

INFLUENCE OF FAMILY ENVIRONMENT ON THE CURRENT  
FUNCTIONING OF CHILDREN EXPOSED TO MALTREATMENT

By

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## ABSTRACT

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To examine the relation between exposure to maltreatment and family environment variables (i.e., conflict, cohesion, expressiveness) in predicting adaptive, externalizing, and internalizing behavior in 112 children, parent-report on both a family environment and behavioral outcomes measure was used. The sample consisted of a group of children exposed to maltreatment (N=60) and a comparison sample of children not exposed to maltreatment (N=52). Using hierarchical regression analyses, the present study tested the moderator models of the relation between family environment variables and behavioral outcome. Results indicated that the family environment variables of conflict and expressiveness moderated the relation between exposure to maltreatment and internalizing behaviors. Specifically, lower conflict within the home was associated with increased internalizing symptoms while higher positive expressiveness was associated with decreased internalizing symptoms for children exposed to maltreatment.

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## Influence of Family Environment on the Current Functioning of Children Exposed to Maltreatment

The family system is the first and possibly the most influential force on a young child's life. Children learn to form their first relationships, create personal boundaries, communicate with others, and develop a sense of self-worth within the family (Krauss & Jacobs, 1990). The family provides a context of learning and socialization for the child and is closely linked to important child outcomes. A stimulating family environment provides opportunities for education and exploration in addition to providing warmth and emotional support (Bradley & Rock, 1988). When the family environment is characterized by disruption, however, child development and family interaction patterns can be altered leading to socio-emotional and psychological difficulties for the child (Ge, Best, Conger, & Simons, 1996; Simons, Whitbeck, Conger, & Conger, 1991; Skinner, Elder, & Conger, 1992). Children exposed to maltreatment represent a group most likely to be affected by family disruption given the disharmony abuse creates among family members.

The current study is designed to address the characteristics of the family environment most important for producing positive child behavior after exposure to maltreatment. Specifically, the project seeks to determine if family conflict, cohesion, and expressiveness moderate the relation between exposure to maltreatment and child adjustment.

### *Child Maltreatment*

Child maltreatment is a general term that encompasses all forms of child abuse and neglect. Although there is not one commonly accepted definition of child maltreatment, the federal government defines child abuse and neglect as “the physical and mental injury, sexual abuse, negligent treatment, or maltreatment of a child under the age of 18 by a person who is responsible for the child’s welfare under circumstances which indicate that the child’s health or welfare is harmed or threatened” (Child Abuse Prevention and Treatment Act, 2003).

The federal definition of maltreatment includes physical abuse, sexual abuse, neglect, and emotional or psychological abuse. Physical abuse is all non-accidental physical injury as a result of acts of the caregiver (i.e., shaking, slapping, punching, beating, kicking, biting, and burning) (Oates, 1996). Sexual abuse involves sexually intimate relationships between adults and developmentally immature children and adolescents. Sexual abuse can include viewing of pornographic material, touching or fondling of genitalia, and penetration (Child Abuse Prevention and Treatment Act, 2003). Child neglect refers to the failure of caregivers to provide a child with the support that is needed for healthy development. Neglect can include ignoring a child’s emotional needs, although typical concerns involve the failure to provide adequate food, housing, clothing, medical care and education (Child Abuse Prevention and Treatment Act, 2003). Mental injury or emotional abuse is the consistent verbal harassment of a child by belittling, criticizing, threatening and ridiculing (Child Abuse Prevention and Treatment Act, 2003).

More than producing isolated incidents, families characterized by maltreatment fail to provide the safe and nurturing relationship that existing research has indicated is vital in creating healthy child psychological functioning. Similarly, child maltreatment is often characterized by a pathological relational environment between the parent and the child that creates a risk for impaired child biological and psychological development (Cicchetti & Toth, 2005).

Child maltreatment is widespread, with an estimated 906,000 children reportedly maltreated in 2003 according to United States child protective agencies (Snyder, Howard, & Sickmund, 2006). Although reported cases of maltreatment have remained fairly consistent from 2001 to 2004, there was an increase (by approximately 40,000) in the reported number of maltreated children between 1999 and 2001 (Snyder, Howard, & Sickmund, 2006). Further, prevalence rates indicate that although children of all ages can be victims, children birth to three years of age represent the largest group of victims with rates reported in 2004 of 16.4 per 1,000. Girls are more often victims of sexual abuse; however, boys and girls are almost equally represented in cases of physical, emotional abuse, and neglect (Department of Social Services [DSS], 1997).

By far, the greatest number of maltreatment reports are for neglect with 60% of total reports in 2004 (Child Welfare Information Gateway, 2006). In the same year, physical abuse characterized approximately 18%, sexual abuse approximately 10%, and emotional abuse approximately 7% of reported cases. Although the rates of abuse are significant, the numbers may be misleading as they do not reflect the overlapping



nature of maltreatment. For example, in a study by McGee, Wolfe, and Wilson (1997), 94% of children reported as maltreated from child protective services were victims of multiple types of maltreatment. That is, children are often identified who have experienced not only physical abuse, but emotional abuse or neglect as well. Statistics reported by clearinghouse agencies like the DSS may not report each type or each incident of abuse separately. Therefore, when children are identified as victims of one type of abuse, the other forms of maltreatment they may have experienced may be seen as secondary. Current estimates suggest that almost two million children will come to the attention of social service agencies each year in need of protection from maltreatment (National Clearinghouse on Child Abuse and Neglect Information, 2002). Even with this grim outlook, the statistics regarding the number and range of maltreatment experiences for children in the United States are, at best, underestimates of the true number of affected children because experiences of abuse and neglect often go unreported (Barnett, Manly, & Cicchetti, 1993; Engels, Moisan, & Harris, 1994; Fox & Gilbert, 1994; Ney, Fung, & Wickett, 1994).

Even if the known rates of maltreatment are underestimates, the bigger issue is the effect of child maltreatment on the health of victims. To this end, the majority of research on child maltreatment has addressed the physical, emotional, and behavioral repercussions of abuse (Kaplan, Pelcovitz, & Labruna, 1999). The main finding across studies is that exposure to maltreatment is a risk factor leading to possible unhealthy development in the child (Cicchetti & Toth, 1995; Zeanah, Boris, & Larrieu, 1997).

### *Effects of Child Maltreatment*

Young children exposed to maltreatment are more likely than non-maltreated children to experience physiological changes that create a susceptibility to heightened arousal and difficulties adapting emotionally (DeBellis, 2001). Feeling emotionally insecure increases the child's sensitivity to subsequent experiences of trauma and impairs the child's ability to concentrate, remember, study, and self-regulate (Gunnar, 1998). In addition, maltreatment during infancy or early childhood can cause important regions of the brain to form improperly, leading to underdevelopment of neural pathways from chronic stress, hyper-arousal, disrupted attachment, and dissociation (Department of Health and Human Services, 2001).

Although the effects of maltreatment have been studied in general terms, research has also examined the effects of specific types of maltreatment and outcomes. However, problems arise in interpreting research regarding specific types of maltreatment as most children exposed to maltreatment are victims of multiple types of maltreatment (McGee, Wolfe, & Wilson, 1997). Even so, most research addresses outcomes for specific or singular types of maltreatment.

Neglect has been associated with a variety of difficulties in childhood, including cognitive delays, deficits in verbal communication, educational difficulties, inadequate peer relations, and internalizing and externalizing behavioral problems (Cicchetti & Toth, 1997; Kendall-Tackett & Eckenrode, 1996). For example, Kendall-Tackett and Eckenrode (1996) found in a sample of neglected children and adolescents with a matched non-maltreated sample of children and adolescents that

children exposed to neglect performed poorly, compared to their non-maltreated counterparts, by demonstrating lower grades, more suspensions, more disciplinary referrals, and more repeated grades.

Physical abuse has not only been characterized by negative physical health consequences for the child, but it has also been linked to cognitive and peer difficulties and to clinical problems, like Post-Traumatic Stress Disorder (Crittenden, 1998; Kaufman, & Henrich, 2000; Cicchetti & Toth, 1997). For example, Lansford et al. (2002) conducted a 12-year prospective study containing 585 children from a community sample with 69 children (11.8%) experiencing maltreatment. Findings indicated that maltreated children were absent from school more frequently and had three quarters of a standard deviation higher levels of aggression, anxiety, depression, dissociation, Post-Traumatic Stress Disorder, social and thought problems, and social withdrawal as compared to non-maltreated counterparts.

Effects of sexual abuse include decreased academic performance, depressive symptoms, inappropriate sexual behavior, and other high-risk behaviors in later childhood (Kendall-Tackett, Williams, & Finkelhor, 1993; Trickett & Putnam, 1998). For example, in a review of 45 studies by Kendall-Tackett et al. (1993), sexually abused children reported more symptoms of fear, Post-Traumatic Stress Disorder, behavior problems, sexualized behaviors, and poor self-esteem as compared to non-abused children.

Emotional maltreatment leads to decreased cognitive and academic functioning and can lead to a multitude of behavioral problems (Claussen &

Crittenden, 1991; Moeller, Bachmann, & Moeller, 1993). In addition, emotional maltreatment has been thought to have effects in all other forms of maltreatment. For example, Claussen and Crittendon (1991) assessed a sample of maltreated children, children in mental health treatment, and non-maltreated children, to determine if psychological maltreatment would be present in cases of physical maltreatment. Results indicated that psychological maltreatment was not only present in almost all of the physical maltreatment cases, but that these children had more detrimental outcomes compared to their non-psychologically abused counterparts.

With the wide array of possible effects of maltreatment, there is no doubt that children exposed to maltreatment are at increased risk for a myriad of physical, behavioral, and emotional difficulties. Although their maltreatment experiences may differ (i.e., more or less severe, shorter or longer duration), research suggests that the family environments of children exposed to maltreatment are very similar (Thomas, Leicht, Hughes, Madigan, & Dowell, 2003). When children exposed to different kinds of maltreatment are compared, research suggests that it is not the kind of maltreatment or the experience of maltreatment itself that is related to the multitude of maladjustment reactions, but rather the types of family dysfunction present before and after the maltreatment experience (Herman & Hirschman, 1977). Before illuminating the family patterns of children exposed to maltreatment, one additional consideration is warranted. That is, in addition to the overlap in types of maltreatment victims experience, current research goes further than simple correlations and establishes that maltreatment is not an easily quantified experience and that several

other factors may intervene to moderate the relation between maltreatment and child outcomes.

For example, outcomes for children exposed to maltreatment vary depending on specific conditions within the maltreatment experience (Bolger & Patterson, 2001; Bolger, Patterson, & Kupersmidt, 1998; Manly, Kim, Rogosch, & Cicchetti, 2001; Thornberry, Ireland, & Smith, 2001). These factors include type, severity, and duration of maltreatment. Some research indicates that the duration of child maltreatment might be more influential on child outcome than the type of maltreatment, demonstrating that children who have been exposed to long-term maltreatment have more maladaptive outcomes than children exposed to short-term abuse, regardless of the type of maltreatment (Gibbons, 1995; McGee & Wolfe, 1991; Starr, Dubowitz, & Bush, 1990).

Other research has determined that severity of maltreatment may be a more salient factor than both duration and type of maltreatment in determining adaptive or maladaptive functioning (Brown & Kolko, 1999; Chaffin, Wherry, Newlin, Crutchfield, & Dynkman, 1997; Manly et al., 2001). For instance, Bolger et al. (1998) found in a study of maltreated children with an equal number of non-maltreated comparison children, that increased difficulties with peer relationships and self-esteem were associated with greater severity and chronicity of maltreatment. Furthermore, type of maltreatment was related to specific aspects of child adjustment. For instance, sexual abuse predicted low self-esteem and not problems in peer relationships. On the other hand, emotional maltreatment was related to difficulties in

peer relationships, but not predictive of low self-esteem. Thus, if type, duration, and severity of the maltreatment experience differentially predict child maladjustment, it may be the case that other intervening variables are also important in predicting adjustment to maltreatment.

The abuse construct appears to be more complicated than a simple sum of events (Bolger et al., 1998; Thornberry et al., 2001). Moreover, the relation between abuse and outcome is further complicated by other intervening variables like family characteristics that appear to modify the abuse-outcome relation.

Because perpetrators are most often biological relatives of the child (U.S. Department of Health and Human Services, 1997), research on child outcomes for children exposed to maltreatment has begun to explore other possibly salient family factors in the child's environment. Maltreatment is usually a whole family experience. As a result, the field has turned to testing the relevance of family factors or the nature of the family environment for victimized children as a way to understand better the milieu in which child reactions to maltreatment occur. The question becomes: Is it the trauma or the pre-existing family variables that produce negative outcomes in victims? Because the families of child victims appear to have some consistent characteristics, the family environment may possess important clues as to how a child victim reacts to maltreatment.

#### *Relation between Child Maltreatment and Child Maladjustment*

Evidence suggests that symptoms displayed by many abuse victims are a function of the family disorganization, deprivation, and hostility that a child

experiences in their household rather than a result of the abusive experience itself (Herman & Hirschman, 1977). That is, some research has determined no significant differences in adjustment for abused and non-abused children after statistically controlling for family environment (Nash, Hulseley, Sexton, Harralson, & Lambert, 1993) with these findings being replicated in several studies using college samples (Cole, 1988; Higgins & McCabe, 1994; Pallotta, 1992; Wisniewski, 1990). It may be that it is not the actual abuse event that leads to maladjustment, but rather the family environment surrounding abuse that protects or creates risk for maladjustment. That is, family environment possibly moderates the relation between exposure to maltreatment and subsequent adaptive or maladaptive behavior in children.

#### *Family Environment of Children Exposed to Maltreatment*

The family environment of maltreated children is often characterized by conflict within the marital relationship, maternal distress, stressful family environment, and social isolation (Finkelhor, 1983; Pianta, Egeland, & Erickson, 1989; Zigler & Hall, 1989). For instance, in a study by Windham, Rosenberg, Fuddy, McFarlane, Sia, and Duggan (2004) mothers identified as at-risk for child maltreatment were assessed for associated parental characteristics (i.e., maternal depression, partner violence). The results indicated that families of children exposed to maltreatment had significantly higher levels of maternal depression and partner violence as compared to families characterized by no maltreatment. Other studies have reported a distinct relation between social isolation and families characterized by child maltreatment. For example, in a study by Gracia and Musitu (2003), non-

abusive families and abusive families were compared on social isolation. Results indicated that abusive parents, as compared to non-abusive parents, had lower levels of community social activities and community integration, resulting in social isolation of the family.

Families of maltreated children are also more likely to have parents who are abusing alcohol and drugs (Besinger, Garland, Litrownik, & Landsverk, 1999; DeBellis, Broussard, Herring, Wexler, Moritz, & Benitez, 2001; Dube, Anda, Felitti, Croft, Edwards, & Giles, 2001). Specifically, Ammerman, Kolko, Kirisci, Blackson, and Dawes (1999) found that mothers or fathers with a substance abuse disorder were more likely to abuse their children than non-alcohol abusing parents. In addition, they found that this risk remains even after substance abuse has been discontinued. Thus, parental substance abuse at any time appears to be implicated in increased risk to maltreat children. This may be due to the physical and mental impairments, resulting from substance abuse, also reducing a parent's ability to provide basic needs for the child (i.e., nutrition, supervision, nurturing) and limit household resources (Child Welfare Information Gateway, 2006). In addition, parents that abuse alcohol often have other problems including high stress, unemployment, and psychological difficulties, which may operate to constrain healthy parenting skills (Child Welfare Information Gateway, 2006).

Research has also established a link between early history of childhood abuse in parents and victimization of others (Clarke, Stein, Sobota, Marisi, & Hanna, 1999). For example, a study by Herrenkohl, Herrenkohl, Toedter, and Yanushefski (1984)



found that 47% of maltreated children were abused by parents who had experienced maltreatment in childhood. Domestic violence and lack of parenting or communication skills also increase the risks of maltreatment to children (DHHS, 2003). For instance, McGuigan and Pratt (2001) found that in a sample of mothers involved in a child abuse prevention program, domestic violence present in the first six months of the child's life was significantly related to physical and psychological abuse and child neglect. This finding indicates that factors within the family environment can increase the risk of child maltreatment. Other specific family environment risk factors include poor interaction and communication between parent and child, family disorganization or lack of family cohesion, and any parental stress or distress (DHHS, 2003).

Despite the consistent finding that children exposed to maltreatment tend to display maladjustment and that the parents of these children can be characterized by several risk factors, some children exposed to maltreatment surprisingly manage to display no maladjustment despite their abusive environment. In an effort to identify what is helpful for children exposed to maltreatment, research on the intervening variables in the maltreatment-child outcome literature has begun to turn its focus on how adaptive as well as maladaptive behavior occurs.

#### *Resilient Children and Maltreatment*

Although the possible negative outcomes of child maltreatment are numerous, there is a subset of children that survive maltreatment well and manage to display adaptive behavior regardless of their challenged childhoods (Steele, 1986). Positive

adjustment despite exposure to stress is often described as resilience and it includes a child's capability to adapt successfully and have competent functioning in spite of exposure to long-term or acute trauma (Cicchetti & Garmezy, 1993; Luthar, 1993; Masten, Best, & Garmezy, 1990; Rutter, 1987). Although it is not common, some children exposed to maltreatment are able for example, to succeed academically (Herrenkohl et al., 1994) and demonstrate high levels of competence on measures of adaptive functioning (Cicchetti, Rogosch, Lynch, & Holt, 1993). It appears that some children have found a way to overcome successfully the adversity of their traumatic environment. For example, in a sample of children exposed to physical abuse and neglect with an additional sample of children acting as a non-maltreated control, Wodarski, Kurtz, Gaudin, and Howing (1990) found maltreated children had unanticipated strengths in adaptive behaviors. Specifically, maltreated children displayed higher scores than the non-maltreated controls in motor and personal living skills and community orientation. These strengths were present despite parental reports of increased behavioral problems in the maltreated child sample.

If family environment factors play a role in the creation and maintenance of child maltreatment and subsequent maladjustment, it is possible that family factors may be at work, albeit inversely, in assisting children defined as resilient in recovering from maltreatment. If so, it would be important for research to develop models that might explain how family characteristics operate in the abuse-adjustment relation.

### *Family Environment and Resilient Children*

Although research specifically defining the family environment of resilient children is limited, some findings indicate that family stability may play a role in helping children to adapt positively to trauma. For example, research conducted by Wyman et al. (1992) found that in a sample of children exposed to major life stressors (i.e., non-maltreated children), children with adaptive outcomes self-reported that their family environment was characterized by positive caregiver-child relationships, consistent family discipline, and positive future expectations.

Other characteristics of a stable family's home environment include consistent parenting, emotional availability, and family cohesion (Bradley, Corwyn,; Olson, 2000; Burchinal et al., 2000; Emde & Robinson, 2000). Additionally, family cohesion has been found to be a protective factor in children with chronic physical disorders such as the trauma of cancer (Varni, Katz, Colegrove, & Dolgin, 1996). Other research has indicated that family cohesion, family expressiveness and marital satisfaction were found in families that did not have abuse potential.

A supportive relationship within the family environment was also found to be associated with decreased symptoms (i.e., negative) that are typically associated with childhood abuse (Boney-McCoy & Finkelhor 1995; Margolin 1998; Trickett 1997). Furthermore, Kaufman and Zigler (1987) reported that a supportive relationship with a parent reduces the transmission of violence intergenerationally. Katz and Gottman (1997) indicated that parental warmth, scaffolding (providing structure to the child in a learning environment), and praise with low parental deprecation of the child

assisted in cushioning negative outcomes (i.e., low academic achievement, poor emotional regulation and peer relations, physical illness) in children exposed to high levels of interparental conflict. In addition, Kliewer, Leport, Oskin, and Johnson (1998) indicated that disclosure of exposure to violence to a supportive individual was associated with fewer internalizing symptoms in children exposed to maltreatment.

If family stability, cohesion, and positive relationships are characteristics of some families experiencing trauma or maltreatment, and producing children that do not have the expected maladjustment, it is possible that the specific family characteristics of conflict, cohesion, and expressiveness could be at work for children exposed to maltreatment who do not display the expected maladjustment. It is even more likely given the research showing children exposed to maltreatment tend to have families that engage in marital conflict and have increased stress (Pianta et al., 1989), that different constructs are apparently present in the homes of maltreated children displaying maladaptive behaviors as compared to the homes of maltreated children who display adaptive behavior. Therefore, research is needed to determine what family environment characteristic differences are most salient to child outcomes in homes of maltreated children.

The question becomes why or what factors account for different child outcomes. Building on past research, the present study will examine if family conflict, cohesion, and expressiveness may provide some answers. The research on children exposed to non-maltreatment trauma suggests a connection between family

characteristics and positive adjustment, however, research has not tested specific family factors that might be able to explain adaptability in *maltreated* children.

### *Conflict within the Family Environment*

Families who frequently argue with each other tend to feel less satisfied with their lives and their relationships (Howard & Dawes, 1976). As the family experience lays the foundation for a child's understanding of how to interact with others, it is especially critical for children to experience positive interactions with family members. When the relationships are marked by conflict, children may feel a sense of stress that goes far beyond the argument itself. For example, research suggests that it is actually the marital conflict surrounding a divorce that affects child adjustment rather than the divorce itself (Buehler et al., 1998; Forehand, McCombs, Long, Brody, & Fauber, 1988; Kline, Johnston, & Tschann, 1991). Children exposed to maltreatment may be particularly sensitive to conflict in their families as their parents tend to report more arguments and stress in their role as parents (Taylor, Repetti, & Seeman, 1997). That is, children exposed to maltreatment tend to experience more ongoing conflict than non-maltreated children, not isolated incidents from time to time, that make conflict in their families a more chronic and typical experience.

If conflict in the family is related to child maladjustment, then it may be the case that children exposed to maltreatment are at greater risk for maladjustment because of the increased family conflict they experience. In addition, it may be the case that children who are maltreated, but resilient, have lower levels of conflict and it is the lower exposure to conflict that impacts adaptive behavior. Although the

conclusion that less conflict is better may seem straightforward, it has yet to be tested with children exposed to maltreatment.

Usually conflict is examined between parent and child only and not in terms of general conflict among all family members (Burt, Krueger, McGue, & Iacono, 2003). Moreover, when conflict is considered, it is only tested as a correlation variable and not a predictor. Therefore, one of the goals of the present study is to determine the role of family conflict in the homes of children exposed to maltreatment and its influence as a moderator of the maltreatment-behavioral outcome relation.

#### *Cohesion within the Family Environment*

In addition to the significance of conflict in the family environment, cohesion may also serve a moderating role for children exposed to maltreatment. Family cohesion is defined as the “emotional bonding that exists between family members” (Place, Hulsmeier, Brownrigg, & Soulsby, 2005, p. 215). Specifically, family cohesion is defined as the capability of the family to “work together, communicate, and problem solve” (Cuffe, McKeown, Addy, & Garrison, 2005, p. 122)

Family cohesion is a vital aspect of positive family functioning (Baer, 2002). Levels of cohesion are implicated in both positive and negative outcomes of children (Barbarin, 1984; Barber, Olsen, & Shagle, 1994; Olson, Russell, & Sprenkle, 1983). It has been suggested that high levels of cohesion lead to enmeshment, a pattern of family relationship that facilitates psychological and emotional likeness resulting in lack of individuation (Barbarin, 1984; Barber, Olsen, & Shagle, 1994; Olson et al.,

1983). Alternately, low levels of cohesion or disengagement represent a failure in affective involvement within the family environment. Medium levels of cohesion indicate family members maintain a level of separation with the amount of connection considered the most beneficial for positive family functioning (Barber et al., 1994; Olson, et al., 1983).

Further, moderate levels of family cohesion appear to operate as a protective factor for children exposed to other forms of trauma (i.e., juvenile rheumatic disease, cancer, sibling diagnosed with cancer) and is therefore, possibly a protective factor for children exposed to child maltreatment (Cohen, Friedrich, Jaworski, Copeland, & Pendergrass, 1994; Daniels, Moos, Billings, & Miller, 1987; Varni, et al., 1996). For example, Daniels et al. (1987) found that for siblings of juvenile rheumatic patients, less family cohesion was associated with increased difficulties in child functioning.

With regard to family cohesion and maltreatment, research indicates that family cohesion is significantly related to current social and psychological adjustment (Ray & Jackson, 1997). For example, Ray and Jackson (1997) analyzed data of women meeting criteria for childhood sexual abuse and a comparison group of women who did not meet criteria for childhood sexual abuse. The results indicated that although family of origin cohesion did not act as a moderator on long-term negative consequences to childhood sexual abuse, higher levels of family cohesion was related to higher self-esteem, better social adjustment, and less depression as compared to families with lower family cohesion.

Although family cohesion did not act as a moderator in adults sexually abused as children, there was a significant relation between cohesion and adaptive behavior. If cohesion in the childhood family is related to positive adjustment in adulthood, it is likely that the relation would be much stronger in childhood. That is, cohesion's impact, if it occurs, is likely to be stronger soon after the abuse occurred. The present study will determine if family cohesion also moderates the relation between exposure to maltreatment and behavioral outcomes in children.

#### *Expressiveness within the Family Environment*

In addition to family conflict and family cohesion, family expressiveness has some support in the resilience literature as a possible moderator of the trauma-behavioral outcome relation. Therefore, it may also be influential in the family environment of the maltreated child.

Family expressiveness is defined in the research as the process whereby children learn from their parents how to express their emotions effectively (Denham, 1993; Dunn & Brown, 1994; Eisenberg, Cumberland, & Spinrad, 1998; Saarni, 1999).

Research has indicated that the amount and kind of expression is important such that families who express more positive rather than negative affect with each other have children whose peer interactions are characterized by pro-social behavior (Denham & Grout, 1993). Alternately, children whose families express more negative rather than positive affect have children with peer interactions characterized by aggression (Boyum & Parke, 1995; Denham, Renwick-DeBardi, & Hewes, 1994;



Greenberg, Lengua, Coie, & Pinderhughes, 1999). In addition, in a study by Cassidy, Parke, Butkovsky, and Braungart (1992) parents of kindergarten and first-grade children were assessed for quality of family expressiveness and their children were assessed for how positive their social relationships were with peers. Results indicated that positive parental expressiveness was linked with more positive peer relationships as compared to children with negative parental expressiveness.

These results support the importance of the emotional climate within the home in the development of social relationships. Disturbances in relationships that are common to child maltreatment may create a threat to a child's capability for effectively managing their emotions and may also create a risk for poor adaptation and psychopathology (Greenberg, Kusche, & Speltz, 1991).

While these findings suggest that positive family expressiveness has possible implications for children's adaptive functioning, research has not focused specifically on family expressiveness and outcomes in children exposed to maltreatment. With research indicating the negative impact linked to negative family expressiveness, it is possible that positive family expressiveness may act as a protective factor in children exposed to maltreatment. This relation was demonstrated through examinations of other forms of stress, such as juvenile rheumatoid arthritis. For example, in a study by Daniels et al. (1987) family expressiveness was investigated for its protective role in children suffering from juvenile rheumatoid arthritis. Results indicated that negative family expressiveness was related to increased adjustment problems among siblings of children with juvenile rheumatoid arthritis, suggesting that family expressiveness

is significantly related to negative adjustment in children exposed to the trauma of having a sibling with a chronic illness.

*Conflict, Cohesion, and Expressiveness as Moderators*

Research demonstrates that family environment characteristics similar to conflict, cohesion, and expressiveness influence adjustment after exposure to stress (Wyman et al., 1992). In addition, these constructs have specifically been implicated in positive adjustment in children exposed to general forms of trauma. For example, Varni et al. (1996) researched the predictive effects of family functioning dimensions in relation to the adjustment of children newly diagnosed with cancer. Looking at three time points, results indicated that higher cohesion and positive expressiveness within the family was significantly predictive of improved adjustment in children exposed to the trauma of cancer. Given the role of these family characteristics to moderate behavioral outcome for children exposed to non-maltreatment traumas, it is possible that the same moderating relation is at work for children exposed to maltreatment. That is, it may be that stress and trauma create negative experiences similar to maltreatment regardless of the specific type of traumatic event. Conflict, cohesion, and expressiveness may act as moderators, reducing the amount of maladaptive behaviors and increasing the amount of adaptive behaviors displayed by children exposed to maltreatment (See Figure 1).

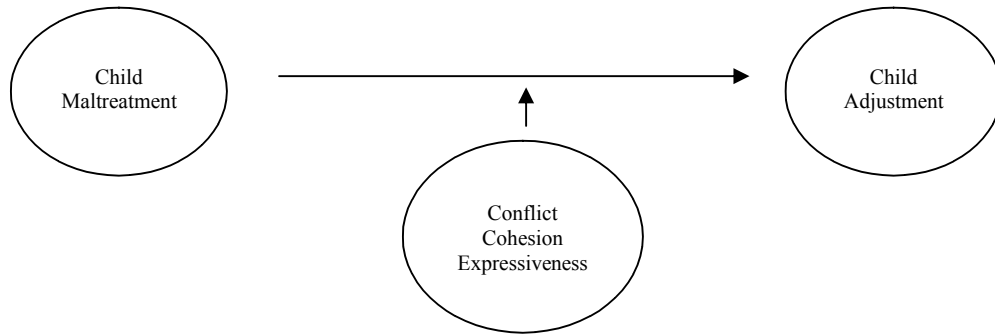


Figure 1. Conflict, cohesion, and expressiveness as a moderator in the relation between child maltreatment and child maladjustment

### *Other Possible Protective Factors of Child Maltreatment*

It is important to note that although research addressing how family environment of maltreated children may predict behavior is promising, some research suggests that variables other than family characteristics may operate to attenuate the effects of maltreatment. Specifically, constructs like social support and intelligence (Doll & Lyon, 1998; Dubow, Edwards, & Ippolito, 1997; Jackson & Warren, 2000; McCabe, Clark, & Barnett, 1999; Miller, Brehm, & Whitehouse, 1998; Sullivan & Farrel, 1999) may also play a protective role for children exposed to maltreatment.

Social support has been identified as a possible protective factor for child maladjustment (Seagull, 1987; Thompson, 1995). Social support within the family may act to moderate the effects of daily parental stress. For example, in a study of mothers by Crnic and Greenberg (1990), social support moderated the influence of stress on negative mother-child interactions with an increase in stress leading to additional negative mother-child interactions. Furthermore, significant life stressors paired with close support predicted mothers' psychological well-being.

Another potential protective factor for children exposed to maltreatment is intelligence (Herrenkohl et al., 1994) with higher intelligence relating to more effective coping strategies and positive adjustment in children exposed to maltreatment (Cicchetti et al., 1993). Furthermore, it is possible that increased intelligence may lead to academic success, which in turn may create a sense of competence and influence positive self-concept (Cicchetti et al., 1993).

Although social support and intelligence level are important, several concerns may make their inclusion in future research on the process of the child maltreatment-behavioral outcome relation less helpful. For example, research conducted by O'Reilly (1988) examined 33 social support measures focusing on the definition, validity, and reliability of these measures. Results indicated only modest agreements in conceptual definition with often ill-defined concepts. With regard to validity and reliability, many studies reported no data, with others providing only modest support for the validity and reliability of social support measures used (O'Reilly, 1988).

In addition, with a variety of ways to define social support, some studies show that social support is not a protective factor for children exposed to violence. For example, McCloskey, Figueredo, and Koss (1995) conducted interviews with mothers (including interviews with one child of each mother) determining the amount of abuse within the home, support and closeness of the nuclear family (including mother and sibling), and mother and child mental health. Results showed that in homes characterized with aggression, there was less parental and sibling warmth and that

social support failed to buffer the detrimental effects in the children exposed to maltreatment.

Additionally, families of maltreated children are more isolated in general in comparison to families not characterized by maltreatment (Gracia & Musitu, 2003). The increase in isolation poses the possibility that children exposed to maltreatment with increased social support may not represent the general population of maltreated children that research has shown is characterized with isolation. This lack of isolation could indicate an overall different maltreatment experience for these children by their environment lacking the isolation that is characteristic of the homes of most maltreated children.

Intelligence as a potential protective factor is also problematic when applied to children exposed to maltreatment. For example, in cases of physical abuse, the child's head is the target in over 50% of cases (Jessee, 1995; Jessee & Rieger, 1996; Needleman, 1986). Specifically, Rubin, Christian, Bilaniuk, Zazyczny, and Durbin (2003) examined children with high-risk child abuse injuries. Researchers found that although all children had neurological examinations upon admission to the hospital and appeared to have no overt signs of head injuries, after more in-depth evaluation 37% showed signs of head injuries with more than half suffering from serious intracranial injuries. Furthermore, children exposed to maltreatment, not just those exposed to physical abuse, tend to display decreased cognitive functioning (Strathearn, Gray, O'Callaghan, & Wood, 2001; Veltman & Browne, 2001). For example, in a three decade review of 92 maltreatment studies, Veltman and Browne

(2001) found 75% of studies indicated cognitive delays in intellectual functioning and 86% indicated delays in language development. Therefore, although intelligence has been defined as a protective factor in child maltreatment, it may be that decreased intelligence is a result of the actual abuse experience possibly explaining the relation of intelligence in research on maltreatment and cognitive delays.

### *Limits of Past Research*

Some children exposed to maltreatment may or may not develop internalizing or externalizing symptoms, although the literature does not define the reason for these alternate outcomes. Possible reasons for alternate outcomes have been defined as the severity, duration, and type of abuse. Although research has indicated that the interaction between these three constructs seems to be the most salient way to investigate these variables (Bolger & Patterson, 2001; Bolger et al., 1998; Manly et al., 2001; Thornberry et al., 2001), research continues to implicate that even more important to child outcomes is the types of family dysfunction present before and after the maltreatment experience (Herman & Hirschman, 1977).

Furthermore, despite the use of family environment variables in other trauma-related research, there has been little to no investigation into the impact of family environment variables (i.e., conflict, cohesion, expressiveness) with children exposed to maltreatment. Given that maltreatment is a family-based trauma, research is needed to determine whether family environment variables moderate the relation between child maltreatment and child outcome. By defining the impact of family environment

on child maltreatment and child outcome, interventions can be shaped to create a more positive family environment possibly resulting in improved child outcomes.

### *Rationale for Current Study*

Because the impact of maltreatment on child adjustment is not restricted to the specific event and is related to the family characteristics, understanding which specific family characteristics operate in adjustment is crucial to understanding the nature of outcomes of children exposed to maltreatment. It is likely that family characteristics are important in the development of behavioral outcomes for all children. For children exposed to maltreatment, however, it is especially likely that family factors like expressiveness, conflict, and cohesion are influential as moderators of the relation between experiencing maltreatment and adjustment. Research has yet to make a clear test of how family factors may operate differentially for children exposed to maltreatment and those not exposed and therefore, the present study was an effort to illuminate several issues; one, whether family factors are influential on outcomes, and two, whether family factors operate differently for children exposed to maltreatment.

Given that most research is clear that children exposed to maltreatment are at greater risk than non-maltreated children for maladjustment, the first goal of the study was to test the general finding that children exposed to maltreatment display more internalizing and externalizing symptoms compared to non-maltreated children. Therefore, the first hypothesis was that children exposed to maltreatment would show

more internalizing and externalizing symptoms than children not exposed to maltreatment.

Because research shows that some children exposed to maltreatment display less adaptive behavior than non-maltreated children, the second hypothesis was that children exposed to maltreatment would display less adaptive behaviors as compared to non-maltreated children.

After establishing these relations, the study addressed the potential moderating operation of family environment characteristics in the maltreatment-behavioral outcome relation. The third hypothesis was exploratory in nature and examined how conflict, cohesion, and expressiveness would moderate the relation between exposure to maltreatment and child outcomes.

## Method

### *Participants*

Participants included two samples. The first sample included 60 caregivers (93.3% female; 6.7% male) of male (48.3%) and female (51.7%) children exposed to maltreatment. Thirty-eight (63.3% of the total maltreatment sample) of the participants were foster parents or caregivers of children enrolled as clients in either the day treatment (26.3%) or outpatient (73.7%) treatment program at a local mental health facility for children exposed to maltreatment. The maltreatment sample also included 22 (36.7% of the total maltreatment sample) children not receiving treatment, but also living in foster care under the supervision of the Department of Family Services (DFS) due to a substantiated history of child maltreatment. The age



range of the children of the participants in the maltreatment exposure group was between 2 and 12 years of age with a mean age of 6.58 ( $SD=3.10$ ). In terms of ethnic diversity, 43.3% of the sample was European American, 21.7% was African American, 21.7% was Biracial, 5% was Hispanic, 1.7% was Native American, and 6.7% was unspecified.

To assist in making appropriate comparisons, the second sample included a selection of children from the general population. A comparison sample of 52 children (51.9% female; 48.1% male) reporting little (i.e., one negative event) to no exposure to a negative event in the past year was collected from an established dataset for a project that addressed the mental health functioning of typical children. The age range of the children in the comparison sample was 8 to 12 years with a mean age of 10.17 ( $SD=1.20$ ). In terms of ethnic diversity, 76.9% of the sample was European American, 9.6% was African American, 3.8% was Biracial, 1.9% was Hispanic, 1.9% was Asian American, and 5.8% was unspecified.

### *Measures*

*Background Information.* Caregivers in both groups completed a demographic information sheet (see Appendix A), which provided information regarding child age, grade in school, ethnicity, and gender. In addition, information was gathered regarding the caregiver's relationship to the child, marital and educational status.

*Maltreatment History.* Maltreatment history was determined by the participants' placement in DFS care. A local mental health facility for children

exposed to maltreatment served as one of the sites for recruitment. Every child at this facility had a documented history of child maltreatment and was currently in foster or kinship care. Admissions criteria for the mental health facility included that the child had a history of maltreatment and was in need of services. Approximately 95% of the referrals came from DFS, Children's Division. Some children (36%) were also recruited from DFS rosters of children in foster care who also had a substantiated history of child maltreatment.

*Family Environment.* To measure family conflict, cohesion, and expressiveness, caregiver-report on the Family Environment Scale (FES; Moos & Moos, 1983) was used. The FES consists of 10 subscales that measure social environment characteristics of families. The instrument consists of 90 true or false statements. Subscales assess three constructs: interpersonal relationships, personal growth, and basic organizational structure. For the purposes of the present study, only the interpersonal relationships domain scores were included in the analyses. Three subscales (conflict, cohesion, and expressiveness) measure the amount of expressed anger and conflict within the family system, the degree of loyalty and support family members provide for each another, and the extent in which members in the family express direct feelings. Scores were obtained by using a scoring template and summing appropriate item responses on each of the conflict, cohesion, and expressiveness subscales.

For this measure, 1,432 healthy and 788 distressed families were used to create the normative data. The authors report high internal consistency and good

construct validity for the Family Relationships Index and for the Family Social Integration Index (Moos & Moos, 1994). Cronbach's alpha, measuring internal consistency for the ten subscales, ranges from .61 to .78. Additionally, the test-retest reliability ranges from .68 to .86 at the two-month interval. The one-year interval also shows good test-retest reliability, ranging from .53 to .84. The authors report good content and construct validity.

*Psychosocial Adjustment.* To measure behavioral outcome for the non-maltreated group, the Behavioral Assessment System for Children Parent Rating Scale (BASC-PRS, Reynolds & Kamphaus, 1992) was used. The BASC-PRS is a 138-item parent report measure of child emotional and behavioral functioning. The BASC-PRS yields an externalizing problems composite, internalizing problems composite, and adaptive skills composite. The three composite scores were used for analyses in the current project. The BASC-PRS was completed by parents of the non-maltreated control group. Alphas for the composite scores of the BASC ranged from .84 to .93, and the test-retest reliability coefficients ranged from .90 to .94 over two months (Reynolds & Kamphaus, 1992). Since the data for the non-maltreated control group were collected previously, it was important to note that the BASC-PRS was the premiere parent-report measure for child emotional and behavioral functioning at the time of data collection. Items on the BASC-PRS are rated on a 4-point scale (i.e., 0 = never, 1 = sometimes, 2 = often, 3 = almost always).

To measure behavioral functioning for children in the maltreated group, the Behavior Assessment System for Children (2<sup>nd</sup> edition) Parent Rating Scale (BASC-2

PRS; Reynolds & Kamphaus, 2004) was used. The BASC-2, like the BASC, is intended to measure three broadband domains of functioning: externalizing, internalizing, and adaptive behavior for children ages 2 through 21 years. The BASC-2 PRS is a 160-item Likert scale measure that measures a child's adaptive and problem behavior within the home and community. The externalizing problems composite includes three scales: hyperactivity, aggression, and conduct problems. The internalizing problems composite is also composed of three scales: anxiety, depression, and somatization. The adaptive skills composite includes five scales: adaptability, activities of daily living, functional communication, social skills, and leadership. These three composite scores were used for analyses. High internal consistency ( $\alpha = .90$  to  $.94$ ) and test-retest reliability ( $r = .78$  to  $.92$ ) were established for the PRS of the BASC. The BASC-2 PRS was completed by caregivers of the children in the maltreated group. Items on the BASC-2 PRS are rated on a 4-point scale (i.e., 0 = never, 1 = sometimes, 2 = often, 3 = almost always).

Research indicates that the BASC PRS and the BASC-2 PRS scores are comparable and that it is reasonable to use scores from both measures in research. Specifically, in a study by Waggoner (2006) it was found that convergent validity was established through substantial correlations between the comparable scales of the BASC and the BASC-2 and the corresponding composite scores. Furthermore, all scales and composites were significantly correlated at the  $p = .01$  level. Similarly, the BASC-2 manual (Reynolds & Kamphaus, 2004) indicates that the PRS subscales of the BASC-2 correlate with corresponding BASC subscales from  $.73$  -  $.90$  with most

being .90 or higher. Additionally the authors state that “these results provide a sound basis for generalizing research done on the BASC PRS to the BASC-2 PRS” (p. 184).

*Life Events.* To select exposure to major life events in the comparison group, the Life Events Checklist (LEC; Johnson, & McCutcheon, 1980) was used (see Appendix B). Specifically, the LEC was used in the current study to identify a comparison group of children not exposed to maltreatment and not endorsing exposure to few or no major life events. To make the comparison clearer, children who endorsed more than one major life event on this measure in the past year were excluded from the comparison group.

The LEC is a 46-item scale listing events that may have occurred in the child’s life. The first 18 items are events that the child would have little or no control over while the last 28 are events that the child has some control over. The child indicates which events have occurred, rates the event as positive or negative, and rates the impact of each event on a scale of zero to three (zero representing no impact and three representing the greatest impact). Alphas for the LEC were found to range from .32 to .66, and test-retest reliability was established ( $r = .82, p = .001$ ) (Gray, Litz, Hsu, & Lombardo, 2004). Participants included in the control group of the study endorsed none (44.2%) or one (55.8%) negative life event.

### *Procedure*

*Children exposed to maltreatment group.* Recruitment of the maltreatment group took place at a local mental health facility for children exposed to maltreatment and from the DFS roster of children exposed to maltreatment in a large metropolitan

city. The mental health facility used for recruitment was designed to assist in creating positive mental and developmental growth and outcomes in children exposed to maltreatment through prevention, treatment, and support of the child and family. The day treatment program and outpatient treatment program provides evaluative and therapeutic services for young children exposed to maltreatment and their parents or caregivers. Children referred for treatment for exposure to maltreatment were recruited to participate in the study at the time of enrollment into the program.

The staff at the mental health facility was asked to give information about the study to all of their clients enrolled in either the outpatient or day treatment programs. For the outpatient clients, if caregivers indicated interest, caregivers were further briefed on consent (e.g., voluntary nature of project) and details about the project by staff members at the mental health facility. Those interested in participating were asked to sign the consent form agreeing to participate in the study (see Appendix C and D). Information regarding the proposed investigation, along with the questionnaires was administered at the mental health facility by the therapists in the clinic at regularly scheduled therapy sessions. Instructions regarding the questionnaires were included and any questions were addressed by the clinic staff. Caregivers completed the study forms (i.e., BASC-2, FES) in the waiting room while waiting for their child during therapy. Participants returned the study forms to the office at the clinic and completed forms were collected by research assistants each week.

Because the caregivers of the clients in the day treatment program were not on site at the clinic, potential participants from the day treatment program were contacted via phone by the staff at the mental health facility to inform the parents about the study (see Appendix C). If the parents indicated interest, the staff at the mental health facility informed the parents that the staff would give the research team the parents' phone numbers and that the parents would be contacted by the research team to complete the study measures via phone interview. Phone interviews for the day treatment program participants consisted of reading the questionnaires over the phone. All participants received gift cards as compensation for their time and effort in participating in the study.

The result for this portion of the exposure to maltreatment group included 10 children from the day treatment program and 28 children from the outpatient treatment program. Data collection for the current study was part of a larger study to evaluate the treatment efficacy of a program used within the day treatment portion of the mental health treatment facility. Additional measures were completed by participants as part of the larger study.

To augment the number of children in the maltreatment group, a list of children exposed to maltreatment was provided by the Missouri Division of Family Services (DFS). From this list a mailing went out explaining the project with a free phone number to contact the principal investigator if interested. Graduate students contacted those caregivers that returned the information sheet or left a voice mail indicating interest in participating in the study. For this portion of the data collection,

the research assistants set up a date and time to meet at the caregivers' homes to complete the study measures. The BASC-2 PRS and FES were administered to caregivers within their home and any questions that they had were addressed by a graduate student or undergraduate research assistant administering the measures. Participants received gift cards as compensation for their time and effort in participating in the study. Data collection using this procedure was part of a larger study examining child maltreatment with additional measures completed by participants.

*Comparison group.* Participants for a comparison group were selected from a previously collected sample of children recruited from several elementary schools from several small, semi-urban towns. Of the 520 parents contacted about the study, 443 (85.2%) of these completed study measures. Of these, eleven (2%) children were later omitted from the subject pool because their scores on an intelligence-screening tool indicated an intelligence estimate in the mentally retarded range. Therefore, 432 (83%) parents and children formed the pool for selection of children for the comparison group. The purpose of collecting data from a non-maltreated sample was to compare the results of the study of children with a history of maltreatment to a sample of children from the general population without such a history. Out of the 432 children in the comparison sample, 52 (12%) were selected to be included in the current study if they met the criteria of endorsing none or one negative event within the last year. All subjects were given an informed consent form and then the study measures in random order. To prevent possible reading level difficulties with any of



the measures, a trained research assistant read all items to the child participants.

Participants were compensated \$5.00 for their participation.

## Results

Prior to the main analyses, preliminary analyses were performed to determine if there were significant differences on demographic variables and other variables of interest within the sample of children exposed to maltreatment. Although all had a substantiated history of maltreatment, the sample was collected from two separate groups (i.e., treatment versus no treatment) and in slightly different ways; therefore, it was important to determine if any possible confounds were present that may influence later analyses. To evaluate this research question, a oneway ANOVA was completed on the maltreatment sample examining all of the family environment, outcome, and demographic variables. The results indicated a significant difference within the maltreatment group in terms of internalizing symptoms and age. Specifically, the participants that came from the mental health facility had more internalizing symptoms ( $M = 58.95$ ,  $SD = 15.60$ ) than those that came from the DFS roster ( $M = 48.82$ ,  $SD = 10.35$ ). Additionally, the treatment group was significantly younger ( $M = 4.50$ ,  $SD = 1.45$ ) than the no treatment group ( $M = 10.18$ ,  $SD = 1.40$ ). Therefore, to control for the significant difference between age in the maltreatment sample, age was entered into the regression model first when internalizing, externalizing, and adaptive symptoms were the dependent variable.

Mean scores and standard deviations on the study measures are included in Table 1. Overall, participants in the maltreatment group reported more externalizing

and internalizing symptoms, fewer adaptive behaviors, less cohesion and expressiveness, and more conflict as compared to the comparison sample.

Table 1.

Study Variable Scores of Maltreatment and No Maltreatment Groups

| Study Variable | <u>Maltreatment</u> (N=60) |             | <u>No Maltreatment</u> (N=52) |             |
|----------------|----------------------------|-------------|-------------------------------|-------------|
|                | <u>M</u>                   | <u>(SD)</u> | <u>M</u>                      | <u>(SD)</u> |
| Externalizing  | 64.42                      | (13.69)     | 49.46                         | (10.87)     |
| Internalizing  | 55.23                      | (14.66)     | 49.06                         | (7.92)      |
| Adaptive       | 40.40                      | (8.92)      | 52.65                         | (9.85)      |
| Conflict       | 50.25                      | (9.36)      | 46.92                         | (12.47)     |
| Cohesion       | 53.88                      | (11.52)     | 55.77                         | (13.53)     |
| Expressiveness | 53.97                      | (8.87)      | 56.90                         | (12.13)     |

Correlations for the study variables are presented in Table 2. The results indicate several significant relations. Specifically, for the children exposed to maltreatment, there was a positive significant correlation between externalizing and internalizing behavior ( $p < .01$ ) and a negative significant correlation between externalizing and adaptive behavior ( $p < .01$ ). Additionally, internalizing behavior and expressiveness were negatively correlated ( $p < .01$ ), and cohesion and conflict were negatively correlated ( $p < .01$ ). For the children not exposed to maltreatment, there was a negative significant correlation between externalizing and adaptive behavior ( $p < .01$ ), externalizing behavior and cohesion ( $p < .01$ ), and externalizing behavior and expressiveness ( $p < .05$ ). Additionally cohesion and conflict were negatively correlated ( $p < .01$ ) and cohesion and expressiveness were positively correlated ( $p < .01$ ).

Table 2.

Intercorrelations Between Subscales for Study Variables (N=112)

|                   | 1      | 2     | 3      | 4      | 5      | 6      |
|-------------------|--------|-------|--------|--------|--------|--------|
| 1. Externalizing  | _      | .42** | -.39** | .18    | -.20   | -.18   |
| 2. Internalizing  | .23    | _     | .01    | -.14   | -.03   | -.42** |
| 3. Adaptive       | -.62** | -.27  | _      | .13    | -.10   | -.05   |
| 4. Conflict       | .25    | .26   | -.09   | _      | -.52** | -.07   |
| 5. Cohesion       | -.44** | -.12  | .21    | -.40** | _      | .01    |
| 6. Expressiveness | -.30*  | -.12  | .08    | -.04   | .50**  | _      |

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

Note. Externalizing = Externalizing composite score on the Behavior Assessment System for Children – Parent Report; Internalizing = Internalizing composite score on the Behavior Assessment System for Children – Parent Report; Adaptive = Adaptive composite score on the Behavior Assessment System for Children – Parent Report

\*Exposure to maltreatment in the upper right quadrant; No exposure to maltreatment in the lower left quadrant.

To test the study predictions, two analyses were completed. The first analysis tested the predictions from hypothesis one and two that children who were exposed to maltreatment would show more internalizing and externalizing symptoms and less adaptive behaviors than children without a history of maltreatment. To evaluate this research question, an independent-samples *t* test was completed with exposure to maltreatment serving as the grouping variable. Specifically, exposure to maltreatment and no exposure to maltreatment were the two categories of the grouping variable. The dependent variables were externalizing and internalizing problems and adaptive skills.

Results indicated support for both hypotheses such that children with a history of maltreatment had significantly higher scores on externalizing symptoms compared to children not exposed to maltreatment ( $t(110) = -6.33, p = .00$ ). Results also

indicated that children exposed to maltreatment had significantly higher scores on internalizing symptoms compared to children not exposed to maltreatment ( $t(110) = -2.71, p < .01$ ). Lastly, in terms of adaptive skills, the results showed that children exposed to maltreatment showed significantly lower scores in adaptive skills than children not exposed to maltreatment ( $t(110) = -6.91, p = .00$ ).

To evaluate the third hypothesis, a series of hierarchical multiple regressions were performed following the guidelines offered by Baron and Kenny (1986). Each measure of psychosocial adjustment (i.e., externalizing, internalizing, and adaptive) was treated as the dependent variable in separate analyses with maltreatment status, being previously dummy coded to indicate either no exposure to maltreatment or exposure to maltreatment, as the independent variable. To determine if family factors operated as moderators of the relation between maltreatment status and internalizing, externalizing, and adaptive outcome, age was entered first, maltreatment status was entered second, followed by the family environment variables (i.e., conflict, cohesion, and expressiveness), and the three two-way interaction terms between maltreatment status and each of the family environment variables entered in the fourth step. A total of three regressions were performed.

As shown in Table 3, the regression testing with internalizing behavior as the outcome variable, the results indicated a significant main effect for conflict ( $\beta = .65, p < .05$ ) such that as more conflict was reported, more internalizing symptoms were reported as well. Furthermore, significant interactions were found between maltreatment status and conflict ( $\beta = -1.37, p < .05$ ) and maltreatment status and

expressiveness ( $\beta = -1.37, p < .05$ ) (see Table 3). No significant main or interaction effect was found for cohesion in the analyses.

Table 3.

Summary of Model 1 Regression Analyses for Maltreatment Status and Family Environment Variables Predicting Children's Internalizing Symptoms While Controlling for Age (N=112)

| Variable              | B     | SE B  | $\beta$ |
|-----------------------|-------|-------|---------|
| Block 1               |       |       |         |
| Age                   | -1.31 | .37   | -.31**  |
| Block 2               |       |       |         |
| Age                   | -1.07 | .47   | -.26*   |
| Maltreatment Status   | 2.33  | 2.79  | .09     |
| Block 3               |       |       |         |
| Age                   | -.99  | .46   | -.24*   |
| Maltreatment Status   | 1.66  | 2.77  | .07     |
| Cohesion              | .04   | .10   | .03     |
| Expressiveness        | -.31  | .11   | -.26**  |
| Conflict              | .03   | .11   | .03     |
| Block 4               |       |       |         |
| Age                   | -.63  | .45   | -.15    |
| Maltreatment Status   | 72.71 | 21.96 | 2.95**  |
| Cohesion              | .26   | .33   | .26     |
| Expressiveness        | .47   | .35   | .40     |
| Conflict              | .73   | .33   | .65*    |
| Malt X Cohesion       | -.22  | .21   | -.57    |
| Malt X Expressiveness | -.57  | .23   | -1.37** |
| Malt X Conflict       | -.54  | .23   | -1.37*  |

Note. R2 = .10\*\* for Step 1;  $\Delta R2 = .01$  for Step 2;  $\Delta R2 = .06^*$  for Step 3;  $\Delta R2 = .09^{**}$  for Step 4  
 \*  $p < .05$ ; \*\*  $p < .01$

To assist in interpreting the significant interactions, moderator variable groups were formed by using procedures adopted from similar studies (Garmezy, Masten, & Tellegen, 1984; Masten et al., 1987; Jackson & Warren, 2000). Specifically, children one standard deviation above and below the mean on conflict and expressiveness were grouped into high and low groups respectively.

The results indicated that for children exposed to maltreatment, those reporting low conflict had significantly higher scores on internalizing behaviors than those reporting high conflict. Moreover, for children not exposed to maltreatment, the

opposite relation was found such that, internalizing behavior was lower for those reporting low conflict compared to those non-maltreated children reporting high conflict (see Figure 2).

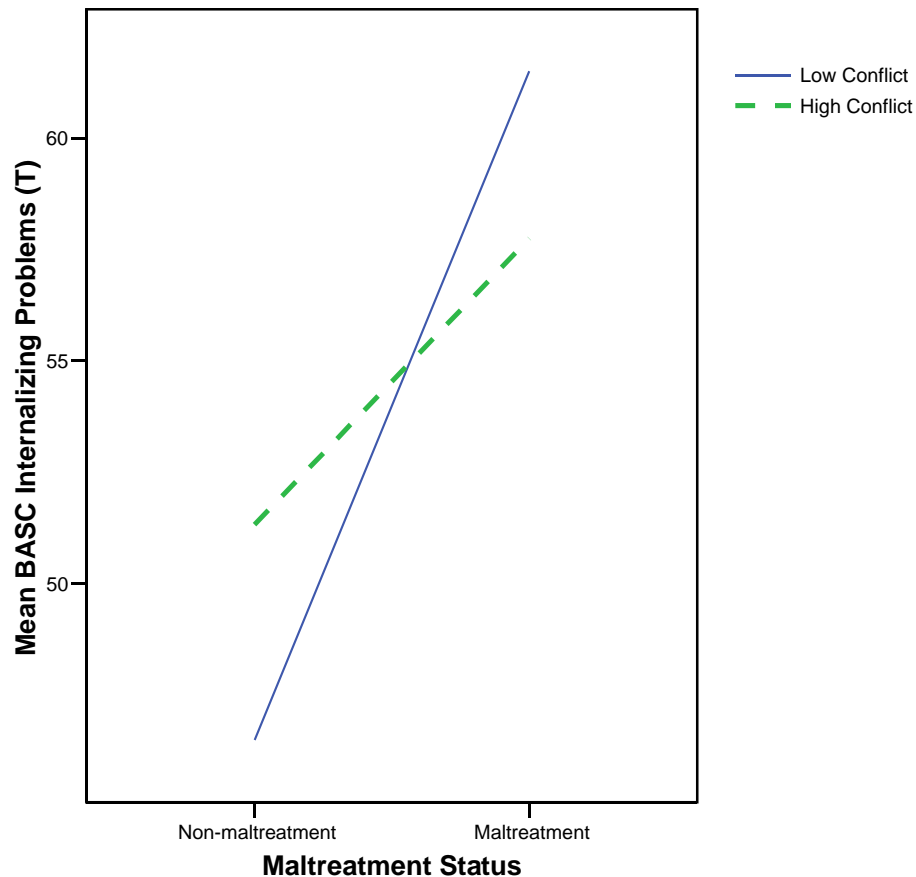


Figure 2. Significant Interaction Between Maltreatment Status and Conflict for Internalizing Symptoms

Regarding expressiveness, the results indicated that children exposed to maltreatment with high family expressiveness had less internalizing symptoms than children exposed to maltreatment with low family expressiveness. Results supported the hypothesis that children exposed to maltreatment with high family expressiveness would have less internalizing symptoms (see Figure 3). Overall, there was little

difference in internalizing symptoms for children in either group whose caretakers endorsed high expressiveness (i.e., internalizing symptoms were generally low for both groups). The pattern for children in the non-maltreatment group indicated that internalizing symptoms were lower for those who reported high expressiveness compared to non-maltreated children who reported low expressiveness.

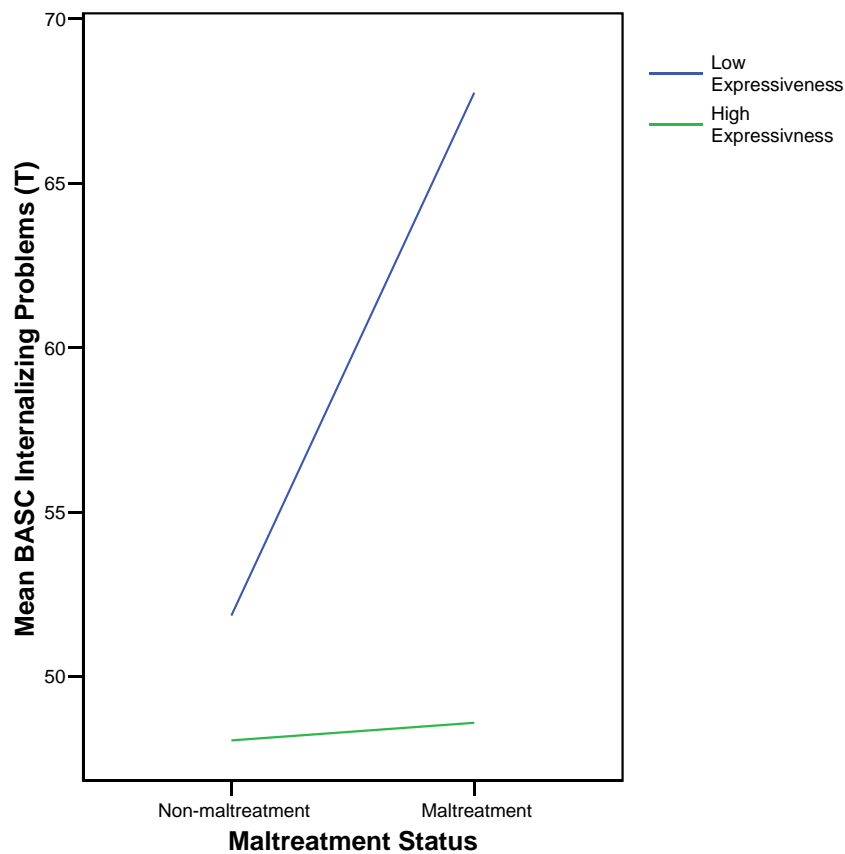


Figure 3. Significant Interaction Between Maltreatment Status and Expressiveness for Internalizing Symptoms

The results, therefore, partially supported the third hypothesis that family characteristics would operate as a moderator of the maltreatment-outcome relation.

Specifically, family conflict and expressiveness, but not cohesion, moderated the relation between maltreatment and internalizing symptoms.

In the second set of regression analyses, externalizing symptoms was the dependent variable. Maltreatment status, the family environment variables (i.e., conflict, cohesion and expressiveness), and the interaction terms between maltreatment status and the family environment variables were the predictors. No significant main effects or interactions were found (see Table 4). The results did not support the hypothesis that conflict, cohesion, and expressiveness would moderate the relation between maltreatment status and externalizing symptoms.

Table 4.

Summary of Model 2 Regression Analyses for Maltreatment Status and Family Environment Variables Predicting Children's Externalizing Symptoms (N=112)

| Variable              | B     | SE B  | $\beta$ |
|-----------------------|-------|-------|---------|
| Block 1               |       |       |         |
| Age                   | -.96  | .45   | -.20*   |
| Block 2               |       |       |         |
| Age                   | .84   | .49   | .17     |
| Maltreatment Status   | 17.97 | 2.92  | .62**   |
| Block 3               |       |       |         |
| Age                   | .87   | .47   | .18     |
| Maltreatment Status   | 16.75 | 2.82  | .58**   |
| Cohesion              | -.21  | .11   | -.18*   |
| Expressiveness        | -.21  | .11   | -.15    |
| Conflict              | .10   | .12   | .07     |
| Block 4               |       |       |         |
| Age                   | .97   | .48   | .20*    |
| Maltreatment Status   | 29.09 | 23.54 | 1.01    |
| Cohesion              | -.32  | .35   | -.27    |
| Expressiveness        | .15   | .37   | .11     |
| Conflict              | .11   | .35   | .08     |
| Malt X Cohesion       | .05   | .22   | .11     |
| Malt X Expressiveness | -.25  | .24   | -.50    |
| Malt X Conflict       | -.02  | .24   | -.05    |

Note. R2 = .04\* for Step 1;  $\Delta$ R2 = .25\*\* for Step 2;  $\Delta$ R2 = .09\*\* for Step 3;  $\Delta$ R2 = .01 for Step 4

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

In the third set of regression analyses, adaptive behavior was the dependent variable. Maltreatment status, the family environment variables (i.e., conflict,



cohesion and expressiveness), and the interaction terms between maltreatment status and the family environment variables were the predictors. The results indicated no significant main effects or significant interactions. Specific results for the hierarchical multiple regressions are presented in Table 5. The results did not support the hypothesis that conflict, cohesion, and expressiveness would moderate the relation between maltreatment status and adaptive behaviors.

Table 5.

Summary of Model 3 Regression Analyses for Maltreatment Status and Family Environment Variables Predicting Children's Adaptive Behaviors (N=112)

| Variable              | B      | SE B  | $\beta$ |
|-----------------------|--------|-------|---------|
| Block 1               |        |       |         |
| Age                   | .92    | .34   | .25**   |
| Block 2               |        |       |         |
| Age                   | -.48   | .37   | -.13    |
| Maltreatment Status   | -13.97 | 2.21  | -.63**  |
| Block 3               |        |       |         |
| Age                   | -.50   | .38   | -.14    |
| Maltreatment Status   | -14.05 | 2.27  | -.63**  |
| Cohesion              | .06    | .09   | .07     |
| Expressiveness        | .01    | .09   | .01     |
| Conflict              | .05    | .09   | .05     |
| Block 4               |        |       |         |
| Age                   | -.50   | .39   | -.14    |
| Maltreatment Status   | -11.54 | 18.80 | -.52    |
| Cohesion              | .35    | .28   | .39     |
| Expressiveness        | -.06   | .30   | -.06    |
| Conflict              | -.12   | .28   | -.12    |
| Malt X Cohesion       | -.19   | .18   | -.54    |
| Malt X Expressiveness | .03    | .19   | .08     |
| Malt X Conflict       | .12    | .20   | .34     |

Note. R2 = .06\*\* for Step 1;  $\Delta$ R2 = .25\*\* for Step 2;  $\Delta$ R2 = .01 for Step 3;  $\Delta$ R2 = .02 for Step 4

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

## Discussion

The purpose of the current study was to examine the role of the family environment in the relation between child experience of maltreatment and subsequent adjustment. The results support previous findings of a significant relation between

exposure to maltreatment and increased maladjustment. Moreover, findings from the current study contribute new information regarding the role of the family environment as a moderator between exposure to maltreatment and behavioral outcomes.

### *Hypothesis 1 and 2*

As reported in previous research (Lynch & Cicchetti, 1998), the current study also found support for the notion that children exposed to maltreatment have more internalizing and externalizing symptoms compared to children not exposed to maltreatment. Similarly, results by Manly, Kim, Rogosch, and Cicchetti (2001) found that children exposed to maltreatment exhibited higher levels of externalizing symptoms as well as internalizing symptoms as compared to children with no history of maltreatment. That is, children exposed to maltreatment were more aggressive, withdrawn, and less cooperative than children not exposed to maltreatment.

Furthermore, research has determined that children exposed to violence display more externalizing behaviors as compared to children not exposed to violence (Schwab-Stone et al., 1999). In terms of exposure to violence and maltreatment, social learning theory provides a coherent link between the experience of maltreatment early in life and later development of aggressive behaviors. That is, the experience of maltreatment teaches the child aggressive behaviors and acceptance of aggression as a norm in close relations (Dodge, Pettit, & Bates, 1997). The present results are consistent with the notion that exposure to maltreatment was significantly

related to externalizing symptoms in that the maltreatment group displayed significantly higher externalizing scores than the non-maltreated group.

Additionally, the current study supported past research on the relation between exposure to maltreatment and fewer adaptive behaviors (Clausen, Landsverk, Ganger, Chadwick, & Litrownik, 1998). For example, in a study by Clausen et al. (1998) of children exposed to maltreatment currently residing in foster care, on a measure of adaptive behavior, reported mean scores more than one standard deviation below the norm.

The findings support previous results and therefore, strengthen the impetus for research to address the mental health needs of children exposed to maltreatment. Furthermore, given that scores for children exposed to maltreatment in this sample were in the at-risk and clinical range on internalizing and externalizing behavior, the current results further support the need for assessment and treatment for psychopathology in children exposed to maltreatment. The results also support the need for assessment of adaptive behaviors in children exposed to maltreatment and if possible, the importance of bolstering adaptive functioning as well as addressing maladjustment in the treatment of maltreated children. Furthermore, it appears that maltreatment is a non-specific risk factor and subsequent assessment of both adjustment and maladjustment is relevant in children exposed to maltreatment. Children exposed to maltreatment displayed more internalizing and externalizing behaviors and less adaptive behaviors than children with no history of maltreatment,

therefore, it is important that professionals assess for a wide-range of outcomes as a child's reaction to maltreatment appears to be multifaceted.

### *Hypothesis 3*

Although showing maladjustment in a sample of children exposed to maltreatment is important, the more important contribution of the study perhaps was the focus on the differential relation family environment plays in the maltreatment-behavioral outcome relation. The results of the analyses indicated some interesting and new findings for the field.

With regard to internalizing symptoms, the results partially supported the hypothesis that family environment variables (i.e., conflict, cohesion, and expressiveness) would moderate the relation between exposure to maltreatment and internalizing symptoms.

With regard to conflict, the results indicated that conflict significantly moderated the relation between maltreatment status and internalizing symptoms. Specifically, children who were not exposed to maltreatment had caretakers who reported lower levels of family conflict than caretakers of children with a history of maltreatment. When conflict was high, children in the no maltreatment group evidenced higher levels of internalizing symptoms than children in the maltreatment group. The opposite was true for children in the maltreatment group. When conflict was low, children exposed to maltreatment demonstrated significantly higher scores on internalizing symptoms as compared to children with no maltreatment exposure. It is important to note that the levels of internalizing behavior, when family conflict was

high, were similar for both groups. For children exposed to maltreatment, however, lower conflict meant higher scores on internalizing behavior as compared to the non-maltreatment group and children exposed to maltreatment with high conflict.

These results for children exposed to maltreatment support the notion that family factors operate differently for children with and without a history of maltreatment. Counter to conventional wisdom, the lower the level of current family conflict, the higher the rate of internalizing symptoms for children exposed to maltreatment.

Although the study did not provide independent information on the amount of family conflict the children exposed to maltreatment were subjected to, research indicates that children exposed to maltreatment are exposed to increased arguments and stress as reported by parents in comparison to homes where maltreatment is not present (Taylor, Repetti, & Seeman, 1997). Furthermore, research shows that abusive families are characterized by high levels of psychological and physical conflict (Straus & Gelles, 1990). Research shows that exposure to violence in childhood can lead to altered developmental trajectories (Boney-McCoy & Finkelhor 1995) and may affect children's socialization skills (Margolin & Gordis, 2000). Bearing in mind that the sample of maltreated children were residing in foster or kinship care at the time or at least no longer living with the perpetrators of their abuse, it may be the case that when conflict is no longer present or is lessened by moving to an alternate placement, children with a history of maltreatment are less secure and clear about how a non-abusive family operates. The high rates of family conflict in homes where children

are maltreated reported in other research (Taylor, Repetti, & Seeman, 1997) suggests that the move to foster care, although likely in the child's best interest, may represent such foreign family relations (i.e., less regular conflict) that the child may have difficulty adjusting.

Although it was not known if the level of family conflict reported by caretakers represented a change in the amount or kind of family conflict the child had experienced prior to the move to foster care or kinship placement, it was clear that some of these new placements did report a significant amount of current family conflict. Surprisingly, less conflict in these new homes was related to more internalizing behavior in the children than exposure to more family conflict. Children exposed to maltreatment may learn from their past maltreatment experiences that conflict is the main or only means for how one communicates with family members. Although not a preferred way to interact, high family conflict may be at least familiar for children exposed to maltreatment and as a result, the expected relation with psychopathology does not manifest. Exposure to family conflict is likely not the only factor contributing to the child's behavior. When family conflict in the new placement or foster family is low or at least assumed to be lower than in their family of origin where abuse occurred, although intuitively ideal, children with a history of maltreatment may be at-risk for internalizing problems.

Furthermore, children living in a conflictual home may, out of necessity, adapt and learn to avoid or emotionally prepare for abusive situations to maintain their safety. In homes characterized by maltreatment, the child's internalizing symptoms

could possibly be a sign of the stress the child is feeling in their effort to manage the tension at home. When the maltreatment ends, children may not be able to accurately interpret healthy expressions of emotion typical to normal parent-child interactions (i.e., anger, frustration). In a study by Bowen and Nowicki (2007) children from violent homes, compared to children from non-violent homes, were more likely to misattribute expressions of happiness as sadness, anger, or fear. Therefore, children exposed to a conflictual and violent home may have misattributions regarding what caretakers mean to communicate, even when the communication and expression is appropriate and reasonable. When children, like the participants in the present study, are no longer living in conflictual homes, they may still perceive and react to family interactions as conflictual due to their history of exposure to conflict and possibly misattribute the meaning of interpersonal expressions by others.

In addition to the possibility that children exposed to maltreatment may misattribute interpersonal interactions, the research on divorce suggests another possible explanation. For example, the divorce literature indicates that there is an increase in behavior problems in children when they are removed from a high conflict home (Morrison & Coiro, 1999). This increase in pathology may be due to not so much the conflict they experienced, but to the lack of resolution of the conflict (Cummings, Vogel, Cummings, & El-Sheikh, 1989). For example, in a study by Cummings et al. (1989), it was found that 6- to 9-year-old children reported less negative emotions when angry or conflictual interactions between caretakers resulted in resolution rather than when the conflict remained unresolved. Like children who

experience divorce, children exposed to maltreatment may also be removed from high conflict homes for their safety and as a sign that the level of conflict resolution (i.e., parent-child interaction) is problematic. Removing children from the home of their abuser may not seem to the child as an end to the conflict, but rather, a failure on the part of the family to resolve their problems. Even though the particular incident of abuse may have ended, the relationship with their perpetrator may not be mended and that this lack of conflict resolution, no matter the level of conflict, may produce the kinds of internalizing symptoms seen in the present study.

Therefore, removal from the maltreatment experience and high conflict home of origin does not necessarily mean that the child perceives that the conflict is resolved. In fact, these children may view their current change in placement as temporary with the very likely possibility of returning to the environment characterized by maltreatment and high conflict. Furthermore, research indicates that conflict-resolution strategies characterized by anger and withdrawal predict increased anxiety and social withdrawal in children experiencing divorce (Katz & Gottman, 1993). Additionally, research within the divorce literature has indicated that style of conflict resolution was more predictive of children's adjustment than the actual level of conflict (Camara & Resnick, 1989). Therefore, for children exposed to maltreatment, it may not be the amount of conflict exposure that is directly related to child adjustment, but the child's perception of the ability to resolve the conflict that is pertinent to the relation between conflict and behavioral outcomes for children exposed to maltreatment.



The current study adds to all of these past results by looking at family conflict in the context of removal from a home environment characterized with maltreatment. The current results indicated that, similar to results within the divorce literature, there may be a problem with internalizing symptoms in children exposed to maltreatment, even when the child is no longer living in the home characterized with maltreatment and high conflict.

Another significant interaction was found for family expressiveness in the relation between the non-maltreated and maltreatment groups. Specifically, low levels of positive expressiveness, as compared to high levels of positive expressiveness, appeared to be related to higher levels of internalizing behavior for both children with and without a history of maltreatment. Furthermore, children exposed to maltreatment with high positive family expressiveness had fairly similar scores on internalizing symptoms as compared to children with no history of maltreatment. This holds true to the original research hypothesis and possibly bolsters the definition of expressiveness as the process whereby children learn from their parents how to effectively express their emotions (Denham, 1993; Dunn & Brown, 1994; Eisenberg, Cumberland, & Spinrad, 1998; Saarni, 1999). For example, research indicates that children living in families who express increased positive affect show increased pro-social behavior (Denham & Grout, 1993) and children living in families who express increased negative affect show increased aggressive behaviors (Boyum & Parke, 1995; Denham, Renwick-DeBardi, & Hewes, 1994; Greenberg, Lengua, Coie, & Pinderhughes, 1999). Within this definition of family expressiveness, it is possible

that high positive family expressiveness in the home creates an atmosphere of modeling effective expression of emotion and therefore, reduces the likelihood that children will internalize ill feelings.

Furthermore, research indicates that homes of maltreated children are characterized by conflict, maternal distress, stressful family environment, and social isolation (Finkelhor, 1983; Pianta, Egeland, & Erickson, 1989; Zigler & Hall, 1989). Therefore, maltreated children, even those living in foster care, may be living in a home environment where positive expression of feelings might be unlikely, yet needed. Additionally, due to positive expression of emotion possibly not being modeled or allowed within the foster family, children may have no outlet for their feelings and as a result may display internalizing symptoms.

The results, however, did not support the hypothesis that family environment variables would moderate the relation between exposure to maltreatment and externalizing behaviors. Although this hypothesis was exploratory in nature, the result is inconsistent with other research on major life events that shows that family environment characteristics such as conflict, cohesion, and expressiveness do influence adjustment following a traumatic or stressful experience (Varni et al, 1996; Wyman et al., 1992).

One possible reason for the lack of moderation might be due to fact that the majority of the children in the maltreatment group were no longer living in the home where the maltreatment occurred. Specifically, research indicates that children go through a predictable sequence of adjustment subsequent to removal from their

maltreatment-related home life. These five phases include getting acquainted, the honeymoon, ambivalence, reciprocal interaction, and bond solidification (Pinderhughes & Rosenberg, 1990). If these phases are true, the current results could be confounded by the particular stage of adjustment to foster care or kinship placement. Specifically, the California Social Work Education Center (CalSWEC) indicates in their training materials that upon being placed in a new placement “the child may appear to make a good adjustment for a period of time. This is often referred to as the “honeymoon period.” The child may be emotionally numb, although this may not be noticed until one knows the child better and is familiar with his usual emotional responses. The child seems quiet, compliant, and easy to please” (Roditti, 2001, p.17). This definition of the “honeymoon period” suggests that children recently removed from their homes may not initially display their true feelings. Although it was not possible to know how long the children had been in state care at the time of the study, consequently some of the children exposed to maltreatment may have differed in terms of where they were in the adjustment to their foster care or kinship placement. Furthermore, even though there was a range of externalizing symptoms displayed by the children exposed to maltreatment, externalizing behaviors at the onset of placement may be on a continuum that depends on the child and may vary depending on duration of placement.

Another possible reason for the lack of moderation found between family environment variables and externalizing symptoms might be that a portion of the children exposed to maltreatment were in treatment whereas a portion of children

were not. Research has indicated that some adult individuals, at the onset of treatment, actually show an increase in symptoms prior to exhibiting a decrease in symptoms (Hayes & Strauss, 1998; Samoilov & Goldfried, 2000). Therefore, children in treatment may be exhibiting the same trajectory and actually showing an increase in symptoms as compared to the no treatment group. Alternately, the externalizing behaviors in the treatment sample might reflect a decrease in symptoms from previous functioning. Therefore, placement in treatment could possibly be a confound in determining a moderation of family environment variables and externalizing symptoms. Additional research should consider the treatment history of children exposed to maltreatment before making firm conclusions about the role of family factors on externalizing behavior.

With regard to adaptive behaviors, the results indicated that family environment variables did not moderate the relation between exposure to maltreatment and adaptive behaviors. Although the present study is the first to address the possible role of moderation of family factors on adaptive behavior for children exposed to maltreatment, the lack of significant findings may be due to how adaptive behavior was measured. The current results are not consistent with past research (Clausen, Landsverk, Ganger, Chadwick, & Litrownik, 1998; Wodarski, Kurtz, Gaudin, & Howing, 1990) and part of the explanation may lie in the inconsistent definition of adaptive behavior between studies. For example, adaptive behavior in the current study was defined as including activities of daily life, adaptability, functional communication, leadership, social skills, and study skills.

Alternately, in other research adaptive behavior was defined as communication and socialization (Clausen et al., 1998), motor skills, personal living skills, and community orientation (Wodarski et al., 1990). Although all of these aspects of adaptability are possibly pertinent within the maltreatment-behavioral outcome relation, the field has yet to agree on the specific dimensions of this construct and as a result, using different definition and measures of adaptive behavior is likely to result in contradictory findings. Although the current study measured adaptive behavior using a widely accepted tool, for the most part, the assessment of adaptive behavior is atheoretical. Without a common idea regarding the nature of what it means to be adaptive, the field will likely continue to produce studies whose results may be difficult to interrelate.

Additionally, the lack of moderation between family environment variables and adaptive behaviors might be related to the age at which the child is removed from the maltreatment experience. Specifically, research indicates that children exposed to maltreatment and violence have developmental repercussions at various stages of development that may or may not be related to adaptive behaviors. For example, in infancy children exposed to maltreatment show distress through changes in behavior as evidenced by irritability, disturbances in sleep, emotional distress, somatic complaints, fears of being alone, and regression in toileting behavior and language (Osofsky & Scheeringa, 1997; Zeanah & Scheeringa, 1997) all of which may or may not be perceived as being related to adaptive functioning. However, in school-age children exposure to maltreatment can lead to increased concerns of security

(Cicchetti & Toth, 1995), possibly paired with hypervigilance to aggression, which may result in children processing social cues with a bias toward inferring hostile meaning (Dodge et al., 1997) with these behaviors possibly being perceived as poor adaptive behaviors within the home and school setting. Therefore, if children throughout development display various symptoms associated with their maltreatment experience, at each stage there may be implications in terms of their ability to learn or develop adaptive functions that will assist them in their environment. Age of removal may reflect developmental symptoms pertaining to adaptive functioning rather than other behavioral symptoms. Additionally, the age at which the child is removed from the maltreatment experience may play a role in the child's ability to possibly undo the negative effects of maltreatment or to learn appropriate adaptive behaviors that were not previously present. Additional research is needed to understand the possible developmental implications of acquiring adaptive skills in children exposed to maltreatment.

Research has established that parents within the family environment can be taught to provide an environment in which children can learn adaptive behaviors (Dangel & Polster, 1984; Hawkins, Meadowcroft, Trout, & Luster, 1985). Therefore, the presence or absence of adaptive behavior modeled within the home characterized with maltreatment may directly affect the development of adaptive behaviors in the child. Subsequently, the lack of moderation between family environment variables and adaptive behaviors may be due to the lack of adaptive modeling in their previous

home and the possible lack of time for the child to learn adaptive behaviors in their current placement.

Another possible problem with measuring adaptive behaviors in children exposed to maltreatment is that adaptive behaviors acquired by children exposed to maltreatment may not be captured in typical adaptive measures. For example, children exposed to maltreatment may acquire a subset of adaptive behaviors to survive within their environment characterized by maltreatment that are not otherwise considered adaptive. One of these possibly adaptive behaviors discussed within the literature is parentification (Hamerman & Ludwig, 2000). Specifically, children exposed to maltreatment may show parentification due to the child needing to care for themselves and other family members (i.e., other children, parents) to survive. That is, maltreated children may display behaviors that are adaptive when being maltreated, but that are atypical for children in the general population. Additionally, it might be pertinent for clinicians to recognize alternate notions for what might be considered adaptive behaviors. Reunification is the goal for almost all children exposed to maltreatment and it may be important in treatment that clinicians not “treat” or reduce the presence of behaviors like parentification given that the child may need these skills when returned to their home of origin. Additional research is needed to better understand the adaptive behaviors of children exposed to maltreatment. Through understanding both adaptive behaviors and their importance for survival in children exposed to maltreatment, clinicians can protect current

adaptive behaviors and teach or reinforce more conventional adaptive behaviors seen in the general population of children.

Of the family variables tested in the present study, cohesion was not a significant predictor of outcome behavior. Past research has suggested that high cohesion moderated the impact of behavioral outcomes (i.e., externalizing behaviors and social competence) for children with a sibling diagnosed with cancer (Cohen et al., 1994). Varni et al. (1996) found that in children newly diagnosed with cancer, the family relationship dimensions of cohesion and expressiveness consistently predicted the child's psychological and social adjustment.

Possible reasons for the lack of moderation between cohesion and behavioral outcomes in the current study as compared to other research could be the vast familial differences between families managing the needs of a child diagnosed with cancer and families characterized by maltreatment. Specifically, research has indicated that parents of children diagnosed with cancer report initial elevations of emotional distress and increased psychosomatic complaints as compared to families not characterized with chronic illness (Dahlquist, Czyzewski, & Jones, 1996; Hoekstra-Weebers, Jaspers, Kamps, & Klip, 1998; Kazak, Rourke, & Crump, 2003). Even so, prospective research has found that over a 10-year period post-diagnosis, parents of child cancer survivors adjusted well over the years following the diagnosis of cancer (Dahlquist et al., 1996; Hoekstra-Weebers et al., 1998; Kupst, Natta, Richardson, Schulman, Lavigne, & Das, 1995). Therefore, research supporting the notion that cohesion is an important moderator might apply only to experiences of acute stress



(i.e., cancer diagnosis) that affects a family at its onset, but over the long-term positive adjustment is achieved. Alternately, in homes characterized by maltreatment, children who are placed in foster care tend to represent children who are exposed to chronic stress (i.e., multiple incidences of maltreatment) (Feerick & Snow, 2006). Moreover, similar to the children in the present study, children in foster homes may move placements several times, reducing the possibility that a sense of cohesion could develop within either the family of origin or the foster family. Because different kinds of stress events may impact families in different ways, research will likely need to attend to the kind of stressful event before firm conclusions can be drawn regarding the role of family cohesion on child behavior.

The results of the current study adds to the literature by raising the question that family environment variables may not be as salient as expected in determining adaptive outcomes for children exposed to maltreatment. It appears that family factors can make things worse for children (i.e., more internalizing behavior), but the results of the present study suggest that the inverse of negative family qualities (i.e., conflict) do not necessarily lead to a moderating effect of some negative outcomes for maltreated children.

#### *Implications of the Current Study*

Given that the intention of the study was partially exploratory in nature, the research implications of the results are many. First, the current study added to the literature by explaining the moderating relation between conflict and expressiveness and internalizing symptoms in children exposed to maltreatment. Second, the current

study illustrates that there may be a difference in the effects of family environment variables depending on a child's maltreatment status. The results were somewhat counter-intuitive and suggest that what might make sense for improving the lives of children (i.e., less conflict) may not necessarily be helpful for children exposed to maltreatment. Qualities of the family environment, timing of placement in foster care, and stage of adjustment to foster care are all likely important variables in the field's effort to make better predictions about the mental health needs of children exposed to maltreatment. Additional studies are needed to determine how the nature of family interactions between family members operate as current conceptualizations that suggest that less conflict would likely have positive effects on children. Clearly, this is the case for children without a history of maltreatment, but for children exposed to maltreatment, the relation is not straightforward. Therefore, additional research is needed to improve the field's understanding of the maltreatment-behavioral outcome relation.

In addition to contributing to the current literature by examining the moderating effects of family environment and behavioral outcomes of children exposed to maltreatment, there are clinical implications as well. Specifically, understanding the moderating relation between exposure to maltreatment and behavioral outcomes could influence future interventions for children exposed to maltreatment. Because the results suggest a moderating effect for family conflict on internalizing symptoms, future interventions for children exposed to maltreatment may want to target increasing positive communication within the family. For

example, children and their families may need an educational experience in treatment that focuses on appropriate ways to communicate in addition to the therapist modeling appropriate communication behaviors that do not include high conflict interactions. Given that the present results suggest that as conflict decreases, internalizing symptoms increase for children exposed to maltreatment, it may not be counter-intuitive, but consistent with the results not to focus on reducing a normal level of conflict in a family with a history of child maltreatment. Instead, therapy may be most helpful in assisting children in learning to address misattributions the child may be making regarding communication and therefore, allow the child to feel comfortable in a household where healthy and supportive methods of communication are present. Furthermore, treatment may need to incorporate discussion on how conflict was communicated by family members in the child's past. Specifically, it may be important to learn from the child how the child experienced conflict to assist the child in processing past negative experiences and creating new ways of communication.

Because the results suggest that children exposed to maltreatment may benefit from positive expressiveness at home, clinicians may want to focus on increasing positive expressiveness in the family environment. Specifically, Parent-Child Interaction Therapy (PCIT) is an empirically based treatment that could address positive expression skills through appropriate modeling of expression for children exposed to maltreatment (Chaffin & Friedrich, 2004) through incorporating elements that target positive family expressiveness. Specifically, PCIT works to increase

positive interactions and expressiveness through Child Directed Interaction that strengthens the caretaker and child relationship. Goals of PCIT include improving the parent/caregiver-child relationship that may have suffered from a home characterized by maltreatment. Child goals include increasing minding and listening, increasing the ability to manage frustration and anger, increasing appropriate social skills and attention skills, and increasing self-esteem. For children exposed to maltreatment, having caretakers reflect verbally the child's appropriate behaviors in a positive manner may provide the child with appropriate modeling and feedback to assist in creating desired positive outcomes.

#### *Limitations of the Current Study*

Although the current study contributes to the literature by addressing the possible moderation of family environment variables in the maltreatment-behavioral outcome relation, there are several limitations. One limitation was the lack of attention to the subtypes of maltreatment. Specifically, the current study did not determine if the significant relations found would be applicable if maltreatment was defined more clearly by the kind of exposure (i.e., physical, sexual, and emotional maltreatment, and neglect) the child experienced. Research has shown that a single type of maltreatment can be related to specific aspects of child adjustment (Bolger et al., 1998). Alternately, research has reported that understanding trauma must take into account the child's experiences prior and subsequent to the abuse, as children can have a myriad of reactions to maltreatment depending on these factors (Finkelhor & Browne, 1985). The current study did not collect data on type of maltreatment.

Research also indicates, however, that most children are victims of multiple types of maltreatment (McGee, Wolfe, & Wilson, 1997) and therefore, negating the power of single type maltreatment studies. Therefore, until research can untangle the differential impact of different kinds of maltreatment on child behavior, it may be premature to make predictions regarding what factors may moderate the effect of one kind of maltreatment over another on child adjustment. Even so, inclusion of type of maltreatment might allow researchers to determine if different aspects of the family environment are more important in the maltreatment-behavioral outcome relation depending on the type of maltreatment exposure.

Additionally, although current literature is mixed (Gibbons, 1995; Manly et al., 2001) as to the importance of the severity and duration of abuse, understanding the qualitative nature of the maltreatment exposure may have added illuminating data to the findings. It may have been important to determine if severity and duration might change or add additional moderating results. Specifically, research has indicated that duration (Gibbons, 1995; McGee & Wolfe, 1991; Starr, Dubowitz, & Bush, 1990) and severity (Brown & Kolko, 1999; Chaffin, Wherry, Newlin, Crutchfield, & Dynkman, 1997; Manly et al., 2001) are more salient than other variables in the maltreatment-behavioral relation. Even so, due to the mixed results of the importance of severity and duration in maltreatment research, these variables might also present additional confounds rather than creating a clearer picture of the maltreatment-behavioral relation.

Another similar limitation of the current study is the lack of information regarding how long the children had been living in a non-abusive family. That is, the time that had past since the abusive episode(s) may have an influence on how much of the child behavior can be attributed to their experience of maltreatment. Even so, the current findings add to the literature through capturing the maltreatment-behavioral outcome of the family environment in the home that the child is currently living in. This holds important clinical implications as most clinical interventions for maltreated children take place subsequent to removal from the maltreatment experience. Therefore, it may be important to determine the prominent family environment variables in the foster or kinship homes following removal from the maltreatment experience.

Another possible limitation was having only one reporter (e.g. caretaker report) of family environment and behavioral outcomes. Research shows that different reporters can provide different and meaningful information (Berger, Jodl, Allen, McElhaney, & Kuperminc, 2005) indicating the importance of having information from multiple reporters whenever possible. Furthermore, child perceptions of the family environment could be quite different than caretaker perceptions, with information from both being salient to determining possible moderating effects in the behavioral-maltreatment outcome relation. Although this is a limitation, due to the young age of participants, it was not possible to measure their perceptions of their foster or kinship family environment or behavioral outcomes. Additional measures are needed to remedy this limitation of studying variables within

a young sample. Furthermore, it is important to note that other child reporters (i.e., teachers) might present additional confounds as they may be limited in their knowledge of the child, especially if change in placement resulted in changes of schools.

An additional possible limitation is not being able to compare directly the family environment of the home characterized with maltreatment to the present kinship or foster care placement. This would have allowed researchers to determine how much conflict, cohesion, and expressiveness was in the previous home where the maltreatment occurred and allow a possible determination if the foster home was actually different than the current placement. This was not possible due to information not provided on the perpetrators of the abuse or caretakers in the previous home. Additionally, it may add an additional confound due to the possibility that these caretakers may be fearful of repercussions (i.e., legal or reunification) which may affect their ability to report truthfully. Finally, the current study is correlational and is limited in its ability to establish causal relations.

#### *Future Research*

Current results indicate that there is a moderating effect for conflict and expressiveness between exposure to maltreatment and subsequent internalizing behaviors. Although the current study used a reputable measure to determine levels of conflict within the home, one direction for future research would be to define conflict more specifically to determine if there is a type or form of conflict that is more salient in the moderating relation. This possibly would assist with clinically targeting

specific types of conflict within the treatment of the family of children exposed to maltreatment.

Research in the divorce literature indicates that children exposed to high family conflict that are later removed from the conflict through divorce show an increase in behavioral symptoms although these symptoms are more severe if the child is left in the conflictual home (Morrison & Coiro, 1999). Given that children exposed to maltreatment are also, at least in theory, removed from conflictual homes for their protection, this line of research from the divorce literature provides another possible avenue for research on child maltreatment. That is, it will be important for future research to address how removing children from homes that are unsafe but familiar into homes that are safe but unfamiliar benefits the child's well-being. The results from the present study suggest that less conflict may not be helpful in reducing internalizing behaviors and calls into question perhaps what is needed to provide for the best interest of the child. It is also possible that this research would add to the literature by determining how clinical interventions might assist with the transition from a high conflict to a low conflict environment, thus reducing behavioral symptoms.

Furthermore, the results indicated that expressiveness moderated the maltreatment-behavioral outcome relation in that increased expressiveness in the homes of children exposed to maltreatment led to decreased levels of internalizing symptoms. This indicates the need for future research to determine how to



incorporate family expressiveness most adequately in treatment for children exposed to maltreatment to increase positive adjustment.

Most importantly, future research needs to continue to study other possible moderating family environment variables in the maltreatment-behavioral outcome relation so that interventions can focus on the family environment variables most sensitive to change in child functioning. Furthermore, consideration of the possible interaction between type, severity, and duration of maltreatment will also assist in developing a more realistic model explaining how family environment variables impact behavioral outcomes in children exposed to maltreatment.

Future research should also determine the possible moderating effects of family environment variables between exposure to maltreatment and behavioral outcomes through child perception. Child report of the family environment was not possible within the current study due to the young age of participants. Therefore, future research should focus on replicating the current study in an older population to determine if child perception of the family environment differs from caretaker report and the possible moderating role of family environment variables from child report.

Future research should incorporate longitudinal data collection to determine if moderation effects are present across time. Specifically, longitudinal data could take into account the aforementioned adjustment trajectory (Roditti, 2001) that children placed in a new home might experience. This approach could also give additional information regarding how symptoms change over time. Knowing how the relation between maltreatment exposure and behavioral outcome change over time would

assist the clinician in understanding what aspects of the family environment, depending on placement and length of time removed from the maltreatment experience, are most salient and subsequently address these issues with the caretaker and child to ensure a smooth and positive transition.

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# Appendix A

ID# \_\_\_\_\_

## DEMOGRAPHIC QUESTIONNAIRE

Child's Date of Birth: \_\_\_\_\_ Child's Age: \_\_\_\_\_ Grade in School: \_\_\_\_\_ Child's Ethnicity: \_\_\_\_\_

Child's Gender: Male Female What is your relationship to the child? \_\_\_\_\_

How many adults lived with the child in the last home? \_\_\_\_\_

Your marital status (circle one): married divorced/separated widowed remarried never married

Highest level of education completed by child's mother: \_\_\_\_\_ father: \_\_\_\_\_

How many brothers and sisters does your child have? \_\_\_\_\_ Please list the following information for each sibling:

Age      Gender (M or F)      Natural or Step      Living in the home (Y or N)

| <u>Age</u> | <u>Gender (M or F)</u> | <u>Natural or Step</u> | <u>Living in the home (Y or N)</u> |
|------------|------------------------|------------------------|------------------------------------|
|            |                        |                        |                                    |
|            |                        |                        |                                    |
|            |                        |                        |                                    |
|            |                        |                        |                                    |
|            |                        |                        |                                    |

How many schools has your child attended? \_\_\_\_\_ What special activities does your child participate in? (i.e. sports, scouts, music lessons, etc.)

**Schools attended:**

**Reason for move:**

**Activities involved in:**

| <b>Schools attended:</b> | <b>Reason for move:</b> | <b>Activities involved in:</b> |
|--------------------------|-------------------------|--------------------------------|
|                          |                         |                                |
|                          |                         |                                |
|                          |                         |                                |

Does your child have any major health problems? Yes No (If so, what are they?) \_\_\_\_\_

Any significant injuries or surgeries? \_\_\_\_\_

How often has your child seen the doctor in the last year? \_\_\_\_\_ The school nurse in the last year? \_\_\_\_\_

Do you or your spouse have any chronic medical problems? If so, what are they? \_\_\_\_\_

Have you, your child, or any one else in your family been treated for emotional or psychological problems? Yes No  
(If so, please answer the following)

Person's relationship to child      Type of problem      Treatment type (therapy, hospital, etc.)      Dates of treatment

| <u>Person's relationship to child</u> | <u>Type of problem</u> | <u>Treatment type (therapy, hospital, etc.)</u> | <u>Dates of treatment</u> |
|---------------------------------------|------------------------|---|---------------------------|
|                                       |                        |   |                           |
|                                       |                        |   |                           |

All children experience stress. What stresses has your child experienced in the last year? How old was he/she at the time?

**Incident:**

**Age of child:**

| <b>Incident:</b> | <b>Age of child:</b> |
|------------------|----------------------|
|                  |                      |
|                  |                      |
|                  |                      |
|                  |                      |
|                  |                      |
|                  |                      |

More space is available on the back of this form.

## Appendix B

ID # : \_\_\_\_\_

### Life Events Checklist

Date: \_\_\_\_\_

**Please read to child:** I am going to read a list of things that sometimes happen to people and I want you to tell me if any of these things have happened to you. I will circle the number of the event that you have experienced and then I will ask you to try to remember when it happened. I will also ask you to rate the event as a *Good* event or a *Bad* event. Finally, I will ask you to tell me how *Good* or how *Bad* the event was. I will circle the number that tells how good or how bad the event was for you.

| <b>0 = None</b><br>(not good or bad at all)<br>(circle #)        | <b>1 = Little</b><br>(a little bit good or bad)<br>(date mo/yr ) | <b>2 = Medium</b><br>(pretty good or pretty bad)<br>(circle one) | <b>3 = Big</b><br>(really good or bad)<br>(# times) | Good  | Bad   |
|--|--|--|---|-------|-------|
| 1. Have you moved to a new home?                                 | _____  | _____  | _____   | _____ | _____ |
| 2. Do you have a new brother or sister?                          | _____  | _____  | _____   | _____ | _____ |
| 3. Have you changed to a new school?                             | _____  | _____  | _____   | _____ | _____ |
| 4. Has any family member been seriously ill or injured?          | _____  | _____  | _____   | _____ | _____ |
| 5. Have your parents gotten divorced ?                           | _____  | _____  | _____   | _____ | _____ |
| 6. Have your parents been arguing more?                          | _____  | _____  | _____   | _____ | _____ |
| 7. Has your mother or father lost his/her job?                   | _____  | _____  | _____   | _____ | _____ |
| 8. Has a family member died?                                     | _____  | _____  | _____   | _____ | _____ |
| 9. Have your parents separated?                                  | _____  | _____  | _____   | _____ | _____ |
| 10. Has a close friend died?                                     | _____  | _____  | _____   | _____ | _____ |
| 11. Has either parent been away from home more?                  | _____  | _____  | _____   | _____ | _____ |
| 12. Has a brother or sister left home?                           | _____  | _____  | _____   | _____ | _____ |
| 13. Has a close friend been seriously ill or injured?            | _____  | _____  | _____   | _____ | _____ |
| 14. Has one of your parents gotten into trouble with the law?    | _____  | _____  | _____   | _____ | _____ |
| 15. Has one of your parents gotten a new job?                    | _____  | _____  | _____   | _____ | _____ |
| 16. Do you have a new stepmother or stepfather?                  | _____  | _____  | _____   | _____ | _____ |
| 17. Has one of your parents gone to jail?                        | _____  | _____  | _____   | _____ | _____ |
| 18. Has there been a change in how much money your parents have? | _____  | _____  | _____   | _____ | _____ |
| 19. Have you had trouble with a brother or sister?               | _____  | _____  | _____   | _____ | _____ |
| 20. Have you gotten any awards for good grades?                  | _____  | _____  | _____   | _____ | _____ |

- |  |       |      |     |   |   |   |   |       |
|--|-------|------|-----|---|---|---|---|-------|
| 21. Have you joined a new club?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 22. Have you lost a close friend ?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 23. Have you been arguing less with your parents?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 24. Have you been in special education classes?<br>(resource room class for kids with learning or behavior problems) | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 25. Have you had a problem obeying rules?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 26. Have you gotten new glasses or braces?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 27. Have you had learning problems in school?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 28. Have you had a new boyfriend/girlfriend?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 29. Have you repeated a grade in school?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 30. Have you been arguing more with your parents?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 31. Do you have any difficulty saying words, or do other people<br>have a hard time understanding what you say?      | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 32. Have you gotten into trouble with the police?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 33. Have you been seriously ill or injured?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 34. Have you broken up with a boyfriend/girlfriend?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 35. Have you made up with a boyfriend/girlfriend?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 36. Have you had trouble with a teacher?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 37. Have you been put in a foster home?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 38. Do you have a hearing problem?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 39. Have you tried out for a sport but didn't make it?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 40. Have you been suspended from school?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 41. Have you made failing grades on your report card?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 42. Have you tried out for a sports team and made it?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 43. Have you had any trouble with classmates?  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 44. Have you gotten any awards for playing sports?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 45. Have you been put in jail?   | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 46. Are there any other events that we haven't talked about?   | _____ |      |     |   |   |   |   |       |
|  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |
| 48. Are there any other events that we haven't talked about?   | _____ |      |     |   |   |   |   |       |
|  | _____ | Good | Bad | 0 | 1 | 2 | 3 | _____ |

## Appendix C

### INFORMED CONSENT STATEMENT

Promoting adaptive behavior and developmental tasks for children exposed to maltreatment

#### Day treatment Program Parental Consent

### INTRODUCTION

The Departments of Psychology and Applied Behavioral Science at the University of Kansas support the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to sign this form and not participate in this study. You should be aware that even if you agree to participate, you are free to withdraw at any time. If you do withdraw from this study, it will not affect your relationship with this unit, the services it may provide to you, or the University of Kansas.

### PURPOSE OF THE STUDY

The goal of the proposed study is to test the effectiveness of the Brain-Gym intervention with children who have been exposed to maltreatment. The Children's Place has used the Brain-Gym program over the past several years in their day treatment program and is interested, along with the investigator, in testing how well it is working to improve the emotional, social, and behavioral functioning of its clients. Brain-Gym involves helping the child complete a series of simple motor movements that are designed to stimulate brain receptiveness and increase readiness to learn. Although the proposed study involves testing an intervention on children, the project will not add any new interventions to the ongoing treatment program at the Children's Place, but instead will test what is already in place. The Children's Place has requested the research and agreed to the following research plan.

### PROCEDURES

Currently, as a member of the day treatment program, your child receives the general classroom Brain Gym intervention. If you agree for your child to participate, your child will be randomly assigned to one of two levels of the Brain Gym intervention: a) intensive treatment, or b) general treatment. The intervention is and will be administered by a trained Brain Gym expert currently employed by the Children's Place. The main difference between the intensive and general treatment is quantity, that is, children in the intensive treatment group will receive more exercises working with the expert. Teachers in the day treatment classrooms will not be notified as to who the participants are and will complete the same study measures on all children in the day treatment program as a part of the regular data collection for the classroom. You will also be asked to complete several questionnaires on how your child thinks, feels, and behaves. Completing the forms will take about an hour of your time. You will be asked to complete the study measures at three different times. Time 1 will be within 10 days of admission, time 2 will be at three months after admission, and time 3 will be within 10 days prior to discharge.

## RISKS

All of the measures in the study are frequently used in research projects like this one with no negative effects reported. Although the questionnaires will ask about your child's social, emotional, and behavioral functioning, no risks are expected for you or your child from completing the study measures. However, if you become distressed or upset at any time, please contact a member of the research team or the Children's Place staff to discuss your concerns. If participation in this study has raised issues for you or your child that you wish to speak with someone about you may contact Comprehensive Community Mental Health Center.

## BENEFITS

The research project will test to see if the children in day treatment are making greater gains in various developmental areas compared to children who currently do not receive the Brain-Gym intervention. By testing two levels of Brain Gym (general and intensive), we will be able to determine how much of the Brain Gym intervention is ideal for creating and maintaining a child's developmental and behavioral gains. It is hoped that if the results show that the Brain Gym intervention is effective for the day treatment children in improving their psychological health, perhaps Brain-Gym could also be implemented in the outpatient clinic in the future.

## PAYMENT TO PARTICIPANTS

After completing each round of study measures, parents will be compensated with a gift card from Target. After completing the measures at time 1, parents will receive a \$10.00 gift card from Target. After completing the measures at time 2, parents will receive a \$20.00 gift card from Target. Finally, for completing the study measures a third time, parents will be compensated with a \$30.00 gift card from Target. Investigators may ask for your social security number in order to comply with federal and state tax and accounting regulations.

## PARTICIPANT CONFIDENTIALITY

Your name will not be associated in any way with the information collected about you or with the research findings from this study. The researcher(s) will use a study number or a pseudonym instead of your name. The researchers will not share information about you unless required by law or unless you give written permission.

Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form you give permission for the use and disclosure of your information for purposes of this study at any time in the future.

## REFUSAL TO SIGN CONSENT AND AUTHORIZATION

You are not required to sign this Consent and Authorization form and you may refuse to do so without affecting your right to any services you are receiving or may receive from the Children's Place or the University of Kansas or to participate in any programs or events at the Children's Place or the University of Kansas. However, if you refuse to sign, you cannot participate in this study.

**CANCELLING THIS CONSENT AND AUTHORIZATION**

You may withdraw your consent to participate in this study at any time. You also have the right to cancel your permission to use and disclose information collected about you, in writing, at any time, by sending your written request to: Yo Jackson, Ph.D., 1000 Sunnyside Ave., Room 2013, Lawrence, KS 66045. If you cancel permission to use your information, the researchers will stop collecting additional information about you. However, the research team may use and disclose information that was gathered before they received your cancellation, as described above.

**QUESTIONS ABOUT PARTICIPATION**

Questions about procedures should be directed to the researcher(s) listed at the end of this consent form.

**PARTICIPANT CERTIFICATION:**

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study. I understand that if I have any additional questions about my rights as a research participant, I may call (785) 864-7429 or (785) 864-7385 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email [dhann@ku.edu](mailto:dhann@ku.edu) or [mdenning@ku.edu](mailto:mdenning@ku.edu).

I agree to take part in this study as a research participant. By my signature I affirm that I am at least 18 years old and that I have received a copy of this Consent and Authorization form.

\_\_\_\_\_
Type/Print Participant's Name

\_\_\_\_\_
Date

\_\_\_\_\_
Child's Name

\_\_\_\_\_
Participant's Signature

**Researcher Contact Information:**

Yo Jackson, Ph.D.
Principal Investigator
Clinical Child Psychology Program
1000 Sunnyside Ave., Room 2013
Lawrence, KS 66045

Psychology/Applied Behavioral Science
University of Kansas
785 864-3581

## Appendix D

### INFORMED CONSENT STATEMENT

Promoting adaptive behavior and developmental tasks for children exposed to maltreatment

#### Outpatient treatment Program Parental Consent

### INTRODUCTION

The Departments of Psychology and Applied Behavioral Science at the University of Kansas support the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to sign this form and not participate in this study. You should be aware that even if you agree to participate, you are free to withdraw at any time. If you do withdraw from this study, it will not affect your relationship with this unit, the services it may provide to you, or the University of Kansas.

### PURPOSE OF THE STUDY

The goal of the proposed study is to test the effectiveness of the Brain-Gym intervention with children who have been exposed to maltreatment. The Children's Place has used the Brain-Gym program over the past several years in their day treatment program and is interested, along with the investigator, in testing how well it is working to improve the emotional, social, and behavioral functioning of its clients. Brain-Gym involves helping the child complete a series of simple motor movements that are designed to stimulate brain receptiveness and increase readiness to learn. Although the proposed study involves testing an intervention on children, the project will not add any new interventions to the ongoing treatment program at the Children's Place, but instead will test what is already in place. The Children's Place has requested the research and agreed to the following research plan.

### PROCEDURES

Currently, children in the day treatment program at the Children's Place receive an intervention called Brain Gym. We would like to test how well this is working by comparing the developmental and behavioral health of these children to the children in the outpatient program who do not receive the Brain Gym intervention. If you agree for your child to participate, you will also be asked to complete several questionnaires on how your child thinks, feels, and behaves. Completing the forms will take about an hour of your time. You will be asked to complete the study measures at three different times. Time 1 will be within 10 days of admission, time 2 will be at three months after admission, and time 3 will be within 10 days prior to discharge.

### RISKS

All of the measures in the study are frequently used in research projects like this one with no negative effects reported. Although the questionnaires will ask about your child's social, emotional, and behavioral functioning, no risks are expected for you or your child from completing the study measures. However, if you become distressed or upset at any time, please contact a member of the research team or the Children's Place staff to



discuss your concerns. If participation in this study has raised issues for you or your child that you wish to speak with someone about you may contact Comprehensive Community Mental Health Center.

#### BENEFITS

The research project will test to see if the children in day treatment are making greater gains in various developmental areas compared to children who currently do not receive the Brain-Gym intervention. By testing two levels of Brain Gym (general and intensive), we will be able to determine how much of the Brain Gym intervention is ideal for creating and maintaining a child's developmental and behavioral gains. It is hoped that if the results show that the Brain Gym intervention is effective for the day treatment children in improving their psychological health, perhaps Brain-Gym could also be implemented in the outpatient clinic in the future.

#### PAYMENT TO PARTICIPANTS

After completing each round of study measures, parents will be compensated with a gift card from Target. After completing the measures at time 1, parents will receive a \$10.00 gift card from Target. After completing the measures at time 2, parents will receive a \$20.00 gift card from Target. Finally, for completing the study measures a third time, parents will be compensated with a \$30.00 gift card from Target. Investigators may ask for your social security number in order to comply with federal and state tax and accounting regulations.

#### PARTICIPANT CONFIDENTIALITY

Your name will not be associated in any way with the information collected about you or with the research findings from this study. The researcher(s) will use a study number or a pseudonym instead of your name. The researchers will not share information about you unless required by law or unless you give written permission.

Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form you give permission for the use and disclosure of your information for purposes of this study at any time in the future.

#### REFUSAL TO SIGN CONSENT AND AUTHORIZATION

You are not required to sign this Consent and Authorization form and you may refuse to do so without affecting your right to any services you are receiving or may receive from the Children's Place or the University of Kansas or to participate in any programs or events at the Children's Place or the University of Kansas. However, if you refuse to sign, you cannot participate in this study.

#### CANCELLING THIS CONSENT AND AUTHORIZATION

You may withdraw your consent to participate in this study at any time. You also have the right to cancel your permission to use and disclose information collected about you, in writing, at any time, by sending your written request to: Yo Jackson, Ph.D., 1000 Sunnyside Ave., Room 2013, Lawrence, KS 66045. If you cancel permission to use your

information, the researchers will stop collecting additional information about you. However, the research team may use and disclose information that was gathered before they received your cancellation, as described above.

#### QUESTIONS ABOUT PARTICIPATION

Questions about procedures should be directed to the researcher(s) listed at the end of this consent form.

#### PARTICIPANT CERTIFICATION:

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study. I understand that if I have any additional questions about my rights as a research participant, I may call (785) 864-7429 or (785) 864-7385 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email [dhann@ku.edu](mailto:dhann@ku.edu) or [mdenning@ku.edu](mailto:mdenning@ku.edu).

I agree to take part in this study as a research participant. By my signature I affirm that I am at least 18 years old and that I have received a copy of this Consent and Authorization form.

|                               |       |
|-------------------------------|-------|
| _____                         | _____ |
| Type/Print Participant's Name | Date  |
| _____                         |       |
| Child's Name                  |       |
| _____                         |       |
| Participant's Signature       |       |

#### Researcher Contact Information:

Yo Jackson, Ph.D.  
Principal Investigator  
Clinical Child Psychology Program  
1000 Sunnyside Ave., Room 2013  
Lawrence, KS 66045

Psychology/Applied Behavioral Science  
University of Kansas  
785 864-3581

Appendix E

CHILD ASSENT FOR RESEARCH

I, \_\_\_\_\_, agree to be in a study conducted by Yo Jackson, Ph.D., at the University of Kansas on how children react to stress and things that help kids adjust well to stress. I agree to be asked a number of questions about my knowledge, feelings, behaviors, and experiences. I will be asked to remember events that may have been unhappy for me. If I become upset, I will talk to someone about it like my mother, father, or teacher.

I also understand that my name or other information that lets people know that the information is about me will not be used. My answers will not be shared with my parents or anyone else, unless I am in danger of being hurt. If I have any questions about this project, I can ask them at any time.

I understand that I can refuse to be in the study and neither my parents nor the research staff will be upset. I also understand that I can stop answering questions at any time and no longer be in the study.

By signing below I am indicating that I understand what is on this form and am agreeing to fill out other forms.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

ID #: \_\_\_\_\_

Appendix F

Parent Consent for Research

*Please print CLEARLY*

Name of the child: -----

Name of the parent or guardian: -----

Address: -----

Telephone: -----

ID#: -----

I, the undersigned, am the legal guardian of -----, consent to participate with her/him in a research project on stress and resilience in children directed by Yolanda K. Jackson, Ph.D. of the Psychology and Human Development Departments at the University of Kansas. I understand that participation in this study involves the following commitment for me and my child:

- 1) Read and sign this consent form.
- 2) Complete several questionnaires, one a background/demographic questionnaire, one on my child's temperament, one on my child's behavior, and one on the environment of my child's family, taking approximately 90 minutes of my time.
- 3) Have my child contacted during or after school, read and sign the child assent form
- 4) Have my child complete several questionnaires during or after the school day, one on his/her intelligence level, one on his/her locus of control, one on his/her significant relationships, one on his/her social support, and one on the major stressors he/she has experienced in that past year, taking approximately 90 minutes of his/her time.
- 5) I also understand that if representatives of this project are unable to work with my child at school, or if I prefer not to have my child contacted at school, I will be contacted to bring my child to the University of Kansas for him/her to complete the child portion of the study.

Procedures

I understand that my child will be contacted at school or after school by a representative of this project and asked several questions regarding his/her intellectual and emotional adjustment. As part of the research, I understand that I will be mailed a packet of questionnaires regarding my child's emotional and behavioral functioning, his/her family environment which I am to return to the Psychology Department. I understand that I can discuss any concerns I have about this project with the coordinator of this research, Yolanda K. Jackson, Ph.D. (864-3581).

Confidentiality

All information obtained in this project will be held in the strictest confidence with the staff of this research project. All information will be stored in a confidential, locked file cabinet, and can be viewed only by authorized research staff members. As legal guardian of my child, I understand that no information about my child will be released, and no names will be recorded on any forms other than this consent form.

By law, the only times in which information will not be kept confidential is 1) if either my child or myself state that we are in imminent danger of harming either ourselves or others or 2) in suspected cases of child abuse.

Risks and Benefits

I understand that the risks of participating in this study are minimal and that all of these questionnaires have been used with other children and their families with no negative effects reported.

I understand that my participation in the study will help in developing a better understanding of the factors that help children to maintain good behavior when faced with stress.

Also I understand that I can request a copy of the study's results, which would be mailed to me following the completion of the study.

Right to Refuse Participation

I understand that participation in this project is voluntary and both my child and myself have the right to withdraw at any time.

Date: -----

Signed: -----  
Parent/Guardian

With my signature I affirm that I am at least 18 years of age and I have received a copy of the consent form to keep.