O'Leary, 1999). For example, using the above definitions, Tjaden and Thoennes (2000) found that 4.5% of women had experienced forcible rape by a partner within their lifetime, 20.4% of women reported being physically assaulted by a partner, and approximately 78% of women who had experienced a physical assault by a partner also experienced psychological abuse, including threats and

induction of fear of bodily injury or death at the time of the event. Thus, the different types of violence may occur independently or they may co-occur.

Because of the elevated prevalence of IPV occurring in homes across the United States, it is important for the scientific community to understand the impact of different forms of violence against women on different facets of the family system. However, due to the variations in the definition of partner violence, it is difficult to compare IPV experiences across samples, and determining the consequences of certain types of IPV for victims and families can be particularly challenging. Thus, as the definition of IPV has expanded, it is important for researchers to define the types of IPV included in their empirical studies, as there is no gold standard definition to date. The present study built upon limitations in prior IPV research and examined the impact of multiple types of IPV, including physical, sexual, and psychological IPV, on mothers' parenting behaviors toward their infants.

### **Chronicity of IPV**

Importantly, the literature on IPV has indicated that it is not unusual for women to experience IPV at multiple points throughout their life, in that women may move in and out of violent relationships over time (Bogat et al., 2003). Because the relationship histories of many of these women may be complex, and many women are battered at multiple points in their life (Bogat et al., 2003), it is especially important to examine the trajectory of IPV over time, or the chronicity of partner violence, on parenting in families with young children. More specifically, because rates of partner violence appear to increase during the childbearing years, such as during pregnancy and beyond (Jasinski & Kantor, 2001; Stewart, 1994; Torres et al., 2000), it is particularly essential to examine the trajectory of IPV throughout the transition to parenthood, a

vulnerable time for both mothers and infants, as well as the impact of violence on maternal parenting.

However, a significant limitation in the majority of prior research is that it fails to adequately address a woman's history of IPV. Researchers often use a marker of current abuse or abuse that occurred 1 year prior to the interview to ascertain whether IPV has occurred (Marshall & Vitanza, 1994; Morse, 1995; Rodriguez, Lasch, Chandra, & Lee, 2001; Straus & Gelles, 1986, 1990). It is often not known whether participants experienced IPV at an earlier time period and, if they did, the extent or the severity of the earlier abuse. However, one study (Kemp, Green, Hovanitz, & Rawlings, 1995) found that 41% of a group of currently battered women reported a history of physical abuse with previous partners. If history of IPV is not assessed, women who are labeled "non-abused" because they have not experienced IPV in a specific or recent time period may, in fact, have experienced IPV earlier in their lives. In fact, these studies may actually be examining differences between "distal" and "proximal" IPV, not actually presence or absence of IPV (Bogat et al., 2003). This is due, in part, to the fact that the vast majority of IPV research uses cross-sectional designs in which subjects are assessed based on specific characteristics at a single point in time. Furthermore, without information about a woman's history of IPV, it is not clear whether the psychological consequences of IPV noted by researchers (e.g., trauma, depression, low self-esteem) are affected primarily by recent IPV experiences or cumulative experiences over time.

Thus, the current study built upon significant limitations in prior research in that it examined IPV at multiple time periods across the transition to parenthood; this period is a particularly critical time for mothers', as well as children's, psychosocial development, including the developing attachment relationship between mother and infant (Ainsworth, Blehar, Waters,



& Wall, 1978; Sroufe & Waters, 1977; Sroufe, 1985). Furthermore, the present study attempted to more clearly understand the role of distal versus proximal violence experiences and chronicity of IPV.

### **IPV and Trauma Theory**

Because IPV is often threatening to a woman's physical integrity and safety and emotional well-being, IPV has been conceptualized in the research literature as a type of trauma experience (Levendosky & Graham-Bermann, 2000). In turn, trauma theory is useful in understanding the ways in which IPV impacts victims. While there has been limited empirical research documenting the effects of traumatic experiences across the transition to parenthood, qualitative and anecdotal reports from women living in the context of community or family violence indicate they feel a sense of helplessness and frustration with their inability to protect themselves and their children (Osofsky, 1995). Additionally, women experiencing violence report that they live in a state of constant fear and helplessness, often resulting in depression and overwhelming anxiety (Appleyard & Osofsky, 2003).

In more extreme cases, women may actually experience posttraumatic stress symptomatology, which further impairs their ability to function. Posttraumatic stress disorder (PTSD) involves a characteristic set of behavioral and emotional reactions to an extreme traumatic stressor. According to the DSM-IV (American Psychiatric Association, 2000), individuals with PTSD experience three types of symptoms: (a) persistent reexperiencing of the traumatic event, (b) avoidance of stimuli associated with the trauma, and (c) increased arousal. This disturbance causes clinically significant distress or impairment in social, emotional, occupational, or other areas of functioning. Recent evidence indicates that women who have experienced IPV demonstrate an increased likelihood for a PTSD diagnosis, with estimates

ranging from 33% to 84% (Merlin & Mohr, 2000). Across numerous studies, it appears that even battered women who do not meet full criteria for PTSD suffer a broad range and scope of subclinical PTSD symptoms that impair everyday functioning, including roles and responsibilities within the family (Merlin & Mohr, 2000).

Furthermore, Herman (1992) argued that individuals experiencing forms of chronic interpersonal trauma may actually suffer from a complex traumatic syndrome that is similar to the diagnosis of PTSD. However, Herman proposed that there may be additional psychological symptoms due to the chronic nature of the trauma, including depression, anxiety, and dissociation, for example. This theory of complex trauma proposes that interpersonal trauma experiences should be considered a chronic psychological, physiological, and relational event, causing a woman to have overwhelming emotions, feelings of betrayal, pain, emotional numbness, and poor stress tolerance. Psychologically, for example, it has been argued that a woman's normal capacity to contain her own emotions is overwhelmed by a flood of painful feelings that accompany what is considered to be a devastating betrayal by a partner (van der Kolk, 1987).

Physiologically, battered women experiencing complex trauma may have changes in the hypothalamic-pituitary-adrenal axis (HPA axis) and associated neurotransmitters, resulting in poor stress tolerance and the tendency to react with aggression or withdrawal to even minor stimuli (Charney, Deutch, Krystal, Southwick, & Davis, 1993; van der Kolk, Greenberg, Boyd, & Krystal, 1985; van der Kolk, 1987). Similarly, it has been documented that trauma may cause individuals to lose the ability to modulate their own arousal due to changes in serotonin levels (van der Kolk et al., 1985). Thus, it is presumed that both these secondary psychological and

physiological side effects of interpersonal trauma may negatively impact a woman's ability to function adequately in her roles within and outside of the home, for example, as a parent.

Furthermore, theory and prior empirical research have demonstrated that there is a more broad range of trauma-related mental health sequelae that are experienced by victims who experience complex, relational trauma experiences. These mental health sequelae extend beyond the scope of DSM-IV PTSD symptoms. More specifically, researchers have found physical, sexual, and emotional or psychological IPV (independently) to be associated with higher rates of depression, anxiety, and substance use, suicidal ideation, and chronic medical problems, for example (Coker et al., 2002; Golding, 1999; Kessler, Sonnega, Bromet, & Hughes, 1995; Magdol, Moffitt, Caspi, & Silva, 1998; Pico-Alfonso et al., 2006). Due to the devastating mental and physical consequences of all three types of IPV on women's functioning, it is presumed that different types of IPV may uniquely impact women's overall functioning including their role as a caregiver.

Next, there will be a review of prior research that has examined the broad and complex construct of parenting, which is one domain of family functioning that may be impacted by IPV in the home. More specifically, the various definitions of parenting that have been utilized in the research literature will be presented, as will the different methodologies used to assess parenting across studies. Finally, parenting as a function within the larger family system will be discussed, including theoretical explanations regarding the manner in which parenting may be impacted by other aspects of the family system, such as the partner relationship.

## CHAPTER 2: PARENTING IN FAMILIES WITH YOUNG CHILDREN

According to the US Census Bureau (2007), 87% of women become parents in their lifetime. Parenthood, particularly motherhood, is argued to be one of the most common and powerful transformations in human experience. Both clinical and research evidence suggest that the physiological and psychological transformations experienced by a woman while pregnant significantly impact the relationship with her infant after birth. After childbirth, the new mother undergoes continued psychological transformations as the infant grows and matures. Thus, preparation for parenthood is believed to begin before the infant is even born, and these psychological processes continue to take place for a woman throughout this critical time for both mother and baby (Slade, Cohen, Sadler, & Miller, 2009). Due to the significant psychological resources that motherhood requires, it is not surprising that parenting may be influenced by other stressors or events in the woman's life, including those occurring within the immediate family system. However, the manner in which parenting capacities are impacted by other contextual factors requires further research examination, as these associations are likely complex and multifaceted.

### **Definition of Parenting**

In order to gain a better understanding of the complex phenomenon of parenting, it is first important to acknowledge that parenting has been assessed differently in the research literature. For example, authors have operationalized and measured parenting in the context of IPV in many ways, including assessing parental representations of their children (Huth-Bocks, Levendosky, Theran, & Bogat, 2004; Sokolowski, Hans, Bernstein, & Cox, 2007; Theran, Levendosky, Bogat & Huth-Bocks, 2005), subjective ratings of parenting stress (Holden et al., 1998; Huth-Bocks & Hughes, 2008; Levendosky & Graham-Bermann, 1998; 2000; Ritchie &

Holden, 1998), parenting behaviors (Graham-Bermann & Levendosky, 1998a; Holden & Ritchie, 1991; Holden et al., 1998; Levendosky & Graham-Bermann, 2001; Levendosky, Leahy, Bogat, Davidson, & Von Eye, 2006; Ritchie & Holden, 1998; Sokolowski et al., 2007), parent-child relationship quality (Holden & Ritchie, 1991; Holden et al., 1998; Levendosky, Huth-Bocks, Shapiro & Semel, 2003; Ritchie & Holden, 1998), and parental emotion coaching (Katz & Windecker-Nelson, 2006).

Thus, while the research literature has been primarily consistent in concluding that parenting is an important predictor of child social-emotional, cognitive, and physical development (Chang, Park, & Kim, 2009; Domitrovich & Bierman, 2001; Jackson & Dickinson, 2009), as well as a factor that is influenced by numerous environmental factors, such as a parent's life history, culture, neighborhood, marital relationship, parental health, and child temperament and age (Belsky & Jaffe, 2006; Bradley & Corwyn, 2002; Bronfenbrenner, 1979; Bugental & Happaney, 2004; Holden and Miller, 1999), the way in which parenting has been assessed differs across studies. Thus, it is important for researchers to articulate the manner in which parenting is defined within their own empirical studies, as there is no gold standard definition or measurement per se. More well-defined operationalizations of parenting would also aid in comparing and contrasting results across studies.

The majority of prior parenting research has utilized self-report measures to assess the different constructs of "parenting," as described above. However, observational techniques are another common methodology used to assess parenting, which involve a researcher observing live behavior between a parent and child dyad in various settings, such as in the laboratory or the naturalistic environment. These observations are coded in vivo, or are more commonly videotaped so that researchers are able to view and code the observations at a later time.

Observed behaviors are believed to provide a more direct sample of the relevant (parenting) behavior more than indirect assessments from self-report measures, as self-report measures are typically retrospective in nature and may be impacted by the mother's own self-report bias (Kazdin, 2003).

Observed parenting behaviors are typically assessed using parent-child interaction tasks, which usually consist of a number of different scenarios depending on the developmental age of the child. There may be a "free play" interaction, where the mother is instructed to play with her child as she typically would outside of the observation task. Also, the mother may be asked to involve her child in a developmentally inappropriate task, or an undesirable task (such as a clean-up or teaching task) in order to purposely induce stress in the mother-child dyad to elicit parenting behaviors during a distressing time. Within the current parenting literature, there are an unknown number of coding schemes used to assess observations of parenting behavior across studies, many of which are not published. Thus, many researchers develop their own coding schemes for their individual studies based on the constructs most common in parenting research and/or particular constructs of interest. However, coding schemes are typically reduced to well-known parenting dimensions like sensitivity-insensitivity, acceptance-rejection, cooperation-interference, and accessibility-ignoring (Ainsworth et al., 1978), sensitivity, controlling behavior, and responsivity (Crittenden, 1981; 1988), warmth, flatness of affect, disengagement, anger, hostility, intrusiveness, communication, and relational touching (Lyons-Ruth, Connell, Zoll, & Stahl, 1987), gratification, responsiveness, affective tone, and dyadic synchrony (Crnic, 1983; Crnic, Greenberg, & Slough, 1986), and positive/negative affect, positive feedback, intrusiveness, unresponsiveness, compliance, and parallel play (Belsky, 1981; Belsky, 1984).

Consequently, a notable strength of the current study was that maternal parenting behaviors were assessed through observation of a mother-infant interaction task, which included both a free-play and clean-up segment in order to obtain data on maternal parenting behaviors in situations with varying levels of stress. This procedure was expected to provide more objective and accurate parenting data than subjective and often retrospective parenting self-report questionnaires.

### **The Spillover Hypothesis**

Because family systems and roles are complex and reciprocally influenced, ecological-developmental theories are important for a clearer understanding about the manner in which parenting may be impacted by IPV and other environmental risks. The Spillover Hypothesis, put forth by Emery, Hetherington, and Dilalla (1984), is one plausible theory that helps explain how maternal parenting behaviors may be impacted by other aspects of the family system. The spillover hypothesis suggests that aspects (e.g., affect or behavior) of one setting or relationship in a family can transfer to another, such as from the marital or partner relationship to the parent-child relationship, or parenting behaviors. Based partly on the socialization hypothesis (Easterbrooks & Emde, 1988) and family systems theory, the spillover hypothesis posits that parents experiencing distress in one aspect of the family system, such as in the marital or partner relationship, may show more problematic parenting due to a “spillover” of their overall distress from the other family system (Emery et al., 1984). Problems with parenting may also be an attempt at deflecting stress away from other distressing environmental events, such as the marital relationship, or, alternatively, may be due to modeling the parent-child relationship after the marital or partner relationship.

Thus, the spillover hypothesis specifically suggests that problems in partnerships may render parents less emotionally or physically available to their children, as the stress from the environment or discordant marriage takes precedence over child rearing and/or may cause more problematic parenting behaviors. A number of individual studies and a meta-analytic review examining 68 studies (Erel & Burman, 1995) found support for the association between marital or partner quality and parent-child relationship quality, including the quality of parenting behaviors, which provides substantial support for the spillover hypothesis. Consequently, this theory was used to guide the present study.

In sum, research documents that the majority of women will become parents in their lifetime, and parenting is a powerful human experience that may be impacted by various stressors in the woman's life, such as those occurring within the broader family system. The spillover hypothesis argues that stress from the partner relationship, for example, may spill over and impact other aspects of the family system, such as parenting. For the purposes of the present study, parenting was defined solely as maternal parenting behaviors that are overt or observable aspects of parenting. While research has also examined causes and consequences of paternal parenting behaviors (Howard, 2010), mothers are typically the primary caretakers for infants and young children. Thus, the present study examined mothers' observable parenting behaviors with infants, in particular.

Next, the relevant literature examining the association between IPV and maternal parenting outcomes will be reviewed, as the present study examined the impact of a woman's history of IPV experiences on maternal parenting behaviors across the transition to parenthood. The following chapter will first include a summary of the vast amount of literature examining the association of IPV on maternal parenting in families with toddlers, preschoolers, and school-age



children. Then the literature examining the impact of IPV on maternal parenting representations during pregnancy will be summarized, as preparation for parenting is known to begin well before the infant is born (Slade et al., 2009). Finally, the sparse research examining the impact of IPV on maternal parenting throughout infancy will also be reviewed, as the present study examined the impact of IPV on parenting behaviors in families with 1-year-old infants, in particular.

## CHAPTER 3: PARENTING OUTCOMES IN THE CONTEXT OF IPV

**IPV and Parenting Outcomes during the Toddlerhood and Preschool Years**

Some of the earliest research conducted examining the impact of IPV on parenting involved parents of toddlers and preschool-age children. Several studies were conducted (Holden & Ritchie, 1991; Holden et al., 1998; Ritchie & Holden, 1998) that examined multiple facets of parenting in the context of homes where IPV was either present or absent. Results from the Holden and Ritchie (1991) and Holden et al. (1998) studies each indicated that battered women reported experiencing significantly more parenting stress than non-battered women. Also, battered women and their children were involved in significantly more conflicts during a mother-child interaction task than the comparison group, and battered mothers were less attentive to their child's play. Battered women also reported significantly more inconsistent discipline and parenting than comparison mothers. In the Holden et al. (1998) study, the authors additionally found that battered mothers reported significantly more aggressive behaviors directed toward their children, including pushing, kicking, or hitting the child, than non-battered mothers. Ritchie and Holden (1998) also found that parenting stress in both battered and non-battered women was significantly related to more punitive reactions from mothers and less maternal monitoring of their children during the observation task, as well as negatively related to maternal reported physical affection.

In another study (Levendosky et al., 2003) examining the impact of IPV on both self-reported and observed parenting behaviors in homes with young children, the mediating role of the mother-child relationship on preschool-age children's functioning was examined. Surprisingly, IPV was not directly associated with parenting according to the observation task in this study. However, there were both direct and indirect effects of IPV on parenting effectiveness

according to maternal self-report, but the direct effect was not in the expected direction; more specifically, mothers who indicated experiencing more IPV in their homes reported better parenting effectiveness. Additionally, maternal psychological distress (including depression and PTSD symptoms) mediated the relationship between IPV and parenting effectiveness, such that higher levels of maternal psychological distress were related to lower levels of parenting effectiveness. Results from this study were contrary to other studies that have examined the impact of IPV on parenting in preschool-age children, in that IPV was not associated with the quality of parenting or was positively associated with parenting effectiveness, depending on source of information. The authors discuss the possibility that mothers experiencing IPV may attempt to compensate for the violence in their homes by being more attentive and responsive to their children, in general. An alternative explanation is that IPV may lead to defensiveness on the part of the mother with unrealistic elevated reports of parenting effectiveness (Levendosky et al., 2003).

### **IPV and Parenting Outcomes during the School-Age Years**

The majority of research examining the impact of IPV on parenting has been done with parents of school-age children. One of the very first studies of IPV and parenting examined the effects of IPV on maternal parenting stress (Wolfe, Jaffe, Wilson, & Zak, 1985). In this study, IPV was significantly related to maternal parenting stress, as was found in a few other studies (Edelson, Hokoda, & Ramos-Lira, 2007; Levendosky & Graham-Bermann, 1998; Owen, Kaslow, & Thompson, 2006). Rossman and Rea (2005) measured parenting according to Baumrind's (1971) parenting typology, or parenting styles, including Authoritative, Authoritarian, and Permissive styles. Results indicated that mothers who had experienced IPV endorsed significantly more permissive and authoritarian parenting styles (more ineffective,

problematic styles), while non-battered mothers endorsed significantly more authoritative parenting styles, which is known to be the most effective parenting style for most families.

Research examining the association between IPV and parenting behaviors in homes with school-age children has found that IPV, in general, is associated with poorer parenting behaviors, such as power assertive parenting, control tactics, physical punishment, and yelling (Margolin, Gordis, Medina & Oliver, 2003), a lack of parental responsiveness (Casanueva, Martin, Runyan, Barth & Bradley, 2008), a lack of parental warmth (Levendosky & Graham-Bermann, 2000), higher rates of physical and sexual abuse toward a child (McCloskey et al., 1995), and child-directed aggression (Levendosky & Graham-Bermann, 2001; Moore & Pepler, 1998). Thus, research examining the impact of IPV on parenting capacities in families with toddlers, preschool-age, and school-age children generally found that IPV is associated with more parenting stress and more negative parenting styles and behaviors, with the exception of Levendosky et al. (2003).

### **IPV and Parenting Outcomes during Pregnancy**

Next, although it has been documented that approximately 1.6% to 20% of women experience IPV during pregnancy (Gazmararian, Adams, & Pamuk, 1996), almost no studies have examined the impact of IPV during this particularly vulnerable time on parenting behaviors after the child is born. Instead, the vast majority of research has focused solely on mothers' experiences of IPV after the child is born because it is typically assumed that this is when partner violence most directly impacts children and parenting. However, it is known that mothers typically form representations of themselves as mothers (Ammaniti, Baumgartner, Candelori, & Perruchini, 1992) and representations of relationships with their children by the third trimester of pregnancy (Lumley, 1982; Stern, 1995; Zeanah & Benoit, 1995). Furthermore, these

representations are believed to be early precursors to actual parenting behaviors after the birth of the child. For example, representations of the child and the self as a mother may be similar to postnatal representations (Slade & Cohen, 1996; Zeanah, Keener, & Anders, 1986), which, in turn, are likely to impact the mother-child relationship and parenting behaviors. In other words, how the mother views the child before birth may strongly impact how she views and interacts with the child after birth (Dayton, Levendosky, Davidson, & Bogat, 2010). While the present study did not assess maternal parenting representations per se, IPV was assessed during pregnancy and was used as a predictor of maternal parenting behaviors postnatally. Thus, it is important to understand the impact of IPV during pregnancy on parenting capacities throughout the transition to parenthood.

In one of the first studies to examine IPV and parenting representations, Huth-Bocks et al. (2004) examined the impact of IPV during pregnancy on mothers' prenatal representations of themselves as mothers and their infants. Results found that women who experienced IPV during pregnancy had more negative representations of their infants *in utero*. More specifically, their thoughts and feelings related to the parent-child relationship appeared less flexible or open to change, less coherent, less sensitive, and less accepting, and they had greater perceived infant difficulty, less joy, more anger, more anxiety, more depressed affect, and less feelings of self-efficacy as caregivers. In addition, battered women were significantly more likely to be classified as having a more global negative representation of their children and their relationship with their children prenatally, while women who had not experienced IPV were significantly more likely to be classified as having a more global positive representation.

In a follow-up study from the same research group (Theran et al., 2005), the stability of mothers' representations of their infants and relationship with their infants were examined from

pregnancy through the child's first year of life. Maternal caregiving was also assessed when the child was a year old through a videotaped free-play interaction between the mother and infant. Results indicated that women who had representations that became more negative over the child's first year of life were significantly more likely to have experienced IPV during pregnancy (Theran et al., 2005). Additionally, women who changed from having a more negative representation of their infant during pregnancy to a more positive representation after birth continued to display less sensitivity toward their child, appeared more disengaged, and showed less warmth than women who had similar representations of their infant over time.

Results from the two aforementioned studies indicate that, in general, IPV appears to have significant negative effects on mothers' representations of the child and of themselves as caregivers during pregnancy (Huth-Bocks et al., 2004), which is likely to translate into less maternal sensitivity and negative representations of the infant during the child's first year of life (Dayton et al., 2010; Theran et al., 2005). Women who are abused during their pregnancies might have fewer psychological resources, and this may interfere with their ability to tolerate or relate to their infant in a positive manner (Lieberman & Van Horn, 1998). Battered mothers may feel overwhelmed by the possibility of caring for another or fear the effects of the violence on their infants. Taken together, these results provide preliminary evidence for IPV as a major parenting stressor that may begin before the child is even born.

### **IPV and Parenting Outcomes during Infancy**

Finally, similar to examinations of IPV in pregnancy, very little research has been conducted regarding the impact of IPV on parenting during infancy. However, as indicated by Theran et al. (2005), the negative effects of IPV on parenting during pregnancy may carry over into the child's first year of life. Additionally, as mentioned earlier, IPV often continues in the

lives of families with young children. Thus, it can be assumed that IPV occurring in the child's infancy will also have deleterious effects on parenting.

In one of the few existing studies to date, Levendosky et al. (2006) examined the impact of IPV before pregnancy and in the first year of the infant's life on parenting, maternal mental health, and infant externalizing behavior. Participants included 203 women between the ages of 18 and 40. In this study, IPV was defined as male-to-female violence, and ranged in severity from mild to severe violence, including threats of violence, physical, and sexual violence. During the infant's first year of life, IPV experienced with all partners in the first year postpartum was considered. During this time, 38% of women reported experiencing threats of violence, 21% experienced physical violence, and 8% reported experiencing sexual violence. Parenting was measured through observed maternal behaviors, which were assessed by a 12-minute mother-infant interaction when infants were approximately 1 year of age. Maternal parenting behaviors included sensitivity (the mother's ability to perceive and accurately interpret the infant's signals and to respond appropriately and promptly), warmth (the mother's affection toward the infant), joy (the quality and quantity of the mother's enjoyment during the interaction with the baby), disengagement (the mother's connection and involvement with the infant), hostility (the mother's hostile communications and interactions with the infant), and intrusive/controlling behavior (the mother's interference with, rather than facilitation of, the infant's goals).

Results from this study indicated that IPV during the child's first year of life was significantly correlated with observed maternal parenting behaviors. Specifically, mothers who had experienced IPV in the first year postpartum were more likely to display hostility and disengagement when interacting with their infants, and they showed decreased warmth and sensitivity toward their infant as well; IPV was also associated with poor maternal mental health.

In addition, this study found that maternal parenting behaviors mediated the relationship between IPV and infants' externalizing behavior at 1 year. Thus, parenting appeared to account for the association between IPV and infant social-emotional outcomes. Overall, these results indicate that not only is IPV often prevalent during the first year after birth for many women, IPV negatively impacts parenting during this time. This is not surprising given that mothers' mental health was also found to be compromised as a result of experiencing IPV. Furthermore, not only do battered mothers appear to display less positive and more negative behaviors toward their infants, but their problematic parenting behaviors affect infants' externalizing behavior, as seen in the broader parenting literature (Blandon, Calkins, & Keane, 2010; Miller-Lewis et al., 2006; Miner & Clarke-Stewart, 2008; Verhoeven, Junger, van Aken, Dekovic, & van Aken, 2010)

Another study (Sokolowski et al., 2007) also examined the effects of IPV on parenting during infancy among a specific high-risk population. Participants in this study included 100 African American mothers over the age of 15 with children between the ages of 17 and 20 months old. These families resided in housing projects in a large Midwestern city that was characterized by extreme levels of poverty and violence. In this study, IPV was defined as male-to-female verbal aggression, including critical and controlling acts, as well as physical violence. Parenting was assessed in two ways: (a) through semi-structured interviews that measured mothers' mental representations of their infants, such as feelings about their relationship with their young child, impressions about their child's personality and behavior, as well as perceived emotional responses to the child, and (b) through observations of parenting behaviors in three situations including reading the child a book, free play, and a clean-up session. Mothers' parenting behaviors in this interaction task were coded according to the general presence or absence of sensitivity/responsivity and encouragement/guidance.



As expected, mothers' experience of verbal and physical IPV with their infants' fathers was significantly related to their parenting representations, such that their narratives contained more guilt, and less sensitivity, involvement, and openness to change regarding their infants. In this study, 38% of women had positive representations of their infants, and 62% had more negative representations of their infants. That is, the presence of verbal and physical IPV with the babies' fathers was significantly related to increased odds of having a global negative representation of their infants. These findings are consistent with those reported by Huth-Bocks et al. (2004).

Both of these studies strongly support a link between IPV and mothers' impaired parenting beliefs, feelings, and behaviors in the first 2 years after childbirth. It is possible that mothers' experiences of hostility and anger in romantic relationships may transfer into the parent-child relationship, including views and feelings about this relationship. However, only two studies have examined the impact of IPV on parenting capacities in families with infants, and these studies used distinctly different samples and measures of parenting (i.e., parenting representations and observed parenting behaviors), leaving room for future research to replicate and expand the findings. Thus, the present study is unique in that it examined the impact of various IPV experiences on observed parenting behaviors in homes with infants, in particular. Furthermore, this study built upon limitations in prior research that has examined the association between IPV and parenting capacities in that it attempted to account for various social-contextual factors that may moderate this relationship.

## CHAPTER 4: SOCIAL-CONTEXTUAL RISK FACTORS IN VULNERABLE FAMILIES WITH YOUNG CHILDREN

As previously mentioned, a comprehensive understanding of the association between partner violence and parenting behaviors cannot be fully understood without consideration of the complex and multiple influences on the broader family system, particularly environmental or social-contextual factors that may impact rates of partner violence and its sequelae and parenting behaviors, such as maternal psychopathology, maternal age, socioeconomic status, family size, racial minority status, and cohabitation, to name a few. The next sections will provide an overview of relevant theories, including the ecological systems theory and the cumulative risk model, that emphasize the importance of considering certain contextual factors in the environment when assessing the association between particular elements in the family system.

### **Ecological Systems Theory**

The importance of accounting for social-contextual risk factors in the broader family system is partially based on ecological systems theory (Bronfenbrenner, 1979), which argues that family functioning and child development are the result of complex interactions among various family systems and the larger social environment. For example, when one or more parts of the system are amiss, all others may be affected. The result is increased risk for unhealthy development or poor family functioning. These problems may also be present at every level of the social environment. According to this model, an individual is not only affected by his or her own characteristics (i.e., individual level characteristics such as gender, temperament, age, and IQ) but also by his or her perceptions of the immediate social and physical environment (i.e., the microsystem level, such as sibling relationships, friendships, parental style, and discipline) and by the interrelationship among the various settings of his or her immediate environment (i.e., the

mesosystem level, such as the interaction between the child and the parent). The individual is further influenced by the broader social setting, such as economic processes (i.e., the exosystem level, such as socioeconomic status, parental employment or education, the quality of the marital relationship), which, in turn, are influenced by cultural attitudes and ideologies (i.e., the macrosystem level, such as inadequate health care, political/societal decisions that negatively affect housing and education, or discrimination) (Bronfenbrenner, 1979). In other words, an ecological perspective considers how the individual (for the purposes of the present study, the mother) develops in interaction with the immediate environment, as well as how aspects of the larger context influence the individual and his or her immediate setting. In sum, the ecological systems theory offers theoretical support for taking into consideration the numerous social-contextual factors that may impact development and family systems on multiple levels, including factors that are more proximal to family members (i.e., family violence, parent-child relationships, etc), and factors that are more distal (i.e., socioeconomic status, discrimination/racism, etc).

### **Cumulative Risk Model**

Next, the cumulative risk model purports that it is essential to account for a *cumulative* index of risk factors typically associated with unfavorable family outcomes (Sameroff, Seifer, Baldwin, & Baldwin, 1993), or environmental factors that are known to negatively influence various family outcomes. This approach is guided by the observation that many contextual factors are known to increase risk for both parent and child functioning. In the cumulative risk model, risk is conceptualized as an *accumulated* set of adverse experiences or conditions that affect families. Any one specific condition does not, by itself, define the risk situation, nor is any one risk condition necessarily more important than another risk condition. Rather, it is the

additive effect of a number of these factors that is considered detrimental to the well-being of the broader family system (Sameroff et al., 1993). Numerous cumulative risk factors have been identified and studied in prior research, including the presence of maternal psychopathology, large family size, poor family functioning, poor quality of the home environment, racial minority status, mothers who did not obtain a high school diploma or equivalent, and an annual family income below the poverty level, to name a few (Dickstein et al., 1998).

The literature on cumulative risk was initially influenced by the conceptualization and findings of the *Rochester Longitudinal Study (RLS)* conducted by Sameroff and his colleagues, which examined the direct relationship between various family risk factors and child developmental outcomes. The original intent of the RLS was to examine the relation of maternal schizophrenia to child outcomes. However, the researchers found that a variety of social-contextual factors, including social status, family stress, and parenting practices were as predictive of child outcomes (i.e., verbal IQ) as maternal mental illness (Sameroff & Seifer, 1983; Sameroff, Seifer, & Zax, 1982). Sameroff, Seifer, Zax, and Barocas (1987) later emphasized the additive nature of risk, because they found no single risk factor to be more important than any other. Instead, the total number of risk factors (cumulative risk) present for each family (maternal mental health, maternal anxiety, maternal education, occupational status of head of household, minority group status, presence of father, family size, and stressful life events) was associated with child verbal IQ.

A few more recent empirical studies have also examined cumulative risk factors in direct relationship to child outcomes. For example, Atzaba-Poria, Pike, and Deater-Deckard (2004) used Bronfenbrenner's (1979) Ecological Systems Theory to guide their study and found support for the cumulative risk model, such that multiple risk factors acted in a cumulative manner; the

more risk children experienced, the more problem behaviors they exhibited. Total child problem behavior was predicted by risks at all three levels: individual (i.e., child temperament, child IQ, child self-worth), microsystem (i.e., sibling relationship, friendships, parental style, parent-child relationship), and exosystem (socioeconomic status, marital relationship, parental social support, parental employment). Next, Deater-Deckard, Dodge, Bates, and Pettit (1996) used a European- and African American sample to examine whether racial minority status, in particular, moderated the association between various cumulative risks in the social environment and child externalizing problems. Using teacher and peer reports, significant (albeit moderate) associations between the number of risk factors and externalizing problems were found for the European-American children, but cumulative risk and externalizing problems were unrelated in the African American children. This moderation effect suggests that the developmental processes involving risk factors and externalizing problems may differ for the two racial groups.

Finally, a few more recent empirical studies have used cumulative risk as a moderator of associations between various developmental outcomes. For example, Hubbs-Tait, Culp, Huey, Culp, Staros, and Hare (2002) examined whether cumulative family risk moderated the relationship between attending Head Start and three child outcomes: receptive vocabulary, teacher ratings of social competence, and teacher ratings of following instructions. Cumulative family risk was the sum of four risks: low income, low cognitive stimulation, parental intrusiveness, and maternal depression. Results indicated that cumulative family risk predicted teacher ratings of following instructions, in particular. Additionally, results revealed that the relation between Head Start attendance and receptive vocabulary was moderated by cumulative risk, with children from higher risk families benefiting more from Head Start. In a different study, Vernon-Feagans and Manlove (2005) examined the effects of otitis media (OM; chronic

middle ear infections) and the quality of child care on the social and communicative behaviors of toddlers, using a cumulative risk framework. Cumulative risk in this study was the sum of three risks associated with the quality of the child care environment (structural, process, and group quality of care). Results indicated that the quality of child care moderated the relation between presence/absence of OM and social/communicative development in children.

In sum, prior research has documented cumulative environmental risks to be associated with child outcomes both directly (Atzaba-Poria et al., 2004; Deater-Deckard, Dodge, Petit, & Bates, 1998) and more indirectly through moderation of other associations (Hubbs-Tait et al., 2002; Vernon-Feagans et al., 2005). While the specific cumulative risk variables have differed across studies, there appears to be consensus in the literature that the additive effect of a number of risk factors is considered most detrimental to the well-being of the broader family system including child outcomes. Importantly, a major limitation of prior research documenting the association between IPV and parenting in families with very young children is that researchers have not generally accounted for the numerous contextual risk factors that may be impacting families with young children. Instead, the vast majority of researchers have examined the direct association between IPV and parenting capacities without examining other possible variables that may affect this relationship. Consequently, the current study is unique in that it examined the impact of various IPV experiences at multiple time points in a woman's life on her parenting behaviors with her 1-year-old infant, while taking into consideration numerous social-contextual risk factors that may moderate this association.

In the present study, the risk factors that were examined as potential moderators of the association between IPV and maternal parenting behaviors are those that have also been found to be directly associated with both IPV and parenting independently. They include maternal

psychopathology, maternal age, number of children in the family (family size), socioeconomic status (based on income-to-needs ratio), racial minority status, and cohabitation. Thus, the following sections will provide a brief overview of the literature that has examined these social-contextual factors in relation to both IPV and parenting. It was presumed that since these factors have been associated with both IPV and parenting, and they have been implicated in prior studies on cumulative risk, they could also have a role in moderating the association between IPV and parenting in the present study.

### **Maternal Psychopathology**

Both theory and research have documented an association between IPV and maternal psychopathology. For example, trauma theory, as stated above, argues that victims of IPV are highly likely to experience PTSD symptomatology, as well as various other trauma-related mental health sequelae. According to trauma theory, these various mental health consequences appear to be a secondary effect of experiencing (often) chronic, relational trauma, and empirical research has documented an association between all types of IPV and maternal psychopathology. More specifically, research has found physical IPV to impact women's mental health, including higher rates of PTSD, depression, and substance use (Golding, 1999; Kessler et al., 1995; Magdol et al., 1998). Sexual IPV has been associated with higher rates of substance use, depression, chronic health problems (Coker et al., 2002), and suicidal ideation (Pico-Alfonso et al., 2006) in women. Finally, psychological or emotional IPV, a less commonly studied type of partner violence, has been found to be associated with increased anxiety, depression, substance use, and other medical problems (Coker et al., 2002; Pico-Alfonso et al., 2006). Thus, all types of IPV appear to be directly related to higher rates of various maternal mental health problems.

Empirical research has also documented an association between maternal mental health symptoms and parenting capacities with infants, in particular. In one study, Seifer, Sameroff, Anagnostopolou, and Elias (1992) found that when infants were 4 months old, and again when they were 12 months old, mothers with serious mental illnesses were rated as less responsive to their infants when they were close in proximity (i.e., within arms' length of them) than mothers without serious mental illness.

The majority of studies exploring the impact of maternal psychopathology on parenting have primarily focused on maternal depression because it is the most common mental disorder in women of childbearing age (Oyserman, Mowbray, Meares, & Firminger, 2000). While research has consistently documented the deleterious impact of depression on maternal behaviors, such as sensitivity, affect, warmth, affection, and communication toward their infant children (Ferber, Feldman, & Makhoul, 2008; Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Malphurs, Raag, Field, Pickens, & Pelaez-Nogueras, 1996), far less research has examined the impact of maternal trauma symptoms on parenting capacities with infants, in particular. Clinical evidence indicates that PTSD symptoms can negatively affect a parent's functioning and ability to parent effectively (Appleyard & Osofsky, 2003). Further, Banyard and colleagues (2003) explored the impact of cumulative trauma experiences and symptoms on parenting in a sample of 152 mothers with different types of interpersonal trauma exposure. Findings showed that, overall, higher levels of trauma exposure were linked with decreased parenting satisfaction, reports of child neglect, use of physical punishment, and a history of protective service reports. Thus, there is preliminary evidence to suggest that complex trauma negatively impacts parenting capacities, although more research is needed, especially in families with infants.



### **Maternal Age**

Next, prior research has documented that individuals tend to be less violent as they age; thus, violence may be more common among couples early in their relationships, making younger maternal age a risk factor for IPV. In fact, the risk of being abused by a partner has been found to be greatest between the teen years and the 30s (Sorenson, Upchurch, & Shen, 1996), which are generally considered the childbearing years (Jasinski & Kantor, 2001; Stewart, 1994; Torres et al., 2000). Thus, mothers with young infants may be at an increased risk for experiencing partner abuse at a critical time in the lives of families.

Additionally, research has also documented variations in parenting based on maternal age. For example, one study found that when other demographic and psychosocial factors are controlled, increased maternal age is linearly related to greater satisfaction with parenting, greater time commitment to parenting, and more optimal observed parenting (Ragozin, Basham, Crnic, Greenberg, & Robinson, 1982). Furthermore, the “maternal maturity hypothesis” states that younger mothers are less likely to provide appropriate parenting or an optimal home environment due to their lack of experience and financial stability (Hotz, McElroy, & Sanders, 1997; McLanahan & Sadefur, 1994). For example, comparisons of adolescent and adult mothers indicate, in general, that parenthood at very young ages is associated with less skilled childrearing and poorer caregiving environments (Becker, 1987; Berlin, Brady-Smith, & Brooks-Gunn, 2002; Coley & Chase-Lansdale, 1998; Fergusson & Woodward, 1999). Wolfe (1987) reported that younger parents are less likely to engage in positive parenting (i.e., praising and hugging), and are less verbal, sensitive, and responsive to their infants (Barratt & Roach, 1995; Culp, Osofsky, & O’Brien, 1996; Moore & Brooks-Gunn, 2002). Berlin et al. (2002) examined links between maternal childbearing age and parenting behaviors and found that teenage mothers

were less supportive, more detached, more intrusive, and more negative/hostile with their infants than older mothers, above and beyond the effects of race, education, family type, family income, and child sex and age. In another study, Belsky, Bell, Bradley, Stallard, and Stewart-Brown (2006) found greater maternal age to be associated with more maternal warmth and positive control, and less negativity. Thus, the majority of research has documented that younger maternal age is associated with poorer parenting processes.

### **Number of Children in the Home**

Research has documented that a greater number of children in the home, or increased family size, is associated with an increase in the experience of IPV (Ellsberg, Pena, Herrera, Liljestrand, & Winkvist, 2000; Flake, 2005). The general perception among family violence researchers is that large families with more children are more prone to violence, in general, because they experience greater stress associated with the necessity to provide for several children (Hoffman, Demo, & Edwards, 1994). A large family size also has a high potential for generating frustration because of its low probability of conflict resolution. Thus, violence may be more likely to become a possible response to this ongoing frustration and stress between parents within the family unit. Finally, DeMaris, Benson, Fox, Hill, and Van Wyk (2003) found that male-to-female partner violence was associated with higher numbers of children in the home. The authors proposed that it is possible that more children in the home is a stressor that may precipitate more frequent disagreements or arguments, which, in turn, may result in violence. In sum, a large family size, or families with more children, appear to be a risk factor for IPV due to the increased stress involved in providing for larger families.

Regarding family size and parenting, the dilution hypothesis put forth by Blake (1981) argues that decisions about family size are important to children's life chances because parental

time and energy are finite resources that become diluted when spread over a larger number of children. Blake (1981) analyzed several cross-sectional surveys and found that a child in a large household receives less parental attention than a child in a smaller household. This finding has since been replicated by other researchers (Downey, 1995; Guo & VanWey, 1999; Strohschein, Gauthier, Campbell, & Kleparchuk, 2008), who found that when more children were added to a household, mothers exhibited declines in the frequency of positive interactions with their children. Similarly, Dunn and Kendrick (1980) reported a decline in maternal attention and play with the firstborn child following the birth of a second child. Three subsequent studies also found that mothers reduce positive interactions with their older child following the birth of a younger sibling (Baydar, Greek, & Brooks-Gunn, 1997; Baydar, Hyle, & Brooks-Gunn, 1997; Menaghan & Parcel, 1995). Stewart (2005) found that the birth of a sibling is associated with decreased parental involvement compared to those parents without other children. Finally, a few other studies have found an association between family size and child maltreatment, such that larger families have higher rates of child abuse and neglect, a more severe type of parenting (Polansky, 1981; Straus, Gelles, and Steinmetz, 1980). Thus, in sum, researchers appear to generally agree that parenting changes (i.e., becomes more problematic) as family size increases.

### **Socioeconomic Status**

Socioeconomic status (SES) is an economic and sociological measure of a person's work experience and economic and social position relative to others, based on income and family size, for example. It was originally assumed that IPV only occurred in low SES groups (poorer families). While it has been found that IPV is actually most prevalent in low SES groups, IPV is, in fact, found in all SES groups, including more wealthy families (Steinmetz, 1978). However, lower SES appears to be a risk factor for IPV. In 9 of 11 case-comparison studies from the

United States, Hotaling and Sugarman (1986) identified family income as a consistent marker of IPV. The relationship between SES and IPV is also well established internationally, such as in Cambodia (Nelson & Zimmerman, 1996), Nicaragua (Ellsberg et al., 2000), Chile (Larrain, 1993), and Thailand (Hoffman et al., 1994). A variety of perspectives suggest that partner abuse is more widespread among the poor because families living in impoverished conditions are subject to higher levels of stress than families not living in poverty (Sullivan & Rumptz, 1994). That is, poverty is not necessarily viewed as a causal factor of IPV, but it is generally assumed to increase the risk of spouse abuse due to the added stress of living in poverty. Carlson's (1984) structural theory of intra-familial violence argues that the inequitable distribution of societal resources causes stress and tension among people with insufficient material resources. When combined with other factors such as living conditions, overcrowding, a sense of hopelessness, and lack of employment opportunities, poverty can significantly increase the risk of IPV (Heise, 1998).

There has also been a documented association in the literature regarding SES and parenting capacities. For example, Smith (2010) found that lower SES was associated with higher levels of maternal control and negativity in a parent-child interaction task with toddlers. Furthermore, a vast amount of research has documented an association between numerous socioeconomic factors and increased rates of child maltreatment (indicative of poorer parenting behaviors), such that those with lower income levels (Deccio, Horner, & Wilson, 1994), median residential housing/property values (Ernst, 2000), higher unemployment rates (Freisthler, 2004; Freisthler, Midanik, & Gruenewald, 2004), higher poverty rates (Deccio et al., 1994; Drake & Pandey, 1996; Freisthler, 2004; Freisthler et al., 2004), and overall lower SES (Zuravin & Taylor, 1987), display higher rates of child maltreatment. Finally, Belsky et al. (2006) found

socioeconomic variables such as higher income/needs ratio and greater maternal education to be associated with greater maternal warmth and positive control, and less negativity in parenting. In sum, research has clearly documented socioeconomic variables to be risk factors for IPV and an important social-contextual variable that is correlated with parenting practices.

### **Racial Minority Status**

Research has documented that victims of IPV represent all racial groups (Barnett, Miller-Perrin, & Perrin, 1997). However, disproportionate numbers of African Americans are violent toward each other within and outside of relationships than non-minority populations, and the violence is typically more severe (Sullivan & Rumptz, 1994). Also, American Indian women report higher levels of IPV than non-minorities (Tjaden & Thoennes, 2000). Finally, Hispanic women have been found to be less likely to report rape or physical assault by a partner than non-Hispanic minority women (Tjaden & Thoennes, 2000), although one study found both Hispanic and African American women to experience higher rates of IPV than non-minority women (Halpern, Spriggs, Martin, & Kupper, 2009). The Theory of Gender and Power (Raj, Silverman, Wingood, & DiClemente, 1999) proposes that African American women, in particular, may experience higher rates of IPV than women of other racial backgrounds for a number of reasons, including higher rates of socioeconomic impoverishment, higher rates of religious affiliations that encourage women to be subservient to men, and a greater emphasis on childbearing (and thus, ties to a romantic partner), as well as a sex ratio imbalance among this racial group (i.e., lack of availability of African American men). Thus, this theory argues that it is not necessarily an individual's race that is associated with higher rates of IPV, but other culturally-based factors that may increase a woman's risk for IPV (Raj et al., 1999). In sum, research has documented

that racial minority groups experience higher rates of IPV than non-minority groups for a variety of reasons, thus making minority status another risk factor for IPV.

Regarding parenting practices, research has also shown a difference in parenting practices across race, such that African Americans in particular may be more accepting of harsh parenting practices, and increased use of physical discipline (Deater-Deckard et al., 1996; Kelley, Power, & Wimbush, 1992). More specifically, Sargeant (1997), in a dissertation study, found that when SES was controlled, African American mothers used significantly more direct commands and fewer questions than did European American mothers. Furthermore, while both African American and European American parents spank their children, African American parents do so more frequently (Deater-Deckard et al., 1996). In fact, spanking on the buttocks is the most common form of punishment in African American families (Deater-Deckard & Dodge, 1997; Flynn, 1998; Korbin, Coulton, Lindstrom-Ufuti, & Spilsbury, 2000). Gunnoe and Mariner (1997) suggest that while European American families may interpret spanking as an act of parental aggression, African American families may interpret it as an expression of their parental authority. Young (1970) argued that for African Americans, the control of child aggression, even if by coercive means, signals love for the child. Mosby and colleagues (1999), in a qualitative analysis of African American parents' and elders' narratives, found that African Americans believe physical discipline is more effective than reasoning alone, but that teaching must accompany the discipline and it must be done without anger. Thus, research documents that African American parents may use harsher parenting practices than European Americans, and that the meaning attributed to these harsher forms of discipline may also vary between cultures. In turn, it may be presumed that children experiencing harsher forms of discipline in African

American homes may interpret the experience differently (as more acceptable) than these forms of discipline in European American families.

African American parents may also apply different attributions to their children's behaviors. For example, Pinderhughes and colleagues (2000) found that African American parents, compared to Caucasian parents, were more likely to attribute hostile intent to their child for misbehavior, to rate their child's behavior as problematic, and to feel worried about their child's future. They also found that these beliefs and concerns were significantly correlated with the use of physical punishment and accounted for 50% of the total effect of race on discipline responses. Thus, the belief that physical discipline is more effective, that children act out because of hostility, and that children will grow up to have dismal futures leads many African American families to use physical discipline. It is also important to note that there is a significant correlation between physical punishment and problem behaviors for European American children, but this correlation does not appear to exist for African American children (Deater-Deckard et al., 1998; Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004); in fact, the significant positive relationship between physical punishment in grades 6 and 8 and externalizing behaviors for European American children was significantly negative for African American children. In other words, the use of mild physical punishment appeared to be a protective factor against later disruptive behavior problems for African American children, perhaps because of the cultural meaning associated with physical punishment. As mentioned previously, African American children may understand that their parents' use of physical discipline signifies concern and love for them.

In sum, research has documented that African Americans may experience more violence within and outside of relationships than other racial groups. Additionally, research has

documented that African Americans may engage in harsher parenting practices than other racial groups. Although certain theories propose particular reasons for the harsher parenting practices among this population, leading one to believe it may actually be a protective factor, empirical research is not yet conclusive regarding these claims. Thus, based on current empirical research, there is room for future research to examine racial minority status as a risk factor for IPV and certain parenting practices.

### **Cohabitation**

Finally, it has been generally agreed upon in the research literature that partner cohabitation (i.e., living together when unmarried) is associated with an increased risk of IPV. For example, national-level U.S. data from 1976 to 1994 showed that cohabiting relationships in the United States had almost 9 times the female homicide rate as marital unions (Shackelford, 2001). Furthermore, higher rates of IPV are consistently found among cohabiters than among married couples. In an analysis of 14 marital violence studies, Brownridge and Halli (2000) concluded that, on average, cohabiters are between 2 and 4 times more likely to engage in physical violence than married couples. Theoretical explanations often point to the temporary nature of cohabitation as a primary reason cohabiters are more abusive than married couples (Nock, 1995). Another theory argues that marriage typically results in couples' lives becoming more stable and "settled" (Berger & Kellner, 1994). Other researchers (Brownridge, 2004; Brownridge & Halli, 2001, 2002) have speculated that "couples who are cohabiting are less secure of their relationship and may therefore be more reluctant to develop a joint lifestyle" (p. 653). Lower security among cohabiters may lead to more compensatory domineering behavior, more sexually proprietary behavior, greater social isolation, a higher probability of depression, more heavy alcohol consumption, and a reduced likelihood of having children. These selection



and/or relationship factors may then lead to more disagreements, conflict, and violence. In sum, both theory and empirical research have suggested that cohabitation is a risk factor for IPV.

Additionally, researchers have documented that partner cohabitation is associated with poorer parenting practices as well. According to a recent estimate, about 50% of unmarried parents are cohabiting at the time of a child's birth (McLanahan, 2006). Using data from the National Survey of Families and Households (NSFH), Thomson, McLanahan, and Curtin (1992) found that parents in all types of two-parent families (stepparent and original parent) reported higher levels of parental control and monitoring than did parents in all types of single-parent families. The exception was parents in cohabiting families, who reported lower levels of parental control and monitoring. Using the same data, Thomson, Hanson, and McLanahan (1994) found lower levels of paternal and maternal support toward children in stepparent and cohabiting parent families than among families containing two biological parents. This research suggests that parents in single-parent and cohabiting families may display lower levels of parental control and warmth in their parenting than those in married-couple families.

### **Cumulative Risk and the Association between IPV and Parenting**

In conclusion, research has documented that a number of social-contextual factors, such as maternal psychopathology, maternal age, socioeconomic status, family size, racial minority status, and cohabitation, are each associated independently with both IPV and parenting. More specifically, the presence of maternal psychopathology, younger maternal age, lower socioeconomic status, increased number of children in the family, being part of a minority racial group, and cohabitation appear to be associated with higher rates of IPV and poorer parenting practices, according to the present research literature. Thus, consistent with the Ecological

Systems Theory and the Cumulative Risk model, it is possible that the accumulation of these risk factors may impact the association between IPV and maternal parenting.

### **Summary and Conclusions**

There is evidence in the literature for a direct relationship between a mother's experience of IPV and impaired parenting capacities. These empirical findings can be understood in terms of the spillover hypothesis, which posits that affect or behavior in one aspect of the family system (i.e., the partner relationship) may spill over or transfer into another aspect of the family system (i.e., the parent-child relationship). These empirical findings may also be understood in terms of trauma theory, which argues that partner abuse may result in psychological and emotional difficulties in victims, which may negatively impact parenting behaviors. Also, there is evidence in the literature that IPV experiences are associated with numerous social-contextual risk factors noted above. The literature also documents that the aforementioned social-contextual or risk factors are associated with parenting experiences; most often, risk is associated with problematic parenting. Almost no studies, however, have empirically examined the association between IPV experiences and parenting experiences while accounting for the cumulative risks or numerous environmental factors that are likely to impact families. Thus, further research is needed to more clearly understand these associations due to a number of inconsistencies and limitations in the literature that make it difficult to compare the results of the studies. Currently, there is also a need to obtain a deeper and more clear understanding about the complex relationship between IPV and parenting, including the manner in which numerous other contextual factors may impact this association. Additionally, it is important to note that most prior studies are cross-sectional, few of the studies have been theoretically-based, and almost no studies have examined the impact of IPV on parenting experiences in families with infants.

One important inconsistency in the literature is the difference in the way the variables of interest are operationalized. For example, some studies operationalize IPV as physical abuse, while others include sexual abuse as part of the definition, and still others include psychological or emotional abuse (Tjaden & Thoennes, 2000). However, O'Leary (1999) argues that it is rare for physical or sexual abuse to occur in the absence of psychological abuse, thus indicating that all forms of abuse should be considered when examining IPV. Additionally, a vast amount of research has documented that each form of IPV is associated with various mental health problems, further supporting the need to include each type of IPV in the definition.

The construct of parenting has also been operationalized differently across studies. Thus, while the research literature has been primarily consistent in concluding the deleterious impact of IPV on parenting in homes with children of varied ages, indicating that IPV is a significant parenting stressor, the way in which parenting has been assessed differs across studies, leaving room for future research.

Another inconsistency is that researchers have used different methodologies to examine the variables of interest. First, because of its harmful nature, it is unethical for researchers to observe IPV as a method of assessment. Thus, self-report measures have been the foundation of IPV assessment, which have greatly increased over the last 20 years (Rhatigan, Moore, & Street, 2005). Parenting, on the other hand, has been examined using both self-report and observations. Although self-report is again the most utilized method, coded observations of live behavior are believed to provide a more direct sample of the relevant (parenting) behavior. Thus, future research should continue to examine observed parenting behaviors in the context of IPV in order to reduce biases from retrospective, self-report measures.

A third inconsistency in the literature is the differing age ranges of children in families experiencing IPV that are used across studies. For example, the vast majority of research examining the impact of IPV on parenting capacities has been conducted in families with preschool-age children (Holden & Ritchie, 1991; Holden et al., 1998; Katz & Windecker-Nelson, 2006; Levendosky et al., 2003; Ritchie & Holden, 1998) or school-age children (Casanueva et al., 2008; Jouriles & LeCompte, 1991; Jouriles & Norwood, 1995; Levendosky & Graham-Bermann, 2000; 2001; McCloskey et al., 1995; Margolin et al., 2003; Moore & Pepler, 1998; Rossman & Rea, 2005). Almost no research has been conducted examining the impact of IPV on parenting capacities across the transition to parenthood and in families with 1-year-old infants, with the exception of the few studies reviewed above (Huth-Bocks et al., 2004; Levendosky et al., 2006; Sokolowski et al., 2007; Theran et al., 2005). Because the transition to parenthood is a critical time for both mothers and the social-emotional adjustment of infants, further research is needed with this understudied population.

Another major limitation of many of the previously mentioned studies is the use of cross-sectional designs, making it difficult to understand how IPV impacts parenting capacities over time. One potential problem of using cross-sectional designs is that researchers may misclassify IPV victims because the research is obtained at only a single point in time, when, in fact, the IPV histories of many victims are quite dynamic and complex (Bogat et al., 2005). This design requires minimal resources, and because subjects are assessed at a single point in time, there is no attrition. Thus, it is clear that more longitudinal research is needed to examine trajectories of violence over time. Longitudinal data allow for the consideration of the complexity of romantic relationships, as the research indicates that most women move in and out of violent relationships over time (Bogat et al., 2003).

A final and important problem in prior literature is that the majority of studies examining the association between IPV and parenting capacities did not account for the numerous other environmental or social-contextual risk factors that may influence the association between IPV and parenting. As described above, research has documented an association between both IPV and parenting and maternal psychopathology, maternal age, number of children in the family, SES, racial minority status, and cohabitation, and the cumulative risk model has received ample empirical support. Thus, it is presumed that an accumulation of these risk factors may also impact the association between IPV and parenting behaviors.

### **The Present Study**

The current study improves upon many of the previously mentioned inconsistencies and limitations in the existing literature. First, IPV is examined in a more complex way than has typically been done in past research. Both the chronicity of IPV (i.e., IPV at multiple points in the woman's life), and the severity of IPV experiences are examined. Additionally, multiple forms of IPV, including physical, sexual, and psychological abuse, are included. Another strength of the present study is that parenting is examined using observed maternal parenting behaviors with 1-year-old infants across two types of interaction tasks; observations coded by trained observers are believed to be the most valid assessment of parenting behaviors. Furthermore, there are only two known existing studies examining IPV and parenting during infancy.

Finally, this study examines whether an accumulation of social-contextual factors moderates the relationship between IPV experiences and maternal parenting behaviors. This study is unique because, not only have very few studies examined cumulative risk in relation to IPV and parenting, but even fewer studies have examined these associations through a

longitudinal design. Thus, the examination of IPV, parenting, and cumulative risk over time in the present study is a particular strength and is necessary to more clearly understand the specific impact of various IPV experiences on family outcomes.

The multi-method approach in this study helps to reduce single-method biases commonly found with exclusive use of self-report measures. Results from this study are expected to help researchers and health service workers better understand the manner in which various risk factors within the home impact various experiences within the broader family system. For example, research has clearly documented a direct association between IPV and parenting practices in families with older children, but significantly less research has examined the mechanism by which this association occurs in families with infants, and how the presence or absence of various other risk factors in the home may impact this association. This knowledge may be particularly helpful for prevention and intervention efforts in at-risk families with young children.

### **Hypotheses**

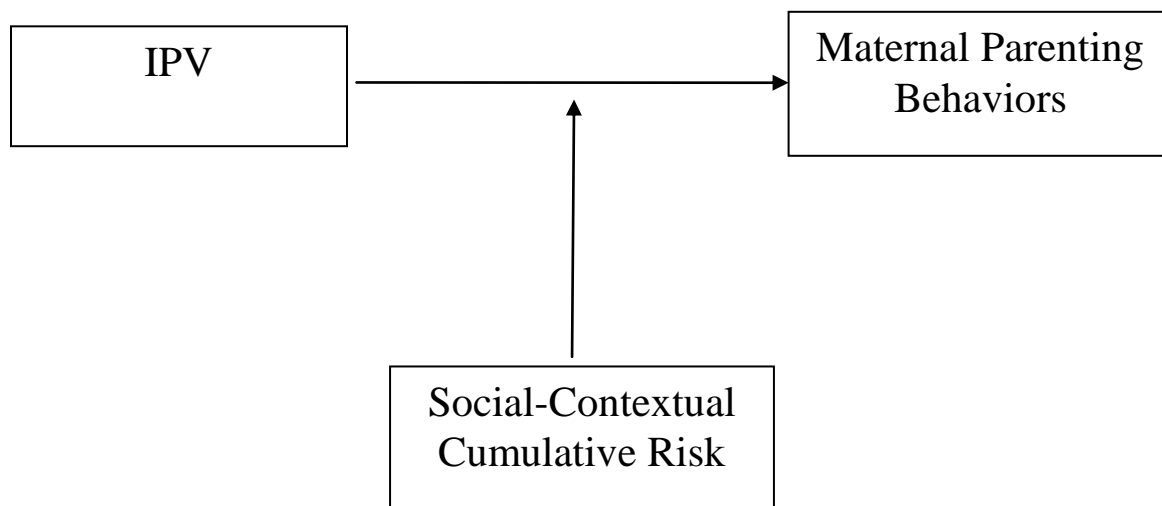
Hypothesis 1a: IPV experiences during the first year of an infant's life (i.e., severity of proximal IPV) will be significantly related to maternal parenting behaviors, such that greater frequency of IPV experiences during this time period will be related to more negative parenting behaviors and less positive parenting behaviors.

Hypothesis 1b: Chronic IPV experiences over the course of a woman's life (i.e., distal and proximal IPV) will be significantly related to maternal parenting behaviors, such that greater chronicity of IPV experiences will be related to more negative parenting behaviors and less positive parenting behaviors.

Hypothesis 2a: Cumulative risk will moderate the relationship between proximal IPV experiences and maternal parenting behaviors, such that the relationship between IPV and parenting will be stronger under the condition of greater cumulative risk and weaker under the condition of less cumulative risk (see Figure 1).

Hypothesis 2b: Cumulative risk will moderate the relationship between IPV chronicity and maternal parenting behaviors, such that the relationship between IPV chronicity and parenting will be stronger under the condition of greater cumulative risk and weaker under the condition of less cumulative risk (see Figure 1).

Figure 1. Hypothesized Moderation Model



### Exploratory Analyses

#### Linear Versus Quadratic Model of Cumulative Risk

In addition to the hypothesis testing described above examining the linear effects of cumulative risk on outcome variables, this study also examines possible quadratic effects of cumulative risk in an exploratory way. It has been argued that the linear approach to examining cumulative risk ignores the potential interactive nature of risk factors and the possibility that

increasing risks have larger and larger effects on individuals with multiple risks; thus, examining only linear effects may overlook the experiences of individuals who are likely to experience the most adverse outcomes as a result of numerous risk factors (Jones, Forehand, Brody, & Armistead, 2002). Although exploratory, it was expected that, in addition to traditional linear additive effects seen in the vast majority of cumulative risk research, cumulative risk would predict maternal parenting in a nonlinear manner as well, such that there would be a significant increase in the effects of each of the individual cumulative risk factor on the outcome.

### **Racial Group Differences in IPV and Parenting**

Finally, this study conducts further exploratory analyses to examine possible racial group differences related to both IPV and maternal parenting independently. While racial minority status is examined as one risk factor in terms of cumulative risk because research has documented that it co-occurs with numerous other environmental risk factors, the present study also examines racial minority status independently in relation to study variables. While the cumulative risk model suggests that race is one risk that may not be qualitatively different from other environmental risks, prior research also indicates that minority status may be a qualitatively unique and important variable to examine on its own. More specifically, African American individuals appear to experience higher rates of IPV than other minority and non-minority groups, and research suggests that African American individuals may engage in harsher parenting practices. However, limited research has examined whether these group differences hold true in a primarily high-risk sample of mothers with infant-age children. Thus, this study is unique in that it is one of the only studies to date to examine group differences in IPV and parenting among racial groups in a diverse sample of families with very young children.



Although exploratory, it is expected that there will be a significant difference in the frequency of IPV experiences among African American and Caucasian American women, such that African American women will report experiencing more frequent IPV (both proximal IPV and IPV chronicity) than Caucasian American women. It is also expected that there will be a significant difference in parenting behaviors between African American and Caucasian American women, such that African American mothers will display more negative parenting behaviors than Caucasian American women.

## CHAPTER 5: RESEARCH DESIGN AND METHODOLOGY

**Participants**

Participants in this study included 120 primarily low-income women who were participating in a 5-wave longitudinal study on parenting over the course of pregnancy through the child's third birthday. Only data from the first and third waves of the larger, ongoing longitudinal study were used in the present study. The first wave of data was collected when the participants were in their third trimester of pregnancy, the second wave of data when the participants' infants turned 3 months old, on average, and the third wave of data when infants turned 1 year old. The fourth wave of data was collected when infants turned 2 years old, and the fifth wave of data is currently being collected when children turn 3 years old.

Participants were between the ages of 18 and 42 ( $M = 26$ ,  $SD = 5.7$ ) at study entry (pregnancy), and 47% self-identified as African American, 36% as Caucasian, 13% as Biracial, and 4% as belonging to other racial groups. Sixty-four percent of participants were single (never married), 28% were married, 4% were separated, and 4% were divorced, and 30% were first time mothers. Furthermore, 20% percent of participants reported having a high school diploma/GED or less education, 44% reported having some college or trade school, and 36% reported having a college degree. The median monthly income for participants at study entry was \$1,500 (range = \$0 - \$10,416). Eighty-eight percent received services from Women, Infants, and Children program (WIC), 62% received food stamps, 90% received Medicaid, Mi-Child, or Medicare, and 20% received public supplemental income at study entry.

Participants were recruited from the Washtenaw and Wayne County communities via fliers advertising a study about parenting. Fliers were placed at areas primarily serving low-income or high-risk pregnant populations. This strategic distribution of fliers allowed for the

specific recruitment of economically-disadvantaged, pregnant women, which was a specific focus of the overall study goals. Specifically, 23% of participants were recruited from several community-based health clinics serving low-income and/or uninsured individuals, 18% from the WIC social service program, 16% from student areas in one regional-level university and one community college, 11% from a “community baby shower” sponsored by local social service programs, 11% heard about the study through word of mouth (friend, relative, another research study, or church), 7% from Head Start and local daycare programs, 7% from subsidized and/or temporary housing facilities, 5% from second-hand, donation centers for pregnant women and young children, and 2% from a parenting class.

At the third wave of data collection (1 year after giving birth), 64% of participants were single (never married), 28% were married, 4% were separated, and 4% were divorced. Twenty percent were cohabitating. Participants’ level of education was the same as the first wave of data collection. The median monthly income for participants at the third wave of data collection was \$1,500 (range = \$0 - \$14,167). Sixty-nine percent received services from WIC, 59% received food stamps, 72% received Medicaid, Mi-Child, or Medicare, and 16% received public supplemental income.

### **Procedures**

Fliers requested that pregnant women interested in the study contact the research office. Upon contacting the research office, research assistants read a scripted description of the study to interested women. This description informed interested women of the intended purpose of the study, the logistics of the first interview (i.e., amount of time, location, types of questionnaires, confidentiality, and compensation), the interest to stay in contact with them for several additional interviews after the birth of their child for which they would receive compensation, as well as

their rights as research participants. After the study description was read, women were asked if they were still interested in participating, and if so, they were asked for verbal consent to continue gathering basic information from them to determine if they met eligibility criteria for the study. There were two inclusion criteria: interested participants needed to be pregnant and fluent English speakers. Additionally, any infants later born with known birth defects or significant health conditions would be excluded from the study as these infants would have qualitatively different social-emotional outcomes and parenting experiences than infants born without these known difficulties; however, no infants met these conditions after birth.

After determining eligibility, research assistants collected contact and demographic information from the interested participants. Interested participants who were currently in their third trimester of pregnancy when they contacted the research office were immediately scheduled for the first interview. Interested participants who were not currently in their third trimester of pregnancy when they contacted the research office were placed in a binder of potential participants. Upon reaching their third trimester, they were contacted by research assistants to schedule the first interview if they were still interested in participating. This process was continued until the required number of participants had been interviewed for the first panel of the study.

The first interview was conducted in either the participant's home (78%) or at a research office on campus (22%), based on participant preference. Interviews lasted approximately 2 ½ to 3 hours and were conducted in rotated teams of two. One interviewer would lead the interview and the second would provide child care for other children in the family and/or observe and assist the lead interviewer. Prior to interviewing, all research assistants were thoroughly trained on study procedures and protocol by the principal investigator (A. Huth-Bocks, Ph.D.).

Training involved reviewing the details of each study procedure and protocol as a research team, on a weekly basis, until every study procedure and protocol had been learned by all research team members. Then, advanced research assistants (i.e., graduate students) were observed leading interviews by the primary investigator. Next, only the advanced research assistants led the interviews while less advanced research assistants observed. Less advanced research assistants were able to lead interviews, with an advanced research assistant observing them, after they had observed at least two interviews and had demonstrated responsibility and competence in the team meetings. All research assistants met weekly as a team, with the principal investigator, to discuss all completed interviews and to discuss any questions or concerns that arose. This allowed for the principal investigator to evaluate whether or not study procedures and protocol were being administered correctly. This also allowed junior and senior research assistants to learn from each other's experiences.

The pregnancy interview began with the research assistant reading the informed consent (see Appendix A) aloud. Then, both the researcher and participant signed two copies of the informed consent, allowing the participant to keep a copy. Next, a brief demographic questionnaire was administered, and then a semi-structured, 1 hour, audio-recorded interview regarding the participant's perceptions of her unborn baby was conducted. The remaining questionnaires were then administered in the same pre-determined order for every participant. This pre-determined order of the questionnaires was determined strategically by the principal investigator, for example, to allow for rapport building with the participant prior to reaching sensitive questionnaires in order to increase the participant's comfort and likelihood of giving honest answers.

Research assistants read all questionnaires aloud to the participant and recorded the participant's verbal answers, in order to address variable levels of literacy and to help control for random responding. Participants were given a questionnaire packet with which to follow along for their convenience. At the end of the interview, the research assistant asked the participant's permission to stay in contact with her every 3 months until the next follow-up interview. Those agreeing to participate in follow-up interviews were asked to provide contact information for up to three people who could provide information on the location of the study participant in case she could not be reached at the next contact interval (these additional individuals were called "recontact people"). Last, participants were thanked, given a long referral list of community resources, and were compensated with a \$25.00 Target gift card.

Prior to the second interview, each participant was contacted by a research assistant approximately 2 weeks after the anticipated due date of her baby to confirm the baby's date of birth, sex, and name. The participant's contact information was also updated and permission for future contact was again obtained. The second interview was typically conducted over the phone, but occasionally (less than 5%) at the participant's home, when the participant's infant was approximately 3 months old. If participants could not be contacted directly, they were typically contacted through one of the recontact people they had listed at the first interview or, less frequently, through home visits.

The third interview was conducted in either the participant's home (93%) or at a research office on campus (7%) and lasted approximately 3 hours. Mothers were informed ahead of time that the target infant needed to be at this interview. The 1-year interview began with the research assistant reading the informed consent aloud (see Appendix B). Then, both the researcher and participant signed two copies of the informed consent, allowing the participant to keep a copy.

Next, a brief demographic questionnaire and a standardized assessment of infant emotion recognition were administered. Mothers were then asked to engage in a 10-minute free-play and 2-minute clean-up interaction with their 1-year-old infants using some toys that the researchers had brought to the interview (more details about this procedure can be found below). This interaction was video-recorded. Subsequently, the remaining questionnaires were then administered in the same pre-determined order for every participant, for the same reasons noted above for the first interview during pregnancy.

As before, the research assistants read all questionnaires aloud to the participant and recorded the participant's verbal answers. Participants were given a questionnaire packet with which to follow along for convenience. At the end of the interview, the research assistant asked the participant's permission to stay in contact with her until her baby turned 3 years old, which would be the final follow-up interview of the study. Information on the recontact people was also updated at this time. Last, participants were thanked, given a long referral list of community resources, and were compensated with \$50 in cash and a baby gift.

### **Tracking Procedures**

In between each wave of data collection, extensive tracking procedures were in place in order to ensure better retention of participants over time. A large team of research assistants were trained extensively on tracking procedures and protocol, and each research assistant was assigned approximately one "tracking" assignment to contact each week. Based on the recommendations of Rumpitz, Sullivan, Davidson, and Basta (1991), participants were contacted by phone every 3 months between interviews in order to determine if their contact information was the same, and to remind the participants that they would be contacted in the future for another research interview. If participants were unable to be reached by phone (i.e., phone

disconnected or no returned phone call), then a letter was sent to the participants' homes explaining that the project staff were trying to reach them in order to update their contact information. They were given the option of either calling the project office to update their contact information or filling out a "contact form" with their updated phone numbers, address, and recontact people's information, which they could return in a stamped and addressed envelope that was provided to them. If the participant was still unable to be reached, phone calls were made and/or letters were sent to each of the recontact people in an attempt to obtain updated contact information for the participant. Finally, if neither the participant nor the recontact people were able to be reached through phone calls or letters, home visits were made to both the participant and/or the recontact people until further contact information was obtained. Detailed records were kept for each tracking assignment regarding the method through which the participants were reached at each of the tracking periods, and how long it took to reach the participant. Overall, this tracking plan allowed for impressive retention of participants in the study; the retention rate at the second interview was 98% and at the third interview was 95%.

### **Measures**

**Intimate partner violence (IPV).** The Conflict Tactics Scale-2 (CTS-2; Straus, Hamby, & Warren, 2003) was used to assess for women's lifetime experiences of violent or abusive partner interactions (See Appendix C). The CTS-2 is a 78-item questionnaire designed to assess experiences of psychological (eight items assessing verbal and symbolic acts that may cause fear or emotional pain), physical (twelve items assessing physically assaultive behaviors), and sexual partner violence (seven items assessing coercion to engage in sexual acts), as well as violence causing injury from a partner (six items assessing injuries and medical needs that may result from physical altercations); 33 items assess perpetration and 33 items assess victimization.



Additionally, 12 items assess conflict negotiation. Due to the interests of the larger study, only the 33 items that assess experiences of victimization were administered. It is common practice for researchers to use only certain subscales of the CTS-2, to focus only on experiences of victimization, and to adjust the time periods being assessed for, depending on their interests (e.g., Bogat et al., 2003; Hughes & Huth-Bocks, 2007; Johnson & Lieberman, 2007), and this is welcomed by the authors of the measure (Straus, Hamby, Boney-McCoy, & Sugarman, 1996).

Response categories for each item included 0 (*never*), 1 (*once*), 2 (*twice*), 3 (*3-5 times*), 4 (*6-10 times*), 5 (*11-20 times*), 6 (*more than 20 times*), and 7 (*not during these time periods, but it happened before*). The CTS-2 was scored by using a weighting system in which frequency values were recoded (1 = 1, 2 = 2, 3 = 4, 4 = 8, 5 = 15, and 6 = 25). Higher scores indicated greater experience (severity) of partner violence and abuse. In the current study, the frequency/chronicity (i.e., how often) and types of IPV experiences were assessed for four different time periods of the participant's life; experiences of IPV during the current pregnancy, the year before the current pregnancy, and anytime before pregnancy were obtained during wave one of data collection, and experiences of IPV in the first year of the infant's life were obtained during wave three of data collection.

For the purposes of the present study, the severity of proximal IPV (i.e., IPV within the child's first year) was based on the total score. Total scores could range from 0 to 825, with higher scores indicating more frequent IPV. Coefficient alpha for the total score in this sample ( $N = 120$ ) was .84. The chronicity of distal IPV was calculated by first assigning a dichotomous code for the presence (1) or absence (0) of any IPV during each of the four time periods, and then by summing those presence/absence scores together. Thus, the chronicity score could range

from 0 to 4, with higher scores indicating the presence of IPV at more time periods, i.e., more chronic IPV.

Straus et al. (2003) reported on data from a college student sample that indicated good internal consistency reliability for each of the five subscales of the CTS-2 (negotiation  $\alpha = .86$ , psychological aggression  $\alpha = .79$ , physical assault  $\alpha = .86$ , injury  $\alpha = .95$ , sexual coercion  $\alpha = .87$ ). Similar internal consistency values were also highlighted for two samples of high-risk postpartum mothers by the same authors. A total internal consistency reliability coefficient for the CTS-2 can be calculated from the above subscale coefficients, but was not reported in the manual. Temporal stability reliability has not been reported for any portion of the CTS-2. However, there is preliminary evidence of convergent and discriminant validity of the measure. Specifically, physical assault scores are significantly correlated with several scales on a measure of personal and relationship risk markers for violence (i.e., the Personal and Relationships Profile), such as the dominance, jealousy, antisocial personality, and violence approval scales (Straus et al., 2003), and there are non-significant correlations between the negotiation and injury subscales and the negotiation and sexual coercion subscales (Straus et al., 1996). Lastly, factor analyses have typically indicated that each CTS-2 item loads highest on its intended subscale (Straus et al., 2003).

**Maternal parenting behaviors.** Maternal parenting behaviors were assessed using a mother-infant interaction observation task. Maternal parenting was assessed at wave three of data collection by video-taped observations of maternal parenting behaviors during a 10 minute free-play task and a 2-minute clean-up task with the target infant conducted in the participants' homes (typically); maternal behaviors were later coded from the videotapes. A standard set of developmentally appropriate toys for 1-year-old infants that were novel to each family were

brought to each interview and used for the mother-infant interaction task. Participants were informed in advance that researchers would spend a few minutes watching “you and your baby play together with some toys that we’ll bring” prior to scheduling the interview. Instructions for the mother-infant interaction task were as follows:

“Now we’d like to videotape you and your baby playing together with some of the toys that we brought along. Please feel free to play and interact with your child as you normally would. Go ahead and have a seat behind the toys and facing us. If possible, please try to keep your child around this area and these toys for the next 12 minutes. After about 10 minutes, we’ll let you know that there’s about 2 more minutes left and then you and your baby can clean up the toys by putting them back in the bucket. One of us will make sure the camera is working, and the other will just be sitting aside organizing paperwork. Ready to begin?”

At a later time, trained coders viewed the entire 10-minute free play segment and the entire 2-minute clean-up segment and provided separate, global maternal behavior ratings for each task according to a coding system adapted primarily from Ainsworth, Blehar, Waters, and Wall (1978), Lyons-Ruth and Zoll (1983; 1999), Main and Hesse (1990), and Crittenden (1981). The coding scheme included 10 scales (5 behavioral scales and 5 affective scales) of maternal parenting. The behavioral scales included Sensitivity, or the mother’s ability to perceive and accurately interpret the infant’s signals and to respond to them appropriately and promptly; Engagement, or the degree of connection and involvement with the infant; Interference, or the degree of intrusive or controlling behavior that interferes with the infant’s goals; Covert Hostility, including covertly hostile communications and interactions with the infant such as sarcasm, teasing, mocking, and discrepant communication toward the infant; and Frightened/Frightening behaviors, or the degree of maternal atypical behaviors, such as odd movements or expressions that may frighten the infant, or where the mother appears frightened of the infant. The affective scales included Warmth, or the mother’s affection toward the infant including her verbalizations, tone, facial expressions, and physical contact; Anxiety, or the

mother's preoccupation with herself or the infant, or pressured/agitated pace; Enthusiasm, or the quality and quantity of the mother's enjoyment during the interaction with the baby (playfulness, excitement, wonder, etc.); Flat Affect, or the degree to which the mother is unanimated and expressionless; and Overt Hostility, or the degree of the mother's overt anger, hostility, or aggression toward the infant. All scales were scored with a 5-point, anchored rating system: 1 (*none*), 2 (*some*), 3 (*moderate*), 4 (*much*), and 5 (*very much*). Higher scores indicated more of the given construct.

Two undergraduate students and one master's level student were trained by this investigator to code maternal behaviors based on the mother-infant interaction videotapes. Weekly training meetings were conducted with this investigator and all three coders together that lasted 1.5 hours each for approximately 12 weeks. During these meetings, each of the codes was described in detail, and behavioral examples of the codes were provided and explored within both free play and clean-up tasks. Also, numerous mother-infant interaction tapes obtained with permission from a different research study were coded during the meetings as practice for coders to become more familiar with the codes and the coding procedures. The research assistants practiced coding the free play and clean-up tasks separately, as this would be the procedure during the actual coding for the current study. These initial training meetings continued until this investigator felt comfortable with each of the coders' understanding of each of the 10 codes based on information obtained during the training meetings.

Following training, each individual coder's reliability was established with this investigator for both free play and clean-up tasks using a random subset of the mother-infant interaction tapes from the present study ( $n = 22$ ; approximately 20% of the sample). Reliability was calculated using intra-class correlation coefficients (ICC), which ranged from .73 for the

Engagement subscale to .94 for the Sensitivity subscale for the free play task, and .73 for the Engagement subscale to .95 for the Interference subscale for the clean-up task. Throughout the reliability coding period, which lasted approximately 6 weeks (coding approximately 4 free play and 4 clean-up segments per week), 1-hour weekly meetings were held with all three coders together to give them feedback about their reliability statistics, and to come to agreement on individual codes from certain tapes that were not in an acceptable reliability range (within one point of this investigator's codes).

Following the establishment of initial inter-rater reliability for both the free play and clean-up tasks (ICCs greater than .70 based on acceptable ranges in the published literature), each of the three coders was randomly assigned 28 free play and 28 different clean-up interactions to code over a 7-week period, coding no more than 4 tapes per week. Different research assistants coded the free play and clean-up segments for the same participant in order to reduce bias between segments. Additionally, some interactions were chosen at random and double coded by this investigator. Coders did not know when this would occur, nor did they know which interactions would be double coded. Each week, this investigator coded at least one of each coder's free play and clean-up segments, resulting in an additional 18 total interaction tapes being double-coded throughout the 7-week coding period (6 additional tapes per coder). When disagreements occurred, the coders resolved their differences, and these conferenced codes will be used in the analyses. Final reliabilities reflect a combination of the initial and ongoing reliability calculations (range = .81 for the Engagement subscale to .91 for the Sensitivity subscale for the free play task, and .76 for the Sensitivity subscale to .97 for the Engagement subscale for the clean-up task). These final reliability estimates are more than adequate (Cicchetti & Sparrow, 1981).

In the present study, the free play and clean-up codes were initially considered separate measures of maternal parenting behaviors, as they were meant to elicit different types of parenting behaviors under two different circumstances (i.e., free play may be considered a less stressful interaction than the clean-up task, which is inherently more demanding for the mother-infant dyad). However, Pearson's inter-correlations were examined between the free play and clean-up codes prior to data analysis to ensure that the tasks should, in fact, be considered separate measures of maternal parenting behaviors. Importantly, the clean-up maternal frightened/frightening behavior was not examined in the inter-correlations, as there was no variance for this code (i.e., it was not observed in the clean-up segment). Upon examination, inter-correlations between free play and clean-up codes were generally lower than .50 between interaction tasks; thus, the free play and clean-up codes were examined as separate outcomes for the purpose of data analysis (see Table 1).

Next, composite maternal parenting variables were computed based on results from two exploratory factor analyses (maximum likelihood estimation) with oblique (direct oblimin) rotation that were conducted using the 10 maternal behavior scale scores for each of the free play and clean-up segments. Factors were considered for interpretation if Eigenvalues were over 1.00 and the factor contained items with loadings over .40. Using the maternal free play scale scores, three factors were extracted with Eigenvalues over 1.00 (see Table 2). The first factor, labeled Maternal Free Play Negative Composite, had four item loadings above .40 and explained 31.98% of the variance; it contained Interference, Sensitivity (reverse-scored), and Anxiety. While Warmth (reverse-scored) also loaded onto this factor, it was not included in forming the Maternal Free Play Negative Composite because it had a higher factor loading on the second factor and fit better conceptually on that factor. The second factor, labeled Maternal Free Play

Table 1

*Associations among Free Play and Clean-Up Maternal Parenting Behavior Codes*

Variable	Free Play									
	Sensitivity	Engagement	Interference	Covert Hostility	Frightened	Warmth	Anxiety	Enthusiasm	Flat Affect	Overt Hostility
Sensitivity	.52**	.28**	-.31**	-.18	-.09**	.46**	-.22*	.32**	-.22*	-.15
Engagement	.22**	.53**	.09	.12	.10	.23*	-.13	.37**	-.37**	.04
Interference	-.40**	.07	.40**	.31**	.16	-.24**	.22*	-.00	-.04	.12
Covert Hostility	-.17	.04	.22*	.41**	.08	-.13	.16	-.06	-.06	-.03
Warmth	.35**	.33**	-.10	-.05	-.08	.41**	.03	.33**	-.37**	.04
Anxiety	-.05	.24**	-.02	-.04	-.00	-.04	-.02	.20*	-.09	.03
Enthusiasm	.34**	.39**	-.17	-.08	-.10	.38**	.01	.39**	-.37**	.05
Flat Affect	-.31**	-.32**	.02	.03	.07	-.38**	-.02	-.43**	.50**	-.01
Overt Hostility	-.02	.28**	.12	.09	-.05	.04	.10	.23*	-.19*	-.02

*Note.* Y-axis = Clean Up

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

Positive Composite, had four item loadings above .40 and explained 25.32% of the variance; it consisted of Flat Affect (reverse-scored), Enthusiasm, Engagement, and Warmth. The third factor, labeled Maternal Free Play Frightening Composite, had two item loadings above .40 and explained 10.02% of the variance; it contained Frightening Behavior and Covert Hostility. Overt hostility did not load onto any factors, and therefore, was not subsequently used.

Using the maternal clean-up scale scores, two factors were extracted with Eigenvalues over 1.00 (see Table 3). The first factor, labeled Maternal Clean-Up Positive Composite, had five item loadings above .40 and explained 34.97% of the variance; it contained Flat Affect (reverse-scored), Enthusiasm, Warmth, Sensitivity, and Engagement. The second factor, labeled Maternal Clean-Up Negative Composite, had four item loadings above .40 and explained 22.85% of the variance; it consisted of Interference, Anxiety, Overt Hostility, and Covert Hostility.

Next, each of the five aforementioned maternal parenting behavior composites was formed by summing the relevant items for each scale that emerged from the factor analyses, a method recommended by DiStefano, Zhi, and Mindrila (2009) when using exploratory factor analysis, in particular. Subsequently, Cronbach's alpha for each composite score was: Maternal Free Play Negative Composite = .81, Maternal Free Play Positive Composite = .81, Maternal Free Play Frightening Composite = .64, Maternal Clean-Up Positive Composite = .81, and Maternal Clean-Up Negative Composite = .56. Each of these composite scores was used as an outcome variable in multiple regression analyses.



Table 2

*Factor Loadings for Exploratory Factor Analysis with Oblique (Direct Oblimin) Rotation of Maternal Parenting Behavior Free Play Codes*

	Negative Composite	Positive Composite	Frightening Composite
Interference	<b>.85</b>	.20	.07
Sensitivity	<b>-.73</b>	.28	-.17
Anxiety	<b>.61</b>	.09	.09
Flat Affect	-.19	<b>-.88</b>	.13
Enthusiasm	-.05	<b>.83</b>	-.12
Engagement	-.11	<b>.58</b>	.15
Warmth	-.49	<b>.56</b>	.05
Overt Hostility	.03	.12	.02
Frightening	-.02	-.02	<b>.70</b>
Covert Hostility	.28	.06	<b>.60</b>

*Note.* Factor loadings > .40 on each respective factor are in boldface.

Table 3

*Factor Loadings for Exploratory Factor Analysis with Oblique (Direct Oblimin) Rotation of Maternal Parenting Behavior Clean-Up Codes*

	Positive Composite	Negative Composite
Flat Affect	<b>-.81</b>	-.05
Enthusiasm	<b>.76</b>	.03
Warmth	<b>.75</b>	-.26
Sensitivity	<b>.64</b>	-.42
Engagement	<b>.47</b>	.22
Interference	-.01	<b>.68</b>
Anxiety	.05	<b>.64</b>
Overt Hostility	.03	<b>.55</b>
Covert Hostility	.01	<b>.42</b>

*Note.* Factor loadings > .40 on each respective factor are in boldface.

#### **Social-contextual risk factors.**

**Demographic risks.** A demographic questionnaire (see Appendix D and Appendix E) designed for this study was used to assess a variety of background and identifying characteristics of sample participants at various waves of data collection, including those considered risk factors. Demographic variables of interest for this investigation included (a) maternal age at child's birth, (b) number of children residing in the home at wave three of data collection, (c)

relationship status at wave three of data collection, (d) income level at wave three of data collection, (e) family size at wave three of data collection, (f) maternal race at wave one of data collection, and (g) presence of partner in the home when unmarried at wave three of data collection.

***Maternal psychopathology.*** The Posttraumatic Stress Disorder Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) was used to assess maternal psychopathology, here defined as maternal posttraumatic stress symptomatology (see Appendix F). This scale is a 17-item self-report questionnaire comprised of three subscales that coincide with the three clusters of PTSD symptoms based on the DSM-IV: (a) avoidance, (b) reexperiencing, and (c) hyperarousal; the measure assesses the severity of these symptoms over the last month. Items are rated on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*), with increasing intensity of the symptoms. Examples include, “Avoiding thinking about or talking about a stressful experience from the past or avoiding having feelings related to it” (Avoidance symptom), “Repeated, disturbing memories, thoughts, or images of a stressful experience from the past” (Reexperiencing symptom), and “Feeling jumpy or easily startled” (Hyperarousal symptom). A total PTSD score was calculated by summing the individual items; total scores range from 17 to 85. Higher total scores indicate more severe PTSD symptoms. This measure was administered to mothers in their home when the child was 1-year-old during wave three of data collection. The cutoff used for the present study to define presence or absence of PTSD was 44, which was based on the recommended cutoff score for victimized women (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). A dichotomous PTSD code was assigned to mothers: 0 = no/mild PTSD (mothers who score below 44 on the PCL) and 1 = PTSD (mothers who score

44 or above on the PCL). This dichotomous PTSD score was included as part of the cumulative risk score.

The PCL is a highly valid and reliable instrument according to empirical research. The PCL total scores have been correlated with scores on other psychological tests, for example, the PCL is significantly related to the Clinician Administered PTSD Scale ( $r = .93$ ; Blanchard et al., 1996), as well as the Impact of Events Scale ( $r = .77$ ; Ruggiero, Del Ben, Scotti, & Rabalais, 2003), and the Mississippi Scale for PTSD ( $r = .82$ ; Ruggiero et al., 2003).

Regarding reliability, the measure was shown to have a high 1-week test-retest reliability ( $r = 0.88$ ; Ruggiero et al., 2003), and moderate 2-week test-retest reliability ( $r = .68$ ; Ruggiero et al., 2003). The test also has high internal consistency reliability;  $\alpha = .94 - .97$  for all three subscales (Blanchard et al., 1996). Coefficient alpha in this subsample was .91.

### *Cumulative risk.*

A total risk score (RS) was calculated by giving each participant one point for the presence of each of the following risk variables: (a) maternal age less than 20 years, (b) three or more children residing in the home, (c) near poverty, or income-to-needs ratio below 2 [income level divided by the poverty threshold for a certain family size as determined by the U.S. Census Bureau (U.S. Census Bureau, Housing and Household Economic Statistics Division, 2008)], (d) racial minority status (non-Caucasian individuals), (e) cohabitation (i.e., partner living in the home but unmarried), and (f) presence of maternal psychopathology. An income-to-needs ratio of 2 was determined to be an appropriate cut-off point for near poverty based on the National Institute of Child Health and Human Development Study of Early Childcare (2005). The RS could range from 0 to 6, with higher scores indicating higher levels of risk. See Table 4 for percentages of participants who have each risk factor.

Table 4

*Percentage of Participants with Presence of Individual Risk Factors*

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Risk Factor	Percentage
Maternal Age Less Than 20	14.2%
Three or More Children Residing in Home	31.7%
Income-to-Needs Ratio Below 2	84.2%
Racial Minority Status	64.2%
Cohabitation	24.2%
Psychopathology	9.2%

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## CHAPTER 6: RESULTS

### **Missing Data**

One participant refused to complete the entire CTS-2 measure during wave one of data collection, and one participant refused to answer several items on the CTS-2 during wave three of data collection. Additionally, six participants voluntarily withdrew from the study or were unable to be located at wave three of data collection. Data for these participants were imputed at the scale level when full scales were missing (details below), and item-level missing data were estimated by mean substitution.

Regarding missing data from the mother-infant interaction task, thirteen participants were unable to complete the mother-infant interaction during wave three of data collection for various reasons, including conducting the interview over the phone due to location (4 participants), voluntarily withdrawing from the study (3 participants), being unable to be located at the time of the interview (2 participants), or not having custody of their children at the time of the interview (4 participants). Eight out of the 13 participants with missing mother-infant interaction data had data imputed at the scale level (details below). The 5 remaining participants whose mother-infant interaction data were not imputed are those that had been lost since wave one of data collection (no confirmation of baby's birth; 1 participant), or those that had not had custody of their children since birth (4 participants).

Regarding missing data for the social-contextual cumulative risk factors, the 6 missing participants at wave three of data collection were missing data on the number of children residing in the home and their relationship status. Ten participants (including the 6 missing at wave three of data collection) were missing income level at wave three of data collection (4 participants were unsure of their income or refused to answer). Finally, 7 participants were

missing data on maternal psychopathology (including the 6 missing at wave three of data collection), as well as 1 individual who refused to answer these items. Thus, the aforementioned social-contextual risk factor missing data were imputed at the item-level.

Missing subscale and scale totals were imputed using the SPSS Estimation Method (EM, also known as single imputation). This method produced a single data set with non-missing values for all observations on all variables from the original data set. This method of imputation proceeds by developing initial estimates for all missing values that are consistent with multivariate trends in all data included in the imputation step and then adds some random variability to these substitute values so that the data reflect the uncertainty in relations among variables present in the non-missing values. This method is recommended when item non-responsivity is minor or there are low levels of missing data, which are the conditions in the present study (McCartney, Burchinal, & Bub, 2006). Therefore, the final sample available for analysis was 115.

### **Descriptive Statistics**

Descriptive data for study variables are provided in Table 5. As can be seen, participants reported experiencing low levels of IPV severity within the infant's first year of life overall. However, mothers reported, on average, moderate levels of IPV chronicity over four different time points across their lives. Participants reported moderate levels of social-contextual cumulative risk. Mothers, on average, displayed low levels of negative parenting behaviors, moderate levels of positive parenting behaviors, and low levels of frightening behaviors toward infants during the free play interaction task. Finally, on average, mothers displayed moderate levels of positive parenting behaviors and low levels of negative parenting behaviors toward infants during the clean-up interaction task. Evaluation of descriptive data and distribution of

Table 5

*Descriptive Data for Original Study Variables*

Variable	<i>M</i>	<i>SD</i>	Range	Possible Range	Skew	Kurtosis
IPV Severity	22.18	39.07	230	0 – 825	3.19	11.42
IPV Chronicity	2.86	1.01	4	0 - 4	-1.03	.94
Cumulative Risk	2.32	1.07	5	0 – 6	-.29	-.06
Free Play Negative	6.95	2.23	11	4 – 20	.56	.29
Free Play Positive	12.35	2.52	13	4 – 20	.43	-.05
Free Play Frightening	2.35	.82	3	2 – 10	3.01	10.73
Clean-Up Positive	13.62	3.15	14	5 – 25	.18	-.30
Clean-Up Negative	6.24	1.59	9	4 – 20	1.40	3.45

variables revealed two variables with extreme positive skew: IPV Severity (skewness = 3.19) and Maternal Free Play Frightening Behavior (skewness = 3.01). Therefore, a log transformation was conducted to reduce the positive skewness of the IPV severity variable prior to running data analyses (log transformed IPV Severity skewness = .134). The Maternal Free Play Frightening Behavior composite was dichotomized based on the presence or absence of frightening behavior since it occurred with such low frequency in the present sample (presence:  $n = 24$ ; absence:  $n =$



91) and to reduce skewness (skewness = 1.45 for dichotomized variable). Because the aforementioned variables appeared to be adequately normally distributed after these data transformations, parametric statistics were used in the current study.

### **Correlations between Study Variables**

Hypothesis 1a stated that IPV experiences during the first year of an infant's life (i.e., severity of proximal IPV) would be significantly related to maternal parenting behaviors, such that greater frequency of IPV experiences during this time period would be related to more negative parenting behaviors and less positive parenting behaviors. Hypothesis 1b stated that chronic IPV experiences over the course of a woman's life (i.e., both distal and proximal IPV) would be significantly related to maternal parenting behaviors, such that greater chronicity of IPV experiences would be related to more negative parenting behaviors and less positive parenting behaviors. To examine hypotheses 1a and 1b, inter-correlations among variables were examined (see Table 6). The significance level was set at  $p < .05$ . As can be seen from this table, correlational results revealed no significant associations between IPV severity or chronicity and maternal positive, negative, or frightening parenting behaviors during either the free play or clean-up interaction task. Thus, neither hypothesis 1a nor 1b were supported.

However, IPV severity during the infant's first year of life was positively related to IPV chronicity over the woman's lifetime, as well as social-contextual cumulative risk. Similarly, IPV chronicity was positively associated with social-contextual cumulative risk. Cumulative risk was positively associated with maternal negative behaviors during the free play interaction, and was negatively associated with maternal positive behaviors during both the free play and clean-up interactions. Maternal negative behaviors during the free play interaction were

Table 6

*Associations among Study Variables*

Variable	IPV Severity	IPV Chronicity	Cumulative Risk	Free Play Neg Comp	Free Play Pos Comp	Free Play Fright Comp	Clean-Up Pos Comp	Clean-Up Neg Comp
IPV Severity	1.00	.58**	.35**	.03	-.16	.05	-.11	.06
IPV Chronicity		1.00	.36**	-.01	-.14	-.01	-.10	.07
Cumulative Risk			1.00	.22*	-.32**	.18	-.27**	.13
Free Play Neg Comp				1.00	-.15	.48**	-.25**	.28**
Free Play Pos Comp					1.00	-.05	.61**	.07
Free Play Fright Comp						1.00	-.11	.22*
Clean-Up Pos Comp							1.00	-.16
Clean-Up Neg Comp								1.00

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

positively related to maternal frightening behaviors during the free play interaction and maternal negative behaviors during the clean-up interaction, and were negatively associated with positive behaviors during the clean-up interaction. Maternal positive behaviors during the free play interaction were positively associated with maternal positive behaviors during the clean-up interaction. Finally, maternal frightening behaviors during the free play interaction were positively related to maternal negative behaviors during the clean-up interaction.

### **Moderation Analyses**

To examine whether cumulative risk moderated the association between IPV experiences and maternal parenting behaviors with 1-year-old infants (hypotheses 2a and 2b), multiple linear regression analyses were conducted for continuous outcome variables (4 of the 5 dependent variables), and logistic regression analyses were conducted for the dichotomous outcome variable (maternal frightening behavior), as recommended by Baron and Kenny (1986) and Holmbeck (1997; 2002). For investigators working with sample sizes that are relatively small, use of regression techniques, as opposed to Structural Equation Modeling (SEM), are recommended due to power considerations (Holmbeck, 1997; 2002).

Multiple regressions were performed examining the hypothesized model (see Figure 1) using both the IPV severity and IPV chronicity variables separately as independent variables and each of the higher-order maternal parenting behavior composites for both the free play and the clean-up interaction tasks as dependent variables. Therefore, ten total multiple regressions were performed, five using IPV severity and five using IPV chronicity as predictors of each of the free play and clean-up maternal parenting behavior composites scores.

According to Baron and Kenny (1986), the linear hypothesis most commonly used to test moderation represents a graduate, steady change in the effect of the independent variable (IPV)

on the dependent variable (maternal parenting behavior) as the moderator (cumulative risk) changes. The linear hypothesis was tested by adding the product of the moderator and the independent variable (IPV X Cumulative Risk) to the regression equation. In order to test the above moderation models, a number of statistical steps were conducted according to Aiken and West (1991) and Holmbeck (2002), consistent with Baron and Kenny's recommendations. First, the independent variable (IPV) and the moderator (cumulative risk) were centered, by subtracting the mean of each variable from the individual's value on that variable in order to reduce multicollinearity. Second, a new interaction term was created using the centered independent variable (IPV) and the centered moderator (cumulative risk). Third, a multiple regression analysis was then conducted by entering the centered independent variable, moderator, and interaction term sequentially as predictors of each of the five maternal parenting behavior outcomes. A significant interaction term would indicate that there is moderation, and that the two regression lines (slopes) are significantly different from one another.

### **Hypothesis Testing for IPV Severity**

Hypothesis 2a stated that cumulative risk would moderate the relationship between severity of IPV experiences during the first year of the infant's life (proximal IPV) and maternal parenting behaviors, such that the relationship between IPV and parenting would be stronger under the condition of greater cumulative risk, and would be weaker under the condition of less cumulative risk.

**Regression analyses for maternal free play negative behaviors composite.** First, the main effects of IPV severity and cumulative risk were estimated in relation to the maternal free play negative behaviors composite (see Table 7). In the first step, IPV severity was entered and was not statistically significant. In the second step, cumulative risk was entered and was

statistically significant, indicating the presence of a main effect ( $\beta = .23, p < .05$ ), such that greater cumulative risk was associated with greater maternal free play negative behaviors. Finally, in the third step, the interaction term (IPV severity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

**Regression analyses for maternal free play positive behaviors composite.** Again, the main effects of IPV severity and cumulative risk were estimated in relation to the maternal free play positive behaviors composite (see Table 7). In the first step, IPV severity was entered and was not statistically significant. In the second step, cumulative risk was entered and was statistically significant, indicating the presence of a main effect ( $\beta = -.30, p < .01$ ), such that greater cumulative risk was associated with less maternal free play positive behaviors. Finally, in the third step, the interaction term (IPV severity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

**Regression analyses for maternal free play frightening behaviors composite.** Next, the main effects of IPV severity and cumulative risk were estimated in relation to the maternal free play frightening behaviors composite (see Table 7). In the first step, IPV severity was entered and was not statistically significant. In the second step, cumulative risk was entered and was not statistically significant. Finally, in the third step, the interaction term (IPV severity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

Table 7

*Hierarchical Multiple Regression Analyses Predicting Maternal Free Play Composite Scores from IPV Severity and Cumulative Risk*

Variable	Maternal Free Play Negative Composite	Maternal Free Play Positive Composite	Maternal Free Play Frightening Composite
	$\beta$	$\beta$	Wald
Step 1			
IPV Severity	.03	-.16	.30
$R^2$	.00	.02	.00
$F$ Value	.12	2.89	.30
Step 2			
IPV Severity	-.05	-.05	.01
Cumulative Risk	.23*	-.30**	3.37
$\Delta R^2$	.05*	.08**	3.56*
$F$ Value	2.85	6.59**	3.86
Step 3			
IPV Severity	-.05	-.05	.00
Cumulative Risk	.21*	-.30**	3.16
IPV Severity X Cumulative Risk	-.08	.01	.24
$\Delta R^2$	.01	.00	.24
$F$ Value	2.14	4.36**	4.11

*Note:* IPV = Intimate Partner Violence; For logistic regression,  $R^2$  = Nagelkerke R Square,  $\Delta R^2$  = Chi Square Step value, and  $F$  value = Chi Square Model value.

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

**Regression analyses for maternal clean-up positive behaviors composite.** The main effects of IPV severity and cumulative risk were then estimated in relation to the maternal clean-up positive behaviors composite (see Table 8). In the first step, IPV severity was entered and was not statistically significant. In the second step, cumulative risk was entered and was statistically significant, indicating the presence of a main effect ( $\beta = -.26, p < .01$ ), such that greater cumulative risk was associated with less maternal positive behaviors during clean up. Finally, in the third step, the interaction term (IPV severity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

**Regression analyses for maternal clean-up negative behaviors composite.** Finally, the main effects of IPV severity and cumulative risk were estimated in relation to the maternal clean-up negative behaviors composite (see Table 8). In the first step, IPV severity was entered and was not statistically significant. In the second step, cumulative risk was entered and was not statistically significant. Finally, in the third step, the interaction term (IPV severity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

Table 8

*Hierarchical Multiple Regression Analyses Predicting Maternal Clean-Up Composite Scores from IPV Severity and Cumulative Risk*

Variable	Maternal Clean-Up Positive Composite $\beta$	Maternal Clean-Up Negative Composite $\beta$
Step 1		
IPV Severity	-.11	.06
$R^2$	.01	.00
$F$ Value	1.49	.37
Step 2		
IPV Severity	-.02	.01
Cumulative Risk	-.26*	.13
$\Delta R^2$	.06**	.01
$F$ Value	4.49**	.99
Step 3		
IPV Severity	-.02	.01
Cumulative Risk	-.25*	.09
IPV Severity X Cumulative Risk	.07	-.16
$\Delta R^2$	.01	.02
$F$ Value	3.19*	1.60

Note: IPV = Intimate Partner Violence

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



### **Hypothesis Testing for IPV Chronicity**

Hypothesis 2b stated that cumulative risk would moderate the relationship between IPV chronicity and maternal parenting behaviors, such that the relationship between IPV chronicity and parenting would be stronger under the condition of greater cumulative risk, and would be weaker under the condition of less cumulative risk.

**Regression analyses for maternal free play negative behaviors composite.** First, the main effects of IPV chronicity and cumulative risk were estimated in relation to the maternal free play negative behaviors composite (see Table 9). In the first step, IPV chronicity was entered and was not statistically significant. In the second step, cumulative risk was entered and was statistically significant, indicating the presence of a main effect ( $\beta = .25, p < .05$ ), such that greater cumulative risk was related to greater maternal free play negative behaviors. Finally, in the third step of the equation, the interaction term (IPV chronicity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

**Regression analyses for maternal free play positive behaviors composite.** The main effects of IPV chronicity and cumulative risk were estimated in relation to the maternal free play positive behaviors composite (see Table 9). In the first step, IPV chronicity was entered and was not statistically significant. In the second step, cumulative risk was entered and was statistically significant, indicating the presence of a main effect ( $\beta = -.31, p < .01$ ), such that greater cumulative risk was related to less maternal free play positive behaviors. Finally, in the third step, the interaction term (IPV chronicity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

Table 9

*Hierarchical Multiple Regression Analyses Predicting Maternal Free Play Composite Scores from IPV Chronicity and Cumulative Risk*

Variable	Maternal Free Play Negative Composite $\beta$	Maternal Free Play Positive Composite $\beta$	Maternal Free Play Frightening Composite <i>Wald</i>
Step 1			
IPV Chronicity	-.01	-.14	.00
$R^2$	.00	.02	.00
<i>F</i> Value	.01	2.33	.00
Step 2			
IPV Chronicity	-.10	-.03	.69
Cumulative Risk	.25**	-.31**	4.20*
$\Delta R^2$	.06**	.08**	4.52*
<i>F</i> Value	3.30*	6.47**	4.52
Step 3			
IPV Chronicity	-.14	-.06	.78
Cumulative Risk	.25**	-.32***	4.00*
IPV Chronicity X Cumulative Risk	-.10	-.09	.92
$\Delta R^2$	.01	.01	1.04
<i>F</i> Value	2.56*	4.61**	5.56

*Note:* IPV = Intimate Partner Violence; For logistic regression,  $R^2$  = Nagelkerke R Square,  $\Delta R^2$  = Chi Square Step value, and *F* value = Chi Square Model value.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

**Regression analyses for maternal free play frightening behaviors composite.** Next, the main effects of IPV chronicity and cumulative risk were estimated in relation to the maternal free play frightening behaviors composite (see Table 9). In the first step, IPV chronicity was entered and was not statistically significant. In the second step, cumulative risk was entered and was statistically significant, indicating the presence of a main effect ( $Wald = 4.20, p < .05$ ), such that greater cumulative risk was related to the presence of maternal frightening behaviors during free play. Finally, in the third step, the interaction term (IPV chronicity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

**Regression analyses for maternal clean-up positive behaviors composite.** The main effects of IPV chronicity and cumulative risk were then estimated in relation to the maternal clean-up positive behaviors composite (see Table 10). In the first step, IPV chronicity was entered and was not statistically significant. In the second step, cumulative risk was entered and was statistically significant, indicating the presence of a main effect ( $\beta = -.27, p < .01$ ), such that greater cumulative risk was associated with less maternal positive behaviors during clean up. Finally, in the third step, the interaction term (IPV chronicity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

**Regression analyses for maternal clean-up negative behaviors composite.** Finally, the main effects of IPV chronicity and cumulative risk were estimated in relation to the maternal clean-up negative behaviors composite (see Table 10). In the first step, IPV chronicity was entered and was not statistically significant. In the second step, cumulative risk was entered and was not statistically significant. Finally, in the third step, the interaction term (IPV chronicity X cumulative risk) was added but was not statistically significant; thus, moderation was not supported.

Table 10

*Hierarchical Multiple Regression Analyses Predicting Maternal Clean-Up Composite Scores from IPV Chronicity and Cumulative Risk*

Variable	Maternal Clean-Up Positive Composite	Maternal Clean-Up Negative Composite
	$\beta$	$\beta$
Step 1		
IPV Chronicity	-.10	.07
$R^2$	.01	.01
$F$ Value	1.03	.59
Step 2		
IPV Chronicity	.00	.03
Cumulative Risk	-.27**	.12
$\Delta R^2$	.07**	.01
$F$ Value	4.46**	1.02
Step 3		
IPV Chronicity	.05	-.01
Cumulative Risk	-.27**	.12
IPV Chronicity X Cumulative Risk	.12	-.11
$\Delta R^2$	.01	.01
$F$ Value	3.46*	1.04

Note: IPV = Intimate Partner Violence

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

### Exploratory Data Analyses

**Linear versus quadratic model of cumulative risk.** Several hierarchical multiple regression analyses were used to examine the quadratic model of cumulative risk in relation to each of the five maternal parenting behavior free play and clean-up composites (see Table 11). Cumulative risk was first entered as a linear term in step one of each regression (cumulative risk) and as a quadratic term in step two of each regression (cumulative risk X cumulative risk). Contrary to the exploratory hypothesis, the quadratic term of cumulative risk was not significantly associated with any of the five maternal parenting behavior free play (positive, negative, or frightening) or clean-up (positive or negative) composite scores. Instead, linear cumulative risk was a significant predictor of maternal free play negative parenting behaviors ( $\beta = .22, p < .05$ ), explaining about 5% of the variance in the outcome, but neither the beta nor the  $r$ -squared change were significant for the quadratic cumulative risk term in relation to the outcome.

Next, linear cumulative risk was a significant predictor of maternal free play positive parenting behaviors ( $\beta = -.32, p < .001$ ), explaining about 10% of the variance in the outcome, but neither the beta nor the  $r$ -squared change were significant for the quadratic cumulative risk term in relation to the outcome. Third, linear cumulative risk was a significant predictor of maternal free play frightening parenting behaviors ( $Wald = 3.59, p < .05$ ), explaining about 5% of the variance in the outcome, but neither the beta nor  $r$ -squared change were significant for the

Table 11

*Hierarchical Multiple Regression Analyses of Cumulative Risk Predicting Maternal Free Play and Clean-Up Behavior*

Variable	Maternal Free Play Negative Composite	Maternal Free Play Positive Composite	Maternal Free Play Frightening Composite	Maternal Clean-Up Positive Composite	Maternal Clean-Up Negative Composite
	$\beta$	$\beta$	Wald	$\beta$	$\beta$
Step 1					
Cumulative Risk	.22*	-.32**	3.59*	-.27*	.13
$R^2$	.05*	.10*	.05*	.07*	.02
$F$ Value	5.49*	12.96**	3.85*	9.01*	1.98
Step 2					
Cumulative Risk	.53	-.48	1.62	-.76*	.64*
Cumulative Risk X Cumulative Risk	-.33	.16	.80	.51	-.53
$\Delta R^2$	.01	.00	.92	.03	.03
$F$ Value	3.38*	6.60**	4.76	6.16*	2.59

Note: IPV = Intimate Partner Violence; For logistic regression,  $R^2$  = Nagelkerke R Square,  $\Delta R^2$  = Chi Square Step value, and  $F$  value = Chi Square Model value.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

quadratic cumulative risk term in relation to the outcome. Next, linear cumulative risk was a significant predictor of maternal clean-up positive parenting behaviors ( $\beta = -.27, p < .05$ ), explaining about 7% of the variance in the outcome, but neither the beta nor the *r*-squared change were significant for the quadratic term in relation to the outcome. Finally, neither the linear cumulative risk nor the quadratic cumulative risk variables were significantly associated with maternal clean-up negative parenting behaviors.

**Racial group differences in IPV and parenting.** Multivariate analysis of covariance (MANCOVA) tests were conducted to examine possible group differences (between African American and Caucasian women) on IPV severity, IPV chronicity, and maternal free play and clean-up parenting behaviors using the composite scores, after controlling for socioeconomic status (i.e., income-to-needs ratio; see Table 12). Results revealed no significant differences between African American and Caucasian women on IPV severity or chronicity after controlling for socioeconomic status.

However, there were significant differences between African American and Caucasian women in socioeconomic status (income-to-needs ratio) and various maternal parenting behaviors during the free play interaction even after controlling for socioeconomic status. Results were significant for the overall model, such that African American mothers reported significantly lower socioeconomic status (lower income-to-needs ratio) than Caucasian mothers,  $F(1, 96) = 11.36, p < .001$ . African American mothers displayed significantly more negative behaviors,  $F(1, 92) = 4.32, p < .05$ , and Caucasian women displayed significantly more positive behaviors,  $F(1, 92) = 4.78, p < .05$ , during the free play interaction (see Table 12). There were no significant differences between African American and Caucasian women on presence/absence of maternal free play frightening behaviors.

Regarding maternal parenting behaviors during the clean-up interaction, results were significant for the overall model, such that African American mothers displayed significantly more negative behaviors,  $F(1, 92) = 12.71$ ,  $p < .001$ , and Caucasian women displayed significantly more positive behaviors,  $F(1, 92) = 27.49$ ,  $p < .001$ , after controlling for socioeconomic status.



Table 12

*Multivariate Analyses of Covariance for IPV and Maternal Parenting Behavior Free Play and Clean-Up Composite Scores Controlling for Socioeconomic Status (Income-to-Needs Ratio)*

Variable	African American ( <i>n</i> = 54)		Caucasian ( <i>n</i> = 43)		<i>df</i>	$\eta^2$	<i>F</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Socioeconomic Status	.86	.87	1.79	1.82	97	.11	11.36	.00
IPV Severity	2.22	1.41	1.74	1.67	97	.01	.56	.46
IPV Chronicity	2.96	.89	2.60	1.18	97	.01	.92	.34
Maternal Free Play Negative	7.43	2.25	6.15	2.01	93	.05	4.32	.04
Maternal Free Play Positive	11.77	2.65	13.40	2.37	93	.05	4.78	.03
Maternal Free Play Frightening	.26	.45	.10	.30	93	.02	2.05	.16
Maternal Clean-up Positive	12.06	2.88	15.63	2.71	93	.23	27.49	.00
Maternal Clean-up Negative	6.70	1.67	5.60	1.15	93	.13	12.71	.00

## CHAPTER 7: DISCUSSION

The primary objective of this study was to broaden psychological and scientific understanding of the longitudinal effects of both proximal and distal IPV experiences on maternal parenting behaviors in primarily low-income families with infants. IPV is known to negatively impact a wide range of parenting capacities (Holden & Ritchie, 1991; Holden et al., 1998; Levendosky et al., 2006; Ritchie & Holden, 1998; Sokolowski et al., 2007), as well as the social-emotional adjustment of young children, thus, it is imperative to conduct studies such as the present one.

The Spillover Hypothesis (Emery, Hetherington & Dilalla, 1984) is one plausible theory that helps explain how maternal parenting behaviors may be impacted by other aspects of the family system. The theory argues that aspects (e.g., affect or behavior) of one setting or relationship in a family can transfer to another, such as from the marital or partner relationship to the parent-child relationship, or parenting behaviors. For example, parents experiencing distress in the marital or partner relationship may show more problematic parenting due to a “spillover” of their overall distress (Emery et al., 1984). Problems with parenting may also be an attempt at deflecting stress away from other distressing environmental events, such as the marital relationship, or alternatively, may be due to modeling the parent-child relationship after the marital or partner relationship. Thus, the Spillover Hypothesis specifically suggests that problems in partnerships may render parents less emotionally or physically available to their children, as the stress from the environment or discordant marriage negatively impacts child rearing. Surprisingly, while the vast majority of prior research has found empirical evidence to support the Spillover Hypothesis, results from the present study did not provide corroborating

evidence with regard to the effects of IPV on maternal parenting of 1-year-old infants. Possible explanations and implications of the findings of this study will be discussed further in this section.

### **IPV Experiences and Maternal Parenting Behaviors**

Descriptive results from this study indicated that mothers reported experiencing low levels of IPV severity within the infant's first year of life overall, but moderate levels of IPV chronicity over four different time points across their lives. Additionally, mothers, on average, displayed low levels of negative parenting behaviors, moderate levels of positive parenting behaviors, and low levels of frightening behaviors toward infants during the free play interaction task. Finally, on average, mothers displayed moderate levels of positive parenting behaviors and low levels of negative parenting behaviors toward infants during the clean-up interaction task.

Contrary to hypotheses, results from this study found that IPV experiences during the first year of an infant's life (i.e., severity of proximal IPV) were not significantly related to any maternal parenting behaviors during the free play or clean-up interaction tasks. Similarly, the chronicity of IPV experiences over the course of a woman's life were not significantly related to any observed maternal parenting behaviors.

These results are inconsistent with the scant, prior research that has examined IPV experiences in relation to maternal parenting. For example, Levendosky et al. (2006) conducted the only known study to date that examined IPV experiences in relation to observed maternal parenting behaviors in families with infants, specifically. Their results indicated that mothers who had experienced IPV across various time points in her life (i.e., before or during pregnancy, or in the first year postpartum), were more likely to display hostility and disengagement (negative parenting behaviors) when interacting with their 1-year-old infants, and these mothers

showed decreased warmth and sensitivity (positive parenting behaviors) toward their infants as well. One possible explanation for the difference in these particular findings compared to the present study is that Levendosky et al. used a different self-report measure to assess for IPV experiences (Severity of Violence Against Women Scale; Marshall, 1992); thus, the variation in the wording of items on this scale may have accounted for the difference in findings.

Additionally, Levendosky et al. assessed for the severity of IPV at various time points of a woman's life separately in relation to maternal parenting behaviors versus examining the cumulative chronicity of IPV overtime in relation to maternal parenting behaviors. Finally, upon further examination, the correlation between the severity of IPV experiences and maternal parenting behaviors during the infant's first year of life in the Levendosky et al. study was  $-.12$ ; thus, the strength of association was not notably larger than many of the correlations between the same variables in the present study. One plausible reason for the difference in statistical significance between the two studies was that the sample size in the Levendosky et al. study was almost twice as large ( $n = 206$ ) as the present study; thus, there was greater power, which may have increased the probability of detecting statistical significance in the association of IPV experiences and maternal parenting in the Levendosky et al. study.

Another study conducted in families with infants found that mothers' experience of verbal and physical IPV with their infants' fathers was significantly related to their feelings and beliefs about parenting, such that their representations about parenting contained more guilt, and less sensitivity, involvement, and openness to change regarding their children (Sokolowski et al., 2007); however, it's important to point out that this study did not examine observable parenting behaviors in relation to IPV, only parental representations. The difference in the operational definition of the parenting construct may have accounted for the variation in findings between

studies. A few other studies (Holden & Ritchie, 1991; Holden et al., 1998) examining the impact of IPV on maternal parenting behaviors in homes with toddlers and preschoolers also found that battered women were involved in more conflicts and were less attentive to their child's play during an interaction task than non-battered mothers. However, these two studies used samples from battered women's shelters; thus, it can be presumed that IPV experiences among these participants may have been more severe than that of a community sample (as in the present study), resulting in an increased likelihood that IPV experiences would be more strongly associated with maternal parenting behaviors. In sum, the aforementioned studies in past research suggest a direct effect of both proximal and distal IPV experiences on maternal parenting with young children, contrary to what was found in the present study. However, it is important to note that numerous methodological differences between these studies may have contributed to the differences in findings.

An entirely different explanation for these mixed results may be the possibility of indirect effects of IPV on maternal parenting behaviors that went unexamined in the present study. For example, the results from Levendosky et al.'s (2003) study indicated that maternal psychological distress (including depression and PTSD symptoms) mediated the relationship between IPV and parenting effectiveness, such that the relationship between IPV and parenting effectiveness was no longer significant when maternal distress was accounted for in homes with toddler and preschool-age children. Even though there was a lack of a direct effect between IPV experiences and maternal parenting behaviors in the present study that prevented the statistical examination of mediation per se, it is possible that IPV is indirectly related to maternal behaviors through additional variables; that is, there may be indirect effects of IPV through different

aspects of the family system which would provide a more comprehensive understanding of the dynamic interaction between various influences in the environment (Bogat et al., 2003).

Additionally, although one known study (Levendosky et al., 2006) found a direct effect between IPV and maternal parenting behaviors in families with infants, it is also possible that IPV does not significantly impact maternal parenting behaviors in families with infants in the same manner as in those families with older children due to different emotional and physical needs of children at various developmental levels. For example, infants require a substantial amount of *instrumental* support from their caregivers, such as regulation of physical states and physical needs (Herbert, 2004), while it could be argued that older children require a *wider range* of parenting behaviors and possibly more flexible parenting behaviors to adapt to a wider range of both physical and emotional demands. In other words, infants may display less overt demands toward caregivers, resulting in different parenting behaviors required for younger versus older children. Consequently, the parenting behaviors in families with infants may be less impacted by IPV experiences than in homes with older children.

Another plausible explanation for the lack of direct effects found between IPV experiences and maternal parenting behaviors in the present study is that there may be a “*sleepers effect*” or *delayed* impact of IPV experiences on maternal parenting behaviors until the child grows older and requires different forms of responsiveness from caregivers (Herbert, 2004). As the spillover hypothesis suggests, IPV may render parents less physically and emotionally available to their children overtime; consequently, the demands of parenting may actually increase as children grow and require more attention to meet both physical and emotional needs (Emery et al., 1984). Thus, the problematic effects of IPV experiences on parenting may not become

apparent until children grow older, even though IPV may be affecting parents in ways that are not yet able to be observed.

Relatedly, it is also possible that IPV experiences may be only one environmental risk factor among many possible risk experiences in the home; consequently, IPV experiences alone may not always have the power to impact such a complex and dynamic construct such as parenting behavior without consideration of several other risk factors present in the same environment. Instead, a mother's parenting behaviors may more likely be impacted by several risk factors in the home, such as an accumulation of those examined in the present study that comprised the cumulative risk index: maternal age, maternal psychopathology, the number of children present, cohabitation, ethnicity, and socioeconomic status, to name a few. This possibility will be addressed more fully later in this paper.

Finally, it is important to note that compared to families with older children, there is very little research examining the impact of IPV on parenting in families with infants (Levendosky et al., 2006; Sokolowski et al., 2007; Theran et al., 2005); thus, future research should continue to examine this association in families with infants, in particular, in order to gain a better understanding of the variables that influence parenting in homes with babies who appear to have different parenting needs than that of older children (Herbert, 2004). Consequently, although the vast majority of prior research has documented a direct association between IPV experiences and maternal parenting behaviors, almost all of these studies were conducted in families with older children, and these results may not be generalizable to families with infants.

### **Cumulative Risk as a Moderator of the Association between IPV and Maternal Parenting Behaviors**

Unlike prior studies, this study examined cumulative risk (i.e., an accumulation of social-contextual risk factors) as a possible moderator between the severity of proximal IPV and the chronicity of IPV experiences and observed maternal parenting behaviors with infants. This examination was based on both the ecological systems theory (Bronfenbrenner, 1979), which argues that family functioning and child development are the result of complex interactions among various family systems and the larger social environment, as well as the cumulative risk model, which purports that it is essential to account for a *cumulative* index of risk factors typically associated with unfavorable family outcomes (Sameroff et al., 1993). The latter theory proposes that there is an additive effect of a number of these factors that are considered detrimental to the well-being of the broader family system. While findings were not consistent with what was expected based on the Spillover Hypothesis as described above, findings from the current study provide strong support for the cumulative risk model, such that one particular environmental risk factor may not be responsible for complex family outcomes (such as parenting behaviors), but instead, it is a cumulative index of risk factors present in the family context that may impact maternal parenting behaviors with infants.

This study hypothesized that cumulative risk would moderate the relationship between severity of IPV experiences during the first year of the infant's life (proximal IPV) and maternal parenting behaviors, such that the relationship between IPV and parenting would be stronger under the condition of greater cumulative risk, and would be weaker under the condition of less cumulative risk. This study also predicted that cumulative risk would moderate the relationship between IPV chronicity and maternal parenting behaviors, such that the relationship between IPV chronicity and parenting would be stronger under the condition of greater cumulative risk, and would be weaker under the condition of less cumulative risk. Unexpectedly, cumulative risk



did not moderate the relationship between the severity or chronicity of IPV experiences and maternal positive or negative parenting behaviors with infants, although there was a direct effect for cumulative risk. While this is the only study to have examined cumulative risk as a moderator of this association, Jouriles et al. (1991) found that child gender moderated the association between IPV and parenting behaviors in homes with school-age children, such that the association between IPV and parenting was stronger in homes with male children. Thus, there is some evidence that certain factors may moderate the associations between IPV and parenting; therefore, further research is needed to clarify which factors at multiple system levels are most pertinent to this relationship.

While moderation was not supported in the present study, it is important to note that there was consistent evidence of direct effects between cumulative risk and maternal behaviors during both free play and clean-up tasks. This is not surprising given that a vast amount of prior research has documented a direct association between each of the risk factors comprising the cumulative risk score in the present study (maternal psychopathology, maternal age, number of children in the home, socioeconomic status, ethnicity, and cohabitation), and maternal parenting behaviors. For example, Banyard and colleagues (2003) found that higher levels of interpersonal trauma exposure were linked with decreased parenting satisfaction, use of physical punishment, and a history of protective service reports, providing support for the association between maternal psychopathology symptoms and parenting behaviors. Other research has documented that younger maternal age is associated with poorer parenting processes, for example, Wolfe (1987) and others have reported that younger parents are less likely to engage in positive parenting (i.e., praising and hugging), and are less verbal, sensitive, and responsive to their infants (Barratt & Roach, 1995; Culp et al., 1996; Moore & Brooks-Gunn, 2002). Third, several

researchers (Downey, 1995; Guo & VanWey, 1999; Strohschein et al., 2008) have found that when more children were added to a household, mothers exhibited declines in the frequency of positive interactions with their children. Additionally, a vast amount of research has documented an association between numerous socioeconomic factors and increased rates of child maltreatment (Deccio et al., 1994; Ernst, 2000; Freisthler, 2004; Freisthler et al., 2004; Zuravin & Taylor, 1987). Also, research has indicated a difference in parenting practices across races, such that African Americans may be more accepting of harsh parenting practices (Deater-Deckard et al., 1996; Kelley et al., 1992). Finally, researchers have documented that partner cohabitation is associated with poorer parenting practices. For example, Thomson and colleagues (1992) found that cohabitating families reported lower levels of parental control and monitoring than other families. Due to the vast evidence of direct effects between individual risk factors and various parenting capacities, it is not surprising then that an accumulation of risk factors in the environment would also have a direct association with maternal parenting behaviors, such as what was seen in the present study.

One unique finding in the present study, however, compared to the past research, was that there was no association between cumulative risk and maternal negative parenting behaviors during the clean-up interaction task, in particular. This is surprising given that the clean-up segment of the mother-infant interaction task is designed to purposefully elicit stress (by increasing demands) within the mother-child dyad. It is possible that the short length of the stressful clean-up segment (2 minutes) resulted in less variance in the negative maternal parenting behavior clean-up codes; thus, this restricted variability might have resulted in a reduced association with negative maternal parenting behaviors overall.

Aside from this sole exception, the results from this study generally show strong support for the cumulative risk model, which argues that there is likely an additive effect of a number of environmental risk factors on various family outcomes, such as both positive and negative parenting behaviors. Prior research has also documented a direct effect of cumulative risk on various outcomes within the family system, including Atzaba-Poria et al. (2004) who found that child problem behavior was predicted by environmental risks at three ecological levels: individual (i.e., child temperament, child IQ, child self-worth), microsystem (i.e., sibling relationship, friendships, parental style, parent-child relationship), and exosystem (socioeconomic status, marital relationship, parental social support, parental employment). Additionally, Larrieu, Heller, Smyke, and Zeanah (2008) found that cumulative risk (maternal education, maternal history of child abuse, history of psychiatric difficulties, substance abuse history, conviction history, depressive symptomatology, and degree of partner violence experienced) was a significant predictor of permanent loss of custody for maltreating mothers of infants and toddlers removed from the home, above and beyond any individual risk factor. Yet another study (Burchinal, Vernon-Feagans, Cox, & Key Family Life Project Investigators, 2008) found that cumulative risk (maternal education, family income, single parent, number of children in the household, stressors or negative life events, parental unemployment, and neighborhood safety) was a stronger predictor of maternal parenting (i.e., observed behaviors, access to learning materials, language) and infant cognitive development at 15 months of age than any individual risk factor alone.

In sum, prior research has documented a direct association between cumulative risk and various family outcomes in families with children of all ages. However, the vast majority of research examines cumulative risk as a moderator of the association between various mental and

physical health constructs (Hubbs-Tait et al., 2002; Garmezy, 1991; Rutter, 1987; Sameroff & Feise, 2000; Vernon-Feagans & Manlove, 2005). While the present study initially aimed to examine cumulative risk as a moderator of the association between IPV and maternal parenting behaviors, results actually provided support for cumulative risk as a direct influence on both positive and negative maternal parenting behaviors with infants. In other words, an accumulation of stressors present in the home appear to be particularly detrimental to parenting behaviors in families with infants.

### **Linear versus Quadratic Model of Cumulative Risk**

In addition to the hypothesis testing described above examining the linear and interactive effects of cumulative risk on outcome variables, this study also conducted exploratory analyses to test for quadratic effects of cumulative risk. It has been argued that the linear approach to examining cumulative risk ignores the potential interactive nature of risk factors and the possibility that increasing risks have larger and larger effects on individuals with multiple risks; thus, examining linear effects only may overlook the experiences of individuals with the most adverse outcomes as a result of numerous risk factors (Jones, Forehand, Brody, & Armistead, 2002). Somewhat surprisingly, results did not support a quadratic effect for cumulative risk; only a linear effect of cumulative risk was found for maternal parenting.

One additional study (Everhart, Fiese, & Smyth, 2008) has examined cumulative risk in terms of both a linear and quadratic effect in relation to caregiver quality of life in pediatric asthma. Results indicated that cumulative risk significantly predicted caregiver quality of life as a quadratic function. In other words, caregivers with numerous risk factors experienced a significant worsening of caregiver quality of life. Contrary to this study, the lack of support for a quadratic effect of cumulative risk in the present study may be a result of both the sample

composition, as well as the timing of the particular risk factors examined in this study. First, because the sample used in the present study was, in general, a high risk sample, the compounded effect of environmental risk factors may have had less of an impact on outcomes than would be seen in a lower risk individuals, whom may be less accustomed to stress and more sensitive to the presence of each additional risk factor. Next, while the risk factors examined in this study do generally tend to be moderately stable overtime, the present study only examined these risk factors at one period of time, preventing the authors from drawing conclusions regarding the stability of the specific risks examined in the present study. Additionally, the time frame in which these risk factors were measured occurred during the transition to parenthood, a major life event that typically results in the destabilization of the home environment (Sameroff, 1993). Thus, it is plausible that the risk factors examined in the present study may have been less stable than in other studies, reducing the likelihood of an exponential or compound impact of these constructs overtime.

In contrast to a quadratic effect, results indicated that an increase in the specific number of risk factors present in the environment affects maternal positive and negative parenting behaviors in an additive (linear) manner. This finding indicates that, while it is important to consider the impact of an exponential effect of numerous environmental risk factors on family outcomes, it is also important to continue to examine the additive effect of these risk factors in a linear fashion. For example, Raviv et al. (2010) found that cumulative risk (mainly consisting of factors present in the home) was linearly associated with mental health symptoms in a sample of maltreated children. Future research should not only examine the cumulative risk model, but should also examine the impact of risk factors in both a linear and quadratic fashion, including IPV experiences, on various aspects of the family system in homes with children of all ages. In

other words, when conducting research that involves examining various dynamics of the family system, future researchers should be comprehensive in the evaluation of social-contextual risk factors on different developmental outcomes in order to determine how the factors operate with one another within the same environment.

### **Racial Group Differences in IPV and Parenting**

Finally, this study conducted further exploratory analyses to examine possible racial group differences in IPV and maternal parenting. While racial minority status was examined as one risk factor in terms of cumulative risk in this study because research has documented that it co-occurs with numerous other environmental risk factors, the present study also examined racial minority status independently in relation to other study variables. Prior research has indicated that minority status may be a qualitatively unique and important variable to examine on its own. More specifically, African American individuals appear to experience higher rates of IPV than other minority and non-minority groups (Sullivan & Rumptz, 1994; Rennison & Planty, 2003), and research suggests that African American individuals may engage in harsher parenting practices (Deater-Deckard et al., 1996).

First, results in this study indicated that African American mothers reported significantly lower socioeconomic status (lower income-to-needs ratio) than Caucasian mothers. This is not surprising given that African Americans are generally more likely to live in poverty or have lower socioeconomic status than Caucasian individuals (US Census Bureau, 2010). Surprisingly, however, there was no difference in the severity or chronicity of IPV experiences between African American and Caucasian mothers after socioeconomic status was accounted for. This is both similar to and contrary to prior research; for example, Rennison and Planty (2003) found no differences in IPV experiences once socioeconomic status was controlled for, and argued for the

importance of controlling for socioeconomic status when examining racial group differences in environmental risk factors. In contrast, Sullivan and Rumptz (1994) found IPV experiences to be more severe in an African American sample, although their study participants were drawn from a battered women's shelter, where IPV experiences are more likely to be more variable and probably more severe. Finally, Raj et al. (1999) found higher rates of IPV experiences in African American women, although this study was limited because their measure of IPV consisted of the summation of three items only which assessed for general experiences of verbal and physical abuse, as well as physical threats from a male partner. Consequently, the measure was less comprehensive than the self-report measure used in the present study. In sum, there are numerous methodological differences that could account for the variation in the findings of IPV experiences between racial groups across studies.

Next, during the free play and clean-up segments of the mother-infant interaction task, African American mothers displayed higher rates of negative parenting behaviors toward their 1-year-old infants, while Caucasian mothers displayed higher rates of positive parenting behaviors toward their 1-year-old infants, after controlling for economic status. The one exception was that there were no differences between groups in the presence of maternal frightening behaviors, which may be a consequence of the very low rates of this construct in general among this sample. However, these general findings are supported by the vast majority of parenting research that has found differences in parenting behaviors between African American and Caucasian individuals.

More specifically, research has shown that African Americans may be more accepting of harsh parenting practices, and increased use of physical discipline (Deater-Deckard et al., 1996; Kelley, Power, & Wimbush, 1992), including spanking (Deater-Deckard et al., 1996). In fact,

spanking on the buttocks is the most common form of punishment in African American families (Deater-Deckard & Dodge, 1997; Flynn, 1998; Korbin, Coulton, Lindstrom-Ufuti, & Spilsbury, 2000). Gunnoe and Mariner (1997) suggest that while European-American families may interpret spanking as an act of parental aggression, African American families may interpret it as an expression of their parental authority. Young (1970) argued that for African Americans, the control of child aggression, even if by coercive means, signals love for the child. Mosby and colleagues (1999) found that African Americans believe physical discipline is more effective than reasoning alone. Thus, research documents that African American parents may use harsher parenting practices than European-Americans, and that the meaning attributed to these harsher forms of discipline may also vary between cultures. In turn, it may be presumed that children experiencing harsher forms of discipline in African American homes may interpret the experience differently (i.e., as more acceptable) than children in European-American families. Unfortunately, this study did not assess parenting beliefs or attitudes, and therefore, it was impossible to examine whether these factors accounted for group differences in observable parenting behavior.

African American parents may also make different attributions about their children's behaviors. For example, Pinderhughes and colleagues (2000) found that African American parents, compared to Caucasian parents, were more likely to attribute hostile intent to their children for misbehavior, to rate their children's behavior as problematic, and to feel worried about their children's future. They also found that these beliefs and concerns were significantly correlated with the use of physical punishment and accounted for 50% of the total effect of race on discipline responses. Thus, the belief that harsh discipline is more effective, that children act out because of hostility, and that children will grow up to have dismal futures lead many African



American families to use harsher forms of parenting. It is also important to note that there is a significant correlation between harsh discipline and child problem behaviors for European-American children, but this association is not consistently found for African American children (Deater-Deckard et al., 1998; Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). As mentioned previously, African American children may understand that their parents' use of harsh discipline signifies concern and love for them. Again, children's responses to parenting were not assessed in the present study, so this explanation is merely one possibility.

Similarly, there were significant differences between African American and Caucasian mothers on positive parenting behaviors, such that Caucasian mothers displayed more positive parenting toward their infants, in general. As described above, it is plausible that because African American mothers may view harsh discipline as a sign of love or caring toward their child, they display less overt positive parenting behaviors as operationalized in this study. Future researchers should continue to examine racial group differences in parenting behaviors, as it is important to understand the impact of various cultural views on important outcomes in the family system, such as parenting. It will also be important for future researchers to consider examining children's understanding and responses to various forms of parenting that they receive in order to better understand the impact of various forms of discipline on child outcomes.

### **Strengths**

In summary, the present study contributes to existing knowledge about associations between proximal and distal IPV experiences and maternal parenting behaviors in families with infants. There are both important strengths and limitations in the current study that deserve some attention here.

First, the present study was driven by multiple theories that have strong empirical support according to prior research. Another important and notable strength of this study was that it allowed for a longitudinal examination of family processes across the perinatal period, which permitted this investigator to examine the impact of IPV experiences on maternal parenting behaviors over time versus an analysis of associations at a single time point. A longitudinal design also yields a more powerful analysis of a moderation model than cross-sectional data, as risk and protective factors in the family environment, such as those examined in the present study, may wax and wane overtime.

Additionally, a major strength of the study was the examination of these family processes in homes with infants, in particular. Infancy is a particularly critical developmental period for ongoing child social-emotional development; experiences during infancy may have long-range implications for ongoing developmental processes (Sroufe, Egeland, Carlson, & Collins, 2005). For instance, prior researchers have documented the importance of maternal parenting behaviors in the development of secure attachment in infancy and other infant social-emotional outcomes, which have been linked to long-term social outcomes in children. Thus, plenty of research has found that maternal parenting appears to lay the foundation for healthy social-emotional development in children (Davies, Harold, Goeke-Morey & Cummings, 2002; Harold, Shelton, Goeke-Morey & Cummings, 2004; Smith, Calkins & Keane, 2006). It is critical to study the impact of family risks on parenting during infancy as opposed to later in childhood. Also, the current study used a generally high risk sample, which is unique in that it allowed the researchers to examine the impact of numerous social-contextual risk factors within families that are more likely to experience multiple environmental threats than the general population or lower risk samples.

Another strength of the current study was the multi-informant, multi-method design. According to Coie and Dodge (1988), multiple methods of assessment are preferable when examining social adjustment or family processes because multi-method assessment offers the most reliable basis for interpretation. In the present study, informants included the mother and researcher-coded observational data. This particular study design reduced the likelihood that the results would be confounded by one particular person's biases (e.g., the mother), which is possibly the case for much of the existing research in this area. Furthermore, the mother-infant observation task used during infancy provided researchers with a rigorous and objective view of the mother-infant relationship; according to Coie and Dodge, direct observations provide a more valid measure of these interactions than other assessment methods. Finally, the subsample used in the present study included more African American individuals than any other racial group and those who appeared to be typically considered more high-risk, including those with lower incomes and the presence of more environmental risk factors. Thus, this allowed for the examination of individuals who face multiple adversities, and also allowed for the examination of between group differences on certain constructs.

### **Limitations**

Despite these strengths, one limitation of the current study is that the sample used in this particular study is not representative of the general population because it is a high risk sample comprised mostly of African American individuals. Thus, the results from this study may not be generalizable to low-risk families or non-minorities. In future studies, it will be important to examine the impact of IPV experiences and cumulative risk on maternal parenting behaviors in different groups of interest.

Although the use of the Conflict Tactics Scale - 2 (Straus et al., 2003) to assess IPV experiences is considered to be the gold standard measurement of IPV, it is possible that this self-report measure did not adequately capture mothers' experiences of IPV due to social desirability biases, or inadequate retrospective recall. However, it is important to note that this is a general problem for IPV research instead of a limitation unique to the present study.

Researchers have also argued that self-report measures are inadequate at assessing IPV in a sensitive manner; self-report measures assess violence out of context, they fail to distinguish between different types of violence, and most fail to measure the extent of injuries or the emotional impact of the event (Gortner, Berns, Gottman, & Jacobson, 1997; Johnson & Leone, 1995). While the CTS-2 (Straus et al., 2003) was used in the present study to examine IPV experiences overtime, any self-report measure has inherent limitations that may impact the validity of the results. Importantly, research assistants from the present study noticed that many participants inquired about and appeared quite worried about answering the IPV questions for fear that their responses would be reported or that their answers would not be kept confidential. Thus, these concerns based on anecdotal evidence may have affected the results.

Relatedly, there are also possible shortcomings of observational techniques, such as the mother-infant interaction task used in the present study, i.e., the free play and clean-up tasks may not have captured an accurate representation of maternal parenting behaviors outside of the observation. The observational method used in this study only captured parenting behaviors in a very brief period; thus, it is questionable whether these observational data are generalizable to the complexity of maternal parenting in real life scenarios for these families. For example, while the mother-infant interaction task was specifically centered around playing with and cleaning up novel toys to both the mother and infant, there are a multitude of scenarios in which mothers and

infants interact throughout a typical day that may involve many different forms of caretaking, such as feeding, bathing, putting to sleep, or running errands. Just as the clean-up interaction task is designed to elicit stress, there are various real life scenarios which may elicit different parenting behaviors as well. Likewise, the parent may act different toward the child during an observation task because behavior may change when individuals are aware that they are being studied (Kazdin, 2003) or due to the uniqueness of the interaction task; these limitations may again impact the validity of the results.

It is also important to acknowledge that there are likely many other influences impacting maternal parenting behavior that went unexamined in this study. For example, variables such as child age or developmental status (Bierman & Montminy, 1993), child gender (Engfer, 1993; Morrison & Matsen, 1991), and child behaviors (Barkley, 1990; Hinshaw, 1994), to name a few, all likely influence a mother's parenting behaviors with her infant. Maternal variables that went unexamined in the present study that may also have influenced her parenting behaviors include history of childhood maltreatment, mental health problems other than trauma symptoms (i.e., depression, anxiety, substance abuse, etc), or social support, to name a few. As a result, future studies should continue to examine the many different factors that likely impact such a complex phenomenon as maternal parenting of infants.

Furthermore, it may be equally important to examine *protective* factors within multiple systems surrounding the young child that may help promote a mother's parenting behaviors toward her infant. Both risk and protective factors play an important role in complex family dynamics or the broader family system. A few studies have examined the role of protective factors in relation to maternal parenting in homes with infants. Hess, Papas, and Black (2002) found that maternal maturity, positive self-esteem, and a positive mother-grandmother

relationship were associated with more positive parenting in African American adolescent mothers in homes with infant children. Additionally, van Bakel and Riksen-Walraven (2002) conducted a study with Dutch families and their 15 month-old infants based on Belsky's (1984) well known research regarding the multiple determinants of parenting, and found that parental ego-resiliency, education, and partner support were directly correlated with observed maternal parenting behaviors. In sum, prior research has documented the importance of protective factors, also termed as factors promoting resiliency, in predicting parenting outcomes in families with infants. Because the aforementioned studies were conducted using specific ethnic groups, however, future researchers should continue to examine the importance of various protective factors in predicting parenting behaviors in infants across more representative samples as well. It is possible that an accumulation of protective factors may have moderated the association between IPV experiences and maternal parenting behaviors in the present study, leaving room for future research.

### **Conclusions**

In conclusion, the findings of the present study did not support a direct association between proximal or distal IPV experiences and maternal parenting behaviors. There are numerous methodological explanations as to why findings in the present study may have differed from prior research. However, results showed a direct effect between cumulative risk and various positive and negative maternal parenting behaviors with infants. These results demonstrated a strong direct effect of cumulative social-contextual risk on maternal parenting behaviors, such that greater cumulative risk was directly associated with less positive and more negative parenting behaviors toward infants.

Additionally, exploratory analyses documented a linear, not quadratic, effect of cumulative risk experiences on maternal parenting behaviors, as well as differences in maternal parenting behaviors between racial groups, such that African Americans displayed more negative maternal parenting behaviors with infants than Caucasians, who displayed more positive parenting behaviors. There were no significant differences between racial groups and IPV experiences, contrary to prior research. These findings suggest that it is important to examine the manner in which risk factors operate within and across various environments, as well as possible racial differences among various family constructs.

One particularly surprising finding in this study was that cumulative risk did not moderate the association between IPV and maternal parenting, as hypothesized. These results further support the notion that various environmental risk factors may have a more direct effect on family outcomes, including parenting, although the vast majority of prior research has examined cumulative risk as a moderator. More research is necessary to solidify both the direct and indirect effects of various environmental risk factors, including IPV, as well as to determine how these associations appear in families with children at different ages. Almost no research has been conducted examining the aforementioned associations in families with infants, despite the fact that research documents infancy to be a particularly critical time for both mothers and children. Additionally, future researchers should examine various protective factors in relation to various family outcomes, including parenting. Some research has documented an association between protective factors and parenting outcomes in particular ethnic groups, but more research is needed to clarify and generalize these findings.

The results of this study provide support for the cumulative risk model (Sameroff et al., 1993). The cumulative risk model posits that an accumulation of environmental risk factors

influence various family processes and developmental outcomes better than specific, individual risk factors, and results here indicated that maternal parenting behaviors appear to be directly associated with cumulative environmental risk. For example, both positive and negative maternal parenting behaviors were significantly associated with cumulative risk in the expected directions. In addition, because neither proximal nor distal IPV experiences were directly associated with cumulative risk or maternal parenting behaviors, these findings suggest that in environments with higher levels of cumulative risk, IPV experiences may be an additional risk factor that impacts family outcomes while in the context of other family risks. Future research should continue to examine the importance of both individual and cumulative risk factors in the family system in homes with children of all ages, but especially at the beginning of life, in order to gain a better understanding of the risk and protective factors that are associated with ongoing family and developmental outcomes.



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## **Appendix A: Informed Consent for Pregnancy Interview**

### Description of the Research Study:

You are being asked to participate in a research study about women's experiences during and after pregnancy, as well as how these experiences influence mothers and babies after birth. This research will help psychologists and other health service workers better understand mothers' and babies' well-being during the transition to parenthood.

As part of this study, you will be asked to fill out a number of questionnaires during your last trimester of pregnancy; these questionnaires will ask you about a variety of experiences including childhood experiences, current relationships, your mental health, important life events, and social support. You will also be interviewed about your feelings about your pregnancy, motherhood, and your infant; this interview will be audio-recorded so that research assistants may better understand your responses at a later date. The entire procedure will last approximately 2 ½ to 3 hours. At the end of this interview, we will ask your permission to stay in contact with you so that we may see how you and your baby are doing around 3 months and 1 year after birth. These follow-up interviews will take approximately 30-45 minutes at 3 months and 2 ½ to 3 hours at 1 year.

### Participation is Voluntary:

Your participation in this study is completely voluntary. You may refuse to answer any questions and may choose to withdraw from the study at any time with no penalty or negative consequences. You will be informed if significant new findings develop during the course of this research that may impact your willingness to continue in the study.

### Confidentiality:

You will be assigned an identification number, which will be used instead of your name, on all of your questionnaires and interviews to protect your confidentiality. Your name or other identifying information will never be placed on any of your materials so that your responses will be kept completely private. All responses will be stored in a locked research office which is located in a locked hallway of our building. Similarly, audio- and video-tapes will be placed in a locked cabinet in the same locked office immediately after the interview is completed to ensure confidentiality of these data. A log of names and identification numbers will be locked in a separate cabinet in a separate office; only the principal investigator and project managers will have access to this log. Results from the study will only be reported or published about *groups* of participants at professional conferences or through publications in scientific journals;

individual responses will never be reported. Individual audio- or video-tapes will never be disseminated.

If, during the course of the interview, project staff learns that you may seriously harm yourself, we may be required to seek outside help in order to keep you safe. If we learn that your current children's safety is in danger, we are required to make a report to Child Protective Services. These are the only exceptions to complete confidentiality.

Risks and Benefits to Participation:

There are no known or anticipated risks from participating in this study. However, some participants may find answering certain questions uncomfortable or distressing. If you experience any distress, project staff will help direct you to appropriate referrals in the community. All women will be given a comprehensive list of referrals that are designed for mothers and young children at the end of the interview.

Your participation in this study will help researchers better understand the unique experiences that women and babies go through during and after pregnancy. Some participants will find discussing these important life events with project staff relieving and enjoyable. You will be given a \$25.00 Target gift card at the end of this interview, and if you choose to participate in future interviews, you will be compensated with gifts, gift cards, or cash.

Future Questions:

If, at any time, you have questions or concerns about study procedures or your participation in the study, please contact the principal investigator, Dr. Alissa Huth-Bocks, at (734) 487-2238 or [ahuthboc@emich.edu](mailto:ahuthboc@emich.edu).

Human Subjects Review:

This research protocol and informed consent document has been reviewed and approved by the Eastern Michigan University Human Subjects Review Committee for use from 9/26/08 to 9/26/09. If you have questions about the approval process, please contact Dr. Deb de Laski-Smith (734.487.0042, Interim Dean of the Graduate School and Administrative Co-chair of UHSRC, [human.subjects@emich.edu](mailto:human.subjects@emich.edu))."

CONSENT TO PARTICIPATE: I understand my rights as a research participant and I voluntarily consent to participate in this study. I understand the purpose and procedures of the study. I will receive a copy of this consent form for my future reference.

---

Participant Signature

---

Date

Participant Name

\_\_\_\_\_  
Witness Signature\_\_\_\_\_  
Date

### **Appendix B: Informed Consent for 1-year Interview**

#### Description of the Research Study:

Thank you for participating in the first parts of our study. As you know, you are being asked to continue participating in this research study about women's experiences during and after pregnancy, as well as how these experiences influence mothers and babies after birth. This research will help psychologists and other health service workers better understand mothers' and babies' well-being during the transition to parenthood.

During this interview today, we will ask you and your baby to play together for about 12 minutes with some toys that we have brought. This part of the interview will be video-taped so that only research staff can view it at a later time. Then, you will be given a number of questionnaires about your experiences since the last interview and about your baby; many of these questionnaires will be the same ones you filled out earlier, but some of them will be new to you. This interview will take approximately 2 ½ to 3 hours. While this is the last interview we have planned for the study at this time, it is possible that we may continue the study at some point in the future. At the end of the interview, we will ask if you are willing to have us contact you in the future if the study does continue at some point.

#### Participation is Voluntary:

Your and your baby's participation in this study is completely voluntary. You may refuse to complete any part of the interview and may choose to withdraw from the study at any time with no penalty or negative consequences. You will be informed if significant new findings develop during the course of this research that may impact your willingness to continue in the study.

#### Confidentiality:

As a reminder, your name or other identifying information will never be placed on any of your questionnaires so that your responses will be kept completely private. All responses will be stored in a locked research office which is located in a locked hallway of our building. Similarly, audio- and video-tapes will be placed in a locked cabinet in the same locked office immediately after the interview is completed to ensure confidentiality of these data. A log of names and identification numbers will be locked in a separate cabinet in a separate office; only the principal investigator and project managers will have access to this log. Results from the study will only be reported or published about *groups* of participants at professional conferences or through publications in scientific journals; individual responses will never be reported. Individual audio- or video-tapes will never be disseminated.

If, during the course of the interview, project staff learns that you may seriously harm yourself, we may be required to seek outside help in order to keep you safe. If we learn that your current children's safety is in danger, we are required to make a report to Child Protective Services. These are the only exceptions to complete confidentiality. We do not report domestic abuse.

Risks and Benefits to Participation:

There are no known or anticipated risks from participating in this study. However, some participants may find answering certain questions uncomfortable or distressing. If you experience any distress, project staff will help direct you to appropriate referrals in the community. All women will be given a comprehensive list of referrals that are designed for mothers and young children at the end of the interview.

Your participation in this study will help researchers better understand the unique experiences that women and babies go through during and after pregnancy. Some participants will find discussing these important life events with project staff relieving and enjoyable. You will be given a baby gift and \$50.00 at the end of this interview.

Future Questions:

If, at any time, you have questions or concerns about study procedures or your participation in the study, please contact the principal investigator, Dr. Alissa Huth-Bocks, at (734) 487-2238 or [ahuthboc@emich.edu](mailto:ahuthboc@emich.edu).

Human Subjects Review:

This research protocol and informed consent document has been reviewed and approved by the Eastern Michigan University Human Subjects Review Committee for use from 9/26/07 to 9/26/08. If you have questions about the approval process, please contact Dr. Deb de Laski-Smith (734.487.0042, Interim Dean of the Graduate School and Administrative Co-chair of UHSRC, [human.subjects@emich.edu](mailto:human.subjects@emich.edu))."

CONSENT TO PARTICIPATE: I understand my rights and my baby's rights as a research participant and I voluntarily consent for both my baby and I to participate in this study. I understand the purpose and procedures of the study. I will receive a copy of this consent form for my future reference.

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Participant Name

\_\_\_\_\_

\_\_\_\_\_

Witness Signature

Date

**Appendix C: Conflict Tactics Scale-2**

No matter how well a couple gets along, there are time when they disagree, get annoyed with one another, want different things from each other, or just have spats or fights because they are in a bad mood, are tired, or are upset for some other reason. Couples also have many different ways of trying to settle their differences. This is a list of things that might happen when you have differences. Please tell me the response that best describes how many times these things happened *during the last year and during your pregnancy with \_\_\_\_\_* (child in study) *considering all of your partners during these time frames, not just your current partner.*

**USE THE FOLLOWING RESPONSE CATEGORIES:**

- 1 = Once**
- 2 = Twice**
- 3 = 3-5 times**
- 4 = 6-10 times**
- 5 = 11-20 times**
- 6 = More than 20 times**
- 7 = Not during these time periods, but it happened before**
- 0 = Never**

(# category)	(# category)	(y/n)
<b>In the last</b>	<b>Pregnancy</b>	<b>Ever</b>
<b>Year</b>	<b>w/_____</b>	<b>Before</b>
	<b>(study child)</b>	<b>Preg.</b>
		<b>w/_____</b>
		<b>(study child)</b>

- |  |          |       |       |
|--|----------|-------|-------|
| 1. My partner insulted or swore at me                                      | 1. _____ | _____ | _____ |
| 2. My partner threw something at me that could hurt                        | 2. _____ | _____ | _____ |
| 3. My partner twisted my arm or hair                                       | 3. _____ | _____ | _____ |
| 4. I had a sprain, bruise, or small cut because of a fight with my partner | 4. _____ | _____ | _____ |
| 5. My partner made me have sex without a                                   | 5. _____ | _____ | _____ |

condom

- 6. My partner pushed or shoved me 6. \_\_\_\_\_
- 7. My partner used force to make me have oral or anal sex 7. \_\_\_\_\_
- 8. My partner used a knife or gun on me 8. \_\_\_\_\_
- 9. I passed out from being hit on the head by my partner in a fight 9. \_\_\_\_\_
- 10. My partner called me fat or ugly 10. \_\_\_\_\_
- 11. My partner punched or hit me with something that could hurt 11. \_\_\_\_\_
- 12. My partner destroyed something that belonged to me 12. \_\_\_\_\_
- 13. I went to a doctor because of a fight with my partner 13. \_\_\_\_\_
- 14. My partner choked me 14. \_\_\_\_\_
- 15. My partner shouted or yelled at me 15. \_\_\_\_\_
- 16. My partner slammed me against a wall 16. \_\_\_\_\_
- 17. I needed to see a doctor because of a fight with my partner, but I didn't 17. \_\_\_\_\_
- 18. My partner beat me up 18. \_\_\_\_\_
- 19. My partner grabbed me 19. \_\_\_\_\_
- 20. My partner used force to make me have sex 20. \_\_\_\_\_
- 21. My partner stomped out of the room or house or yard during a disagreement 21. \_\_\_\_\_
- 22. My partner insisted that I have sex when I didn't want to (but did not use physical force) 22. \_\_\_\_\_
- 23. My partner slapped me 23. \_\_\_\_\_



- 24. I had a broken bone from a fight with my partner 24. \_\_\_\_\_
- 25. My partner used threats to make me have oral or anal sex 25. \_\_\_\_\_
- 26. My partner burned or scalded me on purpose 26. \_\_\_\_\_
- 27. My partner insisted I have oral or anal sex (but did not use physical force) 27. \_\_\_\_\_
- 28. My partner accused me of being a lousy lover 28. \_\_\_\_\_
- 29. My partner did something to spite me 29. \_\_\_\_\_
- 30. My partner threatened to hit or throw something at me 30. \_\_\_\_\_
- 31. I still felt physical pain the next day because of a fight with my partner 31. \_\_\_\_\_
- 32. My partner kicked me 32. \_\_\_\_\_
- 33. My partner used threats to make me have sex 33. \_\_\_\_\_

**Appendix D: Demographic Questionnaire from Pregnancy Interview**

- 1. Your date of birth:        \_\_\_ / \_\_\_ / \_\_\_  
                                    (mo) (dy) (yr)
- 2. Your age in years:        \_\_\_\_\_
- 3. Your baby's due date:     \_\_\_ / \_\_\_ / \_\_\_  
                                    (mo) (dy) (yr)

- 4. Have you been pregnant before? (Circle one)  
    1 = YES        2 = NO (If NO, go to Question 8)

**If YES, to Question 5:**

- 5. How many times? \_\_\_\_\_
- 6. Have you had any miscarriages, still births, or abortions? (Circle one)  
    1 = YES  
    2 = NO
- 7. How many biological children do you currently have? \_\_\_\_\_
- 8. How many people, including yourself, live in your household? \_\_\_\_\_
- 9. Please list these: (Write in specific relationship to mother. Be specific--is the person (for ex.) a husband, stepfather, biological child, foster child, or partner's child?)  
 \_\_\_\_\_self\_\_\_\_\_ \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

10. Choose the one that best describes your current marital/relationship status (choose only one):

- (a) single, never married (see below)
- (b) married For how long? \_\_\_\_\_ (in months)
- (c) separated For how long? \_\_\_\_\_ (in months)
- (d) divorced For how long? \_\_\_\_\_ (in months)
- (e) widowed For how long? \_\_\_\_\_ (in months)

**If (a) is circled:** Are you currently in a relationship? YES NO

If YES, go to Question 11.

If NO, were you in a relationship that lasted at least 6 weeks during your current pregnancy? YES NO

11. First name of your current partner **or** the partner you were with for at least 6 weeks during your pregnancy: \_\_\_\_\_

12. Are you currently living with your partner/spouse? (Circle one)  
1 = YES 2 = NO

13. If yes to Question 12, how long have you been doing so? (Circle one)  
1 = less than 1 year  
2 = 1-3 years  
3 = 4-6 years  
4 = 7-9 years  
5 = 10-12 years  
6 = 13-15 years  
7 = 16 - 18 years  
8 = 19 - 21 years  
9 = 22 - 24 years  
10 = 25 or more years

14. Prior to your current romantic relationship, specified in Question #10

- (a) were you ever married? 1 = YES 2 = NO
- (b) did you ever live with a partner? 1 = YES 2 = NO
- (c) were you ever separated? 1 = YES 2 = NO
- (d) were you ever divorced? 1 = YES 2 = NO
- (e) were you ever widowed? 1 = YES 2 = NO

15. What is the current age of the baby's father? \_\_\_\_\_

16. What is your current relationship with the father of your baby? (Circle one)
- 1 = spouse
  - 2 = ex-spouse
  - 3 = partner
  - 4 = ex-partner
  - 5 = friend
  - 6 = acquaintance
  - 7 = stranger
  - 8 = other Please specify: \_\_\_\_\_
17. What is your racial or racial group? (Circle one)
- 1 = Native American
  - 2 = Asian American/Pacific Islander
  - 3 = Black, African American
  - 4 = Latina, Hispanic
  - 5 = Arab American
  - 6 = Biracial (mixed): Specify \_\_\_\_\_
  - 7 = Caucasian, White
  - 8 = Other: \_\_\_\_\_
18. What is the baby's father's racial or racial group? (Circle one)
- 1 = Native American
  - 2 = Asian American/Pacific Islander
  - 3 = Black, African American
  - 4 = Latino, Hispanic, Chicano
  - 5 = Arab American
  - 6 = Biracial (mixed): Specify \_\_\_\_\_
  - 7 = Caucasian, White
  - 8 = Other: \_\_\_\_\_
19. What is the highest level of education you have completed? (Circle one)
- 1 = Did not complete high school
  - 2 = High school diploma or GED
  - 3 = Some college
  - 4 = Associate's degree or completion of trade school after high school (e.g., Beauty School, nursing school)
  - 5 = Bachelors Degree
  - 6 = Some graduate school
  - 7 = Graduate degree
  - 8 = Other; Specify \_\_\_\_\_
20. Do you currently work outside the home?      YES    NO
21. **If YES**, how many hours a week do you work? \_\_\_\_\_

22. **If NO**, did you work outside the home during the last year?    YES    NO  
How many hours a week during the last year? \_\_\_\_\_
23. If YES to either part of Question 20, what is/was your occupation? \_\_\_\_\_  
*Please be specific. For example, bookkeeper, cashier, computer programmer.  
If there were two jobs/occupations, have participant choose the one that she feels  
best represents her occupation.*
24. What is the highest level of education your partner/spouse has completed? (Circle one)  
1 = Did not complete high school  
2 = High school diploma or GED  
3 = Some college  
4 = Associate's degree or completion of trade school after high school (e.g.,  
Beauty School, nursing school)  
5 = Bachelors Degree  
6 = Some graduate school  
7 = Graduate degree  
8 = Other; Specify \_\_\_\_\_
25. Does s/he work outside the home? (Circle one)  
1 = YES  
2 = NO  
**If YES**, how many hours a week? \_\_\_\_\_
26. If yes to Question 25, what is his/her occupation? \_\_\_\_\_  
(Please be specific)
27. What is your total family income per month (estimate)? \_\_\_\_\_
28. Do you currently receive services from . . . ?
- |  |            |           |
|--|------------|-----------|
| a. WIC or Women, Infants & Children  | <b>YES</b> | <b>NO</b> |
| b. Protective Services   | <b>YES</b> | <b>NO</b> |
| c. Food Stamps   | <b>YES</b> | <b>NO</b> |
| d. Medicaid, Mi-Child, or Medicare   | <b>YES</b> | <b>NO</b> |
| e. SSI (or Disability)   | <b>YES</b> | <b>NO</b> |
| f. Public cash assistance/grant (DHS)  | <b>YES</b> | <b>NO</b> |
| g. Unemployment compensation   | <b>YES</b> | <b>NO</b> |
| h. Any infant related programs (e.g., 0-3; Mother-Infant Program; Head Start)? | <b>YES</b> | <b>NO</b> |
| i. Mental Health treatment   | <b>YES</b> | <b>NO</b> |
| j. Psychiatric treatment (medicine)  | <b>YES</b> | <b>NO</b> |
| k. Other social service or health program                                      | <b>YES</b> | <b>NO</b> |

**Appendix E: Demographic Questionnaire from 1-year Interview**

1. Name of child: \_\_\_\_\_  
(Interviewer: Get this information from T2 interview prior to interview)
  
2. Child's birthdate: \_\_\_\_/\_\_\_\_/\_\_\_\_ (Interviewer: Get this information from T2 interview prior to interview)
  
3. How would you best describe your child's racial or racial group?  
 1 = Native American  
 2 = Asian American/Pacific Islander  
 3 = Black, African American  
 4 = Latino, Hispanic  
 5 = Arab American  
 6 = Biracial (mixed): Specify \_\_\_\_\_  
 7 = Caucasian, White  
 8 = Other: \_\_\_\_\_
  
4. Since you gave birth to \_\_\_\_\_ (name of child), have you had any miscarriages? (a)\_\_\_\_\_, stillbirths? (b)\_\_\_\_\_, or abortions? (c)\_\_\_\_\_ (write in number of each in appropriate places)  
  
 When did these take place? M (d)\_\_\_\_\_, S (e)\_\_\_\_\_, A (f)\_\_\_\_\_
  
5. Are you currently pregnant? **YES NO**
  
6. How many biological children do you currently have? \_\_\_\_\_  
 A. What are their ages? \_\_\_\_\_
  
7. How many people, including yourself, live in your household? \_\_\_\_\_
  
8. Please list these: (Write in specific relationship to mother. Be specific--is the person (for ex.) a husband, stepfather, biological child, foster child, or partner's child?). **NO NAMES ARE NECESSARY.**  
  
 self \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
  
- A. If the baby doesn't live with you, who does the baby live with? \_\_\_\_\_  
 (relationship of person to mother)
  
9. How many times have you moved since the birth of your baby? \_\_\_\_\_

10. Choose the one that best describes your current marital/relationship status (choose only one):
1. Single, never married, NOT living with a partner, NOT in current relationship
  2. Single, never married, NOT living with a partner, IN a current relationship
  3. Single, never married, living WITH a partner
  4. Married
  5. Separated
  6. Divorced
  7. Widowed
11. Are you currently in a relationship? **YES NO**  
If yes:  
 A. How long have you been with this partner? \_\_\_\_\_ (in months)  
 B. How long have you been LIVING with this partner? \_\_\_\_\_ (in months)
12. What is the age of your current partner/ spouse? \_\_\_\_\_
13. What is the highest level of education your partner/spouse has completed? (Circle one)
- 1 = Did not complete high school
  - 2 = High school diploma or GED
  - 3 = Some college
  - 4 = Associate's degree or completion of trade school after high school (e.g., Beauty School, nursing school)
  - 5 = Bachelors Degree
  - 6 = Some graduate school
  - 7 = Graduate degree
  - 8 = Other; Specify \_\_\_\_\_
14. Does s/he work outside the home? **YES NO**  
**If YES:** A. how many hours a week? \_\_\_\_\_  
 B. What is his/her occupation? \_\_\_\_\_  
 (Please be specific)
15. Is this the father of your baby? **YES NO**
16. Is the baby's father involved with the baby? **YES NO**
17. Does the baby's father live with the baby? **YES NO**

18. What is your current relationship with the father of your baby? (Circle one)
- 1 = spouse
  - 2 = ex-spouse
  - 3 = partner/fiancé
  - 4 = ex-partner
  - 5 = friend
  - 6 = acquaintance
  - 7 = stranger
  - 8 = other Please specify: \_\_\_\_\_
19. When we interviewed you during your pregnancy, you had been involved with \_\_\_\_\_ [name of T1 partner] for at least six weeks during the pregnancy. What has happened to this relationship since we interviewed you then? (Read all choices and circle one)
- (a) I am still in a relationship with him.
  - (b) We have been together off and on since the interview, and we are currently together.
  - (c) We have been together off and on since the interview, and we are currently not together.
  - (d) I have not had a relationship with him since the interview.
20. Do you currently work outside the home? **YES NO**
21. **If YES**, how many hours a week do you work? \_\_\_\_\_
22. **If NO**, did you work outside the home during the last year? **YES NO**
23. How many hours a week during the last year? \_\_\_\_\_
24. Do you currently work at home (e.g., daycare provider or home office)? **YES NO**
25. **If YES**, how many hours a week do you work? \_\_\_\_\_
26. [If YES to either part of Questions 20 thru 25]: What is/was your occupation?  
\_\_\_\_\_
- Please be specific. For example, bookkeeper, cashier, computer programmer.  
If there were two jobs/occupations, have participant choose the one that she feels best represents her occupation.*
27. Does your baby receive childcare from anyone other than you? **YES NO**
- Check all that apply:
- |  |                        |
|--|------------------------|
| A. ____ daycare center                   | B. ____ #of hours/week |
| C. ____ in-home care by private provider | D. ____ #of hours/week |
| E. ____ in-home care by family member    | F. ____ #of hours/week |
| G. ____ other (describe: _____)          | H. ____ #of hours/week |



28. Have you received services from the following programs?

	<u>Currently</u>		<u>Previously</u>	
a. WIC or Women, Infants & Children	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
b. Protective Services	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
c. Food Stamps	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
d. Medicaid, Mi-Child, or Medicare	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
e. SSI (or Disability)	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
f. Public cash assistance/grant (DHS)	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
g. Unemployment compensation	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
h. Any infant related programs (e.g., 0-3; Mother-Infant Program; Head Start)?	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
i. Mental Health treatment	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
j. Substance Use treatment	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
k. Psychiatric treatment (medicine)	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
l. Incarceration	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
m. Other social service or health program	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>

29. Considering all sources of income, approximately what is your family income per month (estimate): \_\_\_\_\_

**Appendix F: Posttraumatic Stress Disorder Checklist**

**INSTRUCTIONS:** Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month using the following scale:

**1 = Not at all    2 = A little bit    3 = Moderately    4 = Quite a bit    5 = Extremely**

1. Repeated disturbing memories, thoughts, or images of a stressful experience from the past?
2. Repeated disturbing dreams of a stressful experience from the past?
3. Suddenly acting, or feeling as if, a stressful experience were happening again?
4. Feeling very upset when something reminded you of a stressful experience from the past?
5. Having physical reactions when something reminded you of a stressful experience from the past?
6. Avoiding thinking about or talking about a stressful experience from the past, or avoiding having feelings related to it?
7. Avoiding situations because they remind you of a stressful experience from the past?
8. Trouble remembering important parts of a stressful experience from the past?
9. Loss of interest in activities you used to enjoy?
10. Feeling distant or cut off from other people?
11. Feeling emotionally numb or being unable to have loving feelings for those close to you?
12. Feeling as if your future will somehow be cut short?
13. Trouble falling or staying asleep?
14. Feeling irritable or having angry outbursts?
15. Having difficulty concentrating?
16. Being “super alert” or watchful or on guard?
17. Feeling jumpy or easily startled?

