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# An Examination of a Process Model of Physical Child Abuse: Considering Direct, Indirect, and Interactive Effects of Cumulative Socio-Contextual Risk on Markers of Physical Child Abuse in Mothers of Young Children

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An Examination of a Process Model of Physical Child Abuse: Considering Direct, Indirect, and Interactive Effects of Cumulative Socio-Contextual Risk on Markers of Physical Child Abuse in Mothers of Young Children

A Dissertation

Submitted to the Graduate Faculty of the  
University of New Orleans  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy  
In  
Applied Developmental Psychology

by

Kathleen “Lucy” McGoron

B.S., Eastern Michigan University, 2006  
M.S., University of New Orleans, 2009

December, 2012

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Dedication

To,  
Christopher Patrick Guarasci  
and  
Allisa Charlotte Bohl  
Watching you grow and change has been the biggest joy  
and inspiration of my life

and also to,  
children everywhere who need a  
safe place to lay their little heads

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## Abstract

Understanding pathways to physical child abuse may aid in creating and implementing abuse prevention services. Yet studying child abuse in community samples of parents is fraught with challenges. One solution to these challenges is to examine markers of physical child abuse, rather than asking about abuse directly. The goal of the current investigation is to test a theoretical model of processes that increase the presence of four proximal risk factors, or markers, which have been linked to increased risk for physical child abuse in mothers of young children. The four markers of physical child abuse include: child abuse potential, over-reactive discipline, spanking acceptance, and mothers' negative child perceptions. Positive associations between an accumulation socio-contextual risk and markers of physical abuse are hypothesized. An accumulation of socio-contextual risk is expected to indirectly predict markers of physical abuse by reducing parenting locus of control, or parents' perceptions of control in the parent-child relationship. Furthermore, social support and children's externalizing behavior problems are expected to diminish or intensify this mediated process, respectively. Participants included 85 mothers of young children (ages 1½ to 5 years) from diverse backgrounds. Of the four markers of abuse, cumulative risk and parenting locus of control were correlated only with mothers' child abuse potential and no statistical association between cumulative risk and parenting locus of control was found. Limited support for moderation hypotheses emerged. Theoretical implications are discussed.

Keywords: Child abuse, parenting, parent beliefs, cumulative risk, early childhood

## Introduction

Child maltreatment is a social problem that leads to a number of negative outcomes for children. In 2009 alone, 702,000 children in the United States were identified by authorities as victims of maltreatment (U.S. Department of Health and Human Services [DHHS], Administration for Children and Families, Children's Bureau, 2010). In all likelihood, the actual number of maltreated children is grossly underestimated because not all victims are identified by child welfare agencies and not all reported instances of maltreatment are substantiated (Ammerman, 1998; Chaffin & Valle, 2003). Very young children are most frequently the victims of documented child maltreatment, with 33.5% of reported victims 3 years of age or younger and an additional 23.3% of victims between the ages of 4 to 7 years (U.S. DHHS Administration for Children and Families, Children's Bureau, 2010).

Of the substantiated maltreatment cases, approximately 17 percent were cases of physical child abuse (U.S. DHHS Administration for Children and Families, Children's Bureau, 2010). One factor differentiating physical abuse from other forms of maltreatment is that physical abuse is considered to be an extreme form of harsh discipline. As compared to other forms of abuse, physical abuse is most likely to occur during disciplinary attempts (Trickett & Susman, 1988). Although physical abuse often is defined as parents' intentional motivation to cause physical injury to their children, abuse also occurs when parents unintentionally escalate physical discipline attempts, such as spanking (Rodriguez & Richardson, 2010).

While physical abuse often involves bruises, burns, or broken bones, the consequences of abuse persist beyond the healing of physical injuries (Cicchetti, 2004). Exposure to physical abuse prior to age 6 is related with a number of emotional, behavioral and social adjustment problems. Young physically abused children tend to exhibit more emotion dysregulation than

their non-abused peers (Maughan & Cicchetti, 2002) and have errors in recognizing emotions (Pollak, Cicchetti, Hornung, & Reed, 2000). Compared with non-abused children, young physically abused children demonstrate higher levels of externalizing problems (Koenig, Cicchetti, & Rogosch, 2000), such as less committed compliance (Koenig et al., 2000), more stealing (Koenig, Cicchetti, & Rogosch, 2004), aggressiveness (Maughan & Cicchetti, 2002), and anger regulation problems (Robinson et al., 2009). Young abused children also tend to be more socially withdrawn (Maughan & Cicchetti, 2002) and exhibit higher levels of internalizing problems (Robinson et al., 2009). Compared to non-abused children, abused children also exhibit more disturbances in attachment, such as displaying less indicators of secure attachment and a pattern of disorganized attachment (Cyr, Euser, Bakermans-Kranenburg, & Van IJzendoorn, 2010).

Given the physical and psychological toll of physical abuse for young children, preventative intervention efforts would benefit from a clear understanding of the processes and characteristics that increase parents' likelihood of being physically abusive. Previous research examining parents' risk for physically abusing their children is limited in that these investigations often rely on samples of parents with substantiated cases of abuse. Comparatively less research has examined abuse in community samples, making understanding pathways leading to abuse difficult (Ammerman, 1998; Chaffin & Valle, 2003). One primary challenge with researching characteristics associated with child abuse among community samples is that parents are unlikely to report their use of abusive practices (Ammerman, 1998; Chaffin & Valle, 2003). Aside from the negative social stigma associated with using abusive practices, researchers are mandated reporters of abuse and parents' fears of abusive practices being reported to authorities are valid (Ammerman, 1998). Additionally, investigators face a moral dilemma

between respecting parents confidentially when reporting their use of abusive practices and ensuring children's safety by reporting abuse to child welfare authorities.

An alternative to directly measuring parents' actual physical abusive practices is to measure markers of physical child abuse (Begle, Dumas, & Hanson, 2010; Milner, 1994), which includes examining characteristics and practices closely linked to physical abuse (i.e. proximal risk). Specifically, Milner (1994) suggests that abusive parents are more likely to be easily frustrated and angered, have conflict filled interpersonal relationships, and believe in more firm discipline and control than parents at lower risk for engaging in physical abuse. Milner (1994) also argues that abusive parents have more negative perceptions of their children than non-abusive parents. Collectively, Milner calls the presence of these characteristics parents' *child abuse potential* (Milner, 1994). Importantly, child abuse potential scores have been found to differentiate abusive from non-abusive parents (Caliso & Milner, 1994; Milner, 1994; Walker & Davies, 2010) and to predict future abuse (Chaffin & Valle, 2003).

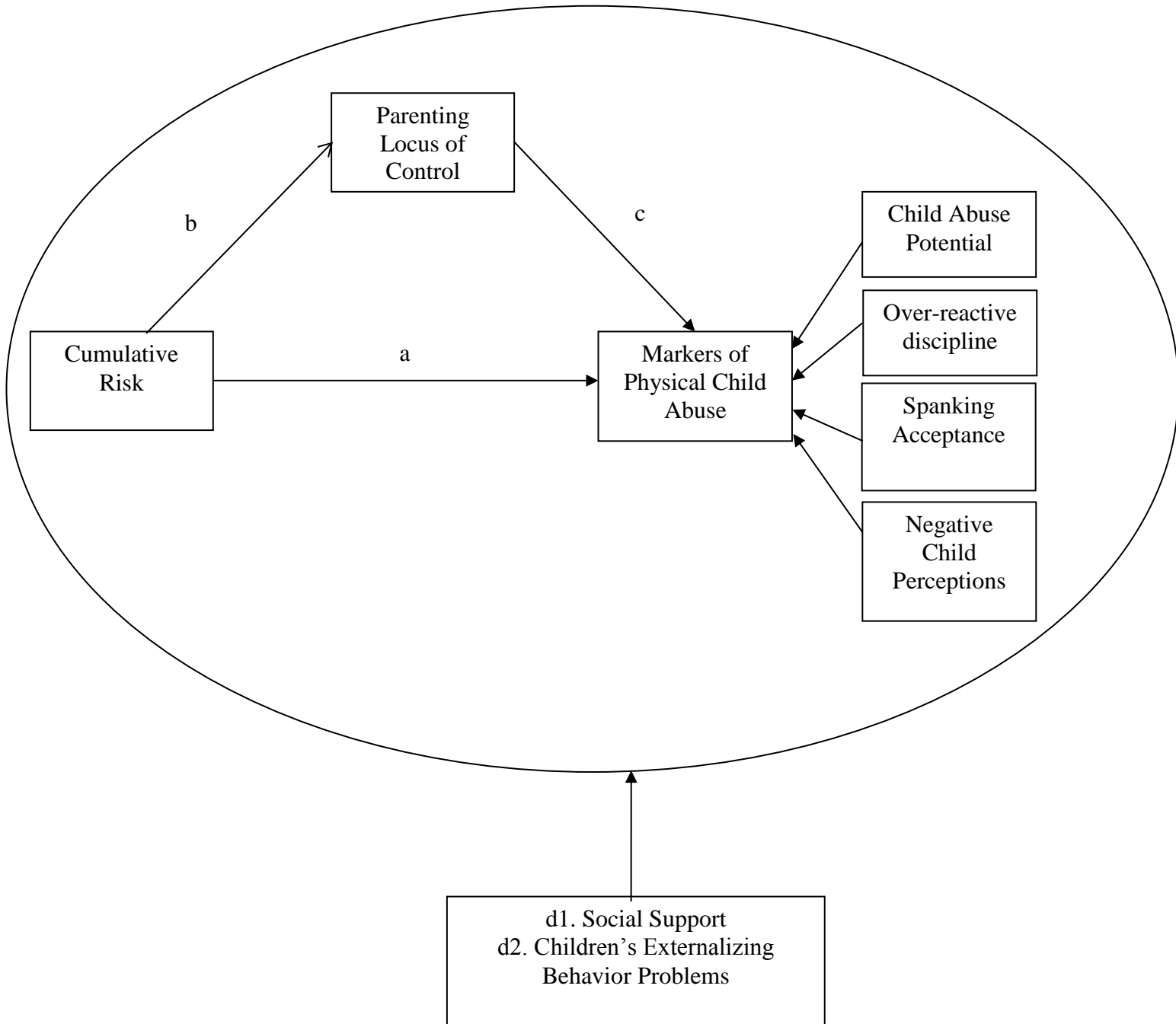
Given that physical abuse often arises out of parents' discipline attempts, parenting beliefs and practices also may be important markers of abuse. Parents at heightened risk for being physically abusive to their young children have been found to be more likely to use over-reactive discipline practices, such as shouting, being physically restrictive, and using corporal punishment, such as spanking (Munz, Wilson, D'Enbeau, 2010; Rodriguez, 2010). Potentially, abusive parents also may find corporal punishment, such as spanking, to be an acceptable and effective discipline practice. In fact, a meta-analysis of parents' use of corporal punishment revealed that parents' use corporal punishment increases their risk for engaging in physically abusive behaviors (Gershoff, 2002). That is, corporal punishment and abuse appear to be on the same continuum, with abuse resulting from frequent or severe corporal punishment (Gershoff,

2002). Moreover, Rodriguez, Russa, and Harmon (2011) found that parents who reported using more physical discipline also reported more acceptance of physical discipline and had higher child abuse potential scores. Thus, both empirical and theoretical support exist for the assumption that use and acceptance of physical punishment is a viable marker of physical child abuse risk.

The goal of the current investigation was to empirically evaluate a social process model whereby mothers' risk for engaging in the four identified markers of physical child abuse are affected by the level of social-contextual risk and felt parenting control (i.e., parenting locus of control) as well as levels of social support and child problem behaviors. As depicted in Figure 1, four markers of abuse were included: child abuse potential (dispositional and interpersonal characteristics of parents), use of over-reactive discipline, spanking acceptance and negative child perceptions. Each of these markers of abuse were expected to be correlated, such that parents who reported more acceptance of corporal punishment were also expected to use over-reactive discipline strategies, have higher child abuse potential scores, and have more negative child perceptions.

Figure 1

*Moderated-mediation Model of Processes that Heighten Markers of Physical Child Abuse*



Theoretically, an accumulation of socio-contextual risk or stressors directly increases mothers' risk of engaging in any of the four markers of abuse (see Figure 1, path a). In addition, factors that may explain (i.e., mediate) or condition (i.e., moderate) the association between an accumulation of socio-contextual risk and markers of physical child abuse was considered. With regard to mediation, parents' perceptions of control, or parenting locus of control (see Figure 1, paths b and c), was expected to explain the connection between an accumulation of socio-contextual risk and markers of physical child abuse. As will be described, as socio-contextual risks accumulate, parents' sense of parenting control may diminish, thereby increasing their abuse potential (Rodriguez & Richardson, 2010), their use of and acceptance discipline that may escalate into abuse, and negative child perceptions. With regard to moderation, levels of perceived social support and children's externalizing problem behaviors were expected to create a context that increases or diminishes the mediating process (see Figure 1, paths d1 and d2). That is, with better quality social support and lower levels of children's externalizing problems, the negative impact of an accumulation of socio-contextual risk on parents' perceptions of control and on markers of physical child abuse is likely minimal. The following sections review the rationale for examining the relationships between an accumulation of socio-contextual risk and markers of physical child abuse as well as the rationale for moderated-mediation.

#### *A Cumulative Risk Approach to Understanding Vulnerabilities Associated with Physical Abuse*

Rutter (1979) was the first to propose a cumulative risk approach to understand how risk affected children's maladaptive adjustment. Rutter (1979) observed that areas of risks do not occur in isolation but rather co-occur frequently. Moreover, the likelihood of maladaptive adjustment increased exponentially with an increase in the number of areas, or social contexts, in which risk was present (Rutter, 1979). The cumulative risk approach assumes that variability



exists across families in the actual risks that accumulate. In other words, the actual risks families face are heterogeneous. Importantly, no one social contextual risk (e.g., economic hardship or neighborhood disadvantage) will negatively impact social adjustment as much as an increase in the number of social contextual risks (e.g., divorce, economic hardship, neighborhood disadvantage, and job loss). In the current study, an accumulation of socio-contextual risk was hypothesized to increase parents' potential for engaging in child abuse, using and supporting physical disciplinary practices (e.g. over-reactive discipline, spanking), and having more negative child perceptions.

Although the cumulative risk approach considers the impact of multiple risks on adjustment simultaneously, the creation of risk indices is quite straightforward. The first step is to identify theoretically which risks are likely to be associated with a specified outcome and determine a critical level for the risk empirically (e.g., 1 standard deviation above the sample mean; Rutter, 1979). Scores above the threshold are coded as risk and scores below the set threshold are coded as no risk. Cumulative risk scores are computed by summing the various risk indicators. This methodology is practical from a statistical perspective because the additive effects of a variety of domains of risks can be evaluated while avoiding problems of multicollinearity associated with simultaneously modeling multiple factors (Evans, 2003; Mistry, Benner, Biesanz, Clark, & Howes, 2010). Furthermore, families experiencing one risk can be compared with families experiencing two risks, even when these families are not experiencing the same risk (Rutter, 1979).

While the cumulative risk approach is generally used to examine child adjustment (e.g. Evans, 2003; Mistry et al., 2010), recent work indicates that as risks accumulate across different areas of parents' lives, parenting is negatively affected. For instance, Trentacosta and colleagues

(2008) found that an accumulation of risk (e.g. being a teen parent, parent education, home overcrowding, parent alcohol and drug problems, living in a dangerous neighborhood) led to maladjustment during early childhood by negatively impacting parenting practices. As risk accumulated, mothers were found to use less nurturant and involved parenting. Thus, parents were relatively unaffected by the presence of risk in one area, but as risk accumulated, parenting suffered (Trentacosta et al., 2008). Similar findings have been reported during the toddler period. As risk accumulates, parents have been found to use harsher parenting practices (Burchinal, Vernon-Feagans, Cox, & Key Family Life Project Investigators, 2008), display less warmth in parent-child interactions (Burchinal, et al., 2008; Kochanska, Aksan, Penney, & Boldt, 2007), and are less sensitive and responsive to their young children (Popp, Spinrad, & Smith 2008) than parents with fewer risks.

In contrast to investigations on more normative parenting practices and child adjustment, less research has directly examined the relationship between an accumulation of risk and the dispositional and interpersonal characteristics that make up a parents' child abuse potential. Even fewer studies have considered the effects of cumulative risk on other markers of abuse. Instead, studies have considered the association between felt parenting stress and child abuse potential and report that more parenting stress is associated with increased levels of child abuse potential (e.g. Burrell, Thomposon, & Sexton, 1994; Crouch & Behl, 2001; Holden, Willis, & Foltz, 1989; Kolko, Kazdin, Thomas & Day, 1993; Rodriguez & Green, 1997). While many of these investigations focus specifically on stress with parenting domains (e.g. stress within the parent-child relationship), theories of the etiology of physical child abuse suggest that there are multiple domains of stress that may impact parents' use of abusive practices. For instance, according to the family stress model (Conger, Rueter, & Conger, 2000), the experience of financial stress

leads to parents feeling distress and leads to the use of more harsh and hostile discipline practices.

In Belsky's (1993) seminal review of the etiology of child maltreatment, Belsky argued that the likelihood of physical child abuse is highest when stressors in parents' lives outweigh the supports in their lives. Conceptually similar to Bronfenbrenner's (1979) social-ecological theory, Belsky (1993) suggests that contexts beyond the immediate parent-child relationship need to be considered when examining the etiology of child abuse. For instance, community and work characteristics also may place parents at risk for using abusive practices. Specifically, Belsky (1993) argued that the constellation of stressors parents experience are heterogeneous in nature and at-risk parents likely experience stress simultaneously from multiple contexts in which they function (e.g. financial stress, stress in relationships, stressful living conditions). Theoretically consistent with a cumulative risk approach, a variety of stressors may increase parents' risk for abuse, but the effects of an accumulation of stress across multiple contexts are likely to be substantially greater than the intensity of any one stressor.

To date, only two investigations have directly considered the impact of an accumulation of risk on parents' potential for child abuse. In an investigation of drug-abusing mothers and their infants, Nair, Schuler, Black, Kettinger, and Harrington (2003) examined an accumulation of environmental risk in relation to parents' child abuse potential. Cumulative risk scores were computed from ten factors, including: depression, intimate partner violence, family size, homelessness, and single parent status. Mothers classified as at-risk in five or more areas had higher child abuse potential scores than parents classified as at-risk in only one or two areas. Interestingly, no difference between parents classified as at-risk in two or fewer areas and those classified as at-risk in three or four areas were found. Instead, a nonlinear association emerged

such that once parents reached a threshold of risk, in this case, elevated scores in five or more areas of risk, then their potential for abuse increased exponentially.

More recently, Begle and colleagues (2010) examined the role of cumulative risk in increasing child-abuse potential in a large ( $n = 610$ ) community sample of parents of young children. Cumulative risk scores were based on 13 identified areas of risk for abuse, including: parents' demographic characteristics (e.g. parents' age, parents' gender, income, home cumulative, crowding), parents' perceptions of control and parental satisfaction, environmental risk (e.g. neighborhood characteristics, involvement in neighborhood), child characteristics (e.g. physical health, externalizing behavior), and quality of parent-child interactions. Again, an accumulation of risk was more important in predicting child abuse potential than any single risk factor.

In the current investigation, the association between markers of physical child abuse and the accumulation of stressors or risks experienced was examined (Figure 1, path a). Nine socio-contextual characteristics previously linked to increased risk for child abuse in previous studies were considered. Specifically, low-income status (Wilson, Morgan, Hayes, & Herman, 2004), not graduating from high school (Murphey & Braner, 2000), single parent status (Begle et al., 2010), becoming a parent as a teenager (Afifi, 2007; Connelly & Straus, 1992; Dixon, Browne, & Hamilton-Giachristis, 2004), home overcrowding (Connelly & Straus, 1992), the presence of intimate partner violence (Dixon et al., 2004), neighborhood dangerousness (e.g. Guterman, Lee, Taylor, & Rathouz, 2009), violence against family and friends, and parents' history of abuse as a child (Dixon et al., 2004; Kim, 2009) have been linked to increases in markers of abuse, or substantiated cases of abuse, and were used to create a cumulative risk index. Many previous investigations have only considered one or two risks within a single study of child abuse. By

considering multiple risks in a single index, the current study builds and extends previous efforts to evaluate the impact of social contextual stressors on parents' child abuse potential. Moreover, the present study also considered additional markers of abuse beyond child abuse potential including parents' use of over-reactive discipline, acceptance of spanking, and negative child perceptions. Importantly, parents' perceptions of their ability to control and manage their children's behavior were expected to explain the association between cumulative risk and markers of child abuse. The next section reviews the rationale for examining parents' perceptions of control (parenting locus of control) as a mediator of the relationship between an accumulation of socio-contextual risk and markers of physical child abuse (Figure 1, paths a, b and c).

*Parenting Locus of Control as a Mediator of the Relationship between an Accumulation of Socio-contextual Risk and Markers of Physical Child Abuse*

While establishing an association between cumulative risk and markers for physical child abuse has utility for treatment and prevention by identifying characteristics of individuals with heightened risk for abusing their young children, the mechanisms by which an accumulation of risk affects markers of physical child abuse are not considered. One mechanism by which an accumulation of risk may affect markers for physical abuse is through parenting locus of control (Figure 1, paths a and b). Parenting locus of control refers to parents' beliefs about the balance of power and level of control in the parent-child relationship (Bugental & Happaney, 2000). Parents with an internal parenting locus of control attribute parenting failures to internal causes and feel they are able to impact their children's behavior (Campis, Lyman, & Prentice-Dunn, 1986). An external parenting locus of control occurs when parents perceive themselves as helpless in the parent-child relationship, with some believing their children are actually the ones in control (Bugental & Lewis, 1999; Campis et al., 1986; Rodriguez & Richardson, 2010). Parents with an

external locus of control believe they are unable to control their children's behavior and assume little responsibility for parenting failures (Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998).

Levels of external locus of control may have important implications for child abuse potential (Figure 1, path c). For instance, Rodriguez and Richardson (2010) found that parents' child abuse potential was predicted by parents' parenting locus of control in a community sample of parents and children (ages 4 to 12). Specifically, parents who believed they had little control over parenting failures had higher child abuse potential scores. Stringer and La Greca, (1985) also reported similar findings, parents with a more external locus of control, and not specifically parenting external locus of control, also had significantly higher child abuse potential than parents with an internal locus of control. Additionally, compared to non-abusive mothers, abusive mothers who perceived little control over negative caregiving were more coercive during interactions with their own children and unrelated sibling pairs of children (Bugental, Blue & Cruzcosa, 1989). These parents were especially coercive when interacting with children rated as challenging, possibly because these children were perceived as threats to their power.

Parents' perceptions of parenting control also impact actual parenting practices, including disciplinary practices. For instance, parents of toddler-aged children who attribute their parenting failures to internal causes are more sensitive in parent-child interactions than parents who attribute failures to external causes (Bornstein, Hendricks, Haynes, & Painter, 2007). In contrast, parents with external perceptions of control are more emotional during parent-child interactions, displaying more negative affect during these interactions than parents with a more internal locus of control (Bugental, Blue, & Lewis, 1990). In terms of discipline, parents with external perceptions of control seem to be more inconsistent and use punishment (Kokkinos & Panayiotou, 2007) as well as more over-reactive, or harsh and coercive discipline (Bondy &

Mash, 1999; Martorell & Bugental, 2006) more frequently than parents with a more internal locus of control. Paradoxically then, parents who feel helpless in the parenting role actually have been found to exert more force or control than parents who do not feel helpless (Bugental & Lewis, 1999). Such parents are more sensitive to threats to their power and are more likely to use power-assertion techniques in response to threats (Martorell & Bugental, 2006). For example, while some noncompliance during early childhood is normative, parents with an external locus of control may view noncompliance as a threat to their authority and use coercive strategies, such as shouting or spanking, to force compliance. According to Bugental and Happaney (2000), such a heavy reliance on power-assertive techniques can escalate into abuse.

Yet despite the empirical support for a link between parents' external parenting locus and markers of physical child abuse, the reasons why some parents feel helpless in the parenting role is not clear. Bugental and Lewis (1999) speculate that the roots of parents' perceptions of helplessness are in their relationships with their own parents. Conceptually, parents' parenting locus of control is an extension of their relationship schema acquired through repeated experiences from their own childhoods (Bugental & Happaney, 2000). Possibly, parents who were abused as children began to feel helpless in social relationships and these feelings of helplessness have extended to their relationships with their own children.

However, a relationship schema may be just one pathway for parents to develop an external parenting locus of control. Bandura (1977) suggests that people develop feelings of efficacy and control through performance attainment. Facing numerous challenges detracts from people's feelings of efficacy and control. Additionally, in Seligman's learned helplessness theory (e.g. Seligman, Abramson, Semmel, & von Baeyer, 1975), helplessness occurs through exposure to uncontrollable events. Parents who face social challenges that seem uncontrollable (e.g.

poverty, single parenthood) may be at an increased risk for feeling helpless in general and feelings of helplessness may extend to their perceptions of control in the parenting role. Rather than the magnitude of any particular event, an accumulation of risk may lead to increased feelings of helplessness in general and with parenting in particular (Figure 1, path b). Taken together, the relationship between cumulative risk and child abuse may be mediated by parents' perceptions of external locus of control (Figure 1, paths a, b, and c).

*Moderated Mediation: The Role of Social Support in Reducing the Impact of an Accumulation of Risk*

The presence of supportive social relationships may protect parents, thereby enhancing parenting practices (Figure 1, path d1), because close supportive relationships may decrease stress associated with parenting. In other words, experiencing an accumulation of stressors is emotionally taxing for parents; the presence of a supportive relationship may help parents cope with those stressors and increase parents' sense of control. Typically, two types of support are most frequently noted, emotional support and instrumental support. First, supportive relationships provide parents with emotional support. Parenting is an emotion-laden experience (Dix, 1991; Dix, 1992) and at times can be emotionally draining and frustrating. Emotional support gives parents an outlet for voicing concerns about their own or their children's well-being and provides parents with reassurance of their worth (Belsky, 1984). Second, the people parents have relationships with also may provide instrumental assistance in childrearing, such as providing babysitting services and advice. Having respite from childcare can reduce stress and allow parents to rebuild emotional resources for their children. Parents with reliable social relationships also may receive more financial assistance (e.g. borrowing money for an overdue bill) and practical assistance from their support providers. Such support providers may be able to



provide a means of reducing daily hassles (e.g. getting a ride home if needed) and negative events (e.g. needing help when sick). Overall, supportive social relationships seem to decrease parents' levels of stress and increase their access to resources (e.g. Burrell, Thompson, & Sexton, 1994).

Previous research suggests that parents without socially supportive relationships are at an increased likelihood for abusing their children (Belsky, 1993; Trickett & Susman, 1988). Parents who are dissatisfied with the social support they receive have higher potential for child abuse (Budd, Heilman, & Kane, 2000). Conversely, supportive and satisfying relationships may decrease parents' likelihood of using abusive parenting. For instance, parents who are satisfied with the social support they receive are less likely to have a child maltreatment report than parents who are unsatisfied (Li, Godinet, & Arnsberger, 2011).

Quite possibly, the impact of an accumulation of risk on reducing abuse risk varies by the level of social support parents receive. For parents facing a number of stressful circumstances, socially supportive relationships may buffer against the harmful effects of an accumulation of risk on markers for abuse by increasing parents' feelings of efficacy. Overall, when supportive social relationships are in place, an accumulation of risk may have less of an impact on markers of physical child abuse. Parents who receive needed social support may retain a sense of control in the parent-child relationship. Such parents may be less distressed in the parenting role, less rigid with their children and less likely to use power-asserting parenting techniques, such as over-reactive discipline (e.g. shouting, spanking), that could escalate into abuse. Consistent with this expectation, Litty, Kowalski, and Minor (1996) found that the presence of supportive social relationships mitigates the impact of a single risk, experiencing abuse as a child, on child abuse potential.

The presence of social support may moderate the direct associations between cumulative risk and markers of child abuse (Figure 1, path a) and moderate the indirect path through parenting locus of control (Figure 1, paths b and c). Specifically, when parents lack socially supportive relationships and parents face an accumulation of risk, markers of child abuse may intensify. Without supportive relationships, parents may face numerous uncontrollable life events, develop feelings of helplessness and be at greater risk for abuse. When socio-contextual risk is low, social support may have little or no impact on parenting control or markers of abuse. Less stressed parents may be able to cope with a few daily stressors and may have less need for social support. The protective or moderating role of social support on reducing the impact of an accumulation of risk on markers of child abuse was considered (Figure 1, path d1). While social support may buffer parents from the negative effects of an accumulation of risk on markers of abuse, characteristics of the child, namely level of externalizing behavior problems, may intensify such processes (Figure 1, path d2), a point now discussed.

*Moderated-mediation: Considering Child Externalizing as Amplifying the Association between Cumulative Risk and Markers of Child Abuse*

Early childhood externalizing problems are frequently defined as elevated levels of aggression, impulsiveness, defiance, hyperactivity, inattention, whining, and non-compliance (e.g., Gilliom & Shaw, 2004). While some externalizing behavior is expected during early childhood (e.g. non-compliance, temper tantrums), managing children with elevated levels of behavior problems is stressful for parents (Williford, Calkins, & Keane, 2007). Such children display frequent and intense negative emotional outbursts, are frequently non-compliant and unruly and are often highly aggressive (Campbell, 1995).

Raising a child with high levels of challenging problems may be taxing for parents (e.g. Campbell, 1995). When children are challenging to manage, parents may be especially reluctant to leave them in the care of other adults and, over time, develop negative feelings about their parenting skills and abilities (Atkins & Stoff, 1993). Such parents also may find raising their children to be less rewarding than children who evidence lower levels of externalizing behaviors (Woodward & Fergusson, 2002). When children are frequently defiant, challenging to manage and do not respond to parents' attempts at behavior management, parents may begin to feel they are unable to influence their child's behavior (Kokkinos & Panayiotou, 2007). Particularly concerning is when parents' feelings of competence diminish to a point in which they begin to feel helpless in managing their children's behavior and report having an external parenting locus of control. For instance, Hagekull, Bohlin, and Hammerberg (2001) found that toddler and preschool-aged children's externalizing behavior was directly related to parents' parenting locus of control. In turn, parents with an external locus of control may become more easily frustrated and rely more heavily on physical control (e.g. use of over-reactive discipline such as shouting or spanking) and, as suggested by Martorell and Bugental (2006), may be at increased risk for physical abuse.

Functionally, children's externalizing problems can be both a result of and a trigger for physical abuse. Given that physical abuse seems to arise from over-reactive disciplinary attempts (Trickett & Susman, 1988), children with elevated levels of externalizing behavior problems may be particularly at risk for abuse. While children's externalizing behavior certainly does not cause abuse (Belsky, 1993), the sheer frequency of disruptive behaviors does increase the occurrence of disciplinary attempts and creates more opportunities for physical abuse to occur. As Patterson, Reid, and Dishion (1992) argue, children with elevated levels of externalizing behaviors are

likely to evoke more harsh and hostile parenting practices. Adding to the problem, when such harsh and hostile parent-child interactions occur frequently, the risk for such exchanges to rapidly spiral out of control intensifies as well (e.g., Patterson, Reid, & Dishion, 1992). Not surprisingly, children's levels of externalizing behavior problems are an area of risk for physical abuse (Stringer & La Greca, 1985; Trickett, Aber, Carlsen, & Cicchetti, 1991; Woodward & Fergusson, 2002).

Quite possibly, children's externalizing behavior problems may interact with other domains of stress in parents' lives. For instance, Holden and Banez (1996) found that higher levels of parenting stress was associated with greater child abuse potential, only when children were characteristically more demanding, hyperactive, and distractible. Parents who had high levels of personal stress and children with challenging behaviors had the highest child abuse potential. Parents who are overwhelmed with personal stress may not have the emotional resources to manage challenging child externalizing behavior sensitively and may be more likely to use disciplinary attempts (e.g. spanking) that could escalate to abuse. In this sense, having a child with externalizing problems may be viewed by parents as an additional stressor and result in parents feeling more frustrated and distressed. Elevated levels of child externalizing problems may add to parents' stress and intensify feelings of helplessness in the parent-child relationship, increasing markers of physical child abuse. Quite possibly, parents with an external parenting locus of control view children's externalizing behavior problems as a threat to their authority.

Overall, children's externalizing problems may moderate the direct associations between cumulative risk and markers of child abuse (Figure 1, path a) as well as moderate the mediated effect via parenting locus of control (Figure 1, paths b and c). For parents with children with elevated levels of problem behaviors, high levels of problem behaviors combined with an

accumulation of socio-contextual stressors may create a context in which markers of physical child abuse increase, either directly or indirectly by compromising parents' sense of parenting control (i.e., external parenting locus of control). Parents of children who engage in low levels of externalizing behavior may be at less risk for abusing their children even in the presence of an accumulation of stressors because parents may be more likely to retain a sense of control when parenting such children and such children do not challenge parents' authority nor do they evoke over-reactive discipline responses (Figure 1, path d2).

## Methods

### *Participants*

A racially and socio-economically diverse group of mothers of young children was recruited to participate in the present investigation. Eighty-seven mothers participated, but two mothers had children under 18 months of age and were excluded. The final sample was comprised of 85 mothers with children between 1.5 and 5 years of age. Four of the participants were actually grandmothers who were actively involved in raising their young grandchildren (all participants will be referred to as mothers).

Participating mothers averaged 32.37 years of age ( $SD = 7.88$ ; see Table 1). Target children ranged from 18 months to 66 months of age and averaged 37.97 months of age ( $SD = 10.79$ ). Fifty-four target children were boys (63.5%) and thirty-one were girls (36.5%). Over half of participating mothers and target children were African American (56.5% and 60%, respectively), 37.6% of mothers and 40% of children were White, 5.9% of mothers and children were Asian, and 2.4% of mothers and children reported being Indian/Middle Eastern. In terms of ethnicity, 5.9% of mothers and 9.4% of children were Hispanic. Approximately half (48.2%) of participating mothers reported working full-time. More than half of participating mothers

reported being single (51.8%; 38.8% of mothers reported being never married), 37.6% reported being married, and 10.6% reported living with a romantic partner. See Table 1 for more information about study participants.

Table 1

*Summary of Demographic Characteristics of the Diverse Group of Participating Mothers and Their Young Children*

	M(SD)	Range	%
Mothers' Age (years)	32.37 (7.88)	21-65	-----
Target Children's Age (months)	37.97 (10.79)	18-66	-----
Per Capita Income	\$12, 505.30 (\$9693.23)	\$945-46,000	-----
<b>Relationship Status:</b>			
Married	-----	-----	37.6%
Single, Never Married	-----	-----	38.8%
Target Children Sex: Boys			63.5%
Number of Children	1.90 (1.05)	1-5	-----
Number of People in the Home:	3.8 (1.15)	2-7	-----
<b>Educational Attainment:</b>			
Less than high school graduate	-----	-----	8.4%
High School Graduate	-----	-----	16.7%
Some Post-High School Education	-----	-----	25%
College Graduate	-----	-----	38.1%
Master's/Phd	-----	-----	11.9%
<b>Mothers's Race/children's race:</b>			
African American	-----	-----	56.5%/60.00%
White	-----	-----	37.6% /40.00%
Asian	-----	-----	5.9%/5.9%
Indian/Middle Eastern	-----	-----	2.4%/2.4%
Mother age First Pregnancy	24.10 (5.84)	15-41	-----
Mother age Pregnancy with TC	27.09 (6.01)	17-41	-----

## *Procedures*

The procedures and methods used in this investigation were approved by Institutional Review Board at the University of New Orleans prior to data collection. Mothers were recruited from local childcare centers and through on-line advertising. In order to ensure variability in cumulative risk scores, childcare centers that served diverse economic populations were recruited with a particular focus on recruitment from centers that serve low-income families. Recruitment at childcare centers included posting fliers, sending fliers home with parents, emailing information about the study to mothers utilizing the childcare center, and project staff signing mothers up for the study during typical morning drop off and afternoon pick up times. Information about the study was also posted on local on-line classified advertisement. Mothers that expressed interest in participating were given more information about the project over the phone or in person (e.g. while picking up or dropping off their child). If mothers were still interested in participating, an in-home visit was scheduled.

Prior to completing the in-home interview, interviewers obtained informed consent from mothers and explained the interview process and answered questions about the study. In-home interviews lasted 1 to 2 hours. Mothers completed a set of self-report questionnaires with an interviewer. Mothers were informed that they could skip any item or ask questions during the interview. All mothers were given the option of completing the questionnaires on their own or to have questions read aloud. Questionnaires measured demographic characteristics, target children's behavior, parenting beliefs, stressful life event (i.e. intimate partner violence), and parenting practices.

A subsample of 65 mothers completed an additional questionnaire about their acceptance of using spanking as a discipline technique. In addition, these mothers completed a five-minute,

audio-recorded speech sample about study target children and their relationship with target children. Each mother was told to talk for five-minutes about her child, describing what kind of child her child is and her relationship with her child over the past six month. Mothers were not told to focus on any specific characteristic or behavior; instead mothers were instructed to “talk about whatever you want to about your child.”

All participants were monetarily compensated for their time (\$20 for the first 20 participants and \$40 for the rest of participants). Mothers also received a resource manual filled with child friendly activities, community resources, and information about child development. Mothers were given a small toy appropriate for their target children (\$2 value).

Later, trained undergraduate and graduate coders rated the speech samples using *The Manual for Coding Expressed Emotion in the Preschool Five-Minute Speech Sample* (Daley, 2007). Coders received 10 hours of training and completed six practice tapes before beginning coding. Only codes that recorded the frequency of mothers’ critical or positive comments were used in the present study. To monitor reliability, 20 percent of the audio recordings were double coded. Interrater reliability was examined by computing the percent of double coded audio recordings that were in agreement. Agreement was defined as having a discrepancy of 2-points or less. Coders meet regularly to discuss tapes and review discrepancies of double coded tapes. Coding from five minute speech samples were used to create negative perceptions of child scores.

### *Measures*

*Cumulative risk.* Cumulative risk included a variety of socio-contextual areas in which mothers may experience stress. The selection of risks was based on previous investigations that have documented associations between each risk indicator and markers of abuse or actual abuse.



The following socio-contextual stressors were included: 1) low income, 2) low educational attainment, 3) single parent status, 4) pregnancy with first child during adolescents, 5) home overcrowding, 6) history of intimate partner violence, 7) neighborhood dangerousness, 8) violence against family and friends, and 9) history of abuse when parents were children.

Cumulative risk scores were created using data collected from a demographics questionnaire (see Appendix A), the Conflict Tactics Scale-Short Form (Straus & Douglas, 2004; see Appendix B), the Me and My Neighborhood Questionnaire (Trentacosta et al., 2008; see Appendix C), and the Child Abuse Potential Inventory (CAPI; Milner, 1986; see Appendix D). Following the methods of Rutter (1979), each indicator was assigned (1) at-risk or (0) no risk. For home overcrowding, neighborhood dangerousness, violence against family and friends and history of abuse when parents were children, the “at-risk” designation was assigned if parents’ scored one standard deviation above (or below) the mean. This scoring procedure has been used in other cumulative risk research (e.g. Trentacosta et al., 2008).

Six areas of risk (mothers’ income, mothers’ education, mothers’ age at first birth, relationship status, home overcrowding) were measured using the demographics questionnaire (see Appendix A). *Low income* was based on mothers’ reports of their total monthly income, the total number of people that income supports, and poverty rates. A poverty score was computed by dividing mothers’ total income (income from all sources) by the poverty rate based on the number of people mothers’ income supports. An income to needs ratio of 2.0 or less was used to indicate risk status. A 2.0 income-to-needs ratio indicates an income twice the amount of the poverty level.

*Low education status* was coded based on whether or not mothers graduated from high school. Mothers who did not graduate from high school were coded as at-risk (1) and all other

mothers were not risk (0). Mothers who obtained a GED were coded as not risk only if they went on to obtain further education (e.g. received a college degree). *Early parenthood* was coded based on mother's age at birth of her first child. Mothers who were 19 years of age or younger were considered at risk, mothers 20 years of age or older were not at risk. *Single parent status* was coded as 1 (risk), married or partnered status (living with a romantic partner) was coded as 0 (no risk). *Home overcrowding* was measured following the strategy used by Begle and colleagues (2010). Mothers reported the number of people that live in their home (at least three nights a week) and the number of rooms in their home. Home overcrowding scores were created by dividing the number of total people in the household by the number of rooms in the household. Average home overcrowding scores were .55 (SD = .22). Scores 1 standard deviation or more above the mean were given a score of 1 (risk).

Mothers' *history of intimate partner violence* was assessed by the Conflict Tactics Scale-Short Form (Straus & Douglas, 2004; see Appendix B). The Conflict Tactics Scale is a widely used, and widely validated, self-report questionnaire of intimate partner violence. The Conflict Tactics Scale-Short form includes 20 items in which respondents rate the frequency that each item has happened over the past year during disagreements with their partner (ranging from 0 = never happened to 6 = happened over 20 times). Mothers can also endorse a score of "7" if intimate partner violence has not happened in the past year, but has happened in the past. In the present study, mothers did not complete the four sexual violence questions, completing only 16 of the 20 items. Ten of the 16 items assessed intimate partner violence, with eight of the items measuring how many times mothers were the aggressor (e.g. "I punched or kicked or beat-up my partner") and eight items measuring how many time the mothers were the victim (e.g. "my partner punched or kicked or beat me-up"). Straus and Douglas (2004) report that the Short Form

version of the Conflict Tactics Scale has adequate concurrent validity as correlations between the Short Form and Long Form of the Conflict Tactics scale range from .64 - .94. Importantly, the Conflict Tactics Scale-Short form is significantly correlated with risk factors for intimate partner violence, including having a criminal record and approval of violence (Straus & Douglas, 2004). Mothers who answered any of the 16 items with more than a “0” were coded as at-risk.

*Neighborhood dangerousness* and violence against friends and family was assessed with the dangerousness subscale of the Me and My Neighborhood Questionnaire, which is a 20-item, parent self-report questionnaire (Trentacosta et al., 2008; see Appendix C). Nine items were used to assess neighborhood dangerousness and 11 items assessed violence against family and friends. Mothers rated the frequency of dangerous events in their neighborhood and family and friends’ experience of violence of the past year (e.g. “You hear about a shooting near your home”) and family and friends’ experience of violence (e.g. “A family member got robbed or mugged”) using a 4 point Likert scale ranging from “1 = never” to “4 = often.” Neighborhood dangerousness scores were created by averaging responses to each of nine items that comprise the scale. (M = 1.53; SD = .50). Violence against family and friends scores were computed by averaging the 11 items that comprise that scale (M = 1.20; SD = .29). Replicating Trentacosta and colleagues (2008), for both neighborhood dangerousness and violence against family and friends scores over 1 standard deviation above the mean were coded as a 1 (risk).

The presence of *physical abuse during mothers’ childhood* was measured using four items from the CAPI (Milner, 1986). None of these items were included in the abuse subscale. Items included: “My parents did not really care about me,” “As a child, I was abused,” “As a child, I was knocked around by my parents,” and “As a child, I was often afraid.” Mothers rated if they agreed (1) or disagreed (2) with each item. Little information is available about the

psychometric properties of the four items assessing parents' experience of abuse during their childhood. These items were used by Begle and colleagues (2010) as an indicator of abuse when parents were children and demonstrated adequate internal consistency (Cronbach's  $\alpha = .71$ ). In the present study, stronger internal consistency was evident (Cronbach's  $\alpha = .85$ ). Following the methods of Begle and colleagues (2010), responses for each item were averaged ( $M = 1.84$ ;  $SD = .31$ ) and scores 1 standard deviation or more above the mean were given a score of 1 (risk).

An overall cumulative risk score was computed by summing the 9 dichotomized risk variables. Possible scores range from 0-9 with higher scores reflecting a greater accumulation of risk. The average cumulative risk score was 2.34 ( $SD = 1.71$ ) indicating some modest variability in risk (see Table 2).

Table 2

*Descriptive Statistics for Cumulative Risk, Parenting Locus of Control, Children's Externalizing Behavior, and Markers of Abuse*

	<i>M (SD)</i>	Possible Range	Actual Range	$\alpha$	Skew	Kurtosis
Cumulative Risk	2.34 (1.71)	0-9	0-9	-----	.83	1.37
Parenting Locus of Control	2.30 (.34)	0-5	1.51-2.96	.77	.01	-.65
Social Support	113.13 (20.00)	0-141	52-141	.94	-.89	.30
Children's Externalizing Behavior	.49 (.30)	0-2	0-1.35	.88	.71	.07
Child Abuse Potential	95.07 (72.52)	0-497	9.00-401.00	.88	2.12	.58
Over-reactive discipline	2.16 (.79)	1-7	1.00-4.30	.66	.56	-.26
Spanking Acceptance	1.29 (.81)	0-4	0-3.5	.82	.36	-.25
Negative Child Perceptions	26.93 (27.57)	0-100	0-100	-----	.78	-.36

*Parenting locus of control.* Parents' parenting locus of control was assessed with the Parental Locus of Control Scale (PLOCS; Campis, Lyman, & Prentice-Dunn, 1986; see Appendix E). The PLOCS is 47-item parent self-report questionnaire in which mothers rate their level of agreement with statements regarding control in the parent-child relationship (e.g. "If your child tantrums no matter what you try, you might as well give up"). Items are rated on a 5-point Likert scale ranging from "1 = strongly disagree," to "5=strongly agree." Lower scores on the PLOC reflect an internal parenting locus of control (e.g., "I am responsible for my child's behavior) and higher scores on the PLOC reflect an external locus of control (e.g. "What I do has little effect on my child's behavior). In order to create a PLOC scores, item responses were averaged. Scores were found to be generally low ( $M = 2.30$ ), indicating that most mothers reported an internal parenting locus of control. The variability around this mean also was very low ( $SD = .34$ ; see Table 2). In the current study, internal consistency estimates were at levels comparable to other studies (current study: Cronbach's  $\alpha = .77$ ; published studies range: .70 to .81; Campis et al., 1986; Lovejoy, Verda, & Hays, 1997).

*Social support.* Mothers' perceptions of social support were assessed with an adapted version of the Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983; see Appendix F). The ISEL is a self-report measure that was designed to assess social resources available for coping with stressful circumstance (Cohen & Hoberman, 1983). The ISEL contains 40 items measuring perceptions of the availability and reliability of support social relationships, (e.g. "There is at least one person I know whose advice I really trust"). Respondents rate their level of agreement with each item on a 4 point Likert scale ranging from "3 = definitely true," to "0 = definitely false." Like previous studies using the ISEL with parents (Feldman, Varghese, Ramsay, & Rajska, 2002), the wording of some of the items was changed because the original

questionnaire was designed for use with college students. In addition to the 40 original items, seven items were added for this study to measure mothers access to social support in regard to child-related stressors (e.g. “If I needed someone to watch my child[ren] for the evening, I could easily find someone”). In the present study, parents’ responses to the original 40 items demonstrated strong internal consistency ( $\alpha = .93$ ), similar to Feldman and colleagues ( $\alpha = .88$ ). Adding the 7 child related support items did not change the overall internal consistency ( $\alpha = .94$ ). Some items were reverse coded so that higher scores indicated more social support. Next, responses to the 47-items were summed. In general, scores were moderately high ( $M = 113.13$ ;  $SD = 20.00$ ) indicating that mothers reported having access to social support.

*Children’s externalizing behavior problems.* The Child Behavior Checklist for ages 1 ½ to 5 (CBCL; Achenbach & Rescorla, 2000; see Appendix G) was used to assess children’s externalizing behavior problems. Mothers rated 100 items on a three point Likert scale (0 = not true, 1 = sometimes/somewhat true, 2 = very true/mostly true) indicating how much each statement describes their children’s behavior during the past 2 months. Only the 26-items from the externalizing subscale were used in this study (e.g. “Destroys things belonging to his/herfamily or other children”). The CBCL is a widely used to measure externalizing problems and has been demonstrated it is a reliable measure of children’s behavior problems (Achenbach & Rescorla, 2000). Furthermore, the CBCL has been extensively validated with Cronbach’s alpha coefficients ranging from .89 to .96 for the externalizing (Achenbach & Rescorla, 2000). In the present study, excellent internal consistency was found (Cronbach’s  $\alpha = .88$ ). Externalizing scores were computed by averaging the 26 items. On average, scores were low ( $M = .49$ ;  $SD = .30$ ; see Table 2), indicating that few mothers’ reported their children displayed elevated externalizing behavior problems.

*Markers of Abuse.* Four markers of abuse risk were assessed. The following section describes the measures used for each marker.

*Child abuse potential.* Mothers' potential for child abuse was assessed with the abuse scale from the Child Abuse Potential Inventory (Milner, 1986; see Appendix D). While originally developed as a screening tool for child welfare workers to evaluate parents' risk for engaging in abusive practices, the CAPI has been widely used in empirical studies to evaluate parents' level of risk for physical child abuse (Milner, 1986). The CAPI assesses the presence of dispositional and interpersonal characteristics that are common in physically abusive parents. The instrument includes 160 items with a forced choice format in which parents respond to each statement with agree or disagree. Risk for child abuse, or child abuse potential, is based on 77 items which comprise the abuse scale. In addition to an overall abuse scale, items also created six subscales including: distress (e.g. "I am often easily upset"), rigidity (e.g. "Children should never disobey"), unhappiness (e.g. "I do not laugh very much"), problems with child and self (e.g. "I have a child who is bad"), problems with family (e.g. "My family fights a lot"), and problems with others (e.g. "Other people have made my life unhappy"). To create child abuse potential scores, each of the 77 abuse items is assigned a weighted values based on scoring guidelines (Milner, 1986; see Appendix H for weighted scores). Weighted values are summed and higher scores indicate a more characteristics that are typical of abusive parents, or greater child abuse potential. Two clinical cut-off scores have been identified. The original clinical cut off is 215. Concerns that this cutoff was too stringent lead to identification of an additional cutoff score of 166. In the current study, the mean child abuse potential score was 95.07 (SD = 72.52), far below either clinical cut-point for risk. Using the conservative cutoff score of 215, four mothers met



the criteria for clinically significant abusive risk, with the less conservative cutoff score, ten mothers were above the clinical cutoff for elevated abuse potential.

Since the scoring procedures involves weighting each item in terms of the magnitude of the association with risk for engaging in child abuse, reviewing the most frequently rated items provides a general overview of the level of severity of the child abuse risk for the sample. Of the 77 items, mothers were most likely to endorse: “I find it hard to relax,” “A child should never talk back,” “Children should stay clean,” “I have several close friends in my neighborhood (reverse scored),” “I often feel better than others (reverse scores),” “Right now I am deeply in love (reverse scores),” “I am usually a quiet person,” and “People have caused me a lot of pain.” In general, these 8 items are weighted rather low in terms of child abuse risk. Indeed, of the 8 items most frequently endorsed, “I am usually a quiet person,” and “People have caused me a lot of pain”) had the highest weighted scores of 6. On the entire scale, the weighted values ranged from x to xx. This pattern of responses indicates that most mothers endorsed items which were not strongly linked to child abuse risk.

Mothers’ child abuse potential scores demonstrated strong internal consistency ( $\alpha = .88$ ), at levels consistent with other published findings. Repeatedly, the CAPI has been demonstrated to have good psychometric properties (see reviews by Chaffin & Valle, 2003; Milner, 1986), particularly for the Abuse Scale (ranging from .91 to .95; Walker & Davies, 2010). Furthermore, Milner (1984) reported strong test-retest reliability estimates for 1 week (e.g.,  $r = .90$  and 1 month ( $r = .83$ ) abuse scores. Similarly, Chaffin and Valle (2003) reported a two-week test-retest reliability of .91. Scores on the CAPI have documented success rates in correctly discriminating abusive from non-abusive parents ranging from 80 to 99 percent (Caliso & Milner, 1994; Milner, 1994; Walker & Davies, 2010). Finally, scores on the abuse scale have been found to correlate

with parents' endorsement of spanking (Medora, Wilson, & Larson, 2001) use of physically restrictive behaviors (Munz et al., 2010).

*Over-reactive Discipline.* The Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993; see Appendix I) was used to assess parents' use of over-reactive discipline when disciplining their young children. The Parenting Scale consists of 30 items and presents parents with a typical parent-child conflict situation. Parents rate their typical reactions using a 7-point scale, with opposing reactions as each anchor. The over-reactive discipline scale consists of 10 items and reflects parents' use of discipline that is harsh and angry (e.g. corporal punishment, screaming, cussing, insulting child). A sample stem includes, "when there's a problem with my child," and the anchors for the item ranges from "things build up and I do things I don't mean to do," to "things don't get out of hand." Parents then choose where their typical behavioral response falls along that continuum. Some items also measure parents' frequency of using corporal punishment and shouting. For instance, parents' are given the stem, "When my child misbehaves, I spank, slap, grab or hit my child." Parents are then asked to rate the frequency of this behavior ranging from "never or rarely," to "most of the time." Arnold and colleagues (1993) reported good internal consistency for the over-reactive discipline scale ( $\alpha = .82$ ) and test-retest reliability of .82 over a two-week period. In the current investigation, internal consistency was somewhat adequate ( $\alpha = .66$ ) Over-reactive discipline scores were created by averaging item responses. Most mothers reported very little use of over-reactive discipline ( $M = 2.16$ ;  $SD = .79$ ; Table 2).

*Spanking acceptance.* The Discipline Beliefs Questionnaire (DBQ; McGoron & Scaramella, 2011; see Appendix J) was created for the present investigation to assess the degree to which participants believe in using spanking as a discipline strategy. The DBQ consists of 15 statements about the use of and effectiveness of discipline strategies that are common with young

children (e.g. time-out, planned ignoring, reinforcing positive behavior, and spanking). Sample items included: “Using time-out is a good way to change a child’s behavior,” and “The best way to handle a temper tantrum is to ignore it.” Parents rated their level of agreement with each statement on a 5-point Likert scale (0 = strongly disagree to 4 = strongly agree). Items tapped into parents’ general attitudes towards each type of parenting behavior. Six items targeted spanking acceptance (e.g. “Spanking is the best way to discipline a misbehaving child.”). These six items were averaged to create spanking acceptance scores. As is presented in Table 2, items demonstrated excellent internal consistency ( $\alpha = .82$ ), but scores were generally low ( $M = 1.29$ ;  $SD = .81$ ), indicating parents tended not to believe that spanking was an acceptable form of parenting.

*Negative child perceptions* (see Appendix K). Mothers’ negative perceptions of their children were rated from the 5-minute audio-recorded speech samples. Two codes from *The Manual for Coding Expressed Emotion in the Preschool Five-Minute Speech Sample* were used to create Negative Perceptions of Child scores: *positive comments* and *critical comments*. For *positive comments*, coders marked the occurrence of each descriptive statement parents made about their child with a positive valence, such as praise or approval (e.g. “he is a great kid”). Comments from parents that involved finding fault with their child or that were critical of their child were scored as *critical comments* (e.g. “he is bad,” “he has terrible tantrums”). Only positive and critical comments were rated. Neutral comments were not rated (e.g., “he is four years old”). For *positive comments*, 81.8% of double coded ratings were in agreement (discrepancy of 2-points or less).. For *negative comments*, 90.9% of double coded ratings were in agreement.

A score reflecting the proportion of critical comments relative to positive comments was created by tallying the total number of positive and critical comments and dividing this total by the critical comments total. Thus, negative child perceptions scores reflect the proportion of parents' negative comments about their child relative to the total number of positive or negative comments made. On average, 26.93% of mothers' coded comments were critical ( $SD = 27.57$ ; see Table 2). Slightly over one quarter of the mothers never made a negative comment about their child.

#### *Data Analytic Plan*

Prior to testing any study hypotheses, preliminary analyses were computed to evaluate the means, standard deviations, univariate skew, kurtosis, and outliers for each study construct. In order to rule out potential confounds of participant race and child sex, a set of paired t-tests were computed for all study constructs by mother race and child sex. Additionally, the impact of child age on all study constructs was examined through correlational analyses. Next, correlations among study constructs were examined for consistency with hypotheses.

The mediation hypotheses (Figure 1, paths a, b, and c) were examined using multiple regressions following the procedures outlined by Baron and Kenny (1986). According to Baron and Kenny (1986), four conditions must be satisfied to demonstrate mediation. First, in order to demonstrate a basis for mediation there must be statistically significant associations between the predictor variable and the outcome variables. In the present investigation, statistically significant associations between cumulative risk and each marker of physical child abuse would satisfy this condition (Figure 1, path a). In the second step, the predictor variable must be statistically and significantly related to the mediator. In the present investigation this step would require a statistically significant association between cumulative risk and parenting locus of control

(Figure 1, path b). Third, a statistically significant association must emerge between the mediator variable and the outcome variables while statistically controlling for the predictor variable. For the present investigation, parenting locus of control was required to be related to each marker of physical abuse beyond cumulative risk (Figure 1, path c). Finally, if the first three conditions are satisfied, the association between the predictor variable and the outcome variables is reexamined was statistically controlling for the mediator variable. Full mediation occurs when the beta coefficient associated with predictor variable is no longer statistically significant once the variance associated with the mediator has been estimated. Partial mediation occurs when the strength of the beta coefficient associated with the predictor variable has been decreased but remains statistically significant after the variance associated with the mediator has been estimated. Consistent with hypotheses, the strength of the association between cumulative risk and each marker of physical child abuse was expected to be diminished once the variance associated with parenting locus of control was estimated.

In addition to using the steps outlined by Baron and Kenny (1986), planned analyses included taking further steps to verify the mediation model. First, planned analyses included computing Sobel tests (Sobel, 1982) to determine if the mediator variable (parenting locus of control) explained a statistically significant portion of the variance of the association between cumulative risk and each of the child abuse markers. Next, planned analyses included examining the statistical significance of the indirect effect by calculating the 95 % bias corrected confidence interval using the bootstrapping technique developed by Preacher and Hayes (2008).

Next, steps were taken to examine the moderated-mediation hypotheses (Figure 1, paths d1 and d2). First, analyses examined if social support and/or children's externalizing behavior problems moderated each path in the mediation model. Moderation analyses were examined by

computing four stepwise hierarchical linear regressions. Before analyses were computed, a series of interaction terms were created by first centering social support, children's externalizing behavior problems, cumulative risk and parenting locus of control. Next, moderators were multiplied by the main effects to create the following interaction terms: 1) cumulative risk x social support, 2) parenting locus of control x social support, 3) cumulative risk x externalizing behavior problems, 4) parenting locus of control x children's externalizing behavior problems. For each analysis, mothers' race was entered in the first step, centered predictor variables were entered in the second step, and the interaction terms were entered in the third step. The first hierarchical regression examined if social support moderated the path between cumulative risk and parenting locus of control (Figure 1, path b). Next, social support was examined as a moderator of the associations between cumulative risk and markers of physical child abuse and parenting locus of control and markers of physical child abuse (Figure 1, paths a and c). Each marker of physical child abuse was examined in separate analyses. Finally, the same steps were taken to examine children's externalizing behavior problems as a potential moderator of the mediation model.

Finally, if regression analyses were consistent with the moderated-mediation model, the planned analyses included using the methods outlined by Preacher, Rucker, and Hayes (2007) to examine if the indirect relationship was moderated by calculating the 95% bias corrected confidence interval at different levels of the moderator variables (Preacher et al., 2007). The following sections first describe results of preliminary analyses and then describe results of hypotheses testing.

## Results

### *Preliminary Data Analyses*

Means, standard deviations, ranges, levels of skew, levels of kurtosis, and outliers are summarized in Table 2. Means indicated generally low levels of cumulative risk, externalizing problems and markers of abuse, but modest levels of reported social support and parenting locus of control. None of the constructs had levels of skew or kurtosis that required statistical correction (e.g., log transformation) in that all of the scores were below 3.0. For child abuse potential, three outliers were found (extremely high scores). Given the small sample size and the fact that the interest of the present investigation was factors that lead to heightened markers of physical child abuse, cases with high child abuse potential scores were retained. No other outliers were found.

Preliminary analyses were computed to consider the extent to which study constructs varied reliably based on mothers' race, child sex, or child age. First, scores were compared by mothers' race (i.e., African American vs. any other race) and then by child sex (boy vs. girl). Regarding mother race, as compared to mothers of other races, African American mothers had statistically significantly higher cumulative risk scores ( $t [83] = 3.49, p < .01$ ; Non-African American:  $M = 1.65, SD = .39$  and African American:  $M = 2.88, SD = 1.72$ ) and reported using less over-reactive discipline practices (see Table 3). Since race differences were not hypothesized, mothers' race was statistically controlled for in all regression analyses. Next, scores were compared by child sex, no statistically significant differences in the means of any study constructs emerged for boys and girls (see Table 4). Child sex was not statistically controlled for in any subsequent analyses. Finally, bivariate correlations were computed to evaluate whether scores on study constructs were related to child age. No statistically significant

correlations emerged (see Table 5). Thus, child age was not statistically controlled for in any of analyses.

Table 3

*Summary of T-test Analyses Examining the Influence of Mothers' Race on Study Constructs*

	African American <i>M(SD)</i>	Non-African American <i>M(SD)</i>	<i>t(df)</i>	<i>p</i> -value
Cumulative Risk	2.88 (1.72)	1.65 (.39)	3.49 (83)	.00
Parenting Locus of Control	2.28 (.30)	2.32 (.39)	-4.61 (83)	.65
Social Support	113.23 (21.46)	113.00 (18.23)	.05 (83)	.96
Children's Externalizing Behavior	.45 (.29)	.54 (.31)	-1.33 (83)	.19
Child Abuse Potential	100.58 (88.90)	87.92 (43.14)	.86 (71.41)	.39
Over-reactive discipline	1.98 (.75)	2.38(.80)	-21.37 (83)	.02
Spanking Acceptance	1.43 (.80)	1.12 (.81)	1.62 (69)	.11
Negative Child Perceptions	30.47 (29.32)	23.47 (25.20)	1.02(63)	.31



Table 4

*Summary of T-test Analyses Examining the Influence of Children's Gender on Study Constructs*

	Boys <i>M(SD)</i>	Girls <i>M(SD)</i>	<i>t(df)</i>	<i>p</i> -value
Cumulative Risk	2.20 (1.46)	2.58 (1.93)	.98 (83)	.33
Parenting Locus of Control	2.31 (.35)	2.27 (.33)	1.53 (83)	.61
Social Support	115.63 (19.44)	108.77 (20.53)	.50 (83)	.13
Children's Externalizing Behavior	.50 (.32)	.47 (.27)	-.15 (83)	.62
Child Abuse Potential	94.19 (77.58)	96.61 (63.95)	-.15 (83)	.88
Over-reactive discipline	2.15 (.81)	2.17 (.77)	-.14 (83)	.89
Spanking Acceptance	1.33 (.85)	1.24 (.75)	.43 (69)	.67
Negative Child Perceptions	24.51 (28.28)	31.89 (26.23)	-1.05 (63)	.30

Table 5

*Correlations among Age, Cumulative Risk, Parenting Locus of Control, Social Support, Children's Externalizing Behavior Problems, and Markers of Physical Child Abuse*

	1.	2.	3.	4.	5.	6.	7.	8.
1. Age: Children's	-----							
2. Cumulative Risk	.07	-----						
3. Parenting Locus of Control	.07	.05	-----					
4. Social Support	-.03	-.22*	-.33**	-----				
5. Children's Externalizing Behavior	-.06	.17	.40**	-.29**	-----			
6. Child Abuse Potential	.07	.40**	.29**	-.52**	.37**	-----		
7. Over-reactive discipline	.11	.02	.18	-.17	.22*	.34**	-----	
8. Spanking Acceptance	.14	.03	.08	-.05	-.04	.18	.34**	-----
9. Negative Child Perceptions	-.11	.17	.04	-.22 <sup>+</sup>	.22 <sup>+</sup>	.29*	.23 <sup>+</sup>	.35**

<sup>+</sup>  $p < .10$ , \*  $p < .05$ ; \*\*  $p < .01$

### *Correlational Analyses*

Before testing the hypotheses with linear regression, bivariate correlations were computed to evaluate the extent to which study constructs were associated in expected ways. As described in Table 5, markers of physical child abuse were statistically and significantly correlated with each other, with two exceptions. Child abuse potential was not significantly correlated with spanking acceptance (see Table 5,  $r = .18$ ,  $p = .13$ ) and the correlation between negative child perceptions and over-reactive discipline approached statistical significance ( $r = .23$ ,  $p = .07$ ). As expected, the remaining child abuse risk scores were modestly correlated, ranging from .29 to .35.

Regarding the theoretical expectations for the mediational model depicted in Figure 1, statistically significant correlations between cumulative risk, parenting locus of control, and indicators of abuse risk were expected but were not found. Cumulative risk was only significantly associated with mothers' child abuse potential, but was unrelated to any other marker of child abuse or with parenting locus of control (see Table 5). Like cumulative risk, parenting locus of control was only significantly correlated with child abuse potential, but not with any other marker of child abuse (see Table 5).

Regarding the identified moderators, as reported in Table 5, more social support was significantly associated with less cumulative risk, a more internalized parenting locus of control, and lower child abuse potential scores. Similarly, higher levels of reported child externalizing behavior problems were associated with a more external parenting locus of control, less social support, higher child abuse potential scores, and more over-reactive discipline (see Table 5).

In general then, the pattern of correlations provided little empirical support for the mediational process model. The non-significant association between cumulative risk and

parenting locus of control indicated that mediation, as described in Figure 1, was not possible. Since African American mothers experienced both more cumulative risk and reported less over-reactive parenting, test for mediation were computed, controlling for mothers' race. Separate regression equations were computed for each marker of abuse.

#### *Empirically Evaluating Moderated-Mediation Hypotheses*

*Parenting locus of control mediates the association between cumulative risk and markers of child abuse.* Four regression equations were computed in which each marker of abuse was regressed onto cumulative risk after controlling for mothers' race. Consistent with the correlational analyses, the beta coefficient associated with cumulative risk was only statistically significant in the model estimating the impact of cumulative risk on child abuse potential scores ( $\beta = .43, p < .01$ ), but not in the models estimating the association between cumulative risk and over-reactive parenting, spanking acceptance, and negative child perceptions.

Next, the association between cumulative and parenting locus of control was evaluated controlling for parental race. After controlling for mothers' race, no statistically significant association emerged between cumulative risk and parenting locus of control ( $\beta = .08, p = .49$ ). Given that this condition was required for mediation, or even an indirect effect of cumulative risk on markers of abuse, the remaining regression equations were not computed. Thus, no evidence for mediation emerged.

*Moderated-mediation hypotheses: Social support moderates paths in mediation model.* Social support was hypothesized to condition the paths between cumulative risk and parenting locus of control on markers of physical child abuse as well as the indirect association of cumulative risk, by way of parenting locus of control, on markers of abuse. With no evidence of mediation, mediated-moderation was not possible. However, it remained possible that social

support could moderate each path in the proposed model. Thus, the following analyses first considered the extent to which social support moderated the path between cumulative risk and parenting locus of control and then considered the extent to which social support conditioned the paths between cumulative risk and parenting locus of control on each marker of abuse

Regarding parenting locus of control, after controlling for mother race, the centered cumulative risk and social support scores were entered in the second step, and the interaction term (cumulative risk x social support) in the third step. In terms of main effects, more social support was associated with lower parenting locus of control scores, indicating that mothers with strong social support report a more internal parenting locus of control ( $\beta = -.33, p < .01$ ; see Table 6), but cumulative risk was not associated with parenting locus of control. Next, a statistically significant interaction term emerged ( $\Delta R^2 = .09, p < .01$ ; see Table 6). The interaction was decomposed by calculating the simple slope of parenting locus of control and cumulative risk at mean levels of social support and 1 standard deviation above (high) and below (low) the mean of social support (see Figure 2). At 1 standard deviation above the mean of social support, the simple slope between cumulative risk and parenting locus of control was statistically significant ( $b = .07; t = 2.11; p < .05$ ). At mean levels of social support, the simple slope was not statistically significant ( $b = .01; t = .44, p = .65$ ). A trend towards statistical significance emerged at low levels of social support ( $b = -.05; t = -1.79, p = .08$ ) such that at high levels of risk, social support had no impact on parenting locus of control. When risk is low, however, more support was associated with a more internal parenting locus of control. This result was opposite of expectations.

Table 6

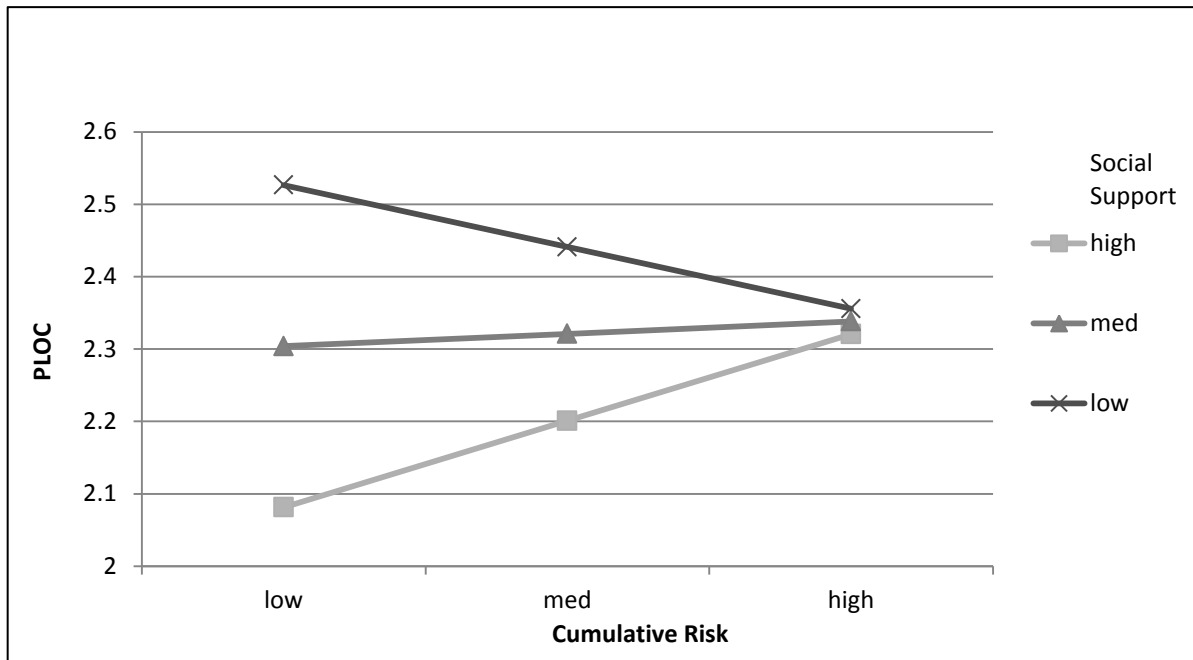
*Summary of Regression Analyses: Examining the Independent and Interactive Effects of Cumulative Risk and Social Support on Parenting Locus of Control while Statistically Controlling for Race*

	$R^2\Delta$	$t$	$\beta$	$p$
Control Variable:	.00			
Mothers' Race		-.46	-.05	.65
Main Effects:	.11			
Cumulative Risk		-.04	-.00	.97
Social Support		-3.10	-.33	.00
Interactive Effects:	.09**			
Cumulative Risk x Social Support		2.89	.30	.00
Overall $R^2 = .20$				

\*\*  $p < .01$

Figure 2

*Decomposing Interaction Term: Social Support Moderates the Association between Cumulative Risk and Parenting Locus of Control*



Next, analyses examined if social support moderated the paths between cumulative risk and parenting locus of control on markers of abuse scores using stepwise hierarchical regression. Like the locus of control models, mother race was statistically controlled in the first step of the equation. The centered cumulative risk, parenting locus of control, and social support scores were entered in the second step. Finally, the two interaction terms were entered in the third step (i.e., cumulative risk x social support and parenting locus of control x social support).

Results of the analyses are presented in Table 7. Regarding the child abuse potential score, a statistically significant main effect emerged for cumulative risk ( $\beta = .31, p < .01$ ) and social support ( $\beta = -.41, p < .01$ ), but not parenting locus of control. Specifically, more cumulative risk and less social support were associated with higher child abuse potential scores. Collectively, cumulative risk and social support explained statistically significant portions of the variance associated with child abuse potential.

Table 7

*Summary of Regression Analyses: Examining the Independent and Interactive Effects of Cumulative Risk, Parenting Locus of Control and Social Support on Markers of Child Abuse while Statistically Controlling for Race*

Markers of Physical Child Abuse												
	<i>CAPI-Abuse Scale</i>			<i>Over-reactive discipline</i>			<i>Spanking Acceptance</i>			<i>Negative Child Perceptions</i>		
	$R^2\Delta$	<i>t</i>	$\beta$	$R^2\Delta$	<i>T</i>	$\beta$	$R^2\Delta$	<i>t</i>	$\beta$	$R^2\Delta$	<i>t</i>	$\beta$
Control Variable:	.01.			.06			.04			.02		
Mother Race		.80	.09		-2.37	-.25*		1.62	.19		1.02	.13
Main Effects:	.37			.05			.01			.06		
Cumulative Risk		3.16	.31**		.70	.08		-.45	-.06		.67	.09
PLOC		1.43	.13		1.13	.13		.59	.08		-.20	-.03
Social Support		-4.23	-.41**		-.96	-.11		-.31	-.04		-1.56	-.21
Interactive Effects:	.06			.01			.02			.00		
Cumulative Risk x Social Support		-1.94	-.18 <sup>+</sup>		-1.03	-.12		-1.05	-.14		.26	.04
PLOC x Social Support		-2.02	-.19*		-.43	-.05		-.10	-.01		-.34	-.05
	Overall $R^2 = .43$			Overall $R^2 = .13$			Overall $R^2 = .06$			Overall $R^2 = .08$		

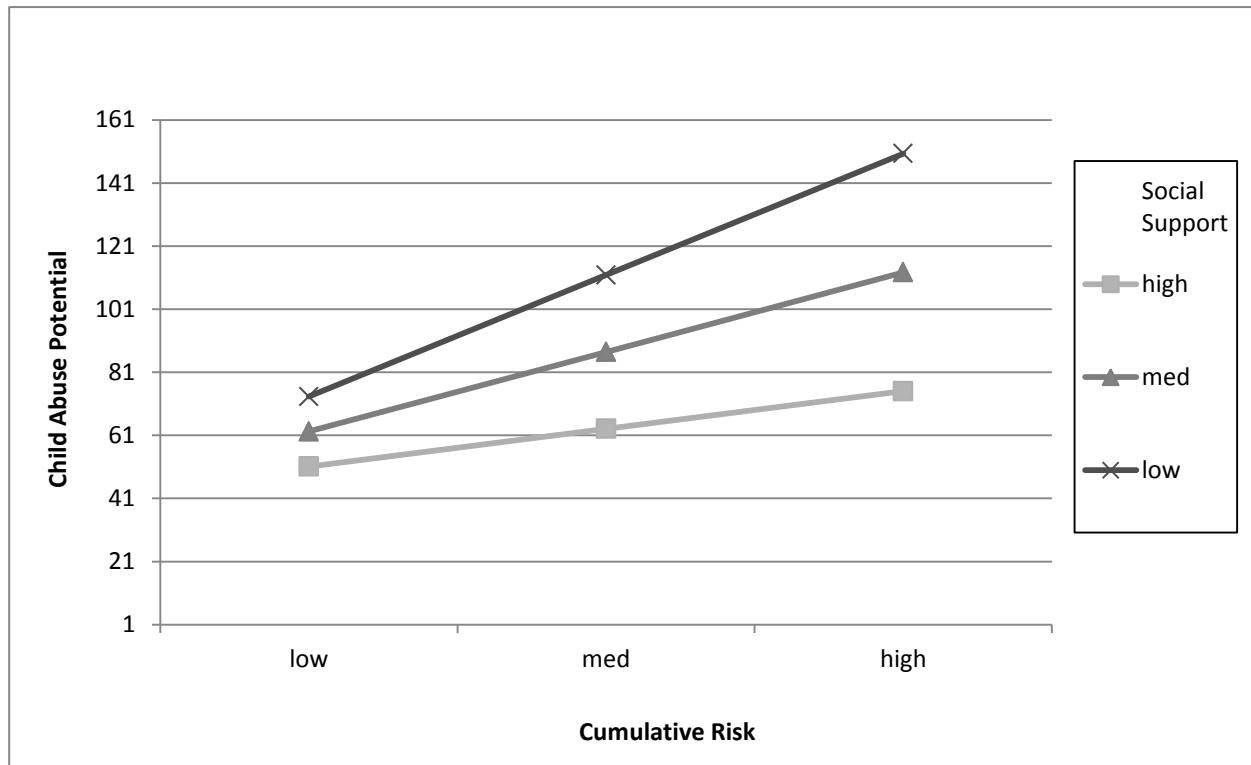
\*  $p < .05$ ; \*\*  $p < .01$



Finally, the interactive effects were estimated. Results revealed that the cumulative risk x social support interaction term was significant at the trend level ( $\beta = -.18, p = .06$ ). Given the small sample size of the present study, the interaction term was decomposed following the same procedures previously described (see Figure 3). The simple slope of cumulative risk and child abuse potential was calculated at 1 standard deviation above and below the mean of social support. Results revealed that at medium and low levels of social support, the simple slope of the association between cumulative risk and child abuse potential was statistically significant ( $b = 14.77; t = 2.18; p < .05; b = 22.55; t = 4.19, p < .01$ , respectively). The simple slope was not statistically significant at high levels of social support ( $b = 6.992; t = 1.11, p = .28$ ). Examination of the decomposed interaction term suggests that social support has little impact on child abuse potential when an accumulation of risk is low. When both an accumulation of risk is high and social support is low, however, child abuse potential was at its highest. Moreover, when social support is high, an accumulation of risk does not appear to impact abuse potential.

Figure 3

*Decomposing Interaction Term: Social Support Moderates the Association between Cumulative Risk and Child Abuse Potential at a Trend Level*

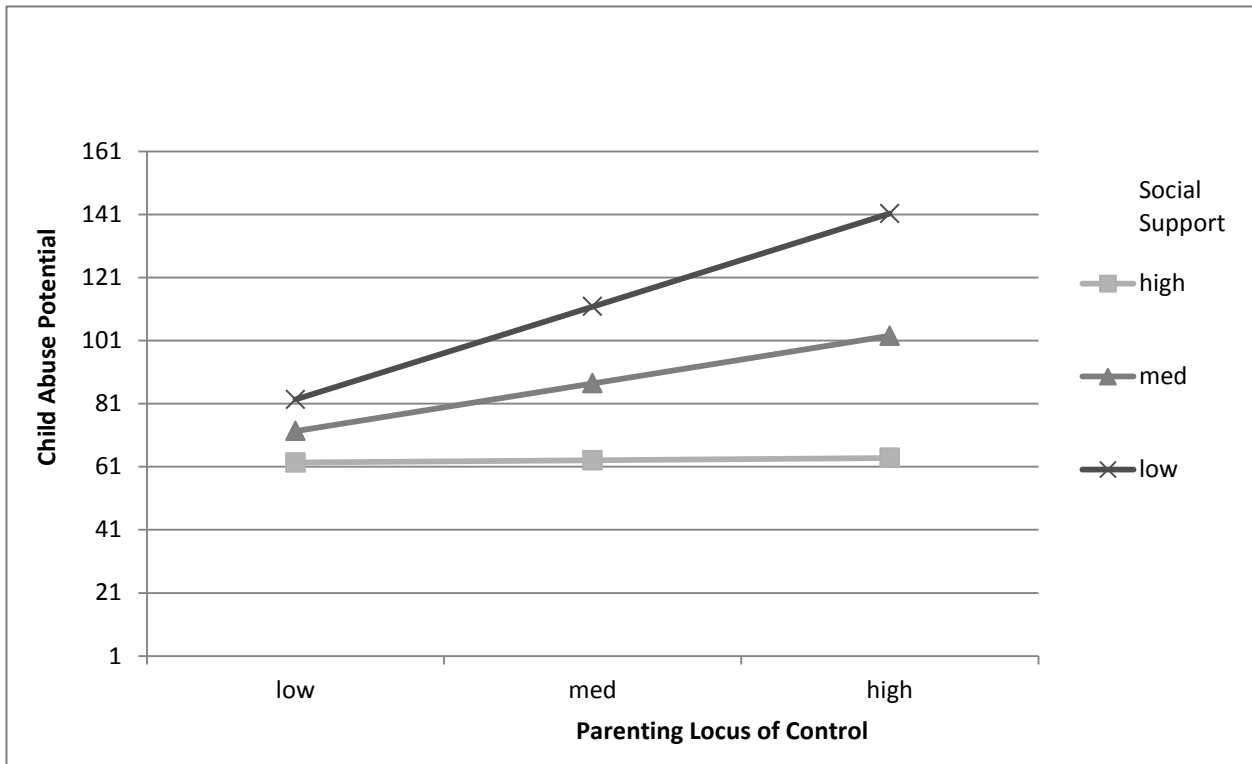


Additionally, the parenting locus of control x social support interaction was statistically significant ( $\beta = -.19, p < .05$ ). The interaction term was decomposed (see Figure 4). The simple slope of parenting locus of control and child abuse potential was estimated at 1 standard deviation above, at, and below the mean of social support. At low levels of social support, the simple slope of the association between parenting locus of control and child abuse potential was statistically significant ( $b = 86.75; t = 2.84, p < .01$ ). The association was not statistically significant at medium or high levels of social support ( $b = 44.45; t = .40; b = 2.15; t = .08$ , respectively). Examination of the decomposed interaction term revealed a pattern similar to the interaction between an accumulation of risk and social support. When parents reported a more internal parenting locus of control, social support had little impact on child abuse potential.

When parents reported a less internal parenting locus of control and social support was low, levels of child abuse potential were at their highest.

Figure 4

*Decomposing Interaction Term: Social Support Moderates the Association between Parenting Locus of Control and Child Abuse Potential*



Considering over-reactive parenting, spanking acceptance, and negative child perceptions, results of the regression equation indicated that cumulative risk, parenting locus of control and social support were not directly nor interactively associated with markers of child abuse (see Table 7).

*Moderated-mediation hypotheses: Children's externalizing moderates paths in mediation model.* The social support analyses were replicated, this time using externalizing behavior as the moderator. Given the potential item overlap between children's externalizing behavior and items that assess *problems with child and self* on the Child Abuse Potential Inventory, analyses with

child abuse potential were computed with and without *the problems with child and self* items. No differences in results emerged. Thus, only results using the full child abuse potential scores are reported.

First, considering parenting locus of control, the interactive effects of cumulative risk x children's externalizing behavior problems did not account for significant portions of the variance left unexplained by the main effects of cumulative risk and externalizing problems. In fact, only the main effect of children's externalizing behavior problems accounted for statistically significant portions of the variance regarding parenting locus of control ( $\beta = .41, p < .01$ ; see Table 8). Specifically, higher levels of child externalizing problems were associated with a less internal parenting locus of control.

Table 8

*Summary of Regression Analyses: Examining the Independent and Interaction Effects of Cumulative Risk and Children's Externalizing Behavior on Parenting Locus of Control While Statistically Controlling for Race*

	$R^2\Delta$	$t$	$B$	$p$
Control Variable:	.00			
Mothers' Race		-.46	-.05	.65
Main Effects:	.16**			
Cumulative Risk		-.18	-.02	.86
Children's Externalizing Behavior		3.83	.41	.00
Interactive Effects:	.02			
Cumulative Risk x Externalizing		-1.01	-.14	.20
Overall $R^2 = .18$				

\*\*  $p < .05$

Next, hierarchical linear regression equations were computed to evaluate the interactive effects of child externalizing problems and cumulative risk as well as child externalizing problems and parenting locus of control on indicators of child abuse risk. Results of the regression analyses are summarized in Table 9. Considering child abuse potential scores, the beta coefficients associated with cumulative risk ( $\beta = .35, p < .01$ ) and externalizing problems ( $\beta = .24, p < .05$ ), but not parenting locus of control were statistically significant. In the second step, neither the cumulative risk x externalizing behavior interaction term nor the parenting locus of control x externalizing interaction term was statistically significant.

Considering over-reactive discipline, acceptance of spanking, and negative child perceptions, in each of the models, none of the beta coefficients associated with the main effects of cumulative risk, parenting locus of control and child externalizing problems or the interactive effects of cumulative risk x externalizing problems and parenting locus of control x externalizing problems were statistically significant (see Table 9). Thus, no support for the expectation that externalizing problems moderated the associations between cumulative risk and parenting locus of control on markers of child abuse emerged.

Table 9

*Regression analyses: Examining the Independent and Interaction Effects of Cumulative Risk and Children's Externalizing Behavior on Markers of Physical Child Abuse while Statistically Controlling for Race*

Markers of Physical Child Abuse												
	<i>CAPI-Abuse Scale</i>			<i>Over-reactive discipline</i>			<i>Spanking Acceptance</i>			<i>Negative Child Perceptions</i>		
	$R^2\Delta$	<i>t</i>	$\beta$	$R^2\Delta$	<i>T</i>	<i>B</i>	$R^2\Delta$	<i>t</i>	$\beta$	$R^2\Delta$	<i>t</i>	$\beta$
Control Variables:	.01			.06			.04			.02		
Mother Race		.80	.09		-2.37	-.25*		1.62	.19		1.02	.13
Main Effects:	.27			.05			.01			.07		
Cumulative Risk		3.35	.35**		.68	.08		-.31	-.04		.65	.09
PLOC		1.67	.17 <sup>+</sup>		.98	.13		.79	.10		1.72	.24
Children's Externalizing		2.22	.24*		1.09	.11		-.30	-.04		-.37	-.05
Interactive Effects:	.00			.01			.01			.04		
Cumulative Risk x Externalizing		-.01	-.00		.88	.00		-.72	-.09		-1.50	-.19
PLOC x Externalizing		-.20	-.02		.03	-.09		-.26	-.04		.67	.09
	Overall $R^2 = .22$			Overall $R^2 = .12$			Overall $R^2 = .06$			Overall $R^2 = .12$		

<sup>+</sup>  $p < .10$ , \*  $p < .05$ ; \*\*  $p < .01$

*Supplemental analyses: Evaluating study hypotheses using the various subscales of the Child Abuse Potential Inventory*

Given that associations emerged only with the child abuse potential scores, post-hoc analyses were computed separately using each of the subscales of the CAPI. This analysis evaluated the extent to which various dimensions of child abuse potential functioned similarly. If the interaction terms among cumulative risk and parenting locus of control with social support were statistically significant, then the interaction terms were decomposed to ensure that the moderated associations were similar within subscales of the abuse potential score. The means and standard deviations for each subscale as well as the correlations among the subscales are summarized in Table 10. Cumulative risk was statistically and significantly correlated with each subscale of the CAPI with one exception, cumulative risk was not statistically and significantly associated with the problems with family subscale ( $r = .18, p < .10$ ; see Table 10). Moreover, parenting locus of control was only statistically and significantly associated with the distress ( $r = .38, p < .05$ ) and unhappiness ( $r = .22, p < .05$ ) subscales. These correlations indicated that the various subscales of the abuse potential score were correlated with the cumulative risk, parenting locus of control, and social support in a similar manner as the overall abuse potential score.

Next, the regression equations estimating the extent to which social support moderated the associations among cumulative risk and parenting locus of control on abuse indicators were computed. Cumulative risk, parenting locus of control, social support and the cumulative risk x social support and parenting locus of control x social support interaction terms were regressed onto each subscale of the CAPI. Only the distress subscale resulted in a statistically significant cumulative risk x social support ( $\beta = -.17, p = .07$ ) and parenting locus of control x social support interaction terms ( $\beta = -.18, p = .06$ ), although at the trend level. Decomposing these interactions



indicated that the pattern of statistical association was identical to the abuse potential score (see Figures 3 and 4). These follow up analyses indicate that of the various components of the abuse potential score, social support conditioned the impact of cumulative risk and parenting locus of control on felt distress.

Table 10

Correlations among cumulative risk, parenting locus of control, social support, children’s externalizing behavior problems and individual scales of the Child Abuse Potential Inventory

	<i>M(SD)</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Cumulative Risk		-----								
2. Parenting Locus of Control		.05	-----							
3. Social Support		-.22*	-.33**	-----						
4. Children’s Externalizing Behavior		.17	.40**	-.29**	-----					
5. CAPI-Distress		.26*	.38*	-.54**	.32**	-----				
6. CAPI-Rigidity		.30**	-.17	.15	.17	.10	-----			
7. CAPI-Unhappiness		.34**	.22*	-.40**	.20+	.47**	-.03	-----		
8. CAPI-Problems with Child and Self		.42**	-.01	-.21+	.19+	.22*	.06	.28*	-----	
9. CAPI—Problems with family		.18+	.15	-.32**	.23*	.41**	.05	.18	.11	-----
10. CAPI—Problems with Others		.39**	.11	-.47**	.18+	.50**	.17	.30**	.34**	.32**

<sup>+</sup>  $p < .10$ , \*  $p < .05$ ; \*\*  $p < .01$

## Discussion

Given the enormous physical and psychological costs incurred by children who are victims of physical abuse at the hands of their parents, theoretical models which clarify the social and psychological processes that influence parents' use of abusive behaviors are needed. Practical and ethical challenges impede scientists' efforts to test theoretical models designed to understand mechanisms associated with parents' risk for engaging in physical child abuse. For instance, parents are as reluctant to report abuse as researchers are to ask about child abuse. This reluctance has led researchers to examine *markers* associated with physical abuse rather than parents' actual use of physically abusive behaviors. Markers of abuse include behaviors that are strongly correlated with child physical abuse (i.e. proximal risk), but in and of themselves are not physically abusive. Following this approach, the present investigation considered four markers of abuse: child abuse potential, over-reactive discipline, acceptance of spanking, and parents' negative child perceptions.

Thus, the goal of the current study was to evaluate a moderated-mediational process model where by an accumulation of socio-contextual risks indirectly increased parents' likelihood of endorsing each of the four markers of abuse (see Figure 1). Specifically, parents who experienced an accumulation of socio-contextual risk (e.g., neighborhood danger, poverty, history of intimate partner violence) were expected to have a diminished sense of parenting control (i.e., external parenting locus of control). Parents who reported feeling helpless in the parent-child relationship were expected to have higher child abuse potential scores, be more likely to use over-reactive discipline, be more accepting of spanking as a disciplinary strategy, and hold more negative perceptions of their children. In addition, the indirect impact of an

accumulation of risk on markers of abuse was expected to diminish under conditions of more social support and be exacerbated under conditions of elevated child externalizing problems.

In general, findings did not support the moderated-mediation process model primarily because no evidence of mediation emerged. That is, the basic assumptions of mediation require all constructs in the model to be statistically and significantly correlated and accumulation of risk scores were unrelated to parenting locus of control scores. Further, an accumulation of risk and parenting locus of control were only significantly correlated with one marker of child abuse risk. Specifically, both an accumulation of risk and parenting locus of control were positively correlated only with levels of child abuse potential. In contrast to the lack of mediational evidence, some evidence for moderation emerged. Namely, social support, but not externalizing problems, moderated the direct associations between parenting locus of control on one markers of physical abuse, child abuse potential. Additionally, social support moderated the association between cumulative risk and child abuse potential, but only at a trend level of statistical significance.

These results not only suggest that the moderated-mediation process model may be mis-specified, but also raise interesting questions regarding markers of physical abuse. The lack of any statistical evidence for parenting locus of control as a mediator suggests the theoretical model may be mis-specified. Additionally, of the four markers of physical abuse identified, statistically significant associations among hypothesized mechanisms of abuse risk only emerged for child abuse potential. The following section will first discuss the implications of the findings in terms of defining markers of child abuse. Next, the consistencies and inconsistencies with the moderated-mediation process model and suggestions for possible changes to the theoretical model will be described. Finally, limitations, strengths, and future directions will be outlined.

*Clarifying Parental Characteristics Associated with Increased Risk for Engaging in Child Physical Abuse*

In general, studies examining risk for physical child abuse in community samples only focus on one marker of abuse, child abuse potential (e.g. Begle et al., 2010; Burell, Thompson, & Sexton, 1994; Holden & Banez, 1996; Medora, Wilson, & Larson, 2001; Rodriguez & Green, 1997; see Rodriguez & Richardson, 2010 for a notable exception). In an attempt to broaden our repertoire of markers of abuse, parenting behaviors, beliefs, and perceptions most proximal to physical abuse were considered. That is, since physical abuse often arises during parents' disciplinary attempts that escalate to the point of abuse (Gershoff, 2002), both the use of over-reactive discipline (e.g., spanking, shouting) and acceptance of spanking as an acceptable disciplinary strategy were used as markers of physical abuse. For instance, when trying to control children's behavior, mothers who are more prone to strong negative reactions and believe in spanking may be more likely to use corporal punishment that could escalate into abuse. Milner (1994) also suggests that abusive mothers' have more negative perceptions of their children. The four markers of physical child abuse were generally modestly correlated, suggesting that child abuse potential scores are associated with the use of harsher discipline practices and negative child perceptions, but not acceptance of spanking. However, theoretical associations among cumulative risk, parenting locus of control and social support only emerged with child abuse potential scores raising important questions regarding the utility of parenting strategies, beliefs, and perceptions as markers of abuse risk.

Before dismissing the viability of harsh discipline practices and beliefs as well as negative child perceptions, though, social desirability could partially explain the lack theoretically meaningful associations. That is, social acceptance of corporal punishment and

negative child perceptions are generally low, despite the fact that most parents use corporal punishment at some point during their children's lives (Strauss & Stewart, 1999). Fears of being reported to child protection authorities also may motivate under reporting harsh disciplinary practices. Mothers also may feel uncomfortable discussing their use of harsh discipline or talking about their children negatively with an interviewer, whom they do not know, as opposed to a close family member or friend. Consistent with this conclusion, greater variability in harsh disciplinary practices have been found when mothers report on their use of harsh disciplinary practices anonymously (e.g. Rodriguez, 2010; Zolotor, Theodore, Chang, Berkoff, & Runyan, 2008).

While social desirability may have resulted in a restriction of range for the three markers of abuse related to parenting behaviors and beliefs, social desirability is less of a concern with the child abuse potential score. The child abuse potential scores include a constellation of mothers' self-reported characteristics, including: dispositions, beliefs, perceptions, and intra and interpersonal difficulties. None of these characteristics directly ask about abusive behaviors or practices and instead capture traits and beliefs that characterize individuals prone to abusive behaviors. In a direct attempt to reduce social desirability, the measure of child abuse potential then lacks face validity (Milner, 1986). The lack of social desirability also can be considered a weakness in that critics of the measure argue that it is unclear as to what the measure actually assesses (Chaffin & Valle, 2003).

Beyond social desirability, though, characteristics of over-reactive discipline, spanking acceptance, and negative child perceptions as measured constructs may limit the utility of these constructs as indicators of abuse risk. Regarding over-reactive parenting, for instance, estimating the actual frequency of using harsh disciplinary practices, such as shouting or spanking, may be

difficult for parents. Such negative reactions of parents often occur during emotionally charged parent-child interactions and parents may not be able to judge the intensity or frequency of their behaviors. Additional research is needed to find alternative procedures to measure over-reactive parenting. Given that over-reactivity reflects poor emotional control, perhaps measuring parents' emotion regulation during frustrating situations would provide a more objective measure of parents' propensity to use over-reactive or harsh parenting.

Similarly, as compared to measuring the frequency and intensity that parents use spanking, acceptance of spanking may not be a good marker of abuse. Although spanking is widely used in the United States, particularly during the early childhood period (MacKenzie, Nicklas, Brooks-Gunn, & Waldfogel, 2011), acceptance and use may not be the same thing. Moreover, Larzelere (2000) argues that even occasional use of spanking is unlikely to lead to abuse as most parents do not escalate their use of corporal punishment. Since effective parenting often requires emotional control in the face of children's unregulated negativity (e.g., Dix, 1991), a better marker of abuse may be simply measuring mothers' ability to regulate negative emotionality. Parents' discipline attempts that escalate into abuse may be closely tied to parents' ability to control their angry emotions during disciplinary confrontations (e.g., Gershoff, 2002; Lazrele, 2000). Moreover, assessing parents' acceptance of extreme forms of physical discipline (i.e. hitting children with a closed fist), rather than spanking, may be more appropriate as a marker of abuse as extreme forms of physical discipline are more closely linked to actual child abuse (Zolotor et al., 2008).

As compared to over-reactive parenting and acceptance of spanking, negative child perceptions represent parents' general cognitive appraisals of their children. While Milner (1994) suggests abusive parents have negative perceptions of their children, negative perceptions have

not been previously considered as a marker of physical abuse. Like child abuse potential, negative child perceptions revealed by parents during general discussions of their children has less obvious social desirability biases. Parents are not directly asked if they endorse specific disciplinary behaviors, instead parents are simply asked to describe their children. Yet the extent to which parents have developed scripts to describe their children and the validity of these descriptions are unknown. For instance, with family members, parents may talk about their children's challenging behaviors. With friends, mothers may compare behaviors of their children with behaviors of their friends. With strangers, like an interview, mothers may have a standard way of describing their children. The extent to which verbal free associations of their children may be heavily dependent on factors external to their child, like mothers' mood, sleep, and how recent negative or positive interactions occurred. Moreover, negative child perception may be unlikely to lead to abuse without the presence of additional domains of risk for abuse.

Negative child perceptions may be mis-specified as a marker of abuse. That is, negative child perceptions may exacerbate other markers of abuse, but not represent a marker of abuse. For instance, mothers with a less internal parenting locus of control may be at greatest risk for abuse when they also perceive their children negatively. Consistent with this idea, Bugental, Blue and Cruzocosa (1986) suggest that parents who feel helpless in the parent-child relationship are most likely to use abusive practices when they perceive their child as challenging and a threat to their authority. Additional work is clearly needed to disentangle the range of characteristics associated with increased risk for engaging in child physical abuse.

#### *Social Contextual Stressors and Markers of Physical Child Abuse*

The primary goal of the present study was to advance our understanding of processes that affect risk for child abuse. Almost 20 years ago, Belsky argued that elevated levels of socio-



contextual stressors and parenting challenges increase parents' risk for physically abusing their children (Belsky, 1993). Since then, few studies have considered the impact of an accumulation of stressors on parents' risk for engaging in physical abuse. In partial support of expectations, a positive association was found between an accumulation of risk and child abuse potential, but not with other markers of abuse. Although this association is consistent with previous research using the child abuse potential scores (Begle, et al., 2010; Nair, et al., 2003), the cumulative risk index was created somewhat differently in the present study than previous research. Both Begle and colleagues (2010) and Nair and colleagues (2003) created indexes using a range of both proximal and distal domains of risk. For instance, cumulative risk scores created by Begle and colleagues (2010) included mothers' demographic characteristics (i.e. income), characteristics of children (i.e. child age, child health), children's disruptive behavior, household characteristics (i.e. disorganization), mothers' parenting satisfaction, and mothers' actual parenting practices. In fact, parenting locus of control, which was examined as a mediator in the present investigation, was included in the cumulative risk index by Begle and colleagues (2010). This non-specific method to creating cumulative risk scores is limited in that it obscures which domains of risk are driving the effect. That is, the association between cumulative risk and child abuse potential may be due to by the presence of particular characteristics of parents, children, the parent-child relationship, or the environment. Trentacosta and colleagues (2008) also point out that when cumulative risk indexes are created with both proximal and distal domains of risk, the opportunity to examine proximal domains of risk as mediators and moderators is lost.

In contrast, only socio-contextual risks were included in the risk index in the present study. The limited focus used to compute the cumulative risk index allowed for examining the importance one specific domain, namely socio-contextual risk. Possibly, an even more limited

focus in creating the cumulative risk index may have led to a clearer interpretation of results. For instance, one limitation to the cumulative risk measure used in the current study is that it included both static (e.g., demographic characteristics) as well as dynamic (e.g., exposure to violence) socio-contextual characteristics. Separating static risk from dynamic risk may be important. Separately examining an accumulation of static and dynamic risk, including negative life events, would clarify which domains of risk have a stronger association to risk for abuse.

Beyond main effects of an accumulation of risk on child abuse potential, social support was also considered as a moderator of this association. Results of these analyses were significant at the trend level. Given the small sample of the present investigation, the interaction was decomposed. Social support appeared most important at reducing child abuse potential for mothers facing socio-contextual risk in multiple areas. Follow-up analyses revealed that social support conditioning the association between cumulative risk and mothers' feelings of distress, but this pattern was not present for the other subscales of the child abuse potential inventory. Mothers facing an accumulation of risk are likely to be faced with more challenges, stressors, and hassles than mothers with less accumulation of risk. For high-risk mothers, having access to supportive social relationships may decrease the toll these stressors have on mothers' well-being, particularly mothers' feelings of distress, and reduce child abuse potential. Future research with larger sample sizes is needed to clarify the protective capacity of social support.

*Parenting Locus of Control: Association with Child Abuse Potential and Exploration of Processes that Lead to External Beliefs in Control*

While parenting locus of control was expected to mediate the association between an accumulation of risk and markers of physical abuse, results did not support these expectations. Interestingly, upon examining of the mean, standard deviation, and range of the parenting locus

of control scores, mothers were overwhelmingly more likely to endorse a more internal, rather than a more external, parenting locus of control. Indeed, mothers' scores never approached a level indicating a strong external locus of control. Nonetheless, results did indicate a positive correlation between parenting locus of control and child abuse potential scores, suggesting that as mothers' locus of control became less internal, abuse potential scores were higher (see also Rodriguez & Richardson, 2010).

In addition to a main effect of parenting locus of control, social support also moderated the association between parenting locus and child abuse potential scores. Specifically, when social support was low and parents reported a less internal parenting locus of control, the highest levels of child abuse potential were found. Moreover, parents with a more neutral parenting locus of control appeared particularly in need of strong social support. Follow-up analyses revealed this pattern of associations was present only for the distress subscale of the Child Abuse Potential Inventory. Possibly, supportive social relationships can offer a sounding board for mothers' child related problems. Furthermore, supportive social relationships may promote mothers' overall wellbeing, particularly decreasing distress, by affirming mothers' worth. When parents are isolated, however, feelings of helplessness may begin to negatively impact parents' emotional well-being. Ultimately, parents may be more likely to feel distressed, frustrated, and become more rigid with their young children and exhibit increased potential for abuse.

While parenting locus of control was also expected to be positively associated with an accumulation of socio-contextual risk, no statistically significant association emerged. One possibility is that the sample simply was not risky enough so that the full range of socio-contextual risk was not represented. Or, cumulative risk, as measured in the current study, may not impact mothers' perceptions of control as an accumulation of risk may not translate into

mothers' exposure to uncontrollable life events. Given that feelings of helplessness arise through increased exposure to uncontrollable events (e.g. Seligman et al., 1975), examining uncontrollable life events is imperative to understanding how a more external parenting locus of control develops. In the present investigation, the cumulative risk scores included demographic characteristics, neighborhood characteristics, and mothers' exposure to violence, but did not specifically measure uncontrollable negative life events. Negative life events may diminish feelings of control because negative events are often unexpected and have a pervasive effect on the lives of individuals. For instance, negative life events include losing a job, death of a family member, or divorce. Consistent with this idea, Zayas, Jankowski and McKee (2005) reported the occurrence of negative, uncontrollable life events decreased new mothers parenting self-efficacy, a construct similar to parenting locus of control. Similarly, when parents are exposed to numerous uncontrollable life events, an external locus of control may develop. These general feelings of helplessness may extend to feelings of helplessness in the parent-child relationship.

Alternatively, locus of control may be more specific to domains in a person's life. That is, an accumulation of risk may impact parents' general perceptions of control but this may not extend to parents' beliefs about the balance of control in the parent-child relationship. Child characteristics, like behavioral control, may specifically impact parenting locus of control because child characteristics may affect the ease of managing children's behaviors. Bandura (1977) and Seligman and colleagues (1975) argue that feelings of mastery and control develop through performance attainment. Unsuccessful performance results in feelings of helplessness. Parents of highly reactive and difficult to manage children may experience fewer parenting successes and, over time, may develop a more external parenting locus of control. For instance, when children are frequently non-compliant mothers may struggle with parenting tasks, such as

clean-up time, and begin to feel they are unable to influence their children's behaviors.

Consistent with this idea and previous research (e.g., Hagekull, et al., 2001), higher levels of children's externalizing behavior problems were associated with a more external parenting locus of control.

Similarly, children's temperament may impact parenting locus of control. While not considered in the present investigation, parents of temperamentally difficult children may develop feelings of helplessness as these children present more parenting challenges. Specifically, temperamentally difficult infants and young children lack regularity in their eating and sleeping cycles (Thomas & Chess, 1977). They are also prone to bouts of intense negative affect and are difficult for parents to soothe. Parents of temperamentally difficult children may struggle with parenting tasks, such as soothing their distressed child, and may begin to feel unable to influence their child's behavior. Not surprisingly, research on parenting efficacy reports that mothers of temperamentally difficult infants and young children rate feeling less effective than parents of temperamentally easy children (Leerkes & Burney, 2007; Fulton, Mastergeorge, Steele, Hensen, 2012), and also have declines in their parenting efficacy across time (Gross, Conrad, Fogg, & Wotke, 1994). Interestingly, Leerkes & Burney (2009) also reported that social support buffered against the negative effects of children's difficult temperament on mothers' parenting efficacy. This pattern may also be present for parenting locus of control.

Finally, while cumulative risk did not directly impact parenting locus of control, social support interacted with cumulative risk in its association with parenting locus of control. Further examination of this interaction revealed that the pattern of findings were inconsistent with hypotheses. At high levels of socio-contextual risk, social support had no effect on levels of

parenting locus of control. In contrast, when cumulative risk was relatively low, more social support was associated with a more internalized locus of parenting control. This finding may suggest that social support has limited utility in high risk situations. Alternatively, it may call for reexamining the cumulative risk scores. That is, social support may be less effective in promoting perceptions of control when parents face a number of static risks, there is simply less for agents of social support to do. Static risks, which cumulative risk scores in the present study were mainly comprised of, are relatively stable and persistent (e.g. low educational attainment). In contrast, actively engaged supportive friends or family members may be better able to help parents maintain internal perceptions of control when parents face dynamic risk, like negative life events or exposure to uncontrollable stressful situations. Further research is needed to understand processes that diminish high-risk parents' perceptions of control.

#### *Limitations, Strengths and Future Directions*

This study is not without limitations. First, although widely used to measure child abuse potential and a critical construct in the present investigation, a number of limitations exist with using the child abuse potential scores from the Child Abuse Potential Inventory. The inventory was developed as a screening tool to differentiate abusive from non-abusive parents (Milner, 1986). Consequently, the CAPI assesses a range of thoughts, attitudes, feelings, beliefs, and behavioral patterns of parents. While the validity of differentiating abusive from non-abusive parents is well established (e.g., Chaffin & Valle, 2003), including the child abuse potential scores in empirical evaluations of theoretical models of abuse risk is more problematic because it is not clear what the Child Abuse Potential Inventory specifically measures. That is, high child abuse potential scores could be the results of parents' negative affect, social problems, child specific challenges or any combination of these things. Without a clear understanding of what is

measured in the child abuse potential scores, efforts to translate empirical results to preventative interventions is impaired as it is not clear which characteristics of parents should be targeted. Additionally, Chaffin and Valle (2003) found that child abuse potential scores only accounts for about 17% of the variance in actual Child Protective Services (CPS) reports of abuse, highlighting the clear need to develop additional markers of abuse that explain additional variance. While meaningful associations emerged in the present investigation, associations should be interpreted with caution until future research more clearly delineates the constellation of markers associated with abuse.

Second, the sample is small. Statistically significant effects with small sample sizes often are considered to be robust, but also are more difficult to detect (Kazdin, 2003). Given the small sample size, the study was underpowered to detect small effect sizes (Cohen, 1977). The sample was a community-based sample using a variety of day care centers. Although low-income mothers were specifically recruited, cumulative risk was still generally low. Moreover, it is possible that mothers who self-selected to participate in this study experienced less socio-contextual risk and were at reduced risk for engaging in physically abusive behaviors. Stronger support for the proposed model may have arisen with a more high-risk sample.

Third, study constructs were almost exclusively measured using mother self-report questionnaires. While under-reporting was described as a possible explanation for low variability in the measures, examining markers of physical abuse using multiple methods may increase the variability of study constructs. For instance, observing mothers' tolerance for frustration and emotion regulation may offer alternative methods to measuring propensity for engaging in harsh parenting. Relatedly, each construct was only measured at one time point, restricting any conclusions about the direction effects.

Fourth, like other studies of child abuse risk, markers of physical abuse were measured rather than reports of abuse from parents or CPS referrals. Conclusions regarding processes that affect actual child abuse practices are limited. Additionally, while child physical abuse affects a large number of children each year, physically abusive behaviors, and markers of abuse, exist in community samples at low rates. Not surprisingly, rates of markers of child abuse were low. As Steiner (2003) argues, low base rate behaviors, such as was found for markers of abuse, increases the chance of false positive results. Thus, results should be interpreted cautiously.

Despite these limitations, the study had a number of strengths. One strength is the use of multiple markers of physical child abuse. While past studies have examined processes that heighten child abuse potential (e.g. Begle et al., 2010), the present study sought to replicate results with multiple markers of physical child abuse. Furthermore, the present study considered processes that heighten markers of abuse within a community sample. The use of a community sample, rather than a sample where abuse has been substantiated, may strengthen our understanding of processes that lead to future abuse. Finally, the present study went beyond considering individual risk factors for child abuse and considered multiple domains of risk for physical child abuse (socio-contextual, beliefs, child characteristics). In terms of socio-contextual risk, nine different areas of risk comprised cumulative risk scores. Belsky (1993) pointed out the utilities of considering multiple areas of risk in that there is no one risk factor for abuse that is present in all substantiated abuse cases. Moreover, no one area of risk always leads to abuse. In line with this observation, the present investigation allowed the constellation of areas of risk to vary by family.

Many questions remain regarding processes that lead parents to escalate discipline attempts into physical abuse. Thus, focusing on processes that lead to abuse is a grossly



understudied area of research. Given the necessity of examining markers of abuse, rather than actual abuse, the first step in understanding processes that lead to abuse is to clarify what parent characteristics and behaviors are most proximal to actual abuse. Currently, assessing child abuse potential is routine when examining abuse risk in empirical research, but this approach is limited. Translating findings from research using child abuse potential into prevention efforts is challenging because abuse potential scores are comprised of a myriad of characteristics. The range of behavioral characteristics is far too broad for interventions to target. Measures of abuse risk that have a more limited focus and overcome problems of report bias are clearly needed.

One promising line of research which seeks to overcome problems in assessing abuse risk comes from Rodriguez, Russa, and Harmon (2011). Rodriguez and colleagues (2011) designed an analog task for identifying parents at heightened risk for abuse. The task assesses parents' acceptance of parenting behaviors ranging from mild physical discipline (i.e. parent slapping a child's hand) to clear physical abuse (i.e. parent whipping children). Parents watch videos of parents and children, with some clips depicting physical child abuse, and stop the video when they believe abuse occurs. Higher scores on the task indicate stronger acceptance of abuse. Promising results emerged as parents' scores on the analog task correlated with multiple of markers of abuse risk (Rodriguez et al., 2011). Another possible approach to measuring abuse risk, without self-report, may be to assess parents' emotional arousal when facing challenging child behavior. For instance, exposing parents to various scenarios of challenging child behavior while measuring parents' emotional arousal and emotion regulation could further specify which parents are likely to become emotionally aroused during discipline attempts and escalate abusive practices into abuse. Possibly, measuring parents' stress reactivity with physiological

techniques (i.e. heart rate, skin conductance) may aid in understanding parents' negative, unregulated emotions when dealing with challenging child behavior.

Beyond clarifying markers of abuse, greater clarity of social characteristics that may increase risk for abuse is desperately needed. Theoretically, an accumulation of risk is a critical context in which risk for abuse increases, but little work has successfully identified which types of stressors are important for child abuse. Additional research that “unpacks” cumulative risk and examines the relative impact of different domains of risk (i.e., demographic characteristics, contextual characteristics, uncontrollable negative life events) is needed.. For instance, creating multiple cumulative risk scores for different domains (i.e. child characteristics, parent demographics, parent exposure to violence) would allow investigators to evaluate the relative importance of each domain of risk in predicting proximal abuse risk.

Finally, future research would benefit from a more in-depth examination of processes that affect parenting locus of control. Examining changes in parenting locus across infancy and early childhood could clarify why some parents begin to have a diminished sense of control in the parent-child relationship. Possibly, examining child characteristics, such as temperament may offer utility in understanding changes in parenting locus of control. Overall, investigations that examine the unfolding of distal and proximal domains of risk over time are needed to clarify processes that lead to abusive parenting.

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## List of Appendices

- A: Demographics Questionnaire
- B: Conflict Tactics Scale-Short Form
- C: Me and My Neighborhood Questionnaire
- D: The Child Abuse Potential Inventory
- E: Parenting Locus of Control Scale
- F: Interpersonal Support Evaluation List
- G: Child Behavior Checklist
- H: CAPI Abuse Scale with Weighted Scores
- I: The Parenting Scale—Overreactive Parenting Subscale
- J: The Discipline Beliefs Questionnaire
- K: Abbreviated Manual for Coding Expressed Emotion in the Preschool Five-Minute Speech Sample

**University Committee for the Protection  
of Human Subjects in Research  
University of New Orleans**

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*Campus Correspondence*

Principal Investigator: Laura Scaramella

Co-Investigator: Kathleen McGoron

Date: September 9, 2011

The Role of Cumulative Risk in Increasing Potential for Physical Abuse in Mothers of Young Children: Examination of Mediating and Moderating Processes

01Jul 11

Your proposal was reviewed by the full IRB. The group voted to approve your proposal pending that you adequately address several issues. Your responses to those issues have been received and you have adequately addressed all of the issues raised by the committee. Your project is now in compliance with UNO and Federal regulations and you may begin conducting your research.

Please remember that approval is only valid for one year from the approval date. Any changes to the procedures or protocols must be reviewed and approved by the IRB prior to implementation. Use the IRB number listed on this letter in all future correspondence regarding this proposal.

If an adverse, unforeseen event occurs (e.g., physical, social, or emotional harm), you are required to inform the IRB as soon as possible after the event.

Best of luck with your project!

Sincerely,

Robert Laird, Ph.D., Chair

Committee for the Protection of Human Subjects in Research

Appendix A

Demographics Questionnaire

	<b>What is your date of birth?</b>			
		<b>Month</b>	<b>Day</b>	<b>Year</b>
<b>1.</b>	<b>Are you Hispanic or Latino?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>2.</b>	<b>What is your ethnicity? (check no more than 2)</b>			
	<input type="checkbox"/> American Indian/ Alaska Native	<input type="checkbox"/> Black / African American		
	<input type="checkbox"/> Asian	<input type="checkbox"/> White		
	<input type="checkbox"/> Native Hawaiian or Pacific Islander	<input type="checkbox"/> Indian/Middle Eastern		
	Other:			
<b>4.</b>	<b>What is your toddler/preschool aged child's birthday:</b>			
		<b>Month</b>	<b>Day</b>	<b>Year</b>
<b>5.</b>	<b>Is your toddler/preschool aged child Hispanic or Latino?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>6.</b>	<b>What is Your Toddler/Preschool aged child's ethnicity? (check no more than 2)</b>			
	<input type="checkbox"/> American Indian/ Alaska Native	<input type="checkbox"/> Black / African American		
	<input type="checkbox"/> Asian	<input type="checkbox"/> White		
	<input type="checkbox"/> Native Hawaiian or Pacific Islander	<input type="checkbox"/> Indian/Middle Eastern		
	<input type="checkbox"/> Other:			
<b>7.</b>	<b>What is Your Toddler/Preschool aged child's gender?</b>	<input type="checkbox"/> boy <input type="checkbox"/> girl		
<b>8.</b>	<b>What is your current relationship status?</b>			
	<input type="checkbox"/> Living with a romantic partner <input type="checkbox"/> Single, never married <input type="checkbox"/> Single, widowed	<input type="checkbox"/> Separated <input type="checkbox"/> Divorced, not married <input type="checkbox"/> Married		
<b>9.</b>	<b>Do you own a car?</b>			
	<input type="checkbox"/> Yes			

	<input type="checkbox"/> No
<b>10.</b>	<b>Did you graduate from high school?</b>
	<input type="checkbox"/> No <input type="checkbox"/> No, but received GED <input type="checkbox"/> Yes
<b>11.</b>	<b>What is your highest level of education?</b>
	<input type="checkbox"/> 10 <sup>th</sup> grade <input type="checkbox"/> 11 <sup>th</sup> grade <input type="checkbox"/> 12 <sup>th</sup> grade/GED Diploma <input type="checkbox"/> 1 year post high school <input type="checkbox"/> 2 years post high school <input type="checkbox"/> Other
<b>12.</b>	<b>What is your current work situation?</b>
	<input type="checkbox"/> Employed full time (30 or more hours per week) <input type="checkbox"/> Employed part time (less than 30 hours per week) <input type="checkbox"/> Temporary or contractual work <input type="checkbox"/> Not working for pay
<b>13.</b>	<b>What is your job?</b> _____
<b>14.</b>	<b>How do you usually get to work?</b>
	<input type="checkbox"/> My own car <input type="checkbox"/> Get a ride <input type="checkbox"/> Bus <input type="checkbox"/> Walk <input type="checkbox"/> Other: _____
<b>15.</b>	<b>How many hours do you work during a typical week? # _____ hours per week</b>
<b>16.</b>	<b>What is your pay per hour?</b>
	\$ _____ per hour

17.	<p><b>Do you receive any income from any of these places? Check all that apply.</b></p> <table border="0" style="width: 100%;"> <tr> <td><input type="checkbox"/> Unemployment benefits</td> <td><input type="checkbox"/> Disability</td> </tr> <tr> <td><input type="checkbox"/> WIC</td> <td><input type="checkbox"/> Child support/money from your children's father</td> </tr> <tr> <td><input type="checkbox"/> SSI</td> <td><input type="checkbox"/> Parents/ family</td> </tr> <tr> <td><input type="checkbox"/> Food stamps</td> <td><input type="checkbox"/> Other: _____</td> </tr> <tr> <td><input type="checkbox"/> TANF/ welfare</td> <td></td> </tr> </table>	<input type="checkbox"/> Unemployment benefits	<input type="checkbox"/> Disability	<input type="checkbox"/> WIC	<input type="checkbox"/> Child support/money from your children's father	<input type="checkbox"/> SSI	<input type="checkbox"/> Parents/ family	<input type="checkbox"/> Food stamps	<input type="checkbox"/> Other: _____	<input type="checkbox"/> TANF/ welfare	
<input type="checkbox"/> Unemployment benefits	<input type="checkbox"/> Disability										
<input type="checkbox"/> WIC	<input type="checkbox"/> Child support/money from your children's father										
<input type="checkbox"/> SSI	<input type="checkbox"/> Parents/ family										
<input type="checkbox"/> Food stamps	<input type="checkbox"/> Other: _____										
<input type="checkbox"/> TANF/ welfare											
18.	<p><b>About how much money do you get from all of these other sources put together per month?</b></p>										
	<p>\$_____per month</p>										
19.	<p><b>Thinking about your total income from all sources, how many people does your income support?</b></p>										
	<p>_____adults _____children</p>										
20.	<p><b>Compared to 1 year ago, would you say that your standard of living today is:</b></p>										
	<p><input type="checkbox"/> A lot worse <input type="checkbox"/> A little worse <input type="checkbox"/> The same <input type="checkbox"/> A little better <input type="checkbox"/> A lot better</p>										
21.	<p><b>During the past year, how hard has it been to pay your bills?</b></p>										
	<p><input type="checkbox"/> Very hard <input type="checkbox"/> Pretty hard <input type="checkbox"/> Sort of hard <input type="checkbox"/> A little hard <input type="checkbox"/> Not at all hard</p>										
22.	<p><b>During the past year, how much money do you usually end up with each month?</b></p>										
	<p><input type="checkbox"/> A lot left over <input type="checkbox"/> Some money left over <input type="checkbox"/> Just enough to make ends meet <input type="checkbox"/> Not enough to make ends meet</p>										
23.	<p><b>Including yourself, how many people live in your home at least 4 nights a week?</b></p>										
	<p>_____Total _____adults _____children</p>										

24.	<b>How many total rooms are in your home?</b>	
	_____ <b>rooms</b>	
25.	<b>Thinking about your home, would you say there is:</b>	
	<input type="checkbox"/> Not enough space for you and your family <input type="checkbox"/> Just the right amount of space for you and your family <input type="checkbox"/> Too much space for you and your family	
26.	<b>How many children do you have?</b>	
	_____ <b>children</b>	
27.	<b>How old were you when you became pregnant with each of your children?</b>	
	1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____	7) _____ 8) _____

## Appendix B

Appendix B is not included to comply with copyright requirements

## Appendix C

### Me and My Neighborhood

Think about how true each statement is about the safety of the neighborhood where you live.

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
1. My neighborhood is safe for adults to walk alone during the afternoon.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
2. My neighborhood is safe for adults to walk alone during the evening.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
3. My neighborhood is safe for <u>children</u> to walk alone during the afternoon.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
4. My neighborhood is safe for <u>children</u> to walk alone during the evening.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
5. My neighborhood is safe for children to play outside when an adult is watching.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
6. My neighborhood is safe for children to play outside without an adult watching them.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Sometimes stressful or scary things happen in neighborhoods. Think about all the things that have happened during the past year. For each item indicate if the event has (1) Never Happened, (2) Happened Once, (3) Happened a Few Times, or (4) Happens A lot.

	<b>Never</b>	<b>Once</b>	<b>A few times</b>	<b>A lot</b>
1. A family member got robbed or mugged.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
2. You hear neighbors complaining about crime in your neighborhood.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
3. You carry a knife or gun for protection.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
4. A friend of yours got robbed or mugged.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
5. You see or hear about a shooting near your home.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
6. You got stopped and questioned by the police.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
7. A family member got stabbed or shot.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
8. A family member carries a gun or knife for protection.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
9. You see strangers drunk or high near your home.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
10. A friend of yours carries a knife or gun for protection.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
11. A friend of yours got stabbed or shot.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4



12. A gang fight occurs near your home.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
13. People in your neighborhood complain about being harassed by the police.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
14. You see cars speeding or driving dangerously on your street.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
15. You see people dealing drugs near your home.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
16. A family member got attacked or beaten.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
17. A family member got stopped and questioned by the police.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
18. You hear adults arguing loudly on your street.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
19. Someone threatened to hurt a member of your family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
20. Someone you know got arrested or sent to jail.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

## Appendix D

Appendix D is not include to comply with copyright requirements

## Appendix E

### Parenting Locus of Control Inventory

- |     |  |                           |
|-----|--|---------------------------|
| 1.  | What I do has little effect on my child's behavior.  | 1.....2.....3.....4.....5 |
| 2.  | When something goes wrong between me and my child, there is little I can do to correct it.                                     | 1.....2.....3.....4.....5 |
| 3.  | Parents should address concerns with their children because ignoring them won't make them go away.                             | 1.....2.....3.....4.....5 |
| 4.  | If your child tantrums no matter what you try, you might as well give up.  | 1.....2.....3.....4.....5 |
| 5.  | My child usually ends up getting his/her way, so why try.  | 1.....2.....3.....4.....5 |
| 6.  | No matter how hard a parent tries, some children will never learn to mind.   | 1.....2.....3.....4.....5 |
| 7.  | I am often able to predict my child's behavior in situations.  | 1.....2.....3.....4.....5 |
| 8.  | It is not always wise to expect too much from my child because many things turn out to be a matter of good or bad luck anyway. | 1.....2.....3.....4.....5 |
| 9.  | When my child gets angry, I can usually deal with him/her if I stay calm.  | 1.....2.....3.....4.....5 |
| 10. | When I set expectations for my child, I am almost certain I can help him/her meet them.  | 1.....2.....3.....4.....5 |
| 11. | There is no such thing as a good or bad child—just good or bad parents.  | 1.....2.....3.....4.....5 |
| 12. | When my child is well-behaved, it is because he/she is responding to my efforts.   | 1.....2.....3.....4.....5 |
| 13. | Parents who can't get their children to listen to them don't understand how to get along with their children.                  | 1.....2.....3.....4.....5 |
| 14. | My child's behavior problems are no one's fault but my own.  | 1.....2.....3.....4.....5 |

1 = strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree

- |     |  |                           |
|-----|--|---------------------------|
| 15. | Capable people who fail to become good parents have not followed through on their opportunities.                 | 1.....2.....3.....4.....5 |
| 16. | Children's behavior problems are often the result of mistakes their parents have made.                           | 1.....2.....3.....4.....5 |
| 17. | Parents whose children make them feel helpless just aren't using the best parenting techniques.                  | 1.....2.....3.....4.....5 |
| 18. | Most children's behavior problems would not have developed if their parents had had better parenting techniques. | 1.....2.....3.....4.....5 |
| 19. | I am responsible for my child's behavior.  | 1.....2.....3.....4.....5 |
| 20. | The misfortunes and successes I have had as a parent are the direct result of my own behavior.                   | 1.....2.....3.....4.....5 |
| 21. | My life is chiefly controlled by my child.   | 1.....2.....3.....4.....5 |
| 22. | My child does not control my life.   | 1.....2.....3.....4.....5 |
| 23. | My child influences the number of friends I have.  | 1.....2.....3.....4.....5 |
| 24. | I feel like what happens in my life is mostly determined by my child.  | 1.....2.....3.....4.....5 |
| 25. | It is easy for me to avoid and function independently of my child's attempts to have control over me.            | 1.....2.....3.....4.....5 |
| 26. | When I make a mistake with my child I am usually able to correct it.   | 1.....2.....3.....4.....5 |
| 27. | Even if a child frequently tantrums, a parent should not give up.  | 1.....2.....3.....4.....5 |
| 28. | Being a good parent often depends on being lucky enough to have a good child.                                    | 1.....2.....3.....4.....5 |
| 29. | I am just one of those lucky parents who happened to have a good child.  | 1.....2.....3.....4.....5 |
| 30. | I have often found that when it comes to children, what is going to happen will happen.                          | 1.....2.....3.....4.....5 |

1 = strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree

- 
- |     |  |                           |
|-----|--|---------------------------|
| 31. | Fate was kind to me—if I had had a bad child I don't know what I would have done.  | 1.....2.....3.....4.....5 |
| 32. | Success in dealing with children seems to be more a matter of the child's mood and feelings at the time rather than one's own actions. | 1.....2.....3.....4.....5 |
| 33. | Neither my child nor myself is responsible for his/her behavior.   | 1.....2.....3.....4.....5 |
| 34. | In order to have my plans work, I make sure they fit in with the desires of my child.  | 1.....2.....3.....4.....5 |
| 35. | Most parents don't realize the extent to which how their children turn out is influenced by accidental happenings.                     | 1.....2.....3.....4.....5 |
| 36. | Heredity plays a major role in determining a child's personality.  | 1.....2.....3.....4.....5 |
| 37. | Without the right break, one cannot be an effective parent.  | 1.....2.....3.....4.....5 |
| 38. | I always feel in control when it comes to my child.  | 1.....2.....3.....4.....5 |
| 39. | My child's behavior is more than I can handle.   | 1.....2.....3.....4.....5 |
| 40. | Sometimes I feel that my child's behavior is hopeless.   | 1.....2.....3.....4.....5 |
| 41. | It is often easier to let my child have his/her way than to put up with a tantrum.   | 1.....2.....3.....4.....5 |
| 42. | I find that sometimes my child can get me to do things I really did not want to do.  | 1.....2.....3.....4.....5 |
| 43. | My child often behaves in a manner very different from the way I would want him/her to behave.   | 1.....2.....3.....4.....5 |
| 44. | Sometimes when I am tired I do things I normally wouldn't.   | 1.....2.....3.....4.....5 |
| 45. | Sometimes I feel that I do not have enough control over the direction my child's life is taking.                                       | 1.....2.....3.....4.....5 |
| 46. | I allow my child to get away with things.  | 1.....2.....3.....4.....5 |
| 47. | It is not too difficult to change my child's mind about something.   | 1.....2.....3.....4.....5 |
-

## Appendix F

### Interpersonal Support Evaluation List

This scale is made up of a list of statements each of which may or may not be true about you. For each statement check “definitely true” if you are sure it is true about you and “probably true” if you think it is true but are not absolutely certain. Similarly, you should check “definitely false” if you are sure the statement is false and “probably false” if you think it is false but are not absolutely certain.

1. There are several people that I trust to help solve my problems.

definitely true (3)  definitely false (0)  
 probably true (2)  probably false (1)

2. If I needed help fixing an appliance or repairing my car, there is someone who would help me.

definitely true (3)  definitely false (0)  
 probably true (2)  probably false (1)

3. Most of my friends are more interesting than I am.

definitely true (3)  definitely false (0)  
 probably true (2)  probably false (1)

4. There is someone who takes pride in my accomplishments.

definitely true (3)  definitely false (0)  
 probably true (2)  probably false (1)

5. When I feel lonely, there are several people I can talk to.

definitely true (3)  definitely false (0)  
 probably true (2)  probably false (1)

6. There is no one that I feel comfortable to talking about intimate personal problems.

definitely true (3)  definitely false (0)  
 probably true (2)  probably false (1)

7. I often meet or talk with family or friends.

definitely true (3)  definitely false (0)  
 probably true (2)  probably false (1)

8. Most people I know think highly of me.

definitely true (3)  definitely false (0)  
 probably true (2)  probably false (1)

9. If I needed a ride to the airport very early in the morning, I would have a hard time finding someone to take me.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

10. I feel like I'm not always included by my circle of friends.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

11. There really is no one who can give me an objective view of how I'm handling my problems.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

12. There are several different people I enjoy spending time with.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

13. I think that my friends feel that I'm not very good at helping them solve their problems.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

14. If I were sick and needed someone (friend, family member, or acquaintance) to take me to the doctor, I would have trouble finding someone.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

15. If I wanted to go out for the day (e.g., to the movies or to the mall), I would have a hard time finding someone to go with me.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

16. If I needed a place to stay for a week because of an emergency (for example, water or electricity out in my apartment or house or I was in between places to live), I could easily find someone who would put me up.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

17. I feel that there is no one I can share my most private worries and fears with.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

18. If I were sick, I could easily find someone to help me with my daily chores and help care for my children.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

19. There is someone I can turn to for advice about handling problems with my family (including my children).

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

20. I am as good at doing things as most other people are.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

21. If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

22. When I need suggestions on how to deal with a personal problem, I know someone I can turn to.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

23. If I needed an emergency loan of \$100, there is someone (friend, relative, or someone I know) I could get it from.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

24. In general, people do not have much confidence in me.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

25. Most people I know do not enjoy the same things that I do.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

26. There is someone I could turn to for advice about my job (for example, getting a new job) or about school (for example, difficulty with getting homework done).

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

27. I don't often get invited to do things with others.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

28. Most of my friends are more successful at making changes in their lives than I am.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)



29. If I had to go out of town for a few weeks, it would be hard to find someone who would look after my house or apartment (the plants, pets, getting my mail etc.).

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

30. There really is no one I can trust to give me good advice about money.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

31. If I wanted to have lunch with someone, I could easily find someone to join me.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

32. I am more satisfied with my life than most people are with their life.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

33. If I was stranded 10 miles from home (for example, car broke down or ride did not show up), there is someone I could call who would come and get me.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

34. No one I know would throw a birthday party for me.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

35. It would be hard to find someone who would lend me their car for a few hours.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

36. If there were a family crisis, it would be hard to find someone who could give me good advice about how to handle it.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

37. I am closer to my friends than most other people are to theirs.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

38. There is at least one person I know whose advice I really trust.

definitely true (3)  definitely false (0)

probably true (2)  probably false (1)

39. If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

40. I have a hard time keeping up with my friends.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

41. If I needed someone to watch my child(ren) for the evening, I could easily find someone.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

42. If I needed money to buy something for my child(ren) (for example, school supplies or new shoes), someone would be willing to give me money to buy it.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

43. If I had to go run some errands, I would not be able to find someone to watch my child(ren) for a few hours.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

44. If there was an emergency and I couldn't go pick up my child(ren) from daycare, I could find someone to do it for me.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

45. There is someone who I can talk to and get advice from when I have problems with my child(ren).

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

46. I feel I am raising my child(ren) alone and have no one I can get help from.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

47. If my child weren't feeling well and I didn't know what to do, I could easily find someone to give me advice.

\_\_\_ definitely true (3) \_\_\_ definitely false (0)  
\_\_\_ probably true (2) \_\_\_ probably false (1)

## Appendix G

Appendix G is not included to comply with copyright requirements

Appendix H

Item #	Subscale/Item	Weighted Score Note: score is given for agreement with item unless specified by an asterisks	n which endorsed each item
	<i>Distress</i>		
5	I am a confused person	14	10
9	I am often mixed up	2	12
17	I am often angry inside	7	7
18	Sometimes I feel all alone in the world	6	32
22	I often feel rejected	1	12
23	I am often lonely inside	11	16
25	I often feel very frustrated	4	20
28	Sometimes I fear I will lose control of myself	1	16
29	I sometimes wish my father would have loved me more	4	21
36	I sometimes worry I will not have enough to eat	12	6
41	Things have usually gone against me in life	8	8
47	I sometimes feel worthless	2	17
49	I am sometimes very sad	1	28
52	I often feel worried	7	30
56	I am often easily upset	3	21
63	I am often worried inside	2	28
73	I find it hard to relax	1	38
78	Other people do not understand how I feel	5	32
84	I have headaches	6	33
93	I have fears no one knows about	2	30
95	Life often seems useless to me	5	4
98	People do not understand me	14	21
99	I often feel worthless	2	6
102	Sometimes I do not know why I act	16	20

	as I do		
103	I have many personal problems	17	14
105	I often feel very upset	2	8
109	I am easily upset by my problems	22	18
111	My parents did not understand me	5	21
112	Many things in life make me angry	2	10
118	I am often depressed	17	7
120	I am often upset	7	7
138	I am often upset and do not know why	4	5
143	I often feel very alone	23	12
145	I often feel alone	6	14
153	I sometimes worry my needs will not be met	8	34
154	I often feel afraid	12	5
	<i>Rigidity</i>		
7	People expect too much from me	4	27
19	Everything in a home should always be in its place	8	31
24	Little boys should never learn sissy games	8	21
26	Children should never disobey	5	34
32	My telephone number is unlisted	1	37
54	A child should never talk back	4	43
68	Child should stay clean	3	47
80	Children should stay quiet and listen	5	25
108	A home should be spotless	2	21
115	Children should be seen and not heard	1	6
122	A good child keeps his toys and clothes neat and orderly	8	18
127	Children should always be neat	6	25
130	Child should never cause trouble	8	19

132	A child needs very strict rules	1	21
	<i>Unhappiness</i>		
14	I am a happy person	1*	4
38	I am an unlucky person	8	10
75	My life is happy	9*	6
77	Children should have play clothes and good clothes	14*	17
81	I have several close friends in my neighborhood	3*	51
90	I do not laugh very much	6	1
107	My life is good	5*	9
134	I often feel better than others	2*	43
141	I have a good sex life	5*	29
147	Right now, I am deeply in love	3*	38
152	I laugh some almost every day	13*	6
	<i>Problems with Child and Self</i>		
3	I have always been strong and healthy	1*	14
45	I have a child who is bad	2	5
69	I have a child who gets into trouble a lot	6	10
76	I have a physical handicap	9	4
113	My child has special problems	10	6
128	I have a child who is slow	2	3
	<i>Problems with family</i>		
39	I am usually a quiet person	6	46
83	My family fights a lot	19	8
94	My family has problems getting along	1	12
148	My family has many problems	12	12
	<i>Problems with Others</i>		
13	You cannot depend on others	2	32
67	People have caused me a lot of pain	6	38

74	These days a person doesn't really know on whom one can count	8	35
100	Other people have made my life unhappy	1	16
129	A parent must use punishment if he wants to control a child's behavior	1	37
151	Other people have made my life hard	6	

## Appendix I

### The Parenting Scale—Overreactive Parenting Subscale

1. I get so frustrated or angry that my child can see I'm upset---- I handle it without getting upset.
2. Things build up and I do things I don't mean to ----- Things don't get out of hand.
3. I raise my voice or yell -----I speak to my child calmly
4. I spank, grab, slap, or hit my child most of the time---- Never or rarely.
5. I often hold a grudge--- Things get back to normal quickly.
6. When I'm upset or under stress, I'm on my child's back--- I am no more picky than usual.
7. I insult my child, say mean things, or call my child names most of the time---- Never or rarely.
8. I usually get into a long argument with my child--- I don't get into an argument.
9. I give my child a long lecture--- I keep my talks short and to the point.
10. I almost always use bad language or curse--- I rarely use bad language.



## Appendix J

### Discipline Beliefs Questionnaire

While all parents have ways of dealing with their children when they misbehave, parents also have different beliefs about forms of discipline. Below are a list of common ways parents discipline their young children. We want to know how much you agree or disagree with each statement.

Please circle the number that corresponds with your level of agreement

0 = strongly disagree 1= disagree 2= neutral 3= agree 4= strongly agree

1.	Spanking is the best way to discipline a misbehaving child.	0	1	2	3	4
2.	Talking to children about their misbehavior is the only form of discipline that is needed.	0	1	2	3	4
3.	If children are misbehaving to get attention, the best course of action is to ignore their behavior.	0	1	2	3	4
4.	Using time-out is a good way to change a child's behavior.	0	1	2	3	4
5.	When children do things well, they should be praised.	0	1	2	3	4
6.	Sometimes children need to be spanked.	0	1	2	3	4
7.	I do not think time-out is a good way to discipline a young child.	0	1	2	3	4
8.	Parents should never spank their children.	0	1	2	3	4
9.	I think parents should try and talk to their children instead of spanking their children.	0	1	2	3	4
10.	Children will not behave well if they are not occasionally spanked.	0	1	2	3	4
11.	Talking to a young child about their behavior will not change anything.	0	1	2	3	4
12.	The best way to handle a temper tantrum is to ignore it.	0	1	2	3	4
13.	Children should be given a treat, like a cookie or time to watch their favorite TV show, when they are good.	0	1	2	3	4
14.	Children deserve to be spanked when they misbehave.	0	1	2	3	4
15.	The best way to decrease a child's bad behavior is to reward their good behavior.	0	1	2	3	4

## Appendix K

# Abbreviated Manual for Coding Expressed Emotion in the Preschool Five-Minute Speech Sample

### General Guidelines:

- 1) Listen to the speech sample all the way through the first time.
- 2) The second time, listen and take notes.
- 3) Rewind and listen again when clarification is needed
- 4) Each phrase within the speech sample must be listened to carefully.
- 5) Remember to consider tone of voice when considering ratings. Pay particular attention to use of sarcasm.

### Two frequency ratings:

- 1) Positive comments
- 2) Critical comments

### **Critical Comments**

Critical comments are negative comments about the child's behavior and/or personality. The frequency of critical comments during the 5-minute speech sample are recorded. Critical comments are counted based on *tone* or *critical phrases*. Statements about similar or related behaviors (really saying the same thing) are scored as one critical comment (even if they are said a different times).

Examples of critical comments: "Jane is a horrible girl!" "He spits at me." "He always acts like a brat," "She is very whiny"

### **Positive Comments**

Positive comments are statements of praise, approval, or appreciation. The majority of these will be descriptive words which indicate a positive trait which the child poses, but they can also be rated based on tone. Statements about similar or related behaviors are scored as one positive comment.

Examples of positive comments: "Jack is very intelligent," "Chloe is very loving," "George is extremely creative," "He's very very good at doing puzzles."

## Vita

Kathleen “Lucy” McGoron is originally from Cincinnati, OH. She received her B.S. from Eastern Michigan University in 2006 with a major in Psychology and a minor in Philosophy. She went on to receive her M.S. from the University of New Orleans in 2009 in Applied Developmental Psychology. During Lucy’s graduate studies, she worked as a research assistant for the Mothers and Preschoolers Project. As a research assistant, she primarily helped with observational coding of children’s affect and parent-child interactions. Lucy also gained experience working at Tulane University’s Infant Institute. She completed two practicums at the Infant Institute, including working with young foster children and foster parents receiving services from Tulane Infant Team. Lucy also worked on the Bucharest Early Intervention Project at Tulane University. Lucy’s research interests include understanding determinants and consequences of parenting in high-risk samples. She is particularly interested in cognitive-affective processes that motivate parenting and developmental psychopathology. In the future, she would like to develop effective parenting interventions for families involved in the child welfare system and parents at-risk for engaging in abusive parenting.