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Previous literature has implicated stress as a significant contributor to child physical maltreatment risk. Studied to a lesser extent, family dysfunction and inadequate social support have also been associated with physical child abuse potential. To date, little empirical support clarifies how such identified risk variables converge to influence physical abuse risk. The current study sought to explore whether the relation between stress and physical abuse risk was moderated by family functioning and social isolation. Questionnaires assessing parental subjective appraisal of stress, family functioning, adequacy of social support, and abuse risk (as measured by the CAPI Abuse Scale and AAPI-2 Total) were administered to 92 mother-child dyads from the community. Stress was hypothesized to strongly predict abuse risk. Further, mothers reporting stress and either family dysfunction or social isolation were expected to evidence greater abuse risk. As expected, stress contributed to the prediction of abuse risk, as measured by both the CAPI and AAPI Total scores. In terms of potential moderators, the current findings indicated that social support moderated the relation between stress and CAPI Abuse Scale scores, but family functioning did not (the interaction term trended toward significance). For AAPI Total scores, neither family functioning nor social isolation was a significant moderator. Overall, these findings validate stress and social isolation as important independent predictors of abuse risk.

FAMILY FUNCTIONING AND SOCIAL ISOLATION AS MODERATORS

BETWEEN STRESS AND CHILD ABUSE POTENTIAL

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Page

CHAPTER I

INTRODUCTION

In 2006, the United States Department of Health & Human Services (DHHS) confirmed over 900,000 cases of child maltreatment in the US, with the majority of abuse (83% of cases) reportedly perpetrated by a biological parent (DHHS, 2008). Of these validated cases, 16% of children were victims of physical acts of aggression or child physical abuse, also referred to as *child physical maltreatment* (DHHS, 2008). Additionally, physical abuse constituted 22.4% of the reported 1,500 abuse related fatalities that year, averaging four deaths per day in the US (DHHS, 2008). Although these statistics are alarming, the rate of underreporting across healthcare professionals indicates that physical abuse is more prevalent than reports suggest (Van Haeringen, Dadds, & Armstrong, 1998; Wissow & Wilson, 1992). In fact, one national survey estimated nearly 7 million children had been abused, suggesting that those confirmed cases reflect only a small percentage of child abuse occurring in American homes (Straus & Gelles, 1990). Reporters of physical maltreatment are more confident in reporting suspicions of severe abuse (Wissow & Wilson, 1992; Zellman, 1990, 1992). Therefore, one explanation for the disparity between confirmed and anonymously disclosed rates is that substantiated cases reflect primarily severe abuse (Van Haeringen et al., 1998; Wissow & Wilson, 1992; Zellman, 1990, 1992). The over-representation of severely abusive parents not only influences official prevalence rates, but also impacts

1

maltreatment research samples.

Using Sub-abusive Samples in Research

A review of the extant literature reveals that a considerable percentage of maltreatment literature is based upon agency- or court-referred samples. However, the over-representation of severely abusive families in current research suggests that findings from these studies may not generalize to the larger proportion of families with less severe abuse, or sub-abusive behavior (Bradley & Lindsay, 1987; Hillson & Kuiper, 1994). As a result, some maltreatment researchers have attempted to address this issue and obtain a more representative sample of the varying degree of abuse by drawing upon community samples. Inherent in this type of sampling are several assumptions: first, that abuse often occurs within the context of discipline (Herrenkohl, Herrenkohl, & Egolf, 1983; Whipple & Richey, 1997); second, evidenced by many researchers' definition of physical abuse, and at the root of many of the reporting issues mentioned above, is a conceptualization of a physical discipline continuum along which physical abuse resides (Gershoff, 2002; Graziano, 1994).

For the purposes of this discussion, non-injurious physical discipline is considered representative of corporal punishment, defined as "the use of physical force with the intention of causing a child to experience pain, but not injury, for the purpose of correction or control of the child's behavior. This includes spanking on the buttocks and slapping a child's hand for touching a forbidden or dangerous object" (Straus, 2000, p. 1110). Great difficulty arises in attempting to define where along the continuum corporal punishment becomes physical abuse as the line is often blurred (Gershoff, 2002;

Graziano, 1994; Whipple & Richey, 1997). Some attempts to delineate this line suggest that physical abuse occurs when normative discipline strategies are either used more frequently or are harshly administered, or when a visible sign of injury results (Brooker, Cawson, Kelly, & Wattam, 2001; Whipple & Richey, 1997).

Although unclear on where the line should be drawn, evidence suggests that the transition to abuse be attributed to a mechanism of escalation (Graziano, 1994). Many abusive parents have reported initially using less severe corporal punishment, and longitudinal research from the UK showed that parents who used corporal punishment with their young children increased the frequency and severity of these techniques, decreased the number of alternative strategies, and became increasingly angry during the discipline episode (Brooker et al., 2001; Vittrup, Holden, & Buck, 2006). Such findings lend support to a physical discipline-abuse continuum in which abuse emerges at some point during the escalated delivery of corporal punishment (Brooker et al., 2001; Graziano, 1994; Gershoff, 2002).

The use of community samples is beneficial in that samples will more closely resemble the type (e.g., severity) of abuse being experienced within those estimated millions of American homes unreported to protective services. Additionally, using sub-abusive parents provides an opportunity to explore the circumstances surrounding a parent's transition into abuse (Graziano, 1994). However, this method of sampling requires additional steps be taken to obtain a sample that is representative of those along the physical discipline-abuse continuum, steps that most likely contribute to researchers' reliance on identified abusive samples. Specifically, as physical abuse arises from

physical discipline, researchers have to ensure that the community participants meet that condition of using physical discipline before assessing for abuse risk factors. However, given that physical discipline is largely embedded within American culture (Straus, 2000), finding community members who endorse physical discipline does not seem a difficult task.

To assist professionals in identifying risk in non-abusive samples, previous research sought to create a risk assessment tool capable of reliably defining and assessing parenting violence (Milner, 1986, 1994). Characteristics associated with elevated risk for physical abuse could then be targeted for preventative interventions (Black, Heyman, & Smith-Slep, 2001; Kolko, Kazdin, Thomas, & Day, 1993). Research has attempted to identify beliefs and behaviors predictive of a parent's risk for physical abuse. The concept of *child abuse potential* assesses these characteristics to estimate the likelihood that a parent will physically abuse (Milner, 1986, 1994). Child abuse potential includes several personal and intrapersonal difficulties that characterize the beliefs, attitudes, and behaviors observed in physically abusive parents (Milner, 1986, 1994). These difficulties are considered to be risk factors for physical abuse and a considerable amount of research has been devoted to identifying variables that predict physical abuse potential (Caliso & Milner, 1994; Crouch & Behl, 2001; Garbarino & Sherman, 1980; Litty, Kowalski, & Minor, 1996; Kolko et al., 1993; Nair, Schuler, Black, Kettinger, & Harrington, 2003). The development of risk models has evolved from being perpetrator-oriented, child-oriented, and then ecologically-oriented as a greater variety of factors predicting abuse

potential began to emerge, suggesting risk factors emanate from multiple sources (Hillson & Kuiper, 1994).

Theoretical Considerations

Consistent with the theory of equifinality, child physical maltreatment is influenced by a constellation of risk factors that have been identified in multiple levels surrounding the parent-child dyad (Belsky, 1980, 1993). Derived from Bronfenbrenner's (1979) seminal work, current ecological perspectives of child abuse expand the parameters in which factors are considered, including the various, nested contexts within which an individual is embedded (Belsky, 1980, 1993; Garbarino, 1977). Further, Belsky's model considers abuse risk to be determined by transactions between the parent and the proximal and/or distal risk factors within these various levels. This view allows for a more complex and comprehensive understanding of physical maltreatment as a "social-psychological phenomenon that is a combination of individual, family, community, and cultural forces" (Mapp, 2006, p. 1294).

Child maltreatment is best understood, and better predicted, by models that accept that this phenomenon is determined by multiple risk factors simultaneously impinging upon the parent (Sidebotham, 2001; Windham et al., 2004). At the epicenter of ecological models of abuse are proximal factors that are considered to have the strongest relation to parental abuse risk. Specifically, considering ontogenic development, child-rearing attitudes and behaviors are greatly impacted by a parent's historical life experiences (e.g., personal history of childhood abuse, education level) and current interpersonal functioning (e.g., psychopathology, substance abuse) (Sidebotham, 2001). In addition to

these personal vulnerabilities, abuse risk is further compounded when contextual factors, external to the parent, threaten normative functioning. The next level of influence (microsystem) acknowledges the immediate environment within which a parent and other family members are embedded. Within this level, abuse risk research has largely focused on the relationships between the parent and the closest sources of support, such as family members and spouses. The next level of investigation (exosystem) considers the context that surrounds the entire family unit. Factors within the exosystem are those that threaten the ability of a parent to develop and maintain healthy relationships outside of the family. Examination of this level has implicated several risk factors, including inadequate social network, either in terms of size or quality of support, and certain neighborhood characteristics, such as neighborhood violence or economic poverty (e.g., inadequate material resources). The last level of investigation (macrosystem) examines how general cultural beliefs and values shape societal conceptualizations of family roles and processes, such as attitudes toward and expectations of children, parental responsibilities, and child-rearing practices (e.g., disciplinary strategies).

Belsky's model allowed for a more complex and comprehensive understanding of the etiology of abuse. Moreover, ecological models demonstrate that abuse risk is influenced by the converging effects of individual factors, exerting varying degrees of influence depending upon their level of origin, simultaneously impinging upon and interacting with a parent's unique ontogenic qualities. Additionally, these models allowed researchers to investigate what combination or balance of factors creates the "ideal" circumstances under which abuse is most likely to emerge. Belsky's model had a great

impact on research in terms of how the etiology of abuse is considered, what factors are targeted for interventions, and, most noticeably, which ecologically sound risk factors should be studied.

Despite the beneficial contributions this research has provided, issues with the current state of ecological models of abuse risk remain (Bradley & Lindsay, 1987; Brown, Cohen, Johnson, & Salzinger, 1998; Hillson & Kuiper, 1994). One criticism is that the limited focus that most studies take regarding the bidirectional influence from the parent to their ecology does not allow for the complexities of Belsky's model to be fully appreciated (Hillson & Kuiper, 1994). Despite the almost 30 year gap since Belsky's first publication, only more recently have studies undertaken the task of exploring how potential risk factors singularly and in combination affect abuse risk. Recent investigations regarding the potential for cumulative effects have shown that a greater number of psychosocial factors is associated with elevated abuse potential (Baynard, William, Saunders, & Fitzgerald, 2008; Nair et al., 2003; Wekerle, Wall, Leung, & Trocme, 2007; World Health Organization (WHO), 2006). Studies like these highlight the need for further acknowledgement of the combined effects of risk factors on abuse potential.

Selection of Factors in Abuse Risk

Another issue apparent within this area of research is rooted in the process by which risk factors are identified. Research has largely focused on identifying risk factors within 4 domains: demographics, family relationships, and parental and child characteristics (Belsky & Vondra, 1989). However, it is unclear if factors common to

many abusive parents are being labeled as risk factors because they are representative of true underlying characteristics that contribute to abuse (e.g., approval of using corporal punishment, attribution biases) or if they are merely an artifact of sampling biases. When discussing the potential risk that demographic factors pose in particular, one must evaluate the manner in which data was collected as well as the amount of clinically relevant information these factors provide (Brown et al., 1998). For example, many studies have identified a link between poverty and abuse risk (Black et al., 2001; Kolko, 1992; Mapp, 2006; Pianta, 1984; Whipple & Webster-Stratton, 1991). However, known methodological biases and conflicting findings make teasing apart this relation difficult (Bradley & Lindsay, 1987; Brown et al., 1998). As a result, it is not yet clear if poverty alone contributes to abuse risk, if impoverished families have been overly identified because of reporter and investigation biases, or if other risk factors underlying poverty (e.g., stress) are contributing to elevated abuse potential (Windham et al., 2004).

Such examples demonstrate that although certain variables may be associated with abuse risk, they should also provide meaningful information regarding abuse potential (Bradley & Lindsay, 1987; Brown et al., 1998; Garbarino & Sherman, 1980; Windham et al., 2004). In general, factors labeled as impacting abuse risk should not only be considered because they are endorsed by abusive parents, but should also be a "loaded factor" in the sense that they provide a greater understanding of underlying processes that offer some further explanation for the link between the particular variable (e.g. poverty, age, ethnicity, domestic violence, psychopathology of parent or child) and abuse risk (Windham et al., 2004).

Lastly, some of the identified variables cannot easily be targeted or improved upon by intervention (e.g., socioeconomic status/poverty, ethnic group membership, number of pregnancies or children, single parent home) (Brown et al., 1998; Windham et al., 2004). The assumed purpose of much research has been to identify factors that, when manipulated, result in improved mental and/or physical health. Yet many current ecological models include factors that do not convey meaningful information regarding the contributions of these variables to modify abuse risk. Therefore, the current study will explore the literature that has focused on both ecologically and clinically relevant factors. Specifically, the current study will examine how stress, family dysfunction, and inadequate social support contribute to abuse risk.

Stress and Child Abuse Potential

The relation between stress and child physical abuse has been well documented (Herrenkohl et al., 1983; Milner, 1994; Kolko, 1992; Pianta, 1984; Whipple & Webster-Stratton, 1991; Williamson, Borduin, & Howe, 1991). However, a review of the literature relating these constructs highlights a major issue within this area that has been overlooked by many researchers. Literature examining the potential effect of stress not only lacks an operational definition of the construct but does not appear to be working from a common conceptual definition (Whipple & Webster-Stratton, 1991). Furthermore, many fail to distinguish between stress and a stressor. *Stress* has been defined by some authors as, "a function of the interaction of the subjectively defined demands of a situation and the capacity of an individual to respond to these demands" (Whipple & Webster-Stratton, 1991, p. 279). *Stressors* have been defined as "life events, hassles,

9

transitions and/or related hardships which produce tension that calls for management"
(Whipple & Webster-Stratton, 1991, p. 279). The current study conceptualizes *stress* as
the subjective emotional experience that results when one does not feel capable of coping
with the presence of stressors.

Another issue that has emerged during this review is one of a more conceptual
nature. Many of these studies have failed to describe how their model conceptualizes
stress as a latent construct, leaving one to wonder if the authors considered how the
various means for assessing stress reflect the multiple meanings that stress can have. For
example, if one's theory posits that abuse risk is a function of the frequency of stressful
life events, then using a life events stress measure that quantifies this frequency is useful.
Similarly, if one believes that the stress associated solely with parenting is what
contributes to abuse risk, then a parenting stress measure would be useful. However, if a
theory hypothesizes that abuse risk is associated with a parent's perceived inability to
effectively cope with stressors, a measure assessing the level of perceived stress is
appropriate. Although semantically these distinctions seem subtle, in order to understand
how stress influences abuse, research must come to an understanding in terms of what
type of risk this construct conveys. In other words, researchers should determine if
physical abuse risk is associated with stress from a total sum of unfortunate events, a
dysfunctional parent-child relationship, or deficits that impact one's ability to accurately
assess the significance of a stressor (e.g., bias in assigning greater meaning) and
adaptively cope with the resulting stress.

In spite of these unresolved issues, research in this area continues to produce further support that child abuse potential is strongly associated with stress, however that may be defined and interpreted (Black et al., 2001). Therefore, a condensed review will be presented in order to further address the specific issues related to individual stress measures and the implications they have on our understanding of abuse risk.

Life events stress and child abuse potential

Many of the studies examining stress and abuse risk assess stress via the aggregation of significant life events (e.g., recently experienced divorce, imprisonment, bankruptcy) (Whipple & Webster-Stratton, 1991). Although, such life events can impair functioning, they affect individuals differently as each person's perception of the event is unique. For instance, a divorce may be a severely stressful event to one person and yet perceived as a relief to another. Examples like this have spurred debate regarding the relevance of the number of life event stressors as an indicator of abuse risk and whether such measures assess stress at a superficial level (Brantley, Waggoner, Jones, & Rappaport, 1987; De Longis, Folkman, & Lazarus, 1988). Most notably, critics charge this conceptualization is not an appropriate predictor of abuse risk as it does not take into account the mediating influences unique to the individual, such as coping ability or the significance of the event (De Longis et al., 1988). Therefore, findings related to life event stress seem to only support the hypothesis that those who have experienced more of these specific events are at greater abuse risk. Moreover, few trends have emerged to suggest that experiencing any particular event is more strongly associated with abuse risk than other events, leaving the interpretations and implications of these results restricted simply

11

to that abusive parents often report greater experiences of significant life events (Starr, 1982). Additionally, the frequency with which abusive parents experience such events does not provide insight to potential features, behaviors, or demographics that could perhaps make these individuals more likely to experience these events in the first place. Therefore, life event stress, although often correlated with abuse risk, is not capable of adequately, or potentially meaningfully, predicting abuse potential.

Parenting stress and child abuse potential

Another common measure of stress that is often associated with abuse risk is parenting stress. Research has repeatedly demonstrated that parents who engage in physical abuse describe parenting as more distressing than their non-abusive counterparts (Benedict, Wulff, & White, 1992; Black et al., 2001; Burrell, Thompson, & Sexton, 1994). However, perhaps due to inconsistent definitions of *stress*, it is unclear how the relation between parenting stress and abuse risk has been previously conceptualized and, therefore, which parental risk factors such findings implicate. Arguably, studies assessing parenting stress intend to capture stress that is related to the parent-child relationship only, not confounded by personal stress. However, assessing for this type of "pure effect" does not account for the possibility that the parent-child difficulties described are symptoms of a broader coping deficit that at-risk parents may hold, a possibility that, if supported, would not be adequately assessed using parenting stress alone. Moreover, this restricted view of stress would not be reconciled with the support that parents' personal stress greatly impacts the stress-abuse risk relation. Specifically, parents' appraisal of personal stress has been found to moderate the relation between child-related stress and

12

abuse risk (Holden & Banez, 1996). This finding suggests that at-risk parents less

effectively cope with personal stress and, as a result, are more easily overwhelmed by the

additional stressor of raising a child perceived to be difficult (Holden & Banez, 1996).

Unlike other restricted interpretations of parenting stress, this finding acknowledges that

stressors, extraneous to the parent-child relationship, converge to influence the ability of

parents to accurately interpret and appropriately respond to child-related stressors.

Consistent with a transactional view of abuse, risk is not only influenced by the

parent's personal risk factors (e.g., coping skills, knowledge of useful parenting

strategies) or the child's characteristics (e.g., difficult temperament, behavior issues,

developmental disabilities), but the interaction of the two (Holden & Banez, 1996).

However, from an ecological perspective, these transactions should also be considered

within the larger context within which they occur by considering the influence of both

proximal and distal factors (Garbarino & Sherman, 1980; Mapp, 2006; WHO, 2006;

Williamson et al., 1991). Therefore, research should broaden the focus from parenting

stress to include those factors that, although not directly related to parenting, influence

one's ability to effectively parent. These factors could include personal stressors

(psychopathology; drug usage, coping skills; perceived quality of relationship with child,

family, and friends, number of children) and distal factors (neighborhood violence,

economic poverty, cultural values) (Black et al., 2001; Mapp, 2006; Nair et al., 2003).

Perceived stress and child abuse potential

The literature on perceived stress and abuse risk is limited compared to life events

and parenting stress, but still offers robust support that abusive parents subjectively rate

stressors as more stressful than non-abusive parents (Black et al., 2001; Milner, 1993, 1994). Additionally, evidence supports that abusive parents report greater distress from both parenting-related and non-parenting related stressors (Bauer & Twentyman, 1985). Even when parents were matched in terms of life stress, abusive parents reported greater distress than non-abusive parents (Justice & Calvert, 1990). These findings suggest that the stress experienced by abusive parents is perceived as elevated across contexts, reflecting, as the authors suggest, a tendency for abusive parents to be "hyperresponsive" (Bauer & Twentyman, 1985, p. 335) to multiple stressors (Casanova, Domanic, McCanne, & Milner, 1992; Justice & Calvert, 1990; Justice, Calvert, & Justice, 1985; Milner, 1993).

Inherent to the theoretical underpinnings of these studies is the perspective that abusive parenting occurs most often within the context of an environment with many stressors, an assumption repeatedly supported by findings such as those previously discussed (Herrenkohl et al., 1983; Pianta, 1984; Wolfe, 1985). Within general stress research, including life events, parenting stress, and perceived stress, abuse risk is considered to be greatly impacted by a parent's psychological functioning as well as the ability to adapt to and cope with other stressors (De Longis et al, 1986; Holden & Banez, 1996). The literature that supports this view of cognitive attributes driving one's experience of stress is that regarding perceived stress (Cohen, Kamarck, & Mermelstein, 1983). Unlike the types of stress previously discussed, perceived stress gives insight beyond the frequency and severity of life stressors or stress arising from parenting or child behavior problems. Assessing parents' perceptions of stress provides a

14

comprehensive picture of the degree to which a parent is overwhelmed by a multitude of factors across various systems. Perceived stress also speaks to how well the parent experiences coping with these stressors and the impact of potential resilience factors within their environment that mitigate the effect of life events.

From this review, the variations in the conceptualization of stress discussed above highlight that the interpretation of the stress-abuse risk relation can be greatly influenced by the measurement of the variable (e.g., life events, parenting, or perceived stress). Despite previous difficulties in establishing and appropriately interpreting this relation, one should not infer that these criticisms expose stress as a poor predictor of abuse risk. Rather, these issues demonstrate that previous research has missed the opportunity to meaningfully inform the underlying processes in the stress-abuse link, an error that can only be remedied by considering a more comprehensive view of stress. Such a perspective would reveal that the fundamental relation between stress and physical abuse potential remains both conceptually and practically relevant. Therefore, based on previous literature, the current study suggests that the degree of stress perceived by a parent will strongly predict child abuse potential.

Family Functioning and Child Abuse Potential

Child maltreatment arises from interactions within the larger context of the family. More broadly, family violence is considered to play an integral role in determining the degree of adaptive functioning experienced at both the family and individual level (Paavilainen & Astedt-Kurki, 2003). The most basic definition describes family functioning as "the degree to which the family functions smoothly as a unit"

(Mapp, 2006, p. 1296). However, research suggests that this process is influenced by a number of complex conditions including family structure, relationships between family members, relationships outside the family, and family resources (Paavilainen & Astedt-Kurki, 2003).

Given the nature of child abuse, parents in maltreating families are assumed to evidence not only personal but familial dysfunction. However, considering that dysfunctional family patterns can be evident in non-abusive and low abuse-risk parents, family dysfunction alone is not considered sufficient to lead to abuse (Burrell et al., 1994; Mollerstrom, Patchner, & Milner, 1992). Therefore, research sought to identify specific family characteristics that are unique not only to dysfunctional families, but specifically to those families who are at greater risk to abuse. The resulting evidence supported that abusive and non-abusive families differ in terms of several key characteristics (Burrell et al., 1994; Kolko et al., 1993; Mapp, 2006; Mollerstrom et al., 1992; Paavilainen & Astedt-Kurki, 2003). Consistent with ecological and transactional perspectives, research has shown that the relationships among family members greatly impact individual development and functioning and, when these behavior patterns are targeted specifically, more strongly predict abuse risk (Brown & Kolko, 1999; Mollerstrom et al., 1992; Stockhammer, Salzinger, Feldman, Mojica, & Primavera, 2001).

From this research, specific distinctions between the characteristics that give rise to functional and dysfunctional family relationships have emerged. Functional families are considered to have well defined yet flexible roles for each member and to foster open communication between all members, simultaneously encouraging individuals to work

together in a cohesive manner (Mollerstrom et al., 1992; Milner & Crouch, 1993; Paavilainen & Astedt-Kurki, 2003). Conversely, previous literature supports that abusive families are more likely to display an unstable and unpredictable family structure and to rigidly adhere to their roles as distinct individuals; such family members do not encourage communication and engage in relationship patterns that are coercive, unsupportive, and conflictual (Black et al., 2001; Kolko et al., 1993; Mapp, 2006; Mollerstrom et al., 1992). Additionally, relationships with extended family are often limited in maltreating families due to either the suspicious nature of the parent(s) or because of fears of interference or judgment (Erickson & Egeland, 1996; Paavilainen & Astedt-Kurki, 2003).

Currently, the literature supports that abusive families typically fit the general profile described above. However, beyond this superficial characterization, the relation between family dysfunction and abuse risk is not clearly specified, leading some to argue that the physical maltreatment literature has yet to concretely establish an empirical basis for attributing abuse to family problems (Kolko et al., 1993). More importantly, despite gaining a clearer picture of the characteristics common to maltreating families, the reliance upon abusive samples makes drawing certain conclusions difficult. For example, it is unclear whether such features are the cause or result of family violence. Additionally, comparison data from non-abusive parents has shown they also endorse engaging in, to some degree, these types of relational patterns considered to be indicative of dysfunctional, abusive relationships (Mollerstrom et al., 1994). These findings support that although abusive families are more likely to demonstrate a certain type of family

17

dysfunction, these behaviors are not truly unique to abusive families and therefore do not support the conclusion that family relational dysfunction alone is sufficient for abuse to occur.

Although research cannot support this factor as a single, independent predictor, clearly family functioning, namely relational dysfunction, serves some role in predicting abuse risk. However, frequent inconsistent conceptualizations of this relation have provided little insight into the mechanisms by which family functioning predicts abuse risk. Specifically, findings are unclear whether having these types of relational characteristics may explain a pre-existing association between another predictor and abuse potential (e.g., family dysfunction as a mediational role), or whether they specify the conditions under which this relation can occur (e.g., a moderator role). Furthermore, the reliance upon simple correlations and, subsequently, the relative absence of sophisticated analyses in a large proportion of maltreatment research has limited our understanding of the role of family dysfunction. As a result, little empirical evidence demonstrates how family functioning relates to abuse risk when other risk factors are also considered (Kolko et al., 1993).

Given the lack of research, a large proportion of studies, with few exceptions (Mapp, 2006; Wekerle et al., 2007), have opted to merely comment or speculate as to what other factors, in combination with family dysfunction, might predict abuse risk (Burrell et al., 1994; Benedict et al., 1992; Wekerle et al., 2007). The failure to take the next logical step in empirical analyses (e.g., testing complex models, testing competing models to rule out alternative explanations) has obscured our understanding of the family

functioning- abuse risk association. Additionally, this issue has been further compounded by the mixed results of the forward thinking researchers who have made such attempts, as many have had difficulty substantiating relationships that make sense at both a conceptual and theoretical level. For example, conceptualizing family functioning as one of many mediating variables, Mapp (2006) posited a complex, ecologically representative model capable of predicting abuse potential. Although the resulting path did not support family functioning as a significant mediator between childhood victimization and adult abuse risk, there is evidence to suggest that the relation between more proximal risk factors (such as ontogenic factors) and physical abuse potential are mediated by more distal risk factors (such as domestic violence) (Wekerle et al., 2007). Additionally, sample characteristics may have impacted Mapp's (2006) findings, as participants were predominantly single mothers with children under the age of 4 (and thus less clear which family relationships they are reporting on) who had a personal history of childhood sexual abuse.

Similarly, research suggesting a moderating role for family dysfunction has also struggled to demonstrate this relationship, and have been further criticized for the predominant focus on personal, ontological factors (e.g., depression, locus of control) and not relational qualities (Burrell et al., 1994; Baynard et al., 2008). Further, although risk factors at this level indeed influence a parent's ability to effectively function as a family member, they do not further inform or elucidate how dysfunctional family relationships among all members contribute to abuse risk (Baynard et al., 2008; Burrell et al., 1994; Howze & Kotch, 1984; Mapp, 2006; Wekerle et al., 2007).

Despite such limitations, these studies should be applauded because their work has laid the foundation for current research to continue to utilize complex models to stringently test etiological theory. Additionally, these studies, although few in number, have corroborated that, the abuse phenomenon cannot be attributed to a single factor, or even several single factors working independently, but rather that abuse potential is most greatly impacted when the effects of several risk factors independently, in relation to one another and in combination, are considered.

Efforts to create a complex model that incorporates multiple predictive factors and utilizes more sophisticated analyses should be commended as they represent the next step in the evolution of abuse risk research. However, for this progression to occur, research requires that such models be individually tested, that competing models be examined, and that findings that emerge be used to further inform the complex and multifaceted etiology of abuse (Howze, & Kotch, 1984).

Social Isolation and Child Abuse Potential

Social support has represented different concepts throughout the literature, with indicators evolving over time from superficial criteria assessing the availability of materials that facilitate social interaction (e.g., telephones, cars), to more sophisticated markers which give insight into the number, characteristics, and quality of social relationships. Although current conceptualizations of social support still vary greatly (e.g., availability of resources, number of individuals, frequency of interactions, perceived quality or satisfaction of relationships), the majority of research considers

support to include dimensions related to emotional and practical support and the degree of social integration (Cutrona & Russell, 1990).

Considering these dimensions, *social support* has been defined as the availability of others "with whom individuals are connected and from whom they could potentially receive emotional and material help, information, and other resources" (Corse, Schmid, & Trickett, 1990, p. 45). More broadly, one's *social network* is indicative of the structural characteristics (e.g., number of individuals providing support) within which social support functions (Corse et al., 1990). Conversely, *social isolation* has been previously conceptualized as either the absence of such sources of support, or when available, the quality of support provided by such sources is insufficient or absent (Corse et al., 1990; Moncher, 1995; Streeter & Franklin, 1992).

From an ecological perspective, sources of support are represented across two levels (microsystem and exosystem) to include family members, spouses, friends, school or work associates, and other members of the community (Belsky, 1980, 1993; Corse et al., 1990; Moncher, 1995; Streeter & Franklin, 1992). Similarly, the effects of social support have been found to effect both personal and interpersonal functioning (ontogenic and microsystem) (Black et al., 2001; Crouch, Milner, & Thomsen, 2001; Litty et al., 1996; Runtz & Shallow, 1997). Specifically, adequate social support is associated with more adaptive physical and psychological functioning, greater parenting efficacy, greater overall family functioning, and increased involvement within various community and cultural activities (Corse et al., 1990; Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Crouch et al., 2001; Milner, Robertson, & Rogers, 1990; Muller, Goebel-Fabbri,

Diamond, & Dinklage, 2000; Ortega, 2002). Unfortunately, those reporting inadequate social support often describe the opposite experiences across those domains.

Examining these social connections is of particular interest to the maltreatment literature as adequate social support is one feature that has been used frequently to distinguish abusive from non-abusive parents and has been found to predict abuse risk (Caliso & Milner, 1994; Crouch et al., 2001; Litty et al., 1996; Milner, 2000; Pianta, 1984; Straus, 1980; Williamson et al., 1991). Abusive parents commonly describe their social environment as lacking a sufficient number of social supports and characterize the quality of their relationships as inadequate if not poor (Black et al., 2001; Gracia & Musitu, 1994, 2003; Moncher, 1995; Pianta, 1984; Starr, 1982; Whipple & Webster-Stratton, 1991). Furthermore, these qualities do not seem to be confounded by sampling issues previously discussed as abusive parents continue to report higher rates of social isolation (perceive less social support) than non abusive parents matched for demographics (Milner & Dopke, 1997). Nonetheless, child maltreatment is more prevalent in communities lacking formal and/or informal sources of social support (Garbarino & Kostelny, 1993). In general, this sense of isolation is pervasive, with abusive parents frequently describing feeling disconnected from supportive resources at most ecological levels (Gracia & Musitu, 1994, 2003).

Research sought to further examine abusive and at-risk families and their surrounding social environment in an attempt to identify what factors or processes were contributing to the apparent social support deficit. The resulting findings reflected the complex, interactive nature that constitutes social support by implicating disruptions at

personal, interpersonal, and community levels (Garbarino & Sherman, 1980). At the

closest level, research suggests that the contributions of certain ontogenic qualities (e.g.,

cognitive biases) make at-risk parents less likely to perceive social support as available

and more likely to report their social relationships as critical or disapproving (Moncher,

1995; Seagull, 1987). Additionally, micro- and exo-system relationships have been

characterized as negative or highly conflictual (Corse et al., 1990; Seagull, 1987).

Similarly, when compared to the interactions of non-abusive parents, abusive parents are

more likely to offend potential supportive resources, a finding often attributed to social

skills deficits (Crittenden, 1981).

Lastly, and perhaps most revealing, research has shown that after frequent,

unsuccessful social interactions, abusive parents begin to actively withdraw from the

social world (Black et al., 2001; Milner, 2000). Specifically, violent parents respond to

the perceived contextual inadequacies by further withdrawing from their social

environment, thereby creating a negative cyclical pattern as the opportunity for

improving the social support network size and quality is diminished (Gracia & Musitu,

1994, 2003; Seagull, 1987). Unlike many current conceptualizations, this process

demonstrates that social withdrawal is a sign of family and social level disruptions and is

therefore a symptom of abuse risk, not a cause (Seagull, 1987). When considered

together, these psychosocial factors explain, at least in part, why abusive parents report

smaller social networks, experience greater difficulty in forming new social connections,

and often find themselves socially isolated.

Social support is considered by many to be an accepted risk factor. However, some researchers have had less success demonstrating this relation (Chaffin, Kelleher, & Hollenberg, 1996; Howing, Wodarski, Kurtz, & Gaudin, 1993; Mapp, 2006). Further examination of these inconsistencies highlight several issues with the current literature relating social support to abuse risk. First, the many variations in conceptualizations of what constitutes social support (e.g., social network, perceived social support, availability of resources) provide one possible explanation for these mixed findings (Corse et al., 1990; Seagull, 1987; Streeter & Franklin, 1992). Similarly, researchers have yet to settle on the role (e.g., type of variable) that social support has in predicting abuse risk. More specifically, social support has been shown to be related to abuse risk independently (Corse et al., 1990; Moncher, 1996; Straus, 1980; Whipple & Webster-Stratton, 1991), as a mediator (Benedict et al., 1992; Crouch et al., 2001; Garbarino & Sherman, 1980), and as a moderator (Kotch et al., 1997; Litty et al., 1996).

Despite current trends that consider social support as working in concert with other risk factors to affect abuse risk (in particular, championing a buffering hypothesis), some research has continued to examine the independent effects of this construct (Gracia & Musitu, 1994, 2003). However, Korbin (1995) cautions that the focus on social isolation in previous literature should not be interpreted as supporting that this construct alone has a causal relation to abuse risk, but rather the purpose was to expand the context in which physical abuse effects and is affected by social support. Additionally, methodological issues with previous studies examining the buffering effects of social support foster hesitancy in interpreting these findings.

By far, the majority of more recent studies have focused on demonstrating how social support resources ameliorate (i.e., moderate) the effects of various stressors on general health (Maurice-Stam, Oort, Last, & Grootenhuis, 2008; Wright, 2006; Youngblut & Brooten, 2006), life adjustment (Benedict et al., 1992; Jack, 1997; Johnston et al., 2003), and abuse risk (Burrell et al., 1996; Caliso & Milner, 1994; Schaeffer, Alexander, Bethke, & Kretz, 2005). Cohen & Wills's (1985) critical analysis of previous literature detailed extensively the conditions under which the buffering effects of social support are appropriately interpreted.

The first guidelines address the manner in which researchers conceptualize and assess social support and stress (Cohen & Wills, 1985). First, the degree to which social supports lessen parents' experience of stress is dependent upon their subjective appraisal of the stressor, the resulting stress, and adequacy of support. Therefore, measurement must focus on parents' perceptions of availability of social support. Second, the measurement of stress represents a potential source for confound as parents' endorsement of certain negative life events (e.g., divorce, death of close one) would be indicators of both a greater level of stress as well as diminished social support. Therefore, researchers must ensure that conceptualizations and assessment of stress and social support lend themselves to gaining more insight into the distinctions between these constructs (e.g., one examines ontogenic experiences, whereas the other, exosystem relationships) and not their similarities (e.g., changes in social relationships). Third, social support resources vary not only in origin (e.g., family, school, work) but also in the type of support they supply (e.g., financial, emotional, material). Therefore, measurements should reflect the

broad scope of social support types and the more global impact they can have. Lastly, in order for social support to show a significant change in the relation between stress and abuse risk, stress must first be shown to have a direct and independent relation to abuse risk (Cohen & Wills, 1985).

The remaining issues Cohen and Wills (1985) discuss are similarly related to assessment, but also include sampling concerns. First, perception of the availability or quality of social support fluctuates, especially for those experiencing life transitions (e.g., college students, servicemen, new parents). However, due to the limited time frame that many measures ask parents to reflect upon (e.g., 24 hours), it is unclear the extent to which reported perceptions of support are representative of typical experiences and not influenced by these fluctuations. Furthermore, abusive parents, especially those beginning to engage in the negative social withdrawal cycle, have been found to make several spontaneous attempts to reach out to the few resources available to them (Corse et al., 1990). Merely asking parents to reflect on the past day might capture this attempt, but not the resolution (e.g., whether connection was maintained, help was not received) and, as a result, influences parents' perceptions of availability of resources. Lastly, samples comprised of clinical populations (including identified abusive parents) are less likely to demonstrate this relation due to the relatively high level of stress (and thus decreased variability in stress) commonly reported. Therefore, samples must also demonstrate varying degrees of stress in order for social support to evidence a differential effect (Cohen & Wills, 1985).

In their conclusion, Cohen and Wills (1985) state that reviews of the literature show that the challenge is no longer focused on substantiating that stress relations are buffered by social support. Rather, the challenge rests with researchers who must use these guidelines to create the context within which this natural relation can emerge. Unfortunately, several studies (Burrell et al., 1994; Caliso & Milner, 1994; Schaeffer et al., 2005) reporting that social support buffers the effects of stress on abuse risk fail to meet one or more of these conditions.

Although important, these issues represent methodological problems in the application of the buffering hypothesis in broader research but do not represent an exhaustive list of issues that can be found in previous social support-abuse risk research. However, Seagull (1987) and others suggest that the current conceptualization of social support used by most researchers may not by appropriate for abusive families. One issue apparent in much social support literature, but is especially relevant to abusive families, is that many studies associate relationships as a potential source of social support. Marriage is often considered to be an indicator of adequate social support, however, for abusive families, and in particular those experiencing domestic violence, this partner relationship represents an additional stressor, not a support (Seagull, 1987). Furthermore, as interactions between family members are often negative, relying upon these sources for support only exacerbates the situation (Corse et al., 1990; Seagull, 1987). Therefore, the presence of a relationship does not ensure the parent is no longer at risk, but rather, researchers should remember that social relationships can encourage prosocial or antisocial behavior. Evidence such as this continues to support that the relationships

between parents and other, extrafamilial individuals better represent those connections that benefit abusive families (Corse et al., 1990; Jayakody, Chatters, & Taylor, 1993). Additionally, these external connections provide the opportunity for at-risk or abusive parents to receive advice or feedback about child-rearing practices, behaviors that would most likely be supported by family members who share similar beliefs (Belsky, 1980).

The next issue, and somewhat connected to the previous point, addresses current calls for a greater focus on relational quality over social network size, acknowledging the importance of assessing parents' perceptions of social experiences (Corse et al., 1990). Research has demonstrated that parents' perception, especially maternal experience, of social support (adequacy or quality of support) is more strongly associated with abuse risk, and is considered more highly valued than the size of the network (Corse et al., 1990; Moncher, 1995; Ortega, 2002; Schaeffer et al., 2005; Paavilainen & Astedt-Kurki, 2003). Additionally, gaining insight into the perceived quality and degree of satisfaction with supportive relationships allows researchers to more confidently distinguish between healthy and compromised supports (Ortega, 2002). This point is exemplified by findings that parents' perception of social poverty (i.e., quality social support is scarce) distinguished high-risk from low-risk neighborhoods matched for socioeconomic level (Garbarino & Sherman, 1980). Similarly, the perceived quality of social relationships dictates whether that relationship will have an exacerbative or ameliorative effect on parents at-risk for abuse (Gracia & Musitu, 1994, 2003; Kotch et al., 1997).

Within the literature, perceived support refers to parents' perceptions of social relationships (Streeter & Franklin, 1992). This type of support is particularly useful in

several ways. First, it is capable of recognizing the differential influence that individuals at various levels of the social hierarchy have and acknowledges that not every social connection results in the formation of a socially supportive relationship. Second, the perceived social support literature has specified that supportive connections are formed when three conditions are met. Specifically, resources must first be available to community members who then recognize the support as available and also perceive it as a potential benefit (Streeter & Franklin, 1992; Tracy 1990). Given the cognitive biases known to be common to abusive parents (see Milner, 2000), it is imperative that research consider how these processes, unique to this population, influence parents' interpretations of their surrounding social world. Therefore, studies that represent social isolation as a concept indicated by descriptive criteria (e.g., availability of material resources, solely by network size) may be less valid predictors of abuse risk relative to perceived quality (Gracia & Musitu, 1994, 2003; Garbarino, 1980; Paavilainen & Astedt-Kurki, 2003; Wright, 2006).

Consistent with the current state of the literature, the abundance of simple models have complicated our understanding of the role of social isolation in abuse risk. However, more recent studies (although still few in number) have begun to consider how specific risk factors, that are conceptually and clinically relevant work together to impact abuse potential (Benedict et al., 1992; Mapp, 2006; Tajima, 2002). Unfortunately, the ecology represented by these models has not often withstood multivariate analyses to demonstrate significance of such risk factors (Mapp, 2006). Therefore, results in final models more closely resemble those in previous research (e.g., simple, direct paths) which are less

representative of the complex, interactive and multileveled models of the future. One study which successfully demonstrated a multiplicative and ecologically relevant model of abuse examined the relation between stress, family functioning, and social support on abuse risk and, therefore, warrants closer examination (Burrell et al., 1994).

Burrell et al. (1994) demonstrated that families with children with developmental disabilities were at greatest abuse risk when disruptions of both family (assessed via perceived family resources, need, and support) and social systems were reported (assessed via perceptions of number of social resources and network adequacies). These findings supported that parenting stress was the strongest correlate of abuse risk and that through this path, social support and family functioning impact abuse potential. Additionally, these findings further indicated that social support did not independently predict abuse risk, but that its effects on other risk factors indirectly impact abuse potential. In their conclusion, the authors state that these three factors taken together explain considerable abuse risk variance and suggest further focus on these factors (Burrell et al., 1994).

Although Burrell et al.'s research provided insightful information, this study has several conceptual limitations, in addition to more obvious sampling issues (e.g., generalizability to parents of typically developing children). First, although this study showed a stress-abuse risk connection, assessing parenting stress too greatly restricts our understanding of how stress influences abuse risk by focusing solely on the parent-child dyad, while ignoring other stressors that simultaneously contribute to parents' stress. Second, although Burrell et al. assessed the extent to which parents perceived support to

30

be available, this support was predominant limited to formal (meaning institutional) support. The noticeable absence of items relating to the availability of and satisfaction with close personal relationships makes it difficult to determine if abuse risk should be attributed to a community problem (e.g., inadequate community resources) or personal, ontogenic qualities (e.g., misappraisal of resource availability and quality). Lastly, and perhaps most importantly, in interpreting their findings, the authors suggest that stress mediates the relation between other risk factors they examined (i.e., social support factors) and abuse potential. Additionally, they go on to suggest, albeit speculatively, that the ability of parents to adaptively cope with the stresses of parenting a child with disabilities (presumably, in the face of limited resources) determines abuse risk. The issue here arises, not from their logic (indeed coping skills ameliorate the effects of stress on abuse risk), but one of misused labeling. Alternative conceptualizations, however, are possible.

First, *stress*, as it was used for this study, described the extent to which parents perceive their parenting responsibilities, family resources/needs, and social network as *stressors*. Second, these stressors only lead to stress when parents are unable to cope with the demands of the stressors and the potential for stress to be alleviated by external resources (e.g., family and/or social support) is absent. Third, in order for stress to serve as a mediator, family resources and social support would need to each evidence direct and independent paths to abuse risk, a condition not met in the social support-abuse risk relation. Therefore, although *stress* is experienced at an ontogenic level, the potential exists for external sources of support to compensate for (interact with) this personal

31

vulnerability, thereby affecting the strength of the stress-abuse risk relation. Considering these points, Burrell et al.'s study does not support a mediational model. Conversely, the relation here between stress and abuse risk is more accurately conceptualized as one that predisposes parents to the moderating effects of other risk factors. In terms of interpretation, this model no longer offers an explanatory model but rather describes the conditions under which stressors associated with parenting a child with disabilities leads to greater abuse risk. Despite these issues, Burrell et al. successfully demonstrated that abuse risk is greatly impacted by the presence of stress, family dysfunction, and social isolation. In other literature, these constructs have more recently been shown to be similarly interrelated by research examining factors that predict parental and familial adjustment following the experience of a physical/medical trauma (Johnston et al., 2003; Maurice-Stam et al., 2008; Youngblut & Brooten, 2006). Again, such efforts to create a more complex and comprehensive etiological model of abuse should be commended, yet continue to demand refinement.

The Current Study

The purpose of the present study was to extend current research examining the relationship between psychosocial risk factors and physical maltreatment risk. As discussed above, previous research has identified stress as one of the strongest correlates of child abuse potential (Burrell et al., 1994; Pianta, 1984) as well as established associations with other identified risk factors, such as family dysfunction and social support (Benedict et al., 1992; Mollerstrom et al., 1992; Moncher, 1995). However, a review of the current physical maltreatment literature found that much of the research has

focused on identifying individual risk factors and has yet to successfully nest those variables within a larger predictive model. Additionally, although some have acknowledged the cumulative effect of multiple factors, few have attempted to examine the potentially interactive effects of risk factors at various levels of the parent's ecological setting. The current study sought to further examine factors previously identified as relevant predictors of abuse potential within the context of an ecological model.

As noted earlier, abusive families report greater levels of stress and family dysfunction. The current investigation sought to provide an explanation as to why these factors so frequently occur in abusive parents. From an ecological perspective, parents who experience themselves as overwhelmed by stressors, whether personal dysfunction, extreme life events, or parenting-related, are more likely to use physical means in an attempt to cope with the chaos perceived to be pervading their environment (Cohen et al., 1983; Justice et al., 1985; Whipple-Stratton, 1991; Wolfe, 1985). The current study thus conceptualizes perceived stress as the extent to which a parent feels overwhelmed by a broad range of daily life stressors. As previously discussed, perceived stress can be considered as capturing the various types of stressors individuals encounter, incorporating one's experiences of those stressors.

Extending beyond the individual level, the family system is the only exosystem variable that not only influences abuse risk but literally is the context within which the majority of abuse occurs. The current study posited family functioning as a moderator that can either exacerbate or ameliorate the effects of the individual-level stress. Within

this context, the nature of the family's relationships and functioning can help diffuse stress, or conversely, exacerbate perceived stress. In the absence of family dysfunction, when a parent perceives the family to be functional, the path between stress and abuse risk will diminish. Therefore, the current model suggested that previous findings have identified an association of family dysfunction with abuse risk only because the parents were also stressed. If subjects were to report family dysfunction but no distress, family dysfunction alone would not be associated with child abuse potential.

One major critique of most of the psychology literature includes the strong reliance on single informants. However, this issue could have a potentially greater impact within maltreatment literature as often the reporters are potential perpetrators (Stockhammer et al., 2001). In an attempt to address such concerns, some investigators have used children as alternate reporters (Gable, 1998; Kolko et al., 1993). The current study extended previous research on these constructs by also gathering children's perception of parenting behaviors and family functioning.

Lastly, in consideration of influences wherein the parent interacts with the extra-familial world, social isolation was examined in this study. Regarding the potential impact of social isolation on abuse risk, the current investigation suggested that the quality of social support relationships would also moderate the relation between stress and abuse risk. Similar to family relationships and dysfunction, connections outside of the family system can provide an opportunity to channel or contribute to parental stress (Revenson, Schiaffino, Majerovitz, & Gibofsky, 1991). Under this view, parents who experience greater stress and report fewer social resources, or poorer quality of those

relationships, were expected to be at greater abuse risk than those who only experience stress or inadequate social support alone.

Collectively, the current study sought to address the above issues by assessing an ecological model (See Figure 1):

The Current Model

1. The first goal was to extend previous empirical support that *perceived* stress in particular directly predicts child abuse potential, such that individuals who report higher levels of perceived stress were hypothesized to also be those who evidence elevated abuse potential. Given that other uninvestigated factors may mediate or moderate this relation, a direct relationship was examined independent of the moderators discussed below.

2. The second goal was to examine whether the relation between perceived stress and abuse risk was moderated by family functioning. Those with higher levels of perceived stress coupled with family dysfunction (e.g., poorer family functioning) were expected to evidence elevated abuse risk, whereas those with higher family dysfunction alone or those with neither perceived stress nor family dysfunction would evidence lower abuse risk.

3. The third goal was to clarify previous conflicting support (Chaffin et al., 1996; Seagull, 1987) that the relation between perceived stress and abuse risk was further moderated by social isolation. Participants who express higher levels of perceived stress *and* social isolation (e.g., less perceived social support) were

expected to report higher abuse risk; those with greater stress but adequate social

support would evidence lower abuse potential.

CHAPTER II

METHOD

Participants

As part of a larger parenting study, mother-child dyads were recruited from various sites in the community, including day care centers and after school programs. Mothers of children between the ages of 6-9 were targeted as children of this age range are among those at the highest risk for physical abuse (Herrenkohl et al., 1983). Given the difficulty in obtaining adequate representation of fathers, mothers were the focus of this study. The current sample included 92 mothers and their children, of whom 50 children were female (54.3%) and 42 were male. Maternal age ranged from 23 to 51 years ($M =$ 38.5, $SD = 6.80$) whereas children's mean age was 7.48 years ($SD = 1.13$). Mothers primarily self-identified as Caucasian (52.2%) or African American (37%) and fewer (6.6%) identified as Hispanic or Latino. The majority of mothers (93.5%) were the child's biological mother and were currently residing with the child's biological father (73.9%) and 20.7% identified as single. On average, mothers held a 4-year university degree and support 3 children ($SD = 1.2$) with a mean annual family income ranging from $40,000 to $49,000. In terms of mental health functioning, within the past month, the majority of mothers reported feeling peaceful and happy most of the time and feeling "blue," nervous, or "down in the dumps" none to some of the time. Thus, in terms of

mood, the sample could be considered to be within a normal range (Davies, Sherbourne,

Peterson, & Ware, 1988).

Materials

Parent Abuse-Risk Measures

Child Abuse Potential Inventory (CAPI; Milner, 1986, 1994). The Child Abuse

Potential Inventory is a 160-item self-report questionnaire that is presented in an

Agree/Disagree, forced choice format. Only 77-items comprise the Abuse Scale score

and its six subscales that assess distress, rigidity, unhappiness, problems with child and

self, problems with family, and problems with others. The remaining items are used as

fillers, distracters, or to assess potential response biases (e.g. Faking–Good, Faking-Bad,

and Random Responding). The CAPI was developed as a screening tool to assess the

extent to which participants endorse characteristics identified in substantiations of child

abuse. Higher scores on the Abuse Scale are associated with greater physical abuse

potential. The CAPI has been found to be reliable across age, gender, education level, and

ethnic group. Internal consistency (KR-20) for the Abuse Scale ranges from .92 to .96 for

abusive and non-abusive populations (Milner, 1986).

Adult - Adolescent Parenting Inventory-2 (AAPI-2; Bavolek & Keene, 2001). The

Adult-Adolescent Parenting Inventory-2 is a 40-item abuse potential measure that utilizes

a 5-point likert scale to determine degree of agreement with beliefs and behaviors

regarding child-rearing across four domains (inappropriate expectations, lack of empathy,

belief in corporal punishment, and parent–child role reversal). Higher AAPI-2 Total

scores are associated with more functional parenting attitudes and beliefs (positive

38

parenting). The AAPI-2 is particularly interested in identifying maladaptive parenting practices associated with child abuse and neglect and has demonstrated discriminative validity, discerning between abusive and non-abusive parents. Internal consistency for the AAPI-2 Total score is .85 (Conners, Whiteside-Mansell, Deere, Ledet, & Edwards, 2006).

Measures of Predictors

Perceived Stress Scale (PSS; Cohen et al., 1983). The Perceived Stress Scale is comprised of 10-items used to assess the extent to which, within the last month, participants felt their lives were overwhelming, uncontrollable, or unpredictable. Items are rated on a four point likert type scale ranging from never to very often. Total scores were generated by summing individual items, with higher scores indicative of greater perceived stress. Coefficient alpha has been reported to range from .84 to .86 across samples for the PSS total score.

Daily Hassles and Uplifts Scale (DHUS; De Longis et al., 1988). The Daily Hassles and Uplifts Scale was revised from a longer measure of the same name and consists of the 53 most frequently endorsed items. The DHUS is assessed using a split scale, allowing for each item to be rated in terms of the degree to which it represents both a hassle and an uplift. A sample item, "your children" would be rated first on a hassle scale from 0 (none or not applicable) to 3 (a great deal) and then again on a similar likert scale as an uplift. The items include events related to the household, finances, work, environmental and social issues, home maintenance, health, personal life, and family and friends. For the purposes of the current study, two adjustments were made to the

instructions commonly used. First, only the Hassles scale was used to determine the degree to which participants perceived these daily events as bothersome, annoying, or irritating. Second, the time frame within which participants were to consider these items was extended from the standard "the past 24 hours" to "the past week". The reasoning behind this amendment was to decrease the potential for responses to rare events that are not typical of daily life (e.g. car accident), and thereby to obtain a broader representation of respondents' perceived daily hassles. The Hassles scale alpha reliability coefficient is reported as .89.

  Family Relations Index (FRI; Moos & Moos, 1986). The Family Relations Index is representative of one of the three dimensions that comprise the original Family Environment Scale (FES; Moos & Moos, 1976). The FRI is used to focus specifically on the relationships between family members. The FRI is a 27-item true-false measure which assesses parents' experience of family relationships across 3 subscales: cohesion, expressiveness, and conflict. Cohesion represents the degree to which members within a family are described as supportive of and committed to other family members as well as the adaptive functioning of the family system (e.g., "There is a feeling of togetherness in our family"). Expressiveness describes the extent to which family members encourage open and direct communication of thoughts, ideas, and feelings (e.g., "Family members often keep their feelings to themselves"). Conflict measures the degree to which family members express anger and aggression and also includes the subjective appraisal of the frequency that members criticize and argue (e.g., "Family members sometimes get so angry they throw things"). A Total Score was obtained by summing scores from both the

40

Cohesive and Expressiveness scales and then subtracting the score from the Conflict

scale (e.g., Total score= ((Coh. + Exp.) - Conflict). The FRI has previously been shown

to have high internal consistency (Varni & Setoguchi, 1993) and good construct validity

(Hoge, Andrews, & Faulkner, 1989). Cronbach's alpha for the Family Relations Index

has been reported as .91 (Howell, Hauser-Cram, & Kersh, 2007).

De Jong-Gierveld Loneliness Scale (De Jong-Gierveld and Van Tilburg 1999).

The original De Jong-Gierveld Loneliness Scale is an 11-item (Yes/No) self-report

questionnaire, including five positive and six negative items. A total score was computed

by adding across individual items, with high scores suggesting greater perceived

loneliness. Although the majority of prior samples have been Dutch, this measure has

been shown to be valid and reliable across cultural contexts and ethnic groups (De Jong-

Gierveld & Kamphuis, 1985). Coefficient alpha ranges from .84 to .88 across samples.

The Social Support Resources Index (SSRI; Vaux & Harrison, 1985). The Social

Support Resources Index measure was used to assess participants' social support

network. The measures' design allows respondents to list up to 10 individuals from their

support network and then rank those individuals in terms of the quality of emotional

and/or socializing support, practical and/or financial assistance, and advice/guidance they

provide. The total number of individuals listed comprises the participant's total Network

Size score. For the current study, the quality of social support was of particular interest

and as such, the instructions were adjusted to reflect that focus. First, instead of listing

names of up to 10 support members, responders were asked to give a number that reflects

the size of her social network that would represent the total Network Size (e.g., 5

individuals). Second, to obtain a better idea of the quality of the relationships between the participant and their closest supporters, respondents were asked to rate relationship satisfaction for only the two closest individuals from their social network. Satisfaction is a more global appraisal of relationship fulfillment that indicates the extent to which the respondent feels each nominated individual provides satisfactory support in the five domains described above. Relation satisfaction was assessed using a 5-point likert type scale with higher ratings representing greater satisfaction with the social network member. The SSRI has been reported as having adequate reliability (.76) (Vaux & Wood, 1987).

Child-Report Measures

Children's Version Family Environment Scale (CFES; Moos & Moos, 1986; Pino, Simons, & Slowinowski, 1983). The Children's Version Family Environment Scale is a downward extension of the FES and is designed for children from ages 5-12. The CFES presents children with 30-pictoral, multiple-choice items featuring a cartoon-like depiction of a parent and child interacting in different scenarios. Additionally, three varying captions are provided that describe different ways the adult character could respond to the corresponding picture. For each item, the child was asked to choose the caption (either A, B, or C) that best represents the way in which his/her own family interacts (e.g., "Which picture looks like your family?"). A sample item portrays a mother who is holding a report card and talking with her daughter. The captions from the mother read: (A) "Grades don't matter!" (B) "You tried. That is important!" or (C) "You need to get all 'A's!". The CFES assesses the same dimensions as the FES, including

scales of Relationship quality, Personal Growth, Cultural Orientation, and System Maintenance, and was used in conjunction with its adult counterpart to obtain a more comprehensive idea of family functioning. To examine the correspondence between parent and child report of family functioning, only the Relationship subscale was utilized in the present study.

Parent Perception Inventory (PPI-C; Hazzard, Christensen, & Margolin, 1983). The Parent Perception Inventory is an instrument designed to assess a child's experience of parenting practices. The PPI describes 9 positive parenting behaviors (e.g., positive reinforcement, non-verbal affection) and 9 negative parenting behaviors (e.g., privilege removal, ignoring). Items are read aloud to the child who then describes the frequency (ranging from (1) "Never" to (5) "A Lot") that each individual parent executes each behavior. Item scores from each dimension (e.g., positive and negative behaviors) are summed to create individual Scale scores for each parent. Given the current study's focus on mothers, children were asked to consider maternal behaviors only which were then used to obtain two Scale scores (Mother Positive and Mother Negative). Chronbach's alpha has been reported for both Mother's Positive and Mother's Negative scales as .84 and .78, respectively.

Procedure

Participants were recruited as part of a larger parenting study, using flyers and advertisements distributed in the Piedmont Triad Metropolitan area. Those interested called the contact number provided and scheduled a time to participate in a session at the university research lab. A proportion of parents (n = 17) were contacted directly, using an

archival database of families who had previously been recruited from the community

using a similar strategy as the present study. Upon their arrival to the lab, parents

provided informed consent and were escorted to a private area to begin the

questionnaires. Children completed an assent form which was read aloud to them.

Parent Protocol

Parents were brought into a private room to complete self-report questionnaires

on computers that displayed items individually. As part of the programming, responses

were automatically stored in a database identified only by a randomly assigned

identification number. Participants were informed of the great measures taken to ensure

their anonymity and candid responding was strongly encouraged. The protocol for the

full parenting study took between 45 to 60 minutes to complete. Participants received a

$20 gift card as compensation for their participation in the full study.

Child Protocol

While the parent completed the individual measures, the self-report measures

were administered verbally to the child by a trained graduate student who also recorded

the child's responses. This portion of the child protocol was 20 minutes and they selected

a small toy after completing their measures.

Analyses

Basic analyses will be conducted using SPSS 16 for Windows. After the potential

need for covariates and simple bivariate relationships were examined, the predictor

measures were standardized and the standardized indicators of stress and social isolation

were summed to create a composite variable of each. The proposed study planned to

utilize multivariate and structural equation modeling (SEM) to compare the hypothesized structural model. However, the obtained sample size was moderate and thus not deemed sufficiently capable of producing reliable SEM results. Thus, a series of hierarchical multiple regressions were performed to examine whether family functioning and social support reliably contributed to the prediction of abuse risk, beyond stress and their independent main effects (see Figure 1). The dependent variables of abuse risk included the Child Abuse Potential Inventory Abuse Scale score and the Adult-Adolescent Parenting Inventory-2 Total score; for a composite stress score, the Perceived Stress Scale and the Daily Hassles and Uplifts Scale scores contributed to a composite; for social isolation, the Social Support Resources and De Jong-Gierveld Loneliness Scale contributed to a composite; and for family functioning, the Family Relation Inventory Total score was used.

CHAPTER III

RESULTS

Demographic comparisons

To assess the need for demographic statistical controls, preliminary analyses were

conducted to determine whether predictor or outcome variables differed across

demographic characteristics. No significant differences in outcome variables were found

for family size or participating child age. Parental age was significantly correlated to

AAPI total scores ($r = .26$, $p \leq .01$), such that younger maternal age was associated with

more maladaptive parenting beliefs.

Family income, educational status, relationship status, and ethnicity were

categorical variables, wherein mothers indicated the option, or range, which applied to

her. A significant correlation was identified for both income and education on the

outcome variables, such that mothers of low income and those who reported less formal

education evidenced greater abuse risk on the CAPI Abuse scale ($r = -.48$, $p \leq .001$; $r = -$

$.29$, $p \leq .01$, respectively) and more maladaptive parenting beliefs on the AAPI ($r = .36$, p

$\leq .001$; $r = .31$, $p \leq .01$, respectively). Analyses also revealed significant t-test findings

regarding group mean differences based on relationship status and ethnicity. Given that

the vast majority of mothers described their relationship status as either living with

child's father (73.9%) or single (20.7%), these two groups were included in the t-test

analysis. Mothers who reported living with a partner, <u>not</u> the child's parent were limited

(n = 4) and thus did not represent a meaningful comparison group. There were significant mean differences for relationship status and CAPI Abuse Scale scores ($t(85) = 4.95$, $p = .000$) and AAPI Total scores ($t = .60$, $p = .000$), such that single mothers evidenced greater abuse potential ($M = 154.16$, $SD = 81.96$) and more maladaptive parenting beliefs ($M = 137.11$, $SD = 14.55$) than mothers living with their child's parent ($M = 71.74$, $SD = 58.53$; $M = 155.21$, $SD = 15.34$, respectively).

Given the limited representation of Hispanic or Asian/Pacific Islander mothers, ethnic group categories were collapsed and a dichotomous variable was created to assess for potential mean differences between Caucasian and ethnic minority mothers. A significant mean difference was found for both dependent variables. The CAPI Abuse Scale score means were significantly higher ($t(90) = -2.30$, $p < .05$) for ethnic minority mothers ($M = 113.09$, $SD = 84.91$) than Caucasian mothers ($M = 75.06$, $SD = 73.35$). Similarly, the AAPI means were significantly higher ($t(90) = 3.43$, $p = .001$) for Caucasian mothers ($M = 156.98$, $SD = 14.69$) than ethnic minority mothers ($M = 145.68$, $SD = 16.89$). The SSRI means were significantly higher ($t(90) = -2.41$, $p < .05$) for ethnic minority mothers ($M = 20.96$, $SD = 8.15$) than Caucasian mothers ($M = 17.44$, $SD = 5.75$). The DHUS means were significantly higher ($t(90) = -2.07$, $p < .05$) for ethnic minority mothers ($M = 93.30$, $SD = 26.39$) than Caucasian mothers ($M = 83.35$, $SD = 19.32$). The De Jong-Gierveld Loneliness Scale means were also significantly higher ($t(90) = -3.62$, $p = .000$) for ethnic minority mothers ($M = 3.7$, $SD = 2.64$) than Caucasian mothers ($M = 1.71$, $SD = 2.64$).

In sum, the indicators of abuse risk (higher CAPI and lower AAPI Total scores) were elevated for mothers who represented an ethnic minority group, obtained less education, earned less income, and/or were single parents. Furthermore, minority status was also associated with greater perceived exposure to daily stressors as well as both indicators of social isolation.

Mean differences were also examined for variables assessing the children's perspective of parenting and family behaviors. No significant age effects were found on either the CVFES or PPI Mother's, Positive or Negative scales (ps ≥.05), but children's reports of family behaviors (CVFES) evidenced a significant sex effect ($t(90) = 2.06$, $p <$ .05), with female children reporting significantly higher ($M = 7.52$, $SD = 1.76$) means than male children ($M = 6.64$, $SD = 2.33$). However, this finding appears to be driven by the significant mean difference on the Cohesion subscale specifically ($t(90) = 3.01$, $p <$ .01) as females reported greater family cohesion ($M = 6.96$, $SD = 1.19$) than males ($M =$ 6.12, $SD = 1.48$). No sex effects were evidenced for the Expressiveness and Conflict subscales (ps > .05). There was no significant sex effect for the PPI Mother's, Positive or Negative scores (ps ≥.05).

Preliminary Correlational Analyses

The initial correlations between the variables of interest were examined (see Table 1). As expected, the CAPI Abuse Scale was significantly negatively correlated with AAPI Total and FRI and positively associated with the DH, SSRI, PSS and Loneliness scores. The AAPI Total score was significantly positively associated with the FRI and negatively associated with the SSRI, Loneliness, and DH, but only marginally

correlated with the PSS ($p = .06$). Thus altogether, greater abuse potential and more maladaptive parenting beliefs were associated with a greater degree of perceived stress, poorer family functioning, and less satisfying social supports.

As Table 1 shows, the relation between the multiple indicators assessing *stress* and those assessing *social isolation* evidenced strong positive relations. These measures were thus standardized and combined to create a composite Stress variable and a composite Social Isolation variable. There was a strong, positive relation between the CAPI Abuse scale scores and composite Stress ($r = .62, p \leq .001$) and composite Social Isolation ($r = .64, p \leq .001$). There was a moderate, negative relation between the AAPI Total score and composite Stress ($r = -.31, p \leq .01$) and composite Social Isolation ($r = -.31, p \leq .01$). Although CAPI Abuse Scale and AAPI Total scores were related ($r = -.37, p \leq .001$) the magnitude of the association was relatively modest, thereby precluding creating a composite abuse risk score; thus, although both dependent variables have been considered measures of abuse potential, they appear to assess independent dimensions of that construct. Consequently, the CAPI Abuse Scale and AAPI Total score were treated as independent outcomes/dependent variables in the subsequent analyses.

Multiple Regression Analyses

Hierarchical Multiple Regression Analyses were used to independently predict the CAPI Abuse Scale and the APPI Total score. Specifically, these analyses were performed to determine the unique role of family dysfunction and social isolation, beyond perceived stress, in independently predicting these two dependent variables of abuse risk.

To address some of the significant findings indicating a relation between the outcome measures and some demographic variables, covariates were included to determine the role of stress, family functioning, and social isolation above and beyond what is attributable to demographic variables alone. Initial analyses of the regression models were structured as follows: the demographic controls (Income, Age, Education, Relationship Status and Ethnic Status) were entered at block one, each main effect was entered at step two (Stress) and three (e.g., FRI or Social Isolation), followed by the interaction term, using a standardized multiplicative term computed from the two composite indicators (e.g., Stress x FRI or Stress x Social Isolation).

In predicting the CAPI Abuse Scale scores, the initial regression, using the FRI and with variables entered as described above, yielded an $R^2 = .55$, $F(8, 83) = 12.40$, $p = .000$. However, with the exception of income, none of the other demographic covariates contributed significant and unique variance to the dependent variable. Although initial demographic analyses indicated a mean difference for CAPI Abuse Scale between Caucasian and ethnic minority mothers, this discrepancy was no longer significant after accounting for annual income (all $ps \geq .1$). Thus, subsequent regression models predicting CAPI Abuse Scale discussed throughout the paper consider the influence of the variables of interest beyond the variability explained by income.

In predicting the AAPI Total, using the FRI with variables entered as described above, the initial regression model resulted in an $R^2 = .31$, $F(8, 83) = 4.65$, $p \leq .001$. However, examination of the unique contribution to the APPI Total score indicates ethnic minority status (e.g., Caucasian versus ethnic minority) and relationship status (e.g.,

50

single versus living with partner) should be retained as a demographic covariates in further analyses predicting this dependent variable. Thus, subsequent regression models discussed in this paper have examined the unique contribution of the predictor variables of interest in explaining variability within the AAPI Total, beyond that already attributed to ethnic minority and relationship statuses.

Predicting CAPI Abuse Scale

The first regression was performed to examine the role of stress in predicting CAPI Abuse Scale scores and, specifically, to determine whether a significant direct effect would be found. Stress contributed a significant amount of unique variance in the CAPI Abuse Scale, beyond income, resulting in a final model of $R^2 = .47$, $F(2, 89) = 40.14$, $p \leq .001$. Specifically, Stress explained an additional 26% of the variance in CAPI Abuse Scale. Thus, as hypothesized, the main effect for Stress was significant in predicting the CAPI Abuse Scale scores.

The second regression was performed to examine whether family functioning interacted with Stress to reliably explain additional variance in the CAPI Abuse Scale, beyond their main effects alone. The initial model including the main effects for Stress and family functioning as well as their interaction was $R^2 = .53$, $F(4, 87) = 24.20$, $p \leq .001$ (see Table 2). There was a significant main effect for family functioning, as the FRI uniquely contributed to the prediction of CAPI Abuse Scale scores beyond the contribution of Stress alone. However, the inclusion of the interaction term evidenced only a trend toward significance ($p \leq .1$). Thus, the most parsimonious model does not retain the interaction term and resulted in an $R^2 = .51$, $F(3, 88) = 30.72$, $p \leq .001$.

The third regression examined the potential role of social isolation as a moderator of the Stress-Abuse Potential relation and found that both the main effect of Social Isolation and the interaction term were significant, contributing beyond what preceded in the model. The final model, variables entered as described above, reliably contributed to the prediction of CAPI Abuse Scale scores and resulted in an $R^2 = .65$, $F(4, 87) = 40.61$, $p \leq .001$ (see Table 3).

Although the main effects for both the FRI and Social Isolation independently predicted CAPI Abuse Scale scores, when both were entered in the same block, only Stress and Social Isolation were retained. Thus, in predicting Abuse Potential, the CAPI Abuse Scale scores "favored" social isolation over family functioning (see Table 4).

Predicting AAPI Total

Another series of multiple regressions were performed, steps entered the same as above, to examine the relation between Stress and the AAPI Total scores. First, after statistically controlling for both ethnic and relationship status, Stress reliably contributed to the prediction of the AAPI Total score, explaining an additional 4% of the variance, and resulted in a regression equation of $R^2 = .28$, $F(3, 88) = 11.24$, $p \leq .001$ (see Table 5).

The next regression examined how family functioning moderated the Stress-AAPI Total relation. For the FRI, neither the main effect nor the interaction term significantly contributed, beyond Stress, to the prediction of the AAPI Total score. Moreover, when the FRI was included in the model, the effect of Stress diminished and was no longer significant ($p \geq .1$) (Table 5). However, the magnitude of the relation between stress and the FRI ($r = -.56$, $p \leq .001$) indicates these two variables explain a similar amount of

variance of AAPI Total scores. Therefore, when the FRI was residualized with respect to stress (or vice versa) the contribution to AAPI Total scores is not significant.

Finally, the moderating role of social isolation on AAPI Total scores was examined. Similarly to findings with the FRI, neither Social Isolation nor its interaction term predicted unique variance in AAPI Total scores when entered in the model (see Table 6). Thus, the most parsimonious model would retain ethnic and relationship status and Stress, resulting in an equation of $R^2 = .28$, $F(3, 88) = 11.24$, $p = .000$, as previously reported.

To test the strength of the main effects for the FRI and Social Isolation, relative to one another, an additional regression was performed. When the FRI and Social Isolation were entered in the same step, following the demographic covariates and Stress, neither were significant. Moreover, the main effect of Stress also diminished to a nonsignificant level. Thus, no significant main effect is found when both potential moderators are entered simultaneously. In sum, only the two covariates and stress reliably contributed to the prediction of AAPI Total scores.

Children's Report Results

Although not the primary research question, the correspondence across mother and child reports on parenting and family behaviors was also examined. Regarding the correspondence between the AAPI and PPI, mothers' reports of more positive, adaptive parenting beliefs was positively correlated with children's report of positive parenting behaviors ($r = .30$, $p \leq .01$) and negatively correlated ($r = -.24$, $p \leq .05$) with children's reports of more negative parenting behaviors. Maternal CAPI Abuse Scale scores was

negatively associated with the PPI, Mother Positive parenting behaviors ($r = -.24$, $p \leq$ .05) and trending toward significance for the PPI, Mother Negative parenting behaviors ($r = .19$, $p = .07$). These findings suggest that as mothers' abuse potential increases, children report fewer positive and, perhaps, more negative parenting strategies being employed. In terms of the association between the FRI and CVFES, the correlation between both these total scores was not significant ($r = -.03$, $p \geq .05$). However, the CVFES Total score was significantly positively associated with AAPI Total ($r = .21$, $p \leq .05$), indicating children reported better overall family functioning as mothers' reported more positive parenting beliefs (e.g., higher AAPI Total scores).

CHAPTER IV

DISCUSSION

The current study sought to examine the relation between psychosocial risk factors and physical maltreatment risk. Specifically, an ecological approach was taken to demonstrate how parental vulnerabilities (e.g., stress) are further exacerbated in the presence of more distal stressors, such as family dysfunction and social isolation. These distal factors were targeted primarily due to the extensive, but mixed, literature regarding the opportunity family and social supports provide to contribute to or diffuse a parent's stress. Overall, the findings of the present study, using 92 mother-child dyads recruited from the community, provided partial support for the hypotheses. Although stress consistently contributed to greater overall abuse risk, the role of both distal factors varied when predicting child abuse potential (CAPI Abuse Scale) and did not significantly predict parenting attitudes and beliefs (AAPI Total).

In addition to further substantiating the crucial role of stress in predicting abuse risk, the current findings indicate that additional factors strongly improve the estimation of abuse risk. Specifically, income influenced child abuse potential scores and relationship status and ethnic minority status related to parenting attitudes and beliefs. Given the magnitude of the associations between these constructs and the tendency to either disregard or misinterpret findings regarding associations between demographic and outcome measures, these findings warrant further discussion.

Regarding the role of ethnicity in predicting abuse risk, an important distinction should be made regarding the potential influential aspects associated with one's ethnicity. Diversity within a sample introduces differing cultural beliefs and values, but also, unfortunately, elucidates the institutional discrimination, as ethnic minorities are overrepresented in impoverished communities. Potential cultural differences may be more prominent in the current study given the substantive representation of ethnic minority mothers in the sample.

The initial regression models for both the CAPI Abuse Scale and AAPI Total scores identified ethnic minority status as a potential covariate. However, for the CAPI Abuse Scale, this association was better explained by a third variable, income. Thus, ethnic minority status was associated with lower income level, which was the stronger predictor of CAPI Abuse Scale. Taking an ecological perspective, income can be considered representative of a microsystem-level factor as income, and other significant correlates, can be indicators of the environment surrounding the family, including access to, and quality, of resources. This view is consistent with the current findings indicating that abuse potential is influenced by other micro- (family functioning) and exo-system factors (social isolation). Additionally, in the current study, lower income level seemed to represent a stressor to mothers, as indicated by the negative association between income and stress. Thus, income may be particularly relevant to predicting abuse potential given the apparent sensitivity of the CAPI to stress.

Regarding the AAPI, ethnic minority mothers more frequently endorsed items associated with more dysfunctional child-rearing practices than did Caucasian mothers.

Most importantly given the demographics of the current sample, African American culture more readily accepts corporal punishment, which likely contributed to elevated risk on both abuse risk measures for this group (Ibanez, Borrego, Pemberton, & Terao, 2006; Wissow, 2001). The current findings are consistent with previous literature suggesting that parenting beliefs and attitudes are shaped by one's culture (Hill & Tyson, 2008). Despite that the placement of culture within the macrosystem (Bronfenbrenner, 1979) may suggest the effects are more passive or the influence on the individual is more diluted, the process of cultural socialization is an active one wherein specific parenting beliefs are communicated and learned. The impact of culture is so pervasive, parenting is predictably impacted.

The Role of Stress

As predicted, perceived stress significantly contributed to increased abuse potential (Child Abuse Potential Inventory) scores and maladaptive parenting beliefs associated with abuse (Adult-Adolescent Parenting Inventory-2). Specifically, the extent to which mothers perceived themselves as feeling overwhelmed by various, daily stressors evidenced greater abuse risk and more dysfunctional parenting practices. Examination of the relation between the abuse risk measures and the indicators of stress suggest that understanding the extent to which mothers perceive daily stressors as overwhelming better informs their child abuse potential compared to their dysfunctional parenting beliefs. This finding supports the conceptualization that parents who express themselves as overwhelmed by multiple stressors are more likely to resort to physical violence in an attempt to regain control over their environment (Cohen et al., 1983;

57

Justice et al., 1985; Whipple-Stratton, 1991; Wolfe, 1985). However, the current findings do not explain the nuances of why these parents may be reporting greater experiences of stress. For example, whether the increased stress reported by the present sample may be the result of a greater number of actual stressors or related to a hyperresponsiveness to stressors suspected for at-risk parents remains unclear (c.f., Bauer & Twentyman, 1985). However, one would expect a stronger relation between perceived stress and daily hassles measures with abuse risk if, indeed, the reported level of stress was largely attributable to the number of stressors in their life. The degree to which actual stressors are perceived as overwhelming is likely driven by other personal factors, which may also contribute to increased abuse risk either independently or in the presence of stressors. Future investigations should examine potential cognitive processes or biases that may play a crucial role in understanding what contributes to the heterogeneity of responses to particular stressors, potentially further elucidating what factors may increase one's vulnerability to stressors.

The magnitude of the relation between mother's perceived stress and the abuse risk constructs is substantially large, but remains consistent with the range of effect sizes reported in the literature, albeit toward the higher end (see Black et al., 2001). Given the strong relation between stress and abuse potential, some consideration is warranted regarding how these constructs were measured. Specifically, the CAPI was designed as a screening tool and, thus, includes various factors considered influential in determining abuse risk so as to best capitalize on factors capable of distinguishing abusive from non-abusive parents (Milner, 1994). In considering this, however, feeling overwhelmed by

58

life stressors is a distressing experience which may reflect shared item content on both the Perceived Stress Scale (PSS) as well as the Distress subscale of the CAPI Abuse Scale, resulting in an amplified association. Despite this strong association, the collinearity statistics were within an acceptable range. Conceptually, this finding underscores the importance of understanding the role of stress as a strong propellant toward the more abusive end of the physical discipline continuum. This rationale is consistent with others' claims of stress as one of the strongest correlates of abuse risk (Burrell, Thompson, & Sexton, 1994).

Parenting attitudes and beliefs on the AAPI were more related to the number of perceived daily stressors in mothers' lives (as measured by the DHUS), compared to their feeling overwhelmed (as measured by the PSS). In contrast to the CAPI, the AAPI does not directly assess parents' perceptions of stress, resulting in a more moderate relation with the indicators of stress. Perhaps the presence of daily stressors represents a chronic degree of stress which more actively erodes one's beliefs about parenting, such that negative attitudes emerge regarding the caregiver role as involving many obligatory burdens which children should attempt to alleviate. Chronic exposure to daily stressors could plausibly begin to shift parenting attitudes and beliefs to include more maladaptive, dysfunctional parenting practices out of expediency, but also interfere with a parent's ability to adaptively cope with these stressors. This interference may result in increased perceptions of feeling overwhelmed and, ultimately, an increased likelihood of engaging in physical maltreatment.

Thus, the current findings extend previous research emphasizing the important role of perceived stress in predicting abuse risk (Bauer & Twentyman, 1985; Casanova, Domanic, McCanne, & Milner, 1992; Milner, 1993). Additionally, the findings of the current study support that distal factors, such as family functioning and social isolation, impact how stress influences child abuse potential and parenting practices. However, the degree of influence of either family functioning or social isolation differed depending upon which outcome variable of abuse risk was predicted. Thus, the role that family functioning and social isolation evidenced was unique to each dependent variable and thus will be discussed individually.

Predicting Child Abuse Potential Inventory (CAPI)

In terms of the role of family functioning in the prediction of child abuse potential, a significant direct effect indicates that the quality of family relationships contributes, beyond the influence of stress, to the prediction of abuse risk. Specifically, abuse risk increases as family relationships become more dysfunctional. Additionally, the current findings support that the relation between stress and abuse risk was impacted by the quality of family relationships, but only at trend levels.

In examining the impact of quality of social relationships on abuse risk, the current findings supported the hypothesis. Social isolation moderated the Stress-Abuse Potential relation, such that mothers who reported higher levels of perceived stress and social isolation, in combination, evidenced greater abuse risk than those reporting only higher levels of stress or social isolation. Consistent with proponents emphasizing the importance of relationship quality (Corse et al., 1990; Moncher, 1995; Ortega, 2002), the

60

current findings support that the extent to which social supports are satisfying influences their utility as a buffer against stress in predicting abuse potential. Moreover, although some evidence proposed the moderating role of social support (Kotch et al., 1997), the current study took steps to address and avoid the pitfalls regarding buffering effects, described by Cohen and Wills (1985) and discussed above, lending further confidence in this finding.

The simultaneous influence of both distal factors in the prediction of abuse potential was also examined to determine which might emerge as a stronger predictor, beyond stress. The resulting findings supported that, when competing, social isolation accounts for the majority of unique variance in abuse potential, eliminating the variance attributable to family functioning. One potential explanation for this finding echoes the discussion above regarding the overlap between the CAPI Distress subscale and PSS. The CAPI Abuse Scale does include items to determine the extent to which parents report difficulties with their family as well as with others. However, considerably more items are devoted to determining the degree of social functioning than for assessing overall family functioning, which likely contributed to the association of the CAPI being stronger for the composite score of social isolation ($r = .64$, $p \leq .000$) than for family functioning ($r = -.51$, $p \leq .000$). Possibly the relation between child abuse potential and social isolation is driven by the extent to which reports that social relationships were less satisfying were reflected on both these instruments.

In contrast, given that family functioning is minimally represented in the child abuse potential measure perhaps provides greater support to the previous finding of a

predictive relation of family functioning to abuse potential. Specifically, family functioning uniquely contributes to the prediction of abuse potential, despite the few opportunities (i.e., limited number of CAPI items assessing this construct) to assess this association. Thus, although predictive, this relation is not strong enough to combat the more salient relation and potential overlap between social isolation and abuse potential. Given the trend toward significance shown in the present study, further investigations should continue to examine how quality of family relations may influence the stress-abuse risk relation.

In the present study, the single indicator of family functioning may have been a hindrance as a linear combination of multiple indicators can compensate for any weaknesses of a single measure, allowing for a more comprehensive assessment of the underlying construct. Additionally, although cohesion, expressiveness, and degree of conflict remain important aspects regarding the determination of relationship quality, perhaps a more direct or explicit assessment of degree of support between family members would improve the prediction of abuse risk. Alternatively, future studies should consider the possibility that the buffering effect of family functioning may be stronger in certain contexts over others, or when in combination with other contextual factors, such as family size or culture. Furthermore, it is unclear whether other dimensions of family functioning not considered in the present study may also be influential in this relation. As previously discussed, functional families evidence stable, structured, yet flexible roles for each member which dictate boundary setting, communication between members and, ultimately, informs how interactions between individual units contribute to the family

unit as a whole (Mollerstrom et al., 1992; Milner & Crouch, 1993; Paavilainen & Astedt-Kurki, 2003). Future research should continue to examine variations in family frameworks that may contribute to elevated abuse potential.

Predicting Parenting Beliefs and Attitudes (AAPI)

Although the current findings supported stress as contributing to more negative parenting beliefs and attitudes, this abuse risk measure was not significantly associated with mothers' report of quality of family relationships. Moreover, the individual contributions of stress and family dysfunction appeared to have negated one another, as neither was retained as a significant predictor when considered simultaneously. This finding is somewhat consistent with other research (Mapp, 2006) indicating that family dysfunction can be correlated and yet not predictive of stress. Similarly, social isolation did not significantly contribute to the predictive relation between stress and the AAPI. However, unlike family functioning, social isolation did not diminish the significance of the relation between stress and parenting beliefs, indicating that stress is simply a better predictor of caretaking attitudes and beliefs.

These current findings suggest that family functioning and social isolation do not influence parenting beliefs and attitudes beyond what is already accounted for by stress alone. However, correlations between these two constructs support a moderate relation, indicating that perhaps the conceptualization that the interaction between stress and family functioning impacts this particular abuse risk indicator may be an issue. Specifically, if parenting beliefs and attitudes can be shaped by chronic exposure to

stressors, as argued above, then perhaps modifications to beliefs are dependent upon the

degree of distress resulting from dysfunctional relationships.

Overall, the present findings support that abuse risk increases when parenting

beliefs and attitudes begin to move away from those consistent with adaptive parenting,

typically considered authoritative parenting (e.g., child-centered, warm, responsive,

fostering healthy independent exploration, appropriate limit setting), and toward beliefs

and attitudes reflective of an authoritarian parenting style (e.g., rigid, demanding,

expectations of unquestioned compliance and respect) (Baumrind, 1967).

Summary Abuse Risk Interpretations

Overall, the ontological factor of interest (stress) consistently demonstrated a

strong predictive relation to both abuse potential and parenting beliefs and attitudes.

However, the more distal factors related to each outcome variable differentially. One

possible explanation for this differential effect may be due to the more stable nature of

attitudes and beliefs. Given the stability of attitudes and beliefs, they may be less

susceptible, or more resistant, to the transient fluctuations in quality of relationships.

However, as these disruptions persist, the relationship becomes increasingly

dysfunctional, ultimately representing a stressor. The resulting distress experience can

begin to actively degrade the parent's attitudes and beliefs regarding other relationships,

possibly including the parent-child relationship. Thus, this process of change may be

more gradual than would be expected for predicting child abuse potential, given the

reactive situational nature of child maltreatment. The decision to engage in harsh physical

discipline requires a catalyst, some event that energizes, or brings to prominence, other risk factors.

Although the distal factors evidenced a differential effect on the outcome variables, this is not to suggest that these processes are disparate or unrelated as they may be simultaneously working to increase overall abuse risk. Specifically, perceived stress gradually alters the underlying belief system regarding caretaking while presenting opportunities for more distal risk factors to exert additional influence via intensified parental distress. Thus, perhaps these findings are representative of a transactional process by which stress affects abuse risk on two fronts. First, increased feelings of being overwhelmed which can interfere with the ability to adaptively cope with and respond to a parent-child interaction and, second, can shape their beliefs and attitudes such that inappropriate reactions, or harsh physical discipline, is considered more acceptable or justified. Conceptually, parents who are escalating toward the more abusive end of the physical discipline-abuse spectrum likely experience some degree of cognitive dissonance (Festinger, 1957). The degree of harsh discipline employed, driven by a desire to control or quickly resolve a stressful parent-child interaction, may be experienced as not consonant with the more functional beliefs about physical discipline held by the parent. However, as the frequency of aggressive parent-child encounters increases, a parent may begin to alter their beliefs so as to regain consistency with their behavior, thus resolving the uncomfortable dissonance experienced. A longitudinal examination of caretaker attitudes and beliefs over time would better substantiate or refute the explanatory, and potentially evolving, role of stress.

CAPI vs. AAPI as Abuse Risk indicator

With the exception of stress, the current findings indicated that the predictors of interest (family functioning and social isolation) functioned differently when predicting abuse potential versus parenting beliefs and attitudes. One explanation for this result is to argue that the AAPI, or maladaptive or dysfunctional parenting beliefs and attitudes, represents only one piece of the abuse risk puzzle, a piece that is already accounted for by the more comprehensive measure of abuse risk, the CAPI. Considering that physical maltreatment is the result of many inter-related factors, the utility of a more inclusive indicator is in its power to capture multiple, relevant risk factors. In addition to the breadth of risk factors tapped by the CAPI, the inclusion of several validity measures and the proportion of filler to scored items are attractive features not common to self-report measures. Moreover, the AAPI has been argued to be more susceptible to socially desirability given the transparency of the items (Carr, Moretti, & Cue, 2005; Milner & Crouch, 1997). Arguments such as these have contributed to the CAPI being the predominant measure of abuse risk.

Given the limited options regarding measures of abuse risk, the alternative perspective taken in the current study considers the CAPI and AAPI to be complementary measures that provide the opportunity to examine the strengths and weaknesses of each without being limited by the latter. Including both, as done in the present study, allows for a more thorough examination of the utility and accuracy of the hypothesized model without relying solely on one indicator. Only with further examination of both measures will the utility of each be more clearly defined.

Utility of Child-Report

When considering source issues, the inclusion of alternative measures that do not rely on self-report would allow for greater confidence in reporting as the threat of socially desirability in responding would be lessened. The present study attempted to go beyond parental self-report and findings suggest a stronger correspondence effect between parent and child's report of parenting behavior than for reports regarding the family environment. The moderate relation between parent and child reports of parenting practices (as measured by the AAPI and PPI, respectively) suggested children are capable of confirming that parents are behaving in a way that is consistent with their self-reported beliefs about parenting. Specifically, parents who hold more functional (or dysfunctional) parenting attitudes and beliefs engage in more positive (or negative) parenting behaviors, which their children notice and are capable of reporting. Moreover, parent and child report of parenting practices related similarly to measures of child abuse potential, stress, social isolation, and family functioning, indicating that the children's report could serve an effective proxy for maternal self-report.

Regarding maternal CAPI Abuse Scale scores, a similar pattern was evidenced as greater abuse risk was associated with the children's report of fewer positive parenting behaviors, but only trended toward significance for children's report of increased negative parenting behaviors. Although the lack of significant correspondence here may be somewhat surprising, this result further supports that the estimation of child abuse potential is a complex, multifaceted process that is not predicted solely by the frequency of physical discipline strategies employed.

Regarding the quality of family relationships (i.e., the family environment) reported across informants, parent and child reports across the three domains (cohesion, expressiveness, and conflict) did not correspond. However, positive parenting beliefs and attitudes (AAPI) were not only noticed by children, but also contributed to children's perceptions of their family relationships being more expressive, as mother's AAPI Total scores and CVFES, Expressiveness subscale scores were positively associated. Therefore, parents with more functional parenting attitudes likely acknowledge the contributions of each family member, thus fostering a climate wherein thoughts and feelings are expressed and discussed.

Despite these small to moderate effect sizes, these finding remain important as they address the many limitations cited throughout psychological literature regarding the over-reliance on parent self-report. Moreover, although some researchers have incorporated youth self-report (Pelcovitz, Kaplan, Ellenberg, Labruna, Salzinger, Mandel, et al., 2000), fewer have attempted to gain perspectives of parents' behaviors from younger children (e.g., 6-9). Overall, these findings indicate that children's perspective on how they are reared and their environment is informative. Specifically, greater confidence was given to mothers' self-report of parenting beliefs and attitudes as a result of the convergence across informants. Given this, further examinations should consider particular factors which may increase correspondence in reporting. For example, it is possible that more expressive families are better attuned to the beliefs and values of other family members and thus correspondence may be more likely. Further examination of the validity and reliability of the current child-report measures is needed to continue to move

toward multiple informants and, ultimately, a more comprehensive picture of family dynamics.

Additional Limitations

As with any research endeavor, additional limitations to the present study warrant mention. Although the current sample represented diversity on a variety of demographic variables, the sample was limited from more sophisticated analyses due to the moderate sample size. Future investigations should employ a larger sample to improve reliability of models derived from multivariate and Structural Equation Modeling analyses. Additionally, given the cross-sectional design, the present findings were correlational, not causal, in nature and thus would need to be evaluated with a longitudinal design. Given that the present study focused on a sub-abusive, community sample, the current findings may not generalize to families wherein abuse has been substantiated or to mothers of lower educational or income level. Additionally, as the present study utilized mothers as the primary caregiver, future investigations should examine whether these findings generalize to paternal caregivers. For example, given that fathers often represent a secondary caregiver, it is unclear whether paternal abuse risk or attitudes regarding the caretaker role would be more or less susceptible to the stress effects found in the present study. The inclusion of additional informants when examining these variables could contribute to a more comprehensive, and thus meaningful, examination of the relation between the constructs of interest. Future studies should continue to examine additional factors for which parent-child report, and potential correspondence, can be examined. Although not a specific goal of the present study, the influence of child-related factors in

predicting how stress and other distal risk factors relate to abuse risk should also be considered by future investigations. Moreover, obtaining both mother and child reports of factors specific to the child would better represent the transactional nature of parent-child interactions, including parenting.

In sum, the current study extended previous findings emphasizing the importance of stress in estimating physical maltreatment risk. Additionally, more distal factors, such as quality of family and social supports, may contribute, either alone or in combination with stress, to the prediction of abuse risk. These findings underscore the need for community based interventions aimed at increasing adaptive coping in response to contextual or demographic stressors. Moreover, considering the potential that parenting beliefs and attitudes shift in response to aggressive parent-child interactions, parents may benefit from coping techniques aimed at increasing positive cognitions associated with parenting, such as positive self-talk, which may increase resistance to alteration. Additionally, future investigations that identify specific cognitive factors (e.g., biases, distorted cognitions) which contribute to perceptions of stressors as overwhelming have clinical utility as these findings would represent important, relevant targets for cognitive restructuring in combination with other cognitive therapy techniques. Considering the present findings, interventions should focus on the potential shift in attitudes and beliefs regarding parenting as well as increasing the number of quality relationships available to the parent. The main goal of the present study was to synthesize and extend previous predictive models of abuse risk. Future investigations should consider the present

findings a foundation from which ecologically nested and clinically malleable risk factors

are incorporated and their utility examined.

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Table 1

Means, Standard Deviations, and Correlations Between Parent Measures

		M (SD)	1	2	3	4	5	6	7
1	CAPI Abuse Scale	93.25 (80.93)	---						
2	AAPI Total	151.58 (16.69)	-.37***	---					
3	PSS	25.57 (8.06)	.71***	-.20$^+$	---				
4	DHUS	88.11 (23.39)	.38***	-.34***	.53***	---			
5	FRI	9.92 (4.20)	-.51***	.31**	-.56***	-.41***	---		
6	SSRI	19.12 (7.18)	.52***	-.22*	.35**	.17$^+$	-.45***	---	
7	Loneliness	2.66 (2.81)	.60***	-.33***	.43***	.23*	-.38***	.51***	---

Note: CAPI Abuse Scale: Child Abuse Potential Inventory Abuse Scale; AAPI: Adult - Adolescent Parenting Inventory-2; PSS: Perceived Stress Scale; DHUS: Daily Hassles and Uplifts Scale; FRI: Family Relations Index; SSRI: Social Support Resources Index; Loneliness: De Jong-Gierveld Loneliness Scale

$^+$ trend level * $p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 2

Initial Multiple Regression for CAPI Abuse Scale and Family Functioning

	b	β	t	sr^2
CAPI Abuse Scale Results				
Block 1				.22
Annual Income	-10.47	-.47	-5.00***	
Block 2				.26
Stress	24.49	.53	6.60***	
Block 3				.04
Family Functioning	-18.83	-.23	-2.60**	
Block 4				.02
Stress x Family Functioning Interaction	-5.93	-.13	-1.67[+]	
Intercept = 131.46				
			$R = .73, F(4, 87) = 24.20, p \leq .001$	
			$R^2 = .53$ (Adjusted $R^2 = .51$)	

Note: CAPI Abuse Scale: Child Abuse Potential Inventory Abuse Scale

[+] trend level * p ≤.05; **p ≤.01; ***p ≤.001

Table 3

Initial Multiple Regression for CAPI Abuse Scale and Social Isolation

	b	β	t	sr²
CAPI Abuse Scale Results				
Block 1				.22
Annual Income	-10.47	-.47	-5.00***	
Block 2				.26
Stress	24.49	.53	6.59***	
Block 3				.14
Social Isolation	25.72	.32	4.23***	
Block 4				.04
Stress x Social Isolation Interaction	5.71	.24	3.38***	
Intercept = 117.35				

$R = .81$, $F(4, 87) = 40.61$, $p \leq .001$
$R^2 = .65$ (Adjusted $R^2 = .64$)

Note: CAPI Abuse Scale: Child Abuse Potential Inventory Abuse Scale

* $p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 4

Initial Multiple Regression for CAPI Abuse Scale, Social Isolation, and Family

Functioning

	b	β	t	sr²
CAPI Abuse Scale Results				
Block 1				.22
Annual Income	-10.47	-.47	-5.00***	
Block 2				.26
Stress	24.49	.53	6.59***	
Block 3				.14
Social Isolation	18.00	.39	4.83***	
Family Functioning	-7.29	-.09	-1.06	
Intercept = 125.53				
			$R = .62, F(4, 87) = 37.73, p \leq .001$	
			$R^2 = .14$ (Adjusted $R^2 = .60$)	

Note: CAPI Abuse Scale: Child Abuse Potential Inventory Abuse Scale

* $p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 5

Initial Multiple Regression for AAPI Total Scale and Family Functioning

	b	β	t	sr²
AAPI Total Results				
Block 1				.24
Ethnic Minority Status	-7.78	-.23	-2.43*	
Relationship Status	15.34	.37	3.86***	
Block 2				.04
Stress	-1.84	-.19	-2.05*	
Block 3				.01
Family Functioning	2.41	.15	1.32	
Block 4				.00
Stress x Family Functioning Interaction	-.01	-.00	-.01	
Intercept = 144.41				
			R = .54, F(5, 86) = 7.07, p ≤ .001)	
			R² = .29 (Adjusted R² = .25)	

Note: AAPI: Adult-Adolescent Parenting Inventory-2

* p ≤.05; **p ≤.01; ***p ≤.001

Table 6

Initial Multiple Regression for AAPI Total Scale and Social Isolation

	b	β	t	sr²
AAPI Total Results				
Block 1				.24
Ethnic Minority Status	-7.78	-.23	-2.43*	
Relationship Status	15.34	.37	3.86***	
Block 2				.04
Stress	-1.84	-.19	-2.05*	
Block 3				.00
Social Isolation	-.32	-.03	-.31	
Block 4				
Stress x Social Isolation Interaction	.32	.06	.66	
Intercept = 143.95				
			R = .53, F(5, 86) = 6.68, p ≤ .001)	
			R² = .28 (Adjusted R² = .24)	

Note: AAPI: Adult-Adolescent Parenting Inventory-2

* p ≤.05; **p ≤.01; ***p ≤.001

Figure 1. Family functioning and social isolation as moderators for the Stress-Abuse Risk relation.