2013

Factors Affecting End of Treatment Symptom Severity for Children Receiving Trauma-Informed Evidence-Based Treatment

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FACTORS AFFECTING END OF TREATMENT SYMPTOM SEVERITY FOR CHILDREN RECEIVING TRAUMA-INFORMED EVIDENCE-BASED TREATMENT

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Social Work
at the University of Kentucky

By
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2013

ABSTRACT OF DISSERTATION

FACTORS AFFECTING END OF TREATMENT SYMPTOM SEVERITY FOR CHILDREN RECEIVING TRAUMA-INFORMED EVIDENCE-BASED TREATMENT

The purpose of this project is to examine how the factors of gender, placement status, type of treatment, the number of different types of trauma experienced, and a child's age at the start of treatment may influence end of treatment symptom severity scores for children ages 2-12 years who received trauma-informed evidence-based treatment for trauma. *Method:* Caregivers and children receiving outpatient services (N=134) completed the Child Behavioral Checklist, Trauma Symptom Checklist for Young Children, and the Trauma Symptom Checklist for Children-Alternate Version at baseline and end of treatment. Hypotheses were tested with a series of ANCOVA analyses, Independent *t*-Tests, and a Paired Samples *t*-Test. *Results:* While statistically significant improvements were found between baseline and termination outcome scores regardless of treatment type, TF-CBT was found to more successfully reduce externalizing and total problem scores at termination compared to PCIT. Despite the relatively young age of this sample, significant differences in externalizing and total problem scores on the CBCL were found for older children at the end of treatment. No significant differences were found between pre-and post-test internalizing and externalizing scale scores for either TF-CBT or PCIT. Additionally, examination of caregiver and child daily functioning scale scores indicated improved ratings of daily functioning from baseline to the end of treatment. *Implications:* Behavior problems stemming from traumatic exposure may resolve differently from behaviors that result from environmental factors apart from trauma. Trauma recovery is dependent upon successful matching of client characteristics and need to treatment type. Practitioners are encouraged to be mindful of the specialized needs of older children who are seeking treatment. Research that focuses on clarifying the factors that differentiate symptom resolution can inform treatment selection decisions. Social work educators are encouraged to design curriculum that is trauma-informed with an emphasis on helping students learn how to think critically about a child's needs and to integrate this knowledge into treatment decisions. The development of policies that incentivize

agencies to provide evidence-based care can increase the availability of research-supported care for trauma exposed youth.

KEYWORDS: Trauma, Post-Traumatic Stress, Child, Treatment, Evidence-Based

Jessica G. Eslinger

Student's Signature

July 2, 2013

Date

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FOR CHILDREN RECEIVING
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By

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ACKNOWLEDGMENTS

This dissertation, while an individual work, benefited from the help and insights of several people. I would first like to thank my co-chairs, Drs. Ginny Sprang and Melanie Otis, who have consistently supported me throughout this process. Dr. Sprang did a wonderful job encouraging, but also challenging me to push my thinking further and to not get overwhelmed when I found myself "in the weeds." I am grateful for her wisdom and guidance and for the amazing opportunities that I have been afforded during my time as a research assistant at the Center. Dr. Otis has supported and encouraged me on this journey since my first full semester as a doctoral student. I have appreciated her belief in my abilities and her never-ending patience in helping me develop my confidence and skills as a researcher. I have been exceedingly fortunate to have had the opportunity to be helped through this process by these two exceptional people and they have both been instrumental in my development as a scholar. I would also like to warmly thank the rest of my committee: Drs. Jim Clark, Jeff Reese, and Karla Washington, all of whom took time out of their busy schedules to offer support and guidance that challenged my thinking and helped to substantially improve my final product.

In addition, I would like to thank my friends and colleagues who have shown unwavering support and encouragement of me over the last four years. I especially want to acknowledge Dr. Katie McBride, a true friend, who encouraged me along this path even before I found it myself. I am thankful for the support and guidance of the numerous social work faculty who facilitated my learning along the way, as well as the outstanding members of my cohort: Sarabeth, Martin, Phil, Jing, and Beth. Special

thanks to Beth for our many phone conversations that helped keep me sane throughout this process. Woop Woop to everyone.

Most importantly, I would like to thank my family for their love and support. I owe a large part of this accomplishment to my parents who have supported me unconditionally and who have promoted all of my academic aspirations. Lastly, I would like to thank my husband, Steve, who has been unwavering in his support of me. He has amazed me with his understanding and his willingness to provide me the space I needed to pursue this goal while all the while making sure that I was well fed along the way. I could not have reached this achievement without his support.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

Introduction

Research examining the commonalities of emotional and behavioral responses of children who have experienced maltreatment and other trauma has led to the development of evidence-based practices focused on reducing emotional and behavioral symptoms related to traumatic exposure. A growing body of research has found that trauma-specific evidence-based practices with traumatized children, such as Child-Parent Psychotherapy (CPP), Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), Parent-Child Interaction Therapy (PCIT), and Alternatives for Families-A Cognitive Behavioral Therapy (AF-CBT), lead to improved emotional and behavioral outcomes for these children and their families (Cicchetti, Rogosch, & Toth, 2006; Cohen, Deblinger, Mannarino & Steer, 2004, Cohen & Mannarino, 1996; Eyberg et al., 2001; Ghosh Ippen, Harris, Van Horn, & Lieberman, 2011; Hood & Eyberg, 2003; King et al., 2000; Kolko, 1996a; Kolko, 1996b; Lieberman, Ghosh Ippen, & Van Horn, 2006; Lieberman, Van Horn, Ghosh Ippen, 2005, McNeil, Capage, Bahl, & Blanc, 1999; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). Questions remain, however, as to how differences in traumatic history and other demographic and environmental factors may influence treatment outcomes for children. Further research in this area is needed to help explicate guidelines that can help identify treatments that best fit the individual needs of a child.

The need for trauma-informed evidenced-based treatment is reinforced by research connecting childhood trauma exposure to long-term adult outcomes (Briere, Kaltman, & Greene, 2008; Cloitre, et al., 2009; Edwards, Holden, Felitti, & Anda, 2003; Felitti & Anda, 2009; Felitti et al., 1998; Limke, Showers, & Zeigler-Hill, 2010). Both

longitudinal and cross-sectional research has found evidence of the connection between childhood exposure to trauma and negative adult emotional and behavioral outcomes. The Adverse Childhood Experiences (ACE) studies conducted by Felitti and colleagues (1998, 2009) utilized longitudinal data to examine how maltreatment experiences in childhood influence emotional, physical, and behavioral outcomes in adulthood. These studies found that adults who identified experiencing four or more adverse events in childhood, such as physical abuse, sexual abuse, substance abuse, and/or violence in the home, were more likely to experience drug abuse, depression, and suicide attempts, as well as chronic health conditions, such as cancer, liver disease, and skeletal fractures later in life. Cross-sectional research from the ACE studies examining the relationship between childhood experiences of sexual abuse, physical abuse, emotional abuse, and witnessing of domestic violence on adult mental health functioning (N = 8,667 male and female adults), found higher levels of mental health issues for participants with more frequent numbers of abuse experiences (Edwards et al., 2003). Emotional abuse during childhood was found to have a particularly detrimental effect on adult mental health, with mental health functioning declining as the intensity of emotional abuse increased (Edwards et al., 2003).

Linkages have also been found between the complexity of emotional symptoms in adult hood and exposure to multiple traumatic experiences in childhood (Briere et al., 2008; Cloitre et al., 2009). In a study examining symptom complexity in a sample of adult college women, Briere, Kaltman, and Green (2008) found a linear relationship between the number of different types of childhood traumas experienced and higher levels of reported negative symptoms related to the traumatic event(s), such as anxiety,

intrusive thoughts, depression, and anger. Similar to the Briere et al. study, Cloitre and colleagues (2009) found that the cumulative effect of multiple traumatic experiences during childhood were predictive of higher symptom complexity in adulthood.

Adult attachment style has also been found to be influenced by experiences of childhood trauma. Limke, Showers, and Zeigler-Hill (2010), examined the role that anxious or avoidant attachment in adulthood may have on mediating psychological adjustment for 356 adult college students with histories of sexual abuse and/or emotional abuse when compared to a matched control group. Anxious attachment was found to significantly mediate the effects of childhood emotional abuse in the domains of "positive relations with others," "total well-being," "purpose in life," "self-acceptance," "negative affectivity," "maladaptive defenses," "splitting," "environmental mastery," and scores on a global severity index (Limke et al., 2010, p.356). Anxious attachment was also found to significantly mediate the effects of childhood sexual abuse (sample included females only) in the areas of "environmental mastery," "positive relations with others," self-acceptance", and "negative affectivity" (Limke et al., 2010, p. 361).

The potential long-term negative effects on emotional, physical, and relational functioning following childhood exposure to trauma encourages the development of efficacious and efficient treatments specific to intervening with young children with varying trauma histories. To this end, the aim of this research project was to examine factors that may affect end of treatment symptom severity for children ages 2-12 years who received a trauma-informed evidence-based treatment intervention of either Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) or Parent-Child Interaction Therapy (PCIT). Specifically, this study aims: 1) to clarify how the number of different types of

trauma exposures, a child's gender, placement in foster care, and the age of the child at the time of treatment may affect end of treatment symptom severity scores, 2) to examine how internalizing and externalizing symptoms may resolve differently following treatment with either TF-CBT or PCIT, and 3) to examine how child and caregiver perceptions of daily functioning may change from the beginning to the end of treatment. A review of the existing literature on TF-CBT, PCIT, and factors that may confound the development of trauma-related symptoms will be provided, followed by a delineation of the guiding theoretical frameworks for this study, the results of the quantitative analyses, and a discussion of the implications of the results and recommendations for future practice, research, education, and policy.

Chapter 2

A Review of the Literature: Symptom Severity

It has been estimated that up to 25% of American children are exposed to a significant traumatic event prior to the age of 16 (Pynoos & Fairbank, 2003). These traumatic exposures can include experiences such as maltreatment, neglect, traumatic grief, school and community violence, exposure to natural disasters, and terrorism.

Childhood Traumatic Grief (CTG) has been increasingly examined within the trauma literature. CTG occurs when a child develops symptoms akin to those of post-traumatic stress disorder in response to the loss of a loved one, and these symptoms interfere with the child's ability to successfully progress through the grieving process (Brown et al., 2008; Cohen & Mannarino, 2004). Symptoms of traumatic grief may include: a preoccupation with how the loved-one died, re-enacting how the person died through play or art, strong emotional responses when reminded of the death, avoidance of reminders of the death, withdrawal from others, becoming "jumpy" or easily startled (Goodman, et al., 2004). Symptoms of CTG should be considered for children who have experienced the loss of a loved-one, including separation from parents and siblings that occur when children are placed in foster care. Additionally, with the increasing numbers of active military and multiple deployments overseas, CTG is being increasingly examined with military children (Cohen & Mannarino, 2011).

Past research has found traumatized children to exhibit symptoms of post-traumatic stress (Alisic, Jongmans, van Wesel, & Kleber, 2011, Crusto et al., 2010; Feldman & Vengrober, 2011; Greeson et al., 2011; Kaplow, Dodge, Amaya-Jackson, & Saxe, 2005; Kelley et al., 2010), depression (Alisic et al., 2011; Feldman & Vengrober,

2011; Greeson et al., 2011), anxiety (Alisic et al., 2011; Greeson et al., 2011; Kaplow et al., 2005), aggression (Ozcol, Zucker, & Spinazzola, 2011), and interpersonal problems (Feldman & Vengrober, 2011; Kim & Cicchetti, 2003). While the development of adverse symptoms following traumatic exposure is well-supported in the literature, further understanding is needed as to how trauma-related symptoms for children ages 12 and younger resolve during treatment.

Systematic reviews of existing research examining treatment interventions for trauma-related symptoms in children and adolescents have found differing levels of symptom reduction at the end of treatment. Gillies and colleagues (2012) reviewed 14 studies that examined treatment outcomes for traumatized children and adolescents following interventions with cognitive behavioral, exposure-based, psychodynamic, narrative, supportive, or eye movement desensitization and reprocessing therapies. Results indicated varying degrees of improvement in symptoms of post-traumatic stress, depression, and anxiety when compared to controls, with CBT being judged to be the most effective at reducing symptoms (Gillies, Taylor, Gray, O'Brien, & D'Abrew, 2012). In a study examining interventions used for reducing symptoms of post-traumatic stress for children exposed to non-maltreatment related trauma, Forman-Hoffman and colleagues (2013) conducted a systematic literature review and identified 25 articles that met their inclusion criteria of child exposure to a non-maltreatment related trauma (either with or without symptoms of post-traumatic stress), low risk of study bias (i.e. selection, performance, and attrition bias), and the inclusion of active or waitlist controls. Their review found variation in the treatment components used across studies, the dose of treatment received, the frequency of treatment attendance, and the way in which family

was incorporated into the treatment (Forman-Hoffman et al., 2013). Similar to the Gillies et al. review, interventions utilizing elements of CBT were more consistently found to lead to symptom reduction.

Studies specific to examining the implementation of full evidence-based protocols (opposed to the use of practice elements only), have more consistently found evidence of symptom reduction following treatment (Cicchetti et al., 2006; Cohen et al., 2004, Cohen & Mannarino, 1996; Eyberg et al., 2001; Ghosh Ippen, Harris, Van Horn, & Lieberman, 2011; Hood & Eyberg, 2003; King et al., 2000; Kolko, 1996a; Kolko, 1996b; Lieberman, Ghosh Ippen, & Van Horn, 2006; Lieberman, Van Horn, Ghosh Ippen, 2005, McNeil, Capage, Bahl, & Blanc, 1999; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). The trauma-informed evidence-based treatment interventions of TF-CBT and PCIT evaluated in this study have been found to reduce emotional and behavioral trauma-related symptoms in young and school-aged children. TF-CBT has been used with children following various types of traumatic exposures and has been found to reduce symptoms of post -traumatic stress (Cohen & Mannarino, 1996; Cohen et al., 2004; King et al., 2000), depression (Cohen & Mannarino, 1998; Deblinger, Lippmann, and Steer, 1996; Cohen et al., 2004; King et al., 2000), fear (King et al., 2000), anxiety (Cohen & Mannarino, 1998), behavior problems (Cohen & Mannarino, 1996; Deblinger, Lippmann, and Steer, 1996; Cohen et al., 2004), sexualized behavior problems (Cohen & Mannarino, 1996; Cohen & Mannarino, 1998), and social competence (Cohen &Mannarino, 1998) in children when compared with other treatment modalities or wait-list controls. PCIT has also been found to improve behavioral outcomes for children with histories of maltreatment (Borrego, Gutow, Reicher, & Barker, 2008; Borrego, Timmer, Urquiza, &

Follette, 2004; Borrego, Urquiza, Rasmussen, & Zebell, 1999; Chaffin et al., 2004; Timmer, Urquiza, Zebell, & McGrath, 2005; Timmer, Ware, Urquiza, & Zebell, 2010). An in-depth examination of this literature will be provided later in this review.

Although there is evidence of symptom resolution following evidence-based treatment, questions remain as to the specific factors that may help or hinder symptom reduction during treatment. Research suggests that there are interpersonal, biological, and environmental factors that may influence the extent to which trauma-related symptoms may develop and how they resolve during treatment (Chapman & Chattarji, 2000; DeBellis et al., 1999a, De Bellis et al., 1999b, De Bellis, 2001, De Bellis, 2005; Labar & LeDoux, 2001). The following section reviews child and environmental characteristics that have been found to influence symptom development following traumatic exposure and provides the basis for understanding factors which may influence symptom severity at the end of treatment.

Multi-Trauma Exposure and Symptom Outcomes

Current research is focusing on how different histories of multiple traumatic exposures may affect symptom severity. Attempts to conceptualize a more inter-related understanding of how multiple types of exposures may influence symptom outcomes both before and after treatment have led to the identification of terms such as *cumulative* trauma, *poly-victimization*, and *complex*. The term *complex trauma* has been utilized to capture a pervasive negative symptom pattern resulting from multi-trauma exposure on a child's emotional, behavioral, physiological, and neurobiological functioning (Cook et al., 2005). The term poly-victimization has been proffered to describe children with high numbers of types of traumatic exposures (Finkelhor et al., 2005a; Finkelhor, Ormrod, &

Turner, 2007), while the cumulative trauma has been used to describe the potential progressive effects of repeated trauma exposure on a child's functioning. Due to the high number of children with multi-trauma histories, researchers have attempted to clarify what aspects of these experiences may carry the most weight in determining emotional and behavioral outcomes.

The identification of a primary type of trauma has been studied as a predictor to symptom outcomes; however, research has suggested a positive correlation between the number of traumatic exposures and levels of emotional and behavioral symptoms (Cloitre et al., 2009; Crusto et al., 2010; Greeson et al., 2011; Kisiel, Fehrenbach, Small, & Lyons, 2009). Finkelhor, Ormod, Turner, and Hamby (2005a) have suggested that the relationships between types of trauma occur at various levels, with some trauma histories involving multiple types of victimizations with some incidents acting as precursors to other types of traumatic exposure, while others placing children at high-risk of experiencing other types of victimizations.

Utilizing data from the Developmental Victimization Survey (DVS), Finkelhor and colleagues (2005a, 2005b, 2007) examined victimization experiences of a national sample of American children ages 2-17 years (N = 2,030) that were interviewed by telephone between December 2002 and February 2003 utilizing the Juvenile Victimization Questionnaire (Hamby & Finkelhor, 2004, as cited in Finkelhor et al., 2005a). Seventy-one percent of participants were found to have experienced some form of victimization, with 69% of participants experiencing more than one type (Finkelhor et al., 2005b). The average number of victimization exposures for the sample was three, with approximately one half of participants identified as victims of an assault, 1 in 12

experiencing a sexual assault or rape, 1 in 7 experiencing child maltreatment, one fourth experiencing property victimization (including robbery, vandalism, and theft), and one third of participants indirectly witnessing the assault or other victimization of another person during the previous year (Finkelhor et al., 2005a). The average age for high (four or more types of traumatic exposures) poly-victimization was 13, and was more likely to be male (Finkelhor et al., 2007). Poly-victimization was found to be a stronger predictor for symptoms, such as anger, depression, and anxiety than more individual types of traumatic exposure, such as homelessness, death, family conflict, or serious illness (Finkelhor et al., 2007).

The connection between multiple trauma exposures and higher levels of symptoms has been reinforced by other studies. Crusto and colleagues (2010), in a sample of children between the ages of 3-6 drawn from a community-wide family violence initiative (N = 154), examined the relationship between the number of traumatic experiences a child had experienced, levels of parenting stress, and a child's post-traumatic stress symptoms. Data were gathered from the Traumatic Events Screening Inventory-Parent Report Revised-Brief Version (Ghosh-Ippen, Ford, Racusin, Acker, Bosquet, & Rogers, 2002), the Trauma Symptom Checklist for Young Children (Briere, 2005), and the Parenting Stress Index, Short Form (Abidin, 1995). The average number of potentially traumatic events experienced for the study sample was 4.9 different exposures, with over 48% of the sample experiencing 5 or more traumatic events (Crusto et al., 2010). Path analysis results indicated significant relationships between family violence, other types of family-related trauma, non-family-related violence, parenting stress, and symptoms of post-traumatic stress disorder (Crusto et al., 2010). Similarly, in

a study examining histories of trauma exposure, symptoms of post-traumatic stress, and emotional and behavioral outcomes for children in foster care who received treatment from a participating National Child Traumatic Stress Network Site, Greeson and colleagues (2011) found that approximately 70% of participants reported having at least two different types of traumatic exposures (combinations including physical abuse, sexual abuse, neglect, and domestic violence). Children with multi-trauma histories were found to be more likely to exhibit internalizing problems (such as depression and anxiety), symptoms of post-traumatic stress, and to meet criteria for at least one clinical diagnosis, than children experiencing fewer types of traumatic exposures. Specifically, logistic regression analyses indicated that children with histories of multiple trauma exposures were 1.6 times more likely to exhibit internalizing behavioral problems than children without such histories, and were 1.5 times more likely to have symptoms of post-traumatic stress (Greeson et al., 2011).

Multiple traumatic exposures have also been found to predict increased symptom complexity for both adults and children. Cloitre and colleagues (2009) examined post-traumatic stress symptoms in samples of adult women (N = 582) and male and female children (N = 152). Their study found that children with histories of multiple types of traumatic exposures (including sexual abuse, physical abuse, neglect, witnessing of domestic violence, not living in home with mother, emotional abuse, and/or witnessing sexual or physical abuse of another) exhibited more symptom complexity (including symptoms of post-traumatic stress, depression, and other internalizing and externalizing behavior problems) compared to children without such histories (Cloitre et al., 2009). Further, their examination of adult females indicated that adults with multiple types of

traumatic exposures in childhood (including sexual abuse, physical abuse, emotional abuse, neglect, and/or did not live with their mother as a child) also exhibited higher symptom complexity in adulthood (Cloitre et al., 2009). While the presence of multiple traumatic exposures in adulthood only was not found to have a significant relationship to adult symptom complexity, a significant relationship was found between adult symptom complexity and multiple types of traumatic exposure in childhood (Cloitre et al., 2009). This finding reinforces the adverse developmental implications of traumatic exposure during childhood that do not appear to be at play for persons who experience traumatic exposure only in adulthood. Kisiel and colleagues (2009) identified similar findings in their study of children within the Illinois child welfare system (N = 4,272). Children with histories of two or more types of traumatic exposures including sexual abuse, physical abuse, emotional abuse, witnessing of domestic violence, and neglect, were found to exhibit more symptoms of post-traumatic stress and other mental health problems as compared to children without such histories (Kisiel, Fehrenbach, Small, & Lyons, 2009).

The concept of allostatic load has been suggested to be helpful in understanding the cumulative adverse effects of repeated trauma exposure on a child's ability to regulate their emotions, cognitions, and behaviors (Sprang et al., 2009; Katz, Sprang, & Cooke, 2012). Allostasis refers to the process of the regulatory systems within the body (including the brain and nervous system) working to maintain balance in response to stressors perceived in the environment (Danese & McEwen, 2012; Katz et al., 2012; Sprang et al., 2009). Allostatic load occurs when experiences of stress over the course of one's life time compromise the body's ability to self-regulate following stressful events (Katz et al., 2012; Sprang et al., 2009). Thus, conceptualizing children who have

experienced repeated traumatic exposure, such as on-going neglect, physical or sexual abuse, as having high markers for allostatic load, can help explain the development of complex symptom profiles for these children. The concept of allostatic load is further supported by the adult outcomes research discussed previously that outlined the adverse consequences of childhood trauma on emotional, interpersonal and physiological adult outcomes (Briere et al., 2008; Cloitre et al., 2009; Edwards et al., 2003; Felitti & Anda, 2009; Felitti et al., 1998; Limke et al., 2010).

Collectively, these findings identify children with histories of multiple traumatic exposures to be at elevated risk of developing more complex and persistent emotional, behavioral, and interpersonal problems, and there is evidence that repeated exposures to trauma can affect the body's ability to manage stress. The emotional, behavioral, and interpersonal needs of children with histories of multiple traumatic exposures present specific challenges for symptom reduction during treatment as these children can present in treatment with substantial difficulties regulating their emotions (may experience high levels of hyper- or hypo-arousal), difficulties with trusting and relating to others (including the treating clinician), high levels of avoidant behaviors (such as difficulty talking about thoughts and feelings), and exhibiting disruptive, inattentive, defiant, and/or aggressive behaviors.

Gender Differences and Symptom Outcomes

Gender has also been found to play a role in the type and severity of symptoms that may develop following a traumatic experience (Alisic, Jongmans, van Wesel, & Kleber, 2011; Maschi, Morgen, Bradley, & Hatcher, 2008; Tollin & Foa, 2003). Past research has found differences in the development of post-traumatic stress symptoms

between males and females. Female children appear to be at risk for developing higher levels of emotional distress following experiences of maltreatment, and have been found to display higher levels of post-traumatic stress symptoms than male children (Maschi et al., 2008). Tollin and Foa (2006) conducted a meta-analysis of studies focused on gender-related differences in the development of symptoms of post-traumatic stress. Their analysis of studies including children and adults examined whether females were more likely than males to exhibit symptoms of PTSD, whether females or males were more likely to experience a traumatic event, whether males and females differed by the types of traumatic events experienced, and whether gender differences remained after controlling for type of traumatic event experienced (Tollin & Foa, 2006). Their results indicated that: 1) females were twice as likely to meet criteria for PTSD than males, 2) adult males were significantly more likely than adult females to report a traumatic experience, but only for certain types of traumatic events (no significant gender differences were found in the child studies that examined traumatic experiences), 3) females reported more experiences of sexual abuse, while males more likely to report traumatic events that included disasters, serious injury, physical assault, and 4) the higher level of PTSD symptoms in female children and adults was not fully accounted for by higher levels of sexual abuse/sexual assault experiences for this group (Tollin & Foa, 2006). In a more recent meta-analysis, Alisic and colleagues (2011) also found being female to be a predictor of the development of long-term symptoms of PTSD.

Studies examining symptom outcomes for children exposed to war and terrorism have found significant gender differences in symptoms outcomes. In a study examining gender differences in the development of symptoms of PTSD, Armour and colleagues

(2011) examined gender as a moderator to PTSD symptoms within two proposed factor-models of PTSD in a sample of high school Bosnian boys and girls (N = 1,572) two years following the end of the Bosnian war. The first model was developed by King, Leskin, and Weathers (1998) and was based on a 17-item PTSD structure including factors of intrusion, avoidance, emotional numbing, and arousal. The second model was developed by Simms, Watson, and Doebbeling (200 including factors of intrusion, avoidance, and arousal, but also examines factors related to dysphoria. Utilizing the War Trauma Screening inventory (WTSI; Layne, Saltzman, Djape, & Pynoos, 1999) and the UCLA PTSD Reaction Index-Revised (Steinberg, Brymer, Decker, & Pynoos, 2004), results indicated that both of the proposed models were a good fit for males and females and that the subgroups for girls and boys were found to differ significantly on all structural factors and reinforces the hypothesis that males and female children respond differently to stress (Armour, et al., 2011).

Studies have suggested that symptom differences by gender persist throughout treatment. In a study examining gender differences in symptoms of post-traumatic stress at baseline and end of treatment for male and female children ages 6-18 including the current study sample, Sprang and Craig (in review) found significant differences in the level of post-traumatic symptoms reported by males and females at the end of treatment. Results of a MANCOVA analysis examining pre- and post-test post-traumatic stress scale scores by dose of treatment received and child gender, found significant differences by gender for scores at both pre- and post-test with females exhibiting higher levels of post-traumatic stress symptoms at both data collection points (Sprang & Craig, in review). These findings suggest that female children are at elevated risk of exhibiting

higher levels of post-traumatic stress symptoms compared to their male peers and that these differences may persist throughout treatment. Additionally, the results suggest that male and female children may process trauma-related stress responses differently which may lead to not only higher levels of post-traumatic stress symptoms, but also to different types of symptom profiles. Further clarification of gender differences in trauma-related emotional and behavioral symptoms during treatment can inform how existing protocols may be modified to address the differing treatment needs of male and female children.

The Effect of Foster Care Placement on Symptom Outcomes

Children placed in foster care have also been found to be at elevated risk for higher levels of adverse emotional and behavioral outcomes following traumatic exposure. The Children's Bureau, a part of the United States Department of Health and Human Services, has identified that over 400,000 children were in foster care placement in the United States as of September 30, 2010, with 33% of these children staying in foster care for 1 to 11 months, and many (10%) remaining in foster care for 3 to 4 years (Children's Bureau, 2012).

In an overview of the literature on mental health problems of children in foster care placement, Oswald, Heil, and Goldbeck, (2010) found that studies that examined psychopathology in foster children consistently found behavioral problems, such as inattention and social problems, to fall within the clinical range on screening instruments such as the Child Behavioral Checklist (CBCL; Achenbach, 1991). Similarly, a study conducted by Leslie, Hulburt, Landsverk, Barth, and Slymen (2004) examined factors influencing the use of outpatient mental health services for a sub-sample of children from the National Survey of Child and Adolescent Well-Being (NSCAW). Their study

included children ages 2 -15 years (N = 462) who had been in a foster care placement for at least 12 months (including non-relative foster care, kinship care, and group homes). Results indicated that approximately half of the children (46.8%) exhibited externalizing and internalizing behavior problems above the clinical cut-off on the CBCL, with a little more than half of the sample (52.8%) receiving at least one outpatient mental health service while in placement (Leslie et al., 2004).

Children placed in foster care are more likely to have histories of multiple traumatic exposures. As previously discussed, exposure to multiple traumas during childhood can increase allostatic load leading to compromises in the body's ability to regulate stress responses (Katz et al., 2012; Sprang et al., 2009). As children are typically placed in foster care following experiences of neglect or abuse (frequently chronic in nature), it can be argued that the majority of children in foster care placements have been exposed to repeated trauma-related stress. Additionally, the placement of a child into foster care is disruptive to existing attachment relationships of the child, as well as to the child's relationships with peers and their connection to outside supports (such as school). Emotional and behavioral responses connected to previously experienced trauma are often further exacerbated by symptoms of traumatic grief.

Instability in a child's placement can also be seen as a contributor to the complex symptom profiles of foster children and is an important consideration in understanding symptom severity. Proctor et al. (2011) utilized classification and regression tree analysis (CART) to examine predictors of placement stability in a sample of children between the ages of 6 and 8 years (N = 285) placed in foster care, with other relatives, and in adoptive homes. Their findings indicated that 14% of the study sample was found to have

instability in their placement between 6 and 8 years of age, and that being adopted was the strongest predictor for placement stability in the sample (Proctor et al., 2011). In a related study, Newton, Litrownik, and Landsverk (2000) examined relationships between changes in foster care placement and behavioral problems in a sample of 415 children over a period of 12 months. Children who exhibited above clinical cutoff levels of behavioral problems on the CBCL (either internalizing, externalizing, or total behavior problem score; Achenbach, 1991) were found to be more likely to have a higher number of placements than children for whom above clinical cutoff disruptive behaviors were not endorsed (Newton et al., 2000). Multiple changes in placement were found to increase behavioral disturbances even for those children who did not initially exhibit emotional or behavioral disturbances on the CBCL at the beginning of the study (Newton et al., 2000). These findings suggest that the instability inherent in changing placements needs to be viewed as an additional trauma exposure and as a potential contributor to allostatic load. A child's perception of having some element of control over factors that affect his or her environment (internal versus external locus of control; Rotter, 1990) may also influence a child's experience of stress.

Research on the long-term developmental outcomes of children in foster care further underscores the effect of on-going stress on child outcomes. Lloyd and Barth (2011) utilized a sub-sample of 353 infants from the National Survey of Child and Adolescent Well-Being (NSCAW) to compare developmental outcomes for children who returned home, were adopted, or remained in foster care after five years. The children were screened on social competence, adaptive behavior, language skills, intelligence, education achievement, and internalizing and externalizing behavior problems; caregiver

education was also taken into account (Lloyd & Barth, 2011). Children who remained in foster care had the poorest developmental outcomes on study measures in all areas except adaptive behavior, with children who returned to their family of origin and those who were adopted, exhibiting more positive outcomes (Lloyd & Barth, 2011).

Therefore, studies suggest that being placed in foster care may be an additional trauma-related stress for a child. Histories of multiple traumatic exposures, disruptions in care giving, peer and other support relationships, and the absence of the perception of control within one's environment may combine to place children in foster care at elevated risk for exhibiting complex trauma-related symptoms. These complex needs may complicate efforts to reduce symptom severity for these children and present specific challenges during treatment. Existing research has suggested modifications to help address the special needs of foster children during treatment (Cohen et al., 2012), however, further clarification of the individual factors that may influence end of treatment symptom severity for these children is indicated.

Child Age and Symptom Outcomes

Symptom reduction in trauma-related symptoms following trauma-informed evidence-based treatment has been found for both younger and older subsets of children (Cohen & Mannarino, 1996; Cohen & Mannarino, 1998; Cohen et al., 2006; Scheeringa et al., 2011). Post-traumatic stress symptoms have been found in very young children (De Young, Kenardy, & Cobham, 2011; Scheeringa, Myers, Putnam, & Zeanah, 2012; Scheeringa, Weems, Cohen, Amaya-Jackson, & Guthrie, 2011; Scheeringa & Zeanah, 2001; Scheeringa & Zeanah, 2008), and research has indicated that the manifestations of trauma-related emotional and behavioral symptoms are intertwined with the

neurobiological and social-relational development of the child. Specifically, infancy and early childhood are a period of robust neurobiological development that is fostered by a secure attachment relationship between a child and his or her primary caregiver(s) (Bowlby, 1969; Perry et al., 1995; Siegel, 1999, Perry & Hambrick, 2008). Neurobiological research indicates that traumatic exposure early in life can negatively affect the development of brain structures that regulate emotions, memory, and perception (Perry et al., 1995; Schore, 1996; Siegel, 1999; Corbin, 2007). It has been asserted that, due to the level of dependence that young children have on their caregivers for their emotional, physical, and overall care needs, disruptions that are interpersonal in nature can be particularly problematic for the emotional and behavioral outcomes of young children (Briere & Spinazzola, 2005; Levendosky, Bogat, & Martinez-Torteya, 2013; Scheeringa & Zeanah, 2001). Such disruptions may place children at elevated risk of developing long-term difficulties regulating emotional responses and forming trusting relationships (Spiegel, 1999; Corbin, 2007). Therefore, the early onset of a trauma can place a child at elevated risk for emotional dysregulation and increasing behavior problems as they age.

Children seeking trauma-related treatment often have histories of multiple types of traumatic exposures (Crusto et al., 2010; Finkelhor et al., 2005a ; Greeson et al., 2011). Older children are at increased risk of multi-trauma exposure and may present to treatment with more complex symptom profiles. The consideration of allostatic load can again assist in conceptualizing the development of more complex symptom profiles for older children (Katz et al., 2012; Sprang et al. 2009). Existing research has found a

child's age to be predictive of higher levels of internalizing symptoms, with older children exhibiting higher levels of symptoms (Greeson et al., 2011).

Thus, children experiencing repeated traumatic exposures beginning within the first five years of life are at increased risk for developing more complicated emotional and behavioral symptoms as they age. Early trauma exposure can interfere with the development of key areas of the brain that assist with the regulation of emotions and cognitions (Corbin, 2007; De Bellis et al, 1999a; De Bellis et al., 1999b; Perry et al., 1995; Schore, 1996; Siegel, 1999). If a child continues to be exposed to traumatic experiences, there is elevated risk for adverse cumulative emotional, behavioral, physiological, and interpersonal outcomes (Cloitre et al, 2009; Crusto et al., 2010; Greeson et al., 2011; Katz et al., 2012; Sprang et al., 2009).

Perceptions of Daily Functioning

Although the reduction of trauma-related symptoms has been the primary focus of outcome research to date, perceived changes in a child's daily functioning are also of interest when assessing end of treatment outcomes. A more qualitative understanding of how a child may be functioning provides additional information apart from a description of symptoms.

A change in a child's behavior is often the first signal that a child is experiencing distress, and assessment of how a child is managing daily stressors, getting along with others, and/or performing at school, can provide a richer understanding of the child's daily functioning. Assessment strategies that capture both of these domains (perceptions of daily functioning and the reports of discrete symptoms) can provide a fuller picture of a child's overall functioning.

In a review of the literature, relationships were found between the presence of symptoms and one's perception of their daily functioning. Alisic and colleagues (2008) found a strong negative relationship between the presence of post-traumatic stress symptoms and a child's rating of his or her quality of life; children exposed to a traumatic event reported lower ratings of quality of life compared to children without traumatic exposure. Similar results have been found in a study examining perceived quality of life after exposure to a traumatic death. In a two and a half year study examining symptoms of post-traumatic stress, depression, and quality of life ratings for 167 children following the witnessed accidental death of two parents during a school drill, Song and colleagues (2012) found child reported depression scores on the Child Depression Inventory (CDI) to significantly predict caregiver ratings of lower quality of life scores. However, child reported symptoms of post-traumatic stress which were not found to significantly predict caregiver ratings of quality of life indicating the helpfulness of considering depressive symptoms as separate from post-traumatic stress disorder (Song et al., 2012).

The influence of a caregiver's emotional state on his or her ratings of their child's functioning has also been examined. Research has suggested that caregiver reports of their child's emotions and behaviors can be influenced by levels of parenting distress experienced by the caregiver which may call in to question the accuracy with which caregiver reports represent a child's functioning. Kinsman and Wildman (2001) conducted a study examining the relationship between parent and child perceptions of functioning. In their sample of mothers and their children ages 5-12 years of age (N = 166), children and their mothers tended to report similar perceptions of functioning except in families where the mother identified elevated symptoms on the Beck

Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979 as cited in Kinsman & Wildman, 2001). For these families, the children were found to report more positive perceptions of their functioning than their mothers with distressed mothers reporting overall more negative perceptions of functioning for their child, themselves, and their families (Kinsman & Wildman, 2001). Similarly, in a study conducted with children ages 7-17 years of age and their caregivers following a traumatic event (N = 91), Valentino, Berkowitz, and Stover (2010) found that a caregiver's own rated symptoms of post-traumatic stress following a traumatic event influenced their report of their children's symptoms of post-traumatic stress, internalizing and externalizing behaviors. Their results indicated that while caregiver self-reported PTSD symptoms were not found to significantly predict the child's self -report of PTSD symptoms, a caregiver's own reported symptoms of PTSD were found to significantly predict his or her identification of post-traumatic stress and other internalizing and externalizing symptoms for the child (Valentino et al., 2010).

These findings support the inclusion of caregiver and child ratings of daily functioning when assessing treatment outcomes. Due to previous findings that suggest that child and caregiver symptoms of distress may influence one another, further research clarifying this relationship is encouraged.

Understanding the Treatment Interventions of TF-CBT and PCIT

Evidence-based practices have been increasingly developed, implemented, and researched since the early 1990's in efforts to successfully reduce trauma-related symptoms in children. Evidence-based practice has been defined as "the conscientious, explicit and judicious use of current best evidence in making decisions about the care of

the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research." (Sackett, Rosenberg, Muir Gray, Haynes, & Richardson, 1996), and its use in the area of mental health grew out of evidence based medicine protocols within the medical community. Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) and Parent-Child Interaction Therapy (PCIT) are two of the most widely examined evidence-based practices for traumatized children and are the interventions of focus for this study. Both interventions have strong research support for their efficacy and effectiveness for emotional and behavioral problems stemming from traumatic exposure.

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)

TF-CBT is an empirically-supported psychotherapy intervention developed by Judith Cohen, MD, Anthony Mannarino, PhD, and Esther Deblinger, PhD to address symptoms of post-traumatic stress, depression, anxiety, and behavioral difficulties in children who have experienced trauma. TF-CBT is a components-based psychotherapy model based in cognitive behavioral theory that utilizes progressive exposure to thoughts and feelings connected to traumatic experiences. Psycho-education about trauma, future safety enhancement, and behavior management techniques, are important parts of the protocol and caregivers can be incorporated into the treatment process (the components of TF-CBT will be delineated in detail in the procedures section). To date, there have been upwards of six randomized-controlled studies comparing TF-CBT to controls. A review of the literature indicates strong support for the use of TF-CBT with children who have experienced sexual abuse, as well as other types of traumatic exposure. TF-CBT has been found to lead to improvement in symptoms of PTSD (Cohen & Mannarino,

1996; Cohen et al., 2004; King et al., 2000), depression (Cohen & Mannarino, 1998; Deblinger, Lippmann, and Steer, 1996; Cohen et al., 2004; King et al., 2000), fear (King et al., 2000), anxiety (Cohen & Mannarino, 1998), behavior problems (Cohen & Mannarino, 1996; Deblinger, et al., 1996; Cohen, et al., 2004), sexualized behavior problems (Cohen & Mannarino, 1996; Cohen & Mannarino, 1998), and social competence (Cohen &Mannarino, 1998) in children when compared with other treatment modalities or wait-list controls. TF-CBT has been rated as a level-1 "well-supported, efficacious treatment" (p. 20) intervention for childhood sexual abuse by the Office for Victims of Crime's Child Physical Abuse and Sexual Abuse: Guidelines for Treatment (Saunders, Berliner, & Hanson, 2004).

Cohen and Mannarino (1996) conducted a study comparing TF-CBT to non-directive therapy for sexual abuse. A sample of 69 sexually abused children ages 3-7 years was utilized and participants were randomly assigned to either TF-CBT or a non-directive therapy intervention (control group). The non-directive therapy focused on providing a supportive environment which included using reflective listening, building rapport with the child and caregiver, encouraging the expression of thoughts and feelings, and validation of these thoughts and feelings. Each of the children received twelve 90 minute therapy sessions. Each session was split between the child and the caregiver. Study results indicated that children who received TF-CBT showed significantly greater improvements in emotional and behavioral symptoms than children in the control group (Cohen & Mannarino, 1996). A follow-up study by Cohen and Mannarino (1997) found that the reduction in symptoms continued at 1 year follow-up.

Deblinger, Lippmann, and Steer (1996) conducted a study utilizing a sample of 100 children randomly assigned to one of four treatment conditions for twelve sessions: TF-CBT for the child only, TF-CBT for the caregiver only, TF-CBT for both the child and caregiver, or treatment conducted by an outside community mental health therapist (specific modality varied across participants assigned to this group; Deblinger et al., 1996). Study results found improvement in emotional and behavioral symptoms for all of the groups utilizing TF-CBT. The child only TF-CBT group indicated greater improvements in PTSD symptoms for the child as compared to the community treatment group, while the parent TF-CBT groups (parent only and parent and child TF-CBT) resulted in the greatest improvements in the child's depressive symptoms, behavioral problems, and in caregiver parenting skills (Deblinger et al., 1996). A follow-up study 2 years later indicated that improvements in symptoms were sustained (Deblinger, Steer, & Lippmann, 1999).

A study conducted by Cohen and Mannarino (1998) with 82 sexually abused children (ages 8-14) and their caregivers replicated previous study outcomes. Participants were randomly assigned to either 12 sessions of TF-CBT or a non-directive therapy. Children and caregivers receiving TF-CBT showed a more significant reduction in symptoms of depression and increased social competence than the comparison group (Cohen & Mannarino, 1998). A follow-up study found that symptom improvements were sustained at 12 month follow up (Cohen, Mannarino, & Knudson, 2005).

Cohen and colleagues (2004) conducted a multi-site study to examine symptom outcomes for sexually abused children utilizing a sample of 229 children at two different treatment sites. Participants were randomly assigned to one of two treatment groups: TF-

CBT or Child-Centered Therapy (CCT). CCT is a client-centered approach which focuses on empowering the child and caregiver to determine the direction of therapy through the use of reflective listening, empathy, and encouragement of the expression of thoughts and feelings (Cohen, Deblinger, Mannarino, & Steer, 2004). Study results indicated that children receiving TF-CBT experienced a greater reduction in symptoms of post-traumatic stress, depression, anxiety, feelings of shame, and behavioral problems as compared to the CCT group (Cohen et al., 2004). The average number of different types of trauma exposures for the study participants was 3.6, suggesting that children with more complex histories of trauma benefit from the use of TF-CBT. A follow-up to this study conducted by Deblinger, Mannarino, Cohen, and Steer (2006) found that the children treated with TF-CBT continued to experience fewer symptoms of post-traumatic stress at 6 and 12 month follow-up. Intervention with TF-CBT has been found to lead to greater symptom reduction when compared to waitlist controls. King and colleagues (2000) examined symptom outcomes for a sample of 36 children with histories of sexual abuse. Children were assigned to one of three treatment groups: TF-CBT child only, TF-CBT with child and parent, or wait list control. Results indicated that children in both TF-CBT treatment groups experienced a greater reduction in symptoms of post-traumatic stress, depression and fear than waitlist controls (King et al., 2000).

Due to the cognitive focus of TF-CBT, questions have been posed as to the helpfulness of this intervention with very young children. Scheeringa and colleagues (2011) conducted a study examining treatment outcomes for children ages 3-6 years of age who were exhibiting symptoms of post-traumatic stress disorder. Participants had varying histories of trauma exposure, from experiences of physical abuse ("single blow"

trauma and "chronic repeated events") to children who were victims of the Hurricane Katrina disaster (Sheeringa, Weems, Cohen, Amaya-Jackson, & Guthrie, 2011; pg. 854). Children (N = 64) were randomly assigned to either 12 weeks of TF-CBT or to a waitlist control. Study participants in the TF-CBT group experienced a greater reduction in PTSD symptoms compared to waitlist controls, however, depressive and separation anxiety symptoms were found to improve for both groups (Sheeringa et al., 2011).

Studies have focused on developing, implementing, and evaluating TF-CBT modifications specific to other types of traumatic exposure, such as childhood traumatic grief (CTG). Cohen, Mannarino , and Knudson (2004) conducted a study examining the efficacy of TF-CBT with children with traumatic grief utilizing a sample of 22 children and their caregivers. Following 16 weeks of TF-CBT with grief-specific modifications, significant reductions in symptoms of childhood traumatic grief, PTSD, depression, anxiety, and behavior problems were found (Cohen et al., 2004). Specifically, symptoms of PTSD were found to improve during the TF-CBT components, while traumatic grief symptoms were found to improve during both the TF-CBT and traumatic grief-specific components (Cohen et al., 2004). Benefits of a briefer course of treatment for youth and their caregivers experiencing childhood traumatic grief have also been examined. Cohen, Mannarino, and Staron (2006) conducted a study with 39 children 6 to 17 years of age with symptoms of childhood traumatic grief. The course of treatment was reduced from 16 to 12 weeks, and utilized the same TF-CBT modifications for grief symptoms put forth in the Cohen et al. (2004) study. Similar to the previous study, children reported improvements in symptoms of post-traumatic stress, childhood traumatic grief, depression, and anxiety (Cohen, Mannarino, and Staron, 2006). Caregivers also reported

improvement in their child's symptoms of post-traumatic stress and behavioral problems, as well as their own symptoms of post-traumatic stress connected to their child's trauma (Cohen, Mannarino, & Staron, 2006). As in the previous study, PTSD symptoms only significantly improved during TF-CBT, while symptoms of traumatic grief significantly improved in both the TF-CBT and childhood traumatic grief-specific components (Cohen, Mannarino, & Staron, 2006).

Modifications of TF-CBT protocols have also been developed to address the needs of children with histories of multiple types of traumatic exposures (Cohen, Mannarino, & Murray, 2011) and for children who are experiencing on-going traumas (Cohen, Mannarino, Kliethermes, & Murray, 2012). Modifications for children with more complex trauma include increasing the focus on coping and safety skills, utilizing exposure more gradually, and including traumatic grief work as indicated (Cohen et al., 2012). For children experiencing on-going traumas, a focus on building safety skills early in treatment is recommended, along with increasing engagement with caregivers who are also experiencing on-going trauma, addressing cognitive distortions connected to on-going traumas, and helping the child increase his or her awareness of the differences between current danger and triggers to past trauma (Cohen et al., 2011).

Parent-Child Interaction Therapy (PCIT)

PCIT is an empirically-supported therapy intervention that was developed by Shelia Eyberg to address disruptive behavior problems in pre- and school-aged children. Based in social learning and attachment theories, PCIT addresses the quality of the relationship between a child and their caregiver through assisting the caregiver with the development of interpersonal and behavior management skills (Bell & Eyberg, 2001;

Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburke, 1993; Eyberg et al., 2001; Eyberg & Matarazzo, 1980; McNeil & Hembree-Kigin, 2010). Research has found that PCIT is successful at decreasing behavioral problems at home (Eyberg & Robinson, 1982; McNeil, Capage, Bahl, & Blanc, 1999; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998), at school (McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburke, 1991), and for specialized populations, such as children with intellectual disabilities (Bagner & Eyberg, 2007), children with separation anxiety disorder (Choate, Pincus, Eyberg, & Barlow, 2005), separation anxiety disorder symptoms with co-occurring oppositional behaviors (Chase & Eyberg, 2008), and for children with histories of maltreatment (Borrego, Gutow, Reicher, & Barker, 2008; Borrego, Timmer, Urquiza, & Follette, 2004; Borrego, Urquiza, Rasmussen, & Zebell, 1999; Chaffin et al., 2004; Timmer, Urquiza, Zebell, & McGrath, 2005; Timmer, Ware, Urquiza, & Zebell, 2010). Benefits of PCIT have been found to generalize to the siblings of the child receiving PCIT (Brestan, Eyberg, Boggs, & Algina, 1997).

An early study by Eyberg and Robinson (1982) examined treatment effects following PCIT for seven children (between the ages of two and seven) and their families referred for treatment due to disruptive behavior problems. Comparison of pre- and post-test scores on psychometric measures indicated significant improvement in levels of reported home behavior problems, in positive attitudes toward the child by the parent(s), and in maternal adjustment within the parenting role (Eyberg & Robinson, 1982). Schuhmann and colleagues (1998) conducted a randomized study with 64 preschool age children with disruptive behavior problems and their caregivers to examine the effectiveness of PCIT on decreasing behavioral problems and parental stress. Children

and their caregivers were randomly assigned to either PCIT or a wait list control. Caregivers in the PCIT group were found to have more positive interactions with their children, were more effective in gaining compliance from their child, and reported reduced parenting stress (Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). These results were replicated in a study by McNeil and colleagues (1999) that examined disruptive behavior outcomes for 32 young children between the ages of two and eight years of age and their families after receiving either PCIT or being placed into a waitlist group. While assessment of the two groups at baseline found no significant differences between the groups on gender, age, race characteristics, or by levels of behavioral symptoms and parental stress, the group receiving PCIT displayed a significant improvement in behavioral symptoms at three month reassessment as compared to the wait-list group (McNeil, Capage, Bahl, & Blanc, 1999).

The benefits of PCIT have been found to remain stable over time. Eyberg and colleagues (2001) examined whether treatment outcomes were sustained at one and two year follow-up for 20 families of children ages 3-6 years who participated in a previous effectiveness of treatment phase study (see: Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993). Reports of child behavior problems and levels of parenting stress were found to be consistent with end of treatment levels and continued to demonstrate statistically significant improvement from original baseline scores (Eyberg, Funderburk, Hembree-Kigin, McNeil, Querido, & Hood, 2001). Hood and Eyberg (2003) conducted an effectiveness study examining whether improvements were sustained following PCIT 3-6 years post-treatment (see Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998 or

original study). A follow-up with approximately half of the families indicated that behavioral improvement was sustained at follow up (Hood & Eyberg, 2003).

PCIT has been found to reduce behavioral problems and to increase positive interactions between the child and caregiver for children with histories of maltreatment. PCIT has earned a scientific level 1 rating as an intervention "well supported by research" for disruptive behavior treatment for children and adolescents and parenting training (The California Evidence-Based Clearinghouse for Child Welfare, 2013). PCIT has also been rated a level 3 "supported and acceptable treatment" (p. 20) intervention for childhood physical abuse by the Office for Victims of Crime's Child Physical Abuse and Sexual Abuse: Guidelines for Treatment (Saunders, Berliner, & Hanson, 2004). Due to the high occurrence of externalizing behaviors in children who have been physically abused (Eckenrode, Laird, & Doris, 1993) and the high incidence of physical abuse to young children (Children's Bureau, 2010), PCIT is increasingly an intervention of choice.

Borrego, Urquiza, Rasmussen, and Zebell (1999) conducted a case study examining the effectiveness of PCIT with a 3-year-old child and mother at high risk for abusive behavior. Post-treatment assessments indicated improvement in the child's behavior problems, a reduction in parental stress, and an increase in positive interactions between the child and caregiver (Borrego et al., 1999). In an effort to distinguish how abusive versus non-abusive parenting interactions develop, Borreg Timmer, Urquiza, and Follette (2004) conducted a study with 30 abusive and non-abusive parent-child dyads to examine differences in parental responses following compliant and non-compliant behaviors by the child. Results indicated that parents with histories of being physically abusive were more likely to respond negatively (i.e. yelling, making a critical statement)

to their child's noncompliance and the noncompliant behaviors were more likely to follow negative parental responses. However, no differences were found in praising behaviors by the mothers between the two groups (Borrego et al., 2004). The results suggest the importance of addressing the relational dynamics between these parents and their children.

Chaffin and colleagues (2004) completed a study with 110 physically abusive parent-child dyads examining the effectiveness of PCIT at decreasing the re-occurrence of physical abuse reports over a four year period. Study participants were randomly assigned to one of three treatment groups for 6 months: PCIT, PCIT with individualized services (i.e. also targeted issues such as substance abuse issues or parental depression), and a standard community parenting group. Results indicated that the two PCIT groups were more successful at decreasing future physical abuse reports than the community parenting group (Chaffin et al., 2004). Although the differences between the two PCIT groups were not statistically different, researchers noted that the PCIT group without the individualized services was most successful at decreasing future physical abuse reports (Chaffin et al., 2004).

Timmer, Urquiza, Zebell, and McGrath (2005) conducted a study focused on examining the effectiveness of PCIT on reducing behavior problems in children with varying maltreatment histories. Utilizing a sample of 136 parent-child dyads of which 91 of the dyads had a history of maltreatment (including physical or sexual abuse or neglect), pre- and post- treatment symptom change was examined using the CBCL and the Eyberg Child Behavior Inventory (ECBI) (Eyberg & Robinson, 1983). Results indicated significant treatment effects from pre- to post treatment behavior ratings

(Timmer et al., 2005). On the ECBI, no variation in treatment effects were found between the maltreated and non-maltreated groups, however, a variation in effects was found between the two groups on the CBCL. Parents of the maltreated children were found to identify fewer problems for their child on pre-treatment measures as compared to the non-maltreated group; however, both groups similarly rated their child's problems at post- treatment. Thus, children with histories of maltreatment had lower overall rates of reductions in symptoms from the beginning to end of treatment (Timmer et al., 2005).

Borrego, Gutow, Reicher, and Barker (2008) have proposed that the structure and content of PCIT is appropriate to target the impaired emotional and parental functioning of caregivers with histories of domestic violence, as well as the behavioral disruption common to children who have witnessed such violence (Borrego et al., 2008). Timmer, Ware, Urquiza, and Zebell (2010) designed a study to examine the effectiveness of PCIT for children exposed to inter-parental violence. The sample consisted of 129 children ages two to seven years of age and their mothers who received PCIT. Sixty-seven (52%) of these dyads had histories of inter-parental violence, with these children also being more likely to have been physically abused than the children in the comparison group (Timmer etal., 2010). Significant reductions in behavioral problems for both treatment groups were found with no differences found for the effect sizes between the groups (Timmer et al., 2010).

Due to the high incidence of disruptive behaviors exhibited by children in foster care (Oswald, et al., 2010), researchers have examined how PCIT may benefit children and their foster caregivers. McNeil and colleagues (2005) conducted a study with 30 children ranging from 2-8 years of age and their foster parent(s) who were provided an

intensive two-day PCIT workshop to decrease behavioral problems within the home. One month after the completion of treatment, foster caregiver ratings of their child's behaviors on the Eyberg Child Behavior Inventory (ECBI) (Eyberg & Pincus, 2000) indicated a significant reduction in the number of problematic behaviors exhibited by the child and in the intensity of these behaviors (McNeil, Herschell, Gurwitch, & Clemens-Mowrer, 2005). At treatment completion, foster parents rated high levels of satisfaction with PCIT on the Foster Parent Training Satisfaction Survey (FPTSS) (M = 47.04, range = 41-50), and 80% of the foster parents reported using the skills learned during PCIT "most"" or "all of the time" one month after the completion of the workshop (McNeil, et al., 2005). To further examine how PCIT can be applied to child-foster caregiver dyads, Timmer and colleagues (2006) conducted a single-case study of a 4 year old child and his foster-adopt mother. The child had a complex history of maltreatment and exhibited disruptive and aggressive behaviors. The child and caregiver received 36 PCIT sessions in the clinic with adjunctive in-home supports beginning after 6 sessions to support the use of PCIT skills in the home. Results at the end of treatment indicated significant decreases in both the child's disruptive behavior and in levels of caregiver stress.

Research suggests that a child's trauma-related emotional and behavioral symptoms may be influenced by multi-trauma exposure, the child's gender, placement stability, and the age of the child at the start of treatment. While systematic reviews of studies examining symptom outcomes following various treatment interventions and the use of separate treatment components have found symptom outcomes to be overall

inconsistent, research examining symptom outcomes following TF-CBT and PCIT is robust and indicates consistent evidence of symptom improvement.

Chapter 3

Theoretical Conceptualizations:

A Unified Developmental Theory and a Developmental Traumatology Model

This project utilized the guiding frameworks of Sameroff 's (2010) Unified Developmental Theory and the Developmental Traumatology Model proposed by De Bellis and colleagues (De Bellis et al., 1999a; De Bellis et al., 1999b; De Bellis, 2001; De Bellis, 2005) to conceptualize the development of trauma-related symptoms in very young and school-aged children. In the following section, the basic tenets of each framework are discussed, followed by an application of the theories to symptom severity following traumatic exposure.

Unified Developmental Theory

Utilizing nature versus nurture as an organizing construct, Sameroff (2010) proposes a translational, dialectic model that attempts to integrate four conceptual models (personal, contextual, regulatory, representational) into a unifying theory that explains how change occurs over one's life time. Sameroff (2010) has posited that although each of the individual models explains a piece of the nature/nurture developmental argument, there is still much variance in how best to promote positive long term emotional and behavioral outcomes for children. His proposed unified developmental theory aims to capture the transactional and contextual nature of child development. In order to better understand the underpinnings of the unified developmental model, the four components of the theory are reviewed.

A personal change model. A personal model of change delineates the process through which children gain or acquire necessary skills or competencies across the life

cycle. Building from Heinz Werner's orthogenetic principle proposed in the 1950s, Sameroff describes his conceptualization of a "developmental helix" that graphically portrays the cyclical and intertwined pattern of child development (Sameroff, 2010; p. 9). Specifically, this helix proposes that developmental stages or phases "mutually constitute" one another in that developmental issues (such as the developmental of interpersonal relationships) are revisited again and again by the child (Sameroff, 2010; p. 9). Child development is viewed as being cumulative and fluid, and biological development is intertwined with how a caregiver may interact with his or her child, which is nested within the social circumstances of the child, the family, and the prevailing cultural and social norms. Using a personal change model as a lens through which to understand the developmental consequences of domestic violence and neglect, the following example is offered: A mother is experiencing on-going domestic violence within the home and is unable to provide for the basic emotional needs of her 3-year-old child. Due to her own symptoms of post-traumatic stress and depression, the mother responds with a pervasive pattern of inconsistent responses to her child's emotional needs. The mother's difficulties attuning to her child may disrupt the development of a secure attachment relationship between the mother and her child and may lead to the formation of an anxious, avoidant, or disorganized attachment style for the child. Disruption of the development of healthy attachment relationships between the child and his or her caregivers can interfere with the development of critical brain structures that help to regulate emotions and cognitions, placing the child at risk of attachment problems in future relationships.

A contextual model. Building on Urie Bronfenbrenner's ecological theory that proposes that all systems surrounding a child (micro-, meso-, exo-, macro-, and chrono-systems) overlap around the child to affect the child's development, Sameroff (2010) argues that the context in which a child lives influences a child's biological and emotional development. The social relationships of the child (including relationships with caregivers, daycare, school, and peers) interrelate with the resources the child, family, and community are able to access (resources such as financial, social, medical, and mental health), which in turn overlaps with political and social norms that overlay the whole of the child's environment. Sameroff has suggested that "promotive" factors exist that assist children through the course of healthy development, and that the absence of these factors increase the risk that there will be interruptions or negative effects in a child's developmental progress (Sameroff, 2010; p. 14). Utilizing the example referenced above, the effects of domestic violence and neglect on a child can be understood through a contextual model. The child is exposed to interpersonal violence within in the home, his or her mother's own trauma-related mental health issues, and the mother's inability to properly care for her child. The continuation of the violence in the home may be indirectly influenced by factors, such as a lack of available employment or by limited access to physical or mental health care. Both the mother and her child are affected by the availability of financial or supportive resources for the family, the safety of the neighborhood in which they reside, and the proximity to daycare, school, and/or grocery stores. Thus the family violence occurs within the context of the overlapping systems in which the family functions. The availability or paucity of supportive systems

can serve to either protect the child or place him or her at elevated risk for adverse outcomes.

A regulation model. Regulation models view the child as being an active participant in their experiences and this participation facilitates change over the life cycle. Sameroff suggests that there is a transactional nature in regulation; children can regulate their responses to their environment, but other persons or environmental circumstances surrounding the child also serve to regulate a child's emotional or behavioral response (Sameroff & Chandler, 1975, as cited in Sameroff, 2010; Sameroff, & Fiese, 2000 as cited in Sameroff, 2010; Sameroff, 2010). Utilizing the example from above, the 3-year old child is developing the capacity to begin to manage his or her own emotional states within her environment. The child is learning how to generate responses to his or her needs from others, as well as how to begin to sooth him or herself when feeling distressed. Care giving style and levels of safety and stability within the home serve to modulate the child's responses within the environment. The presence of instability and violence in the home can directly contribute to a child becoming emotionally dysregulated leading to disorganized patterns of emotional distress and behavioral problems.

A representational model. A representational model proposes that change occurs due to a person's perceptions of him or herself, the perceptions of others, and perceptions of his or her own experiences. These perceptions create the person's working model of their world through which all future experiences are filtered (Bowlby, 1969). Representations of one's world and life experience are also influenced through the expectations that a person might hold for themselves or due to the expectations of others

(Seifer, Sameroff, Barrett, & Krafchuk, 1994 as cited in Sameroff, 2010). Therefore, the responses of caregivers around a child serve to shape the child's perception of consistency, safety, and security in their world. A child who is exposed to regular fighting within the home may develop a working model that is defined by fear and the belief that they are not safe.

In summary, a unified developmental theory draws collectively from all of the above stated models to form a transactional, dialectic theory that views child development as having a series of interconnected parts. Developmental change is viewed as resulting from an interchange between the biological, environmental, regulatory, and representational aspects of a child's life experience, with biology and environment creating a basis for a child's neurological, physical, and emotional development, upon which regulatory factors then influence the child's interpretations of their life experiences (Sameroff, 2010).

A Developmental Traumatology Perspective

Building on the Sameroff's unified developmental theory, a developmental traumatology model (De Bellis et al., 1999a, 1999b; De Bellis, 2001; De Bellis, 2005) was also utilized to conceptualize how the specific experiences of maltreatment and other trauma can interfere with neurobiological development resulting in the manifestation of post-traumatic stress symptoms and other symptoms of emotional and behavioral dysregulation. This model integrates the interplay between developmental psychopathology, developmental neuroscience, and research on stress with trauma responses (De Bellis, 2005), and assists in explaining how these factors contribute to both the development and resolution of emotional and behavioral symptoms following trauma.

As delineated by De Bellis (2001, 2005), this model assumes that: 1) experiences of maltreatment may bring on feelings of anxiety and distress for the child, 2) maltreatment is believed to be interpersonal in nature and may lead to dysfunctional attachment relationships between the child and caregiver(s), 3) maltreatment experienced as a child has the propensity to be more detrimental than maltreatment experienced only in adulthood and can lead to chronic mental health issues, such as chronic PTSD and mood disorders, and 4) maltreatment is viewed as a long-standing or chronic stressor and can directly affect the development of brain structures that regulate biological stress responses, including the regulation of emotions, memory, and perception.

Mechanisms of Change: Understanding Symptom Severity at the Beginning and End of Treatment

Sameroff's Unified Developmental theory (2010) provides a basis for understanding the transactional relationships between a child and their environment that may affect the development of trauma-related symptoms. As delineated above, when a child experiences a traumatic event, the event occurs within the context of the child's psychosocial and neurobiological development. Depending on the intensity of the traumatic event and the child's age at time of occurrence, the traumatic exposure can interrupt the child's progression through the developmental continuum, potentially interfering with the critical acquisition of skills specific to a development phase. The systems which make up a child's world also influence the development of symptoms following a traumatic event. The inter-related systems surrounding a child, such as home, neighborhood, school, and the financial and other resources available to the family, provide a broader context within which the child is functioning and underlie a

child's emotional development. The stability of home life of the child, the extent to which there are supportive and nurturing adults caring for the child, and the ability of the caregivers to provide the child with a feeling of safety and security following a traumatic event, can serve to either "protect" the child or place the child at risk for developing adverse emotional and behavioral symptoms. The development of trauma-related emotional and behavioral symptoms is also influenced by the child's ability to regulate her/his responses and by how the adults around the child respond to stress. This is especially true for young children who learn to regulate themselves through attachment relationships with their caregivers and the process of attunement (Bowlby, 1969). Further, if feelings of anxiety and fear are sustained, the child may internalize these feelings of fear and anxiety as a true representation of their world, thus incorporating these beliefs into their working model.

The Developmental Traumatology model developed by DeBellis and colleagues (1999a, 1999b) can be nested within Sameroff's Unified Developmental theory and provides a framework for understanding the potential negative ramifications of early trauma exposure on the neurobiological development of young children. An exposure to a traumatic event can lead to feelings of acute distress for the child, including feelings of fear and anxiety. The traumatic event, especially when the event involves a form of maltreatment, can lead to disruption in the security of the attachment relationship between the child and his/her caregiver. This disruption in attachment stability can lead to anxious, avoidant, or disorganized attachment, and can contribute to the development of emotional dysregulation for the child. Further, traumatic exposures can interrupt critical points of neurological development contributing to heightened stress responses

and interruptions in the development of brain structures that regulate emotions and the development of memory (Corbin, 2007; De Bellis, 2001, 2005; Perry et al., 1995; Schore, 1996; Siegel, 1999).

Treatment can serve as a "promotive" factor (Sameroff, 2010; p. 14) when conceptualized within these two frameworks. Treatment can address the developmental concerns for the child by providing the caregiver with psycho-education about the child's developmental needs and the potential effects of trauma exposure on neurobiological, emotional, behavioral, and interpersonal development. Children and their caregivers can be helped to develop skills to help regulate their thoughts and emotions. Treatment can guide caregivers in developing more consistent and stable caregiving practices that encourage healthy attachment and have the propensity to change a child's perception (and a caregiver's view) of the world around them. Additionally, treatment can help connect families to needed outside resources, thus assisting to help bolster outside supports.

The purpose of this study was to contribute to the existing literature on childhood trauma treatment by examining factors that may influence symptom severity for children ages 2-12 years following intervention with the trauma-informed evidence-based treatment interventions of either Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) or Parent-Child Interaction Therapy (PCIT). Additionally, this study aimed to clarify how child and caregiver perceptions of daily functioning may change from the beginning to the end of treatment, and how the perception of daily functioning may correlate with empirical ratings of symptoms.

Hypotheses

The following hypotheses are postulated:

1) Children with higher numbers of different types of trauma exposures at baseline will exhibit higher levels of symptoms at the end of treatment compared to children with fewer numbers of different trauma exposures regardless of treatment type.
2) Female children will exhibit higher levels of symptoms at the end of treatment compared to male children regardless of treatment type.
3) Children in foster care will exhibit higher levels of symptoms at the end of treatment compared to children residing with biological, adoptive, or other relative caregivers regardless of treatment type.
4) Older children will exhibit higher levels of symptoms at the end of treatment compared to younger children regardless of treatment type.
5) Children will experience a greater reduction in internalizing symptoms at the end of TF-CBT treatment compared to externalizing symptoms at the end of treatment regardless of gender.
6) Children receiving PCIT will experience a greater reduction in externalizing symptoms compared to internalizing symptoms at the end of treatment.
7) Children and their caregivers will report improved daily functioning at the end of treatment regardless of treatment condition.

Chapter 4

Methodology

Sample

This study utilized data gathered from 134 children between the ages of 2-12 years who were receiving treatment for traumatic stress from the University of Kentucky Child and Adolescent Trauma Treatment and Training Institute (CATTTI) and its affiliates. Secondary data were drawn from a clinical database of children who received services between the fall of 2007 and winter of 2012 (Grant # 1U79SM058230-01, Sprang -PI). Male and female children age 12 years and under who had experienced at least one traumatic event were included in the study. All study participants received one of two empirically-based interventions of either Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) or Parent-Child Interaction Therapy (PCIT). In some circumstances, children received both interventions (one following the other). When this occurred, data was drawn from the first intervention utilized, prior to the start of the second treatment intervention. All study participants either fully completed all components of the specific treatment modality or were judged by the therapist to have received at least an adequate dose of treatment. An adequate dose of treatment was defined as a caregiver obtaining mastery of the Child-Directed Intervention component of PCIT or the child participation in the Cognitive Processing 1 phase of TF-CBT. Past research has postulated that some therapeutic benefit may be obtained even if a child drops out prior to full completion of treatment (Lyon & Budd, 2010). End

of treatment completion status was determined by the treating clinician and was coded as fully completed, adequate dose, or early dropout.

Participants resided in 29 counties across Kentucky, and were referred due to symptoms of post-traumatic stress disorder, anxiety, depression, and/or behavioral problems following at least one traumatic exposure. Traumatic experiences included sexual abuse/rape, physical abuse, and emotional abuse, neglect, extreme interpersonal violence, being exposed to an impaired caregiver, witnessing of domestic violence, traumatic grief, and experiencing acts of terrorism.

Out of the sample of 134 children, a little over half were male (56%), and the average age was 8 years (M = 7.68, SD = 2.473). Thirty-one percent (n = 42) of children were in the care of biological or adoptive parents, 19% (n = 25) were cared for by other relatives, 49% (n = 66) were in the custody of the State (8 cases were in residential treatment 58 were placed in foster care), and 1% (n = 1) was placed in the care of a family friend. Seventy-two percent (n = 97) of the sample received TF-CBT, with 28% (n = 37) receiving PCIT. Sixty-six percent (n = 89) of the sample fully completed treatment, while 34% (n = 45) were judged to have received an adequate dose of treatment before discontinuing services. Table 1 displays descriptive statistics for the sample.

Table 1

Descriptive Statistics at Baseline Assessment (N = 134)

Variable	%	n	M	SD	Range
Child Gender:					
Male	56%	(75)			
Female	44%	(59)			
Age of Child at Start of Treatment		(134)	7.68	2.47	2 - 12
Race/Ethnicity					
Caucasian	79%	(106)			
African American	10%	(14)			
Hispanic/Latino	1%	(1)			
Multi-racial	8%	(10)			
Other	2%	(2)			
Placement Status					
Biological/Adoptive	31%	(42)			
Other Relative Placement	19%	(25)			
State Custody	49%	(66)			
Other	1%	(1)			
Type of Treatment Received					
TF-CBT	72%	(97)			
PCIT	28%	(37)			
Average age of Child per Treatment Type					
TF-CBT			8.24	2.19	3 - 12
PCIT			6.22	2.61	2 - 12
Dose of Treatment Received					
Full Completion	66%	(89)			
Adequate Dose	34%	(45)			
Number of Different Types of Trauma Exposures		(133)	4.74	2.28	1 – 12
Age at Time of First Trauma		(124)	1.47	2.68	0 - 9
Daily Functioning Scores					
Baseline		(83)	16.42	4.06	7 - 25
Termination		(83)	19.88	3.77	9 – 30

Table 1 (continued)

Descriptive Statistics at Baseline Assessment (N = 134)

Variable	%	n	M	SD	Range
Child Gender:					
Male	56%	(75)			
Female	44%	(59)			
Age of Child at Start of Treatment		(134)	7.68	2.47	2 - 12
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Number of Different Types of Trauma Exposures		(133)	4.74	2.28	1 – 12
Age at Time of First Trauma		(124)	1.47	2.68	0 - 9
Daily Functioning Scores					
Baseline		(83)	16.42	4.06	7 - 25
Termination		(83)	19.88	3.77	9 – 30

Procedures

Children were referred for services by individual families and community agencies, such as CATTTI receives referrals from families and community agencies, such as the Cabinet for Families and Children. There are no fees for service charged by CATTTI, and Medicaid is the primary payer source for the community mental health centers. Children involved in treatment across all sites lived with biological, adoptive or foster parents, grandparents, or other adult relatives.

Treatment was provided by 12 clinicians employed at the research clinic site and nine clinical associates participating from rural community mental health clinics across the state. Professional credentialing included 10 licensed clinical social workers, four psychiatry residents, one licensed psychologist, four doctoral psychology interns, one licensed professional counselor, and one psychiatric nurse. All clinicians were trained in both TF-CBT and PCIT by approved or certified trainers. Training in assessment, case conceptualization within a trauma-focused framework, and instruction as to how to utilize psychometrics during treatment was also provided. All clinicians received a minimum of six training sessions with on-going consultation and monitoring to help assure fidelity.

Upon referral for treatment, a trained clinician assessed all children for appropriateness of services. Assessments included in-depth interviews with the child and caregivers, a trauma history evaluation, and the completion of a battery of psychometric measures documenting symptoms of post-traumatic stress, depression, anxiety, behavioral problems, level of family functioning, and parenting stress. Meeting the

criteria for PTSD was not a requirement to receive treatment; rather children were accepted into treatment if there was an indication in the assessment that the child was suffering from a traumatic stress condition. A traumatic stress condition was defined as an elevation in emotional and behavioral symptoms following a traumatic exposure including symptoms of depression, anxiety, post-traumatic stress, and/or behavioral problems at home, school, or in other settings. Following the completion of the assessment process, children were assigned to receive either TF-CBT or PCIT based on the assessment profile. In a case where a more appropriate treatment modality was identified that was not available, referrals were made to outside providers.

Protocol fidelity.

Both TF-CBT and PCIT have manualized treatment protocols which outline the individual components of the treatment and provide specific intervention guidelines for skill attainment in each phase (Treating Trauma and Traumatic Grief in Children and Adolescents by Judith Cohen, Anthony Mannarino, & Ester Deblinger, 2006; Parent Child Interaction Therapy Protocol by Sheila Eyberg and Beverly Funderburk, PCIT International, 2011). Treatment fidelity is monitored through the use of on-going consultation either face-to-face or by phone, treatment teams meetings, videotaping of sessions, and the use of fidelity metric forms. The metric forms break down each component of treatment and assist clinicians with maintaining fidelity to the manualized protocols. The metrics are used during face-to-face and phone consultation, videotaping of sessions, and live observation of sessions to guide treatment fidelity. Fidelity adherence is monitored by an approved or certified TF-CBT or PCIT trainer.

Treatment Interventions

The implementation of PCIT.

As discussed in detail previously, Parent-Child Interaction Therapy (PCIT) is an empirically supported treatment for children between the ages of 2 -12 years. PCIT has demonstrated efficacy at decreasing child behavior problems by focusing on building parenting skills and increasing nurturing behaviors which strengthen the healthy attachment between the child and his or her caregiver. The components of PCIT include a Child-Directed Intervention (CDI) and a Parent-Directed Intervention (PDI). PCIT is mastery-based, thus progression to the next phase of treatment does not occur until the caregiver attains minimal mastery of the prescribed skills in the current phase (McNeil & Menree-Kigin, 2010). The acquisition of skills is evaluated every session with a standard rating instrument called the Dyadic Parent-Child Interaction Coding System-III (DPICS-III; Eyberg, Nelson, Duke, & Boggs, 2005). PCIT begins with a pre-treatment assessment which includes the gathering of psychosocial history, observing the child and caregiver together, and gathering psychometric data on both the child and their caregiver. PCIT is typically completed in 12-20 sessions. The components of PCIT are delineated below:

- ***Child-Directed Intervention (CDI).*** The goal of the CDI component of PCIT is for the caregiver to improve the quality of his or her relationship with the child through the obtainment of minimal mastery of the PCIT PRIDE skills during play interactions with their child. The PRIDE skills teach the caregiver to: Praise appropriate behavior, Reflect appropriate talk, Imitate appropriate play, Describe appropriate behavior, and show Enthusiasm during play (McNeil & Hembree-

Kigin, 2010). This component begins with the caregiver meeting individually with the therapist to learn the PRIDE skills, including labeled praise, reflection, behavioral description, neutral talk, and the use of direct commands (McNeil & Hembree-Kigin, 2010). Joint sessions then begin with the child and caregiver. The child and caregiver are placed in a therapy room that is equipped with a table, two chairs, and specially selected toys. The therapist observes the child-caregiver interactions from behind a two-way mirror and communicates prompts and praise to the caregiver through an ear piece. During this component, the child directs the play and healthy attachment is fostered through the caregiver-child interaction and the caregiver's use of the PCIT parenting skills (McNeil & Hembree-Kigin, 2010).

- ***Parent-Directed Intervention (PDI).*** The goal of the PDI component of PCIT is to increase the child's compliance to their caregiver's directives through the continued use of the PRIDE skills. During this component, the caregiver-child dyad continues to meet together in the therapy room with the therapist remaining behind the two-way mirror providing verbal prompts to the caregiver. During this component, the caregiver learns to apply the skills acquired during the CDI component (i.e. labeled praise, reflection, behavioral observation, neutral talk, and the use of direct commands) to more directive interactions with their child (McNeil & Hembree-Kigin, 2010). During PDI, the caregiver strengthens his or her skills at providing the child with direct commands and in managing behavioral problems (i.e., ignoring a command or throwing a tantrum). Building on the relationship developed during the CDI component and through continued

coaching by the therapist, the caregiver increases the child's compliance with demands, increases his or her ability to manage behavioral problems, and continues to build a closer emotional attachment with the child (McNeil & Hembree-Kigin, 2010).

The implementation of TF-CBT.

As discussed in detail previously, Trauma Focused Cognitive Behavioral Therapy (TF-CBT) is an empirically supported treatment for children ages 3 - 18 years who are experiencing emotional and behavioral difficulties associated with exposure to various types of traumatic life experiences. The phases of TF-CBT are sequential and include psycho-education about the trauma and behavior management strategies, relaxation training, affect regulation, cognitive processing 1, development of a trauma narrative, cognitive processing 2, in vivo sessions, conjoint session(s) with the child and caregiver, and psycho-education on the enhancement of safety skills. TF-CBT is typically completed within 12-20 sessions. Prior to the beginning of TF-CBT, a pre-treatment assessment is completed including the gathering of a psychosocial history and the completion of psychometric measures. The components of TF-CBT are delineated below:

- ***Psycho-education.*** Provided to assist the child and his or her caregiver in understanding the purpose, rationale, and typical course of TF-CBT. Psycho-education assists children and their caregivers in understanding symptoms specific to different types of trauma and how symptoms may change throughout the treatment process, to assist in the implementation of supportive parenting practices within the home to support the child, and to assist in the development of

safety plans to prevent further traumas from occurring. Psycho-education occurs at each phase of the treatment protocol to educate the child and caregiver about the skills, how each phase fits into the treatment process, and ways to assist them with implementing these skills at home.

- ***Relaxation training phase.*** Teaches controlled breathing, progressive muscle relaxation, and thought stopping to assist children with managing physiological responses to the experienced trauma(s), such as anxiety, avoidance, and/or somatic complaints.
- ***Affect modulation phase.*** Focuses on helping the child differentiate between thoughts and feelings, assessing the child's ability to identify various feeling states, and assisting the child in developing skills to manage the intensity of different feeling states as they arise within treatment.
- ***Cognitive processing 1 phase.*** Teaches the child about the connections between thoughts, feelings, and behaviors. This phase assists children with beginning to identify inaccurate thoughts connected to the traumatic experiences, and ways children can challenge and replace negative thoughts.
- ***Trauma narrative phase.*** An in-depth exploration of the experienced trauma(s) which involves the child creating a written or drawn narrative about his or her experience(s). The trauma narrative progressively exposes the child to more detailed recollections of the trauma(s) and the thoughts, feelings, and responses connected to the experience(s).
- ***Cognitive processing 2 phase.*** Focuses on assisting the child to identify and restructure cognitive distortions that may be connected to the traumatic

experience(s). This can include the child's beliefs about him or herself, their feelings of responsibility connected to the trauma, and their beliefs about others and their environment.

- ***In vivo phase.*** Focuses on assisting the child with managing trauma reminders that have been generalized to other life experiences (i.e., avoidance of sleeping in one's own bedroom). A behavioral plan is frequently developed with the child and caregiver that gradually exposes the child to the situation and associated triggers. The therapist works with the child and caregiver on implementing coping skills learned in the earlier phases to assist the child with managing distressing thoughts and feelings.
- ***Parent-child conjoint phase.*** Incorporates the caregiver(s) into session with the child and focuses on assisting the child with talking about his or her traumatic experience(s) with his or her caregiver and increasing the caregiver's understanding of the child's thoughts, feelings, and reactions about the trauma. This phase helps the caregiver with validating the child's thoughts and emotions, and reinforces the healthy cognitions developed in the previous phase of treatment.
- ***Psycho-education.*** Psycho-education pertaining to the enhancement of safety skills is provided to both the child and caregiver at the end of treatment to assist with identifying and problem-solving around potential risks to re-victimization.

Measurement

Outcome Variables for Symptom Severity.

The aim of this study was to examine factors that influence end of treatment symptom and functioning outcomes for children 2-12 years of age who received either the trauma-informed evidence-based practice of TF-CBT or PCIT. Symptom severity is defined as the level of psychological distress exhibited by the child at the end of treatment as measured by emotional and behavioral scores on the following measures collected at baseline and at the end of treatment:

Child Behavior Checklist (CBCL; Achenbach & Rescrola, 2000, 2001). The CBCL is a parent report instrument designed to measure emotional and behavioral functioning for children ages 1 ½ to 18 years of age. The CBCL yields internalizing and externalizing behavior severity scale scores, as well as a total combined behavior severity score. Internalizing behaviors include symptoms of anxiety, depression, and somatic complaints, while externalizing behaviors include symptoms such as aggression and rule-breaking behaviors. The Total Problem scale score is made up of the internalizing and externalizing scale scores, as well as scores from questions related to social, thought, attention, and other functioning problems. Internalizing, externalizing, and total scale scores greater than 63 are indicative of clinical symptoms. Developmental issues are addressed within the CBCL by the creation of two versions of the instrument: one for children ages 1 ½ to 5, and another for ages 6 to 18. Both age-specific versions of the CBCL have been found to be internally consistent (0.78 – 0.97) and to have high test-retest values (0.95 – 1.00; Achenbach & Rescorla, 2000, 2001). The Externalizing, Internalizing, and Total Behavior domains at baseline and end of treatment were utilized

from this instrument to measure symptom severity at the end of treatment. If no end of treatment measures were available for a child, the last 3-month in-treatment assessment or first 3-month post treatment assessment scores were utilized. Appendices 1 and 2 display non-reproducible copies of the measure for each age group.

Trauma Symptom Checklist for Children (TSCC-A; Briere, 1996). The TSCC-A is a child self-report measure of post-traumatic stress and related symptoms for children ages 8-16 who have experienced traumatic events. The TSCC-A consists of 44 items which include two validity scales (an Under-response scale which measures the likelihood that the child is under-reporting symptoms, and a Hyper-response scale which measures the likelihood that the child is over-reporting symptoms), five clinical scales (Anxiety, Depression, Anger, Posttraumatic Stress, and Dissociation), and seven critical items (fear of men, fear of women, getting into fights, thoughts of self harm, and thoughts of harming others). TSCC-A clinical scale scores equal to or above 65 indicate clinical symptoms. The TSCC-A scales have been found to be internally consistent (alpha = .77 to .89), and to yield convergent, discriminant, and predictive validity (Briere, 1996). The Total Post-traumatic Stress (Total PTS) domain at baseline and end of treatment was utilized from this instrument to measure symptom severity. If no end of treatment measures were available for a child, the last 3-month in-treatment assessment or first 3-month post treatment assessment scores were utilized.

Trauma Symptom Checklist for Young Children (TSCYC; Briere, 2005). The TSCYC is a parent report measure designed to measure trauma-related symptoms in children ages 3-12. The TSCYC consists of 90 questions that include two validity scales which measure caregiver under-reporting and over-reporting of symptoms, and eight

clinical scales which measure anxiety, depression, anger/aggression, post-traumatic stress (intrusion), post-traumatic stress (avoidance), post-traumatic stress (arousal), dissociation, and sexual concerns. Scores equal to or above 70 indicate clinical symptoms. Reliability for the individual clinical scales was found to range from good to excellent with values ranging from .81 - .93 (Briere, Johnson, Bissada, Damon, Crouch, Gil, Hanson, & Ernst, 2001). The Total Posttraumatic Stress (PTS) domain at baseline and end of treatment were utilized from this instrument to measure symptom severity. If no end of treatment measures were available for a child, the last 3-month in-treatment assessment or first 3-month post treatment assessment scores were utilized.

The TSCYC and the TSCC-A were both routinely administered at baseline, reassessment, and end of treatment. The Total Post Traumatic Stress score was utilized by default from the TSCYC to capture post-traumatic stress scores for this study, however, when this score was not available, the Post-Traumatic Stress score from the TSCC-A was utilized.

Outcome Variable for Daily Functioning.

In order to examine how a caregiver or child's perception of daily functioning of the child may have changed over the course of treatment, data from a structured questionnaire developed by the Transformation Accountability Center for Mental Health Services (TRAC), a part of the Substance Abuse and Mental Health Administration (SAMSHA; Center for Mental Health Services, 2012) was examined. The interview is a verbally administered questionnaire administered within 30 days of the start of treatment, every 6 months during treatment and

within 30 days of discharge from treatment. The interview is a required component of the research site's funding source.

The interview consists of 11 sections including demographic information, daily functioning, military family history, stability in housing, education, criminal status, perception of mental health care received, social connectedness, discharge status, and services received by the family. For children ages 10 years and younger, the caregiver is asked to respond to questions related to the child's functioning over the last 30 days, while the questionnaire is completed directly with children ages 11 years and older. Due to the age of children included in this study, 86% of the ratings of perceived Daily Functioning of the child were completed by caregivers (n = 71). The following daily functioning questions were utilized for the current study:

A) Section instructions: "*In order to provide the best possible mental health and related services, we need to know what you think about how well you were (your child was) able to deal with everyday life during the last 30 days. Please indicate your disagreement/agreement with each of the following statements*." Response options include: Strongly Disagree, Disagree, Undecided, Agree, or Strongly Agree. Participants have the option to refuse to respond.

1) I am (my child is) handling daily life.
2) I get (my child gets) along with family members.
3) I get (my child gets) along with friends and other people.
4) I am (my child is) able to cope when things go wrong.
5) I am satisfied with our family life right now.

For this study, baseline and end of treatment scores were compared. If no end of treatment TRAC data was available for a child, the last in-treatment interview data was utilized if it was collected within 3 months of the end of treatment.

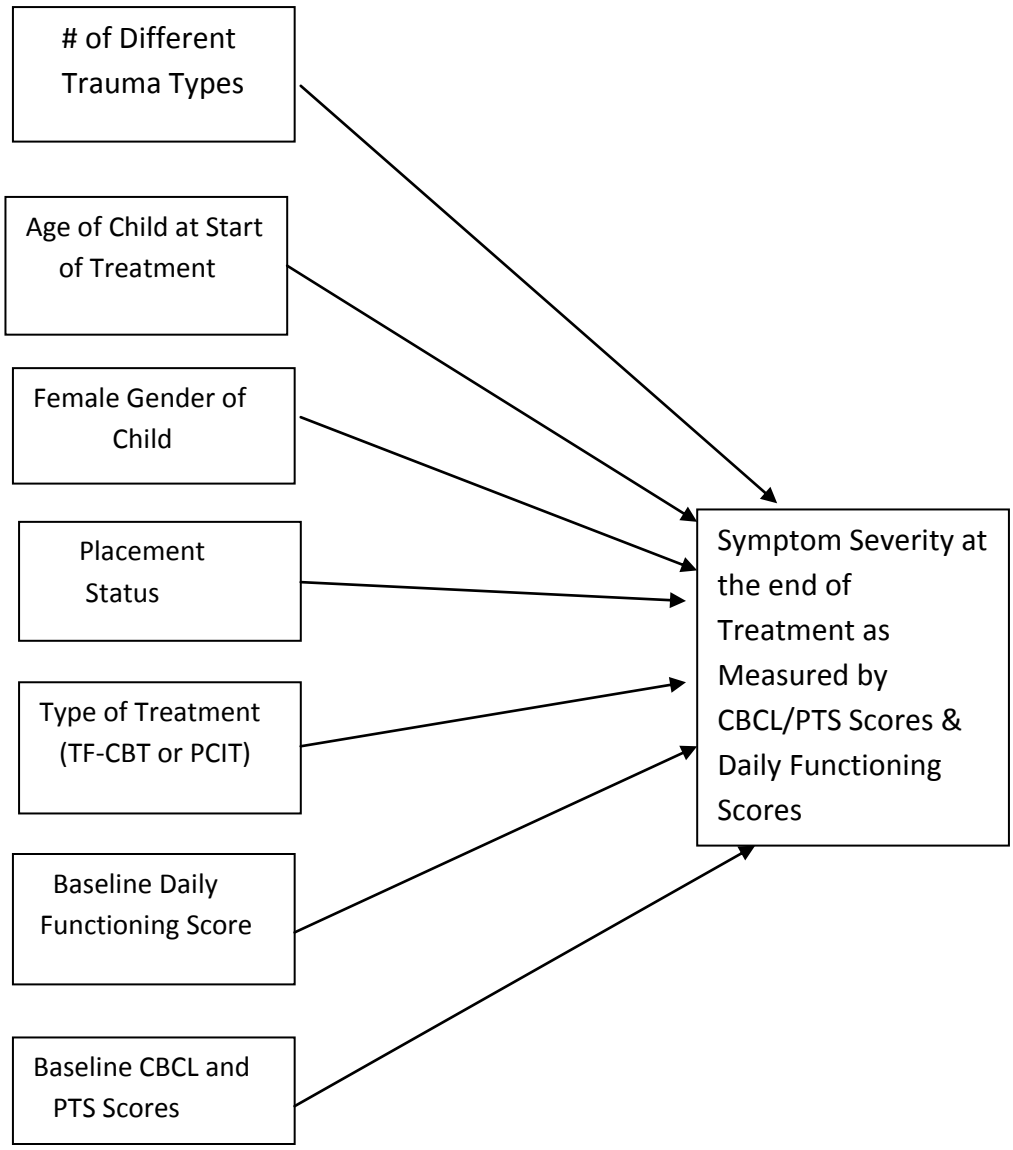
Independent Study Variables.

This study aims to examine factors that may influence symptom severity at the end of TF-CBT or PCIT for children ages 12 years and under. Figure 1 graphically displays the conceptual model. Individual factors for this study include:

- ***Number of different types of trauma.*** The number of different types of traumatic exposures experienced by the child was gathered from a detailed trauma history form completed by the clinician with the child and caregiver at baseline assessment.
- ***Age of the child at treatment onset.*** Data was gathered from a baseline assessment form completed by clinicians with the caregiver at the start of treatment.
- ***Gender of the child.*** Data was gathered from a baseline assessment form completed by clinicians with the caregiver at the start of treatment.
- ***Placement status of the child at treatment onset.*** Data was gathered from a baseline assessment form that identifies whether the child resides with a biological or adoptive parent, foster parent, other adult relative, or in residential treatment.
- ***Type of treatment.*** Each child received at least a moderate dose of either TF-CBT or PCIT.

- ***Baseline scores***. Baseline CBCL and PTS Scale scores were examined as covariates within the model.

Figure 1: Conceptual Model



Chapter 5

Results

PASW 20.0 was utilized for data analysis. Data were screened for missing values by visually inspecting the data and running frequency distributions. In order to examine the bivariate relationships between the predictor variables and outcome scores One-Way Analyses of Variance (ANOVAs) and *t*-tests were conducted. A series of Analyses of Covariance (ANCOVAs) and paired sample *t*-tests were conducted to test the hypotheses. An a priori power analysis indicated that a sample size of 100 is sufficiently large to identify a medium effect (Cohen's $f^2 = 0.15$) at 80% power ($\alpha = .05$).

Cases were removed from the analyses if either a baseline or an end of treatment score was unavailable. Final sample size for the CBCL, PTS, and the Daily Functioning scale were 106, 104, and 83 cases, respectively. Bivariate analyses between the predictors and outcome scores were conducted both with and without outliers, and following these analyses, four additional cases were removed from the PTS termination scale due to the influence of outliers. Outliers were identified by examination of histograms and were defined as scores ≥ 100 for baseline PTS, ≥ 90 for termination PTS, and ≥ 90 for baseline and termination CBCL scores on the internalizing, externalizing, and total problem scales. One case within the variable of Placement Status was re-coded from "Other" (child lived with a friend of the family) to be included within the category of Other Relative Placement.

Descriptives for the Outcome Scores

Symptoms of baseline and end of treatment post-traumatic stress were measured by scores from the TSCYC or TSCC-A. Due to the TSCYC and TSCC-A having

different clinical cut-scores (65 and 70, respectively), a decision was made for the critical cut-off point of 65 to be used for the combined PTS scale scores in order to capture all elevated PTS scores on both measures. For this sample, the average score on the PTS baseline scale was in the borderline clinical range at (M = 66.60, SD = 15.06), while the PTS termination Scale score fell below the clinical cut-off (M = 55.69, SD = 12.45) indicating an overall reduction in PTS symptoms from the beginning to the end of treatment for the sample.

Internalizing, Externalizing, and Total Problem scale scores from the CBCL were utilized to measure the severity of emotional and behavioral symptoms at the beginning and end of treatment. The clinical cut-off for these scales was 63. The average CBCL Internalizing baseline scale score for this sample was right at the clinical cut-off of 63 (M = 63.14, SD = 11.57), with the termination scale score for this measure decreasing to 57 (M = 57.47, SD = 12.51). The average CBCL Externalizing baseline scale score was 69 (M = 68.92, SD = 11.22), while the average termination scores declined to 63 (M = 62.72, SD = 13.02). The scores for CBCL Total Problem baseline and termination scale scores were 68 (M = 67.89, SD = 10.47) and 61 (M = 61.94, SD = 12.76) respectively, with the baseline score falling in the borderline clinical range, and falling below the clinical cut-off at termination.

Further, the computed Daily Functioning scale score was examined to determine an overall level of daily functioning at baseline and termination. Higher scores indicate higher levels of perceived daily functioning. The average baseline Daily Functioning score for the sample was 16 (M = 16.42, SD = 4.06), increasing to 20 (M = 19.88, SD =

3.77) at the end of treatment indicating improved ratings of daily functioning from baseline to the end of treatment.

In order to examine whether differences exist between a child's symptoms at baseline and symptom levels at the end of treatment, a series of paired-sample *t*-tests were conducted between baseline and termination scores PTS scale, CBCL Internalizing scale, CBCL Externalizing scale, CBCL Total Problem scale, and the Daily Functioning scale scores. Table 2 displays correlation statistics for for baseline and end of treatment scores. Table 3 displays paired sample *t*-test statistics for baseline and end of treatment scores. Significant mean differences were found between all baseline and end of treatment groups indicating that overall symptom levels declined at the end of treatment for each of the four outcome measures.

Table 2

Correlations between Baseline and End of Treatment Scores

	Correlations
PTS Base & Term	.297*
CBCL Int. Base & Term	.564*
CBCL Ext. Base & Term	.552*
CBCL Tot. Prob. Base & Term	.545*
Daily Functioning Base & Term	.476*

$p \leq .001$*

Table 3

Paired Sample t-test: Baseline and End of Treatment Scores

	N	M (SD)	*t*	*df*
PTS Base	(100)	66.60 (15.06)	6.63**	99
PTS Term	(100)	55.69 (12.45)		
Internalizing Base	(106)	63.14 (11.57)	5.18**	105
Internalizing Term	(106)	57.47 (12.51)		
Externalizing Base	(106)	68.92 (11.22)	5.52**	105
Externalizing Term	(106)	62.72 (13.02)		
Total Problem Base	(106)	67.89 (10.47)	5.44**	105
Total Problem Term	(106)	61.94 (12.76)		
Daily Functioning Base	(83)	16.42 (4.06)	-7.84	82
Daily Functioning Term	(83)	19.88 (3.77)		

$p \leq .05$*, $p \leq .001$**

Bivariate Analyses

Analyses were conducted to examine the bivariate relationships between the independent variables and end of treatment symptom outcome scores. T-test grouping values were determined by the associated clinical cut-off score for the each symptom scale score (CBCL > 63, PTS > 65).

Significant group differences were found for the Number of Different Types of Trauma Exposures and CBCL Externalizing scores at termination, $t = 3.375$, $df(103)$, $p \leq .001$, and between this variable and CBCL Total Problem termination scale scores, $t = 1.777$, $df(103)$, $p < .05$. Significant bivariate differences were also found between the Age of the Child at the Start of Treatment and CBCL Externalizing termination scores, $t = 2.236$, df(104), $p < .05$. Additionally, significant differences were found between Placement Status and CBCL Internalizing termination scores, $F = 4.266$, $p < .05$). Table

4 displays significant findings for the ANOVAs. Table 5 displays mean differences in end of treatment scores by factor using clinical cutoff scores.

Multivariate Analyses

Prior to conducting the Analyses of Covariance (ANCOVAs), the data were examined for violation of assumptions associated with the analysis. Histograms, scatter plots, probability-probability plots using residuals were examined for violations of linearity, normality, and homoscedasticity. No violations of assumptions were found, and a series of ANCOVAs were conducted to examine the first four stated hypotheses. Specifically, the ANCOVAs examined variables that may influence severity of symptom outcomes at the end of treatment, and separate analyses were conducted with each of the four termination scale scores (PTS, CBCL Internalizing, CBCL Externalizing, and CBCL Total Problem Scales) entered as the dependent.

Table 4

Significant Group Differences in End of Treatment Scores by Factor: ANOVA Statistics

	N	M	SD	F	*p*	Confidence Interval
PTS Termination						
Gender Male	(57)	54.33	12.09	1.58	.21	51.12 – 57.54
Female	(43)	57.49	12.83			53.54 – 61.44
CBCL Internalizing Term						
Gender Male	(60)	57.37	12.05	.01	.92	54.25 – 60.48
Female	(46)	57.61	13.23			53.68 – 61.54
CBCL Externalizing Term						
Gender Male	(60)	62.52	13.76	.03	.86	58.96 – 66.07
Female	(46)	62.98	12.14			59.37 – 66.58
CBCL Total Problem Term						
Gender Male	(60)	61.47	13.10	.19	.66	58.08 - 64.85
Female	(46)	62.57	12.41			58.88 – 66.25
PTS Term						
Placement Status						
Bio/Adopt	(33)	53.03	11.66	1.25	.29	48.90 – 57.16
Other Relative	(15)	58.54	13.54			50.35 – 66.72
State	(54)	56.63	12.60			53.19 – 60.07

Table 4 (continued)

Significant Group Differences in End of Treatment Scores by Factor: ANOVA Statistics

	N	M	SD	F	*p*	Confidence Interval
CBCL Internalizing Term						
Placement Status						
Bio/Adopt	(32)	53.66	12.45	4.27	.02*	49.17 – 58.15
Other Relative	(16)	64.50	10.51			58.90 – 70.10
State	(58)	57.64	12.37			54.39 – 60.89
CBCL Externalizing Term						
Placement Status						
Bio/Adopt	(32)	60.03	12.47	1.11	.37	55.54 – 64.53
Other Relative	(16)	64.69	10.38			59.15 - 70.22
State	(58)	63.66	13.91			60.00 – 67.31
CBCL Total Problem Term						
Placement Status						
Bio/Adopt	(32)	59.09	11.80	1.90	.16	54.84 – 63.35
Other Relative	(16)	66.56	10.61			60.91 – 72.22
State	(58)	62.24	13.56			58.68 – 65.81
PTS Term						
Treatment Type						
TF-CBT	(77)	55.83	12.95	.04	.84	52.89 – 58.77
PCIT	(23)	55.22	10.88			55.51 – 59.92
CBCL Internalizing Term						
Treatment Type						
TF-CBT	(76)	56.38	12.88	2.06	.15	53.44 – 59.32
PCIT	(30)	60.23	11.28			56.02 – 64.45
CBCL Externalizing Term						
Treatment Type						
TF-CBT	(76)	62.08	13.99	.64	.43	58.88 – 65.28
PCIT	(30)	64.33	10.20			60.53 – 68.14
CBCL Total Problem Term						
Treatment Type						
TF-CBT	(76)	61.04	13.54	1.35	.25	57.95 – 64.13
PCIT	(30)	64.23	10.38			60.36 – 68.11

$p \leq .05$*

Table 5

Group Differences by Factor Using Clinical Cutoff Scores: T-tests

	N	M (SD)	*t*
# Types of Trauma/ PTS Term	≥ 65 (27)	5.26 (1.99)	1.21
	< 65 (72)	4.65 (2.31)	
# Types of Trauma/ CBCL Internalizing Term	≥ 63 (36)	5.14 (2.27)	.99
	< 63 (69)	4.67 (2.34)	
# Types of Traumas / CBCL Externalizing Term	≥ 63 (58)	5.48 (2.38)	3.38**
	< 63 (47)	4.02 (1.97)	
# Types of Traumas / CBCL Total Problem Term	≥ 63 (57)	5.19 (2.47)	1.78
	< 63 (48)	4.40 (2.05)	
Age at Start of Tx/ PTS Term	≥ 65 (27)	8.00 (2.13)	.15
	> 65 (73)	7.92 (2.65)	
Age at Start of Tx/ CBCL Internalizing Term.	≥ 63 (36)	7.64 (2.67)	-.12
	< 63 (70)	7.70 (2.49)	
Age at Start of Tx / CBCL Externalizing Term	≥ 63 (58)	8.17 (2.59)	2.24*
	< 63 (48)	7.08 (2.38)	
Age at Start of Tx/ CBCL Total Problem Term	≥ 63 (57)	7.82 (2.60)	.63
	< 63 (49)	7.51 (2.49)	

$p \leq .05$*, $p \leq .001$**

An initial main-effects only model was created with gender, placement status, type of treatment, the number of different types of traumas experienced, and the child's age at start of treatment entered as predictors in each model, with the coinciding baseline scale scores entered as a covariate. Additionally, ANCOVA models were created with specified interaction terms to test for differences by type of treatment. Table 6 displays univariate statistics for variables included in the analyses.

Table 6

Univariate Statistics for Variables Included in ANCOVAs

Variable	N	M (SD)	Skewness	Kurtosis
# of Different Types Trauma	(134)	4.74 (2.28)	.149	-.156
Age of Child at Start of Tx	(134)	7.68 (2.47)	-.176	-.737
PTS Scale Scores				
Baseline	(104)	67.79 (16.02)	.771	.418
Termination	(104)	57.65 (15.71)	1.300	.237
CBCL Scale Scores				
Internalizing Baseline	(106)	63.14 (11.57)	.374	.529
Internalizing Termination	(106)	57.47 (12.51)	.235	-.304
CBCL				
Externalizing Baseline	(106)	68.92 (11.22)	.396	.739
Externalizing Termination	(106)	62.72 (13.02)	-.368	.273
CBCL				
Total Problem Baseline	(106)	67.89 (10.47)	.627	1.288
Total Problem Termination	(106)	61.94 (12.76)	-.597	.372
Daily Functioning Scale Score				
Baseline	(83)	16.42 (4.06)	-.027	-.220
Termination	(83)	19.88 (3.77)	-.847	1.288

Testing of Hypotheses 1-4

Hypothesis 1. *Children with higher numbers of different types of trauma exposures at baseline will exhibit higher levels of symptoms at the end of treatment compared to children with fewer numbers of different trauma exposures regardless of treatment type.*

Hypothesis 2. *Female children will exhibit higher levels of symptoms at the end of treatment compared to male children regardless of treatment type.*

Hypothesis 3. *Children in foster care will exhibit higher levels of symptoms at the end of treatment compared to children residing with biological, adoptive, or other relative caregivers regardless of treatment type.*

Hypothesis 4. *Older children will exhibit higher levels of symptoms at the end of treatment compared to younger children regardless of treatment type.*

ANCOVA results for the main-effects only model yielded the following results:

PTS termination scale scores. The overall model was not significant, F = 2.02, $p \leq .10$, and was only able to explain approximately 13% of the variance in PTS scale scores at termination ($R^2 = .134$). The Levene's Test supported the assumption of equality of variances, F = 1.19 (11, 87), $p > 05$. Significant mean differences were found between the covariate PTS Baseline scale scores and end of treatment PTS scores, F = 8.175, $p \leq .05$; however no significant differences were found between the child's age, gender, placement status, type of treatment, or the number of different types of traumas experienced and end of treatment PTS scores.

CBCL internalizing termination scale scores. The overall model was significant, F = 8.01, $p \leq .001$), and was found to explain approximately 37% of variance in Internalizing behavior scores at the end of treatment ($R^2 = .366$). The Levene's Test supported the assumption of equality of variances, F = .72 (11, 93), $p > .05$. Significant mean differences were again found between the covariate Internalizing baseline scale scores and end of treatment Internalizing scores, F = 40.33, $p \leq .001$, with an absence of significant differences found between the independent variables in the model and end of treatment Internalizing scores.

CBCL externalizing termination scale scores. The overall model was significant, F = 8.43, $p \leq .001$, and was able to explain approximately 38% of the variance in Externalizing behavior scale scores at termination ($R^2 = .378$). The Levene's Test supported the assumption of equality of variances, F = 1.22 (11, 93), $p > .05$. Again,

significant mean differences were found between the covariate Externalizing baseline scores and end of treatment Externalizing scores, F = 38.18, $p \leq .001$. Significant mean differences were found between a child's age at the start of treatment and end of treatment Externalizing scores, F = 5.43, $p \leq .05$, and a trend toward significance was found for treatment type, F =3.22, $p \leq .10$. After controlling for the influence of CBCL Externalizing baseline scores, older children were found to exhibit higher levels of externalizing symptom at the end of treatment. Examination of the estimated means for type of treatment indicate that at the end of treatment, children who received TF-CBT, *M* = 61.58, *SD* = 1.46, exhibited less severe externalizing behavior scores as compared to children who received PCIT, *M* = 66.29, *SD* = 2.15.

CBCL total problem termination scale scores. The overall model was significant, F = 7.73, $p \leq .001$, and was able to explain approximately 36% of the variance in Total Problem scores at termination ($R^2 = .358$). The Levene's Test supported the assumption of equality of variances, F = .83 (11, 93), $p > .05$. Significant mean differences were again found between the covariate Total Problem and end of treatment Total Problem scores, F = 35.66, $p \leq .001$. Significant mean differences were also found between a child's age at the start of treatment, F = 5.48, $p \leq .05$), treatment type, F = 4.52, $p \leq .05$, and end of treatment Total Problem scores. When the influence of Total Problem baseline scores were controlled, older children were found to exhibit higher levels of total problem behavior symptoms at the end of treatment. Examination of the estimated means for type of treatment indicate that at the end of treatment, children who received TF-CBT, *M* = 60.76, *SD* = 1.45, exhibited less severe total problem scores compared to children who received PCIT, *M* = 66.28, *SD* = 2.14. Table 7 displays tests

of between-subject effects, and table 8 displays estimated means and standard deviations for the ANCOVAs.

In order to test for differences by treatment type for hypotheses 1-4, additional ANCOVA analyses were conducted that separately included the following interaction terms: the number of different types of trauma exposures and type of treatment (H1), gender and type of treatment

Table 7

Tests of Between-Subject Effects: ANCOVA Statistics

	N	F	*p*	ηp2	R^2
PTS Term (DV)	99				.134
Corrected Model		2.015	.061*		
Intercept		38.600	.000***		
Gender		1.890	.173	.020	
Type Tx		.321	.572	.004	
Placement Status		.672	.513	.015	
Child Age		.580	.448	.006	
# Diff Traumas		.473	.494	.005	
Baseline PTS		8.000	.006	.081	
CBCL Int. Term (DV)	105				.366
Corrected Model		8.011	.000***		
Intercept		5.430	.022**	.053	
Gender		.775	.381	.008	
Type Tx		2.671	.105	.027	
Placement Status		1.333	.268	.027	
Child Age		1.828	.179	.019	
# Diff Traumas		.031	.861	.000	
Baseline CBCL Int		40.333	.000***	.294	
CBCL Ext. Term (DV)	105				.378
Corrected Model		8.427	.000***		
Intercept		1.428	.235		
Gender		1.577	.212	.016	
Type Tx		3.216	.076*	.032	
Placement Status		.127	.881	.003	
Child Age		5.428	.022**	.053	
# Diff Traumas		2.304	.132	.023	

Table 7 (continued)

Tests of Between-Subject Effects: ANCOVA Statistics

	N	F	*p*	ηp2	R^2
Baseline CBCL Ext		38.181	.000***	.282	
CBCL Total Prob Term (DV)	105				.358
Corrected Model		7.734	.000***		
Intercept		1.663	.200		
Gender		2.015	.159	.020	
Type Tx		4.518	.036**	.045	
Placement Status		.017	.983	.000	
Child Age		5.475	.021**	.053	
# Diff Traumas		.466	.497	.005	
Baseline CBCL Tot. Prob.		35.655	.000***	.269	

$p \leq .10$*, $p \leq .05$**, $p \leq .001$**

H2), foster care and type of treatment (H3), and age and type of treatment (H4). None of the interaction terms were found to be significant predictors of outcome scores.

Table 8

Estimated Means: ANCOVA

	M	SD	Confidence Intervals (95%)
PTS CBCL Term (DV)			
Grand Mean	56.65	1.67	53.34 – 59.95
Gender			
Male	54.92	1.88	51.18 – 58.67
Female	58.37	2.27	53.87 – 62.87
Treatment Type			
TF-CBT	55.72	1.67	52.41 – 59.03
PCIT	57.57	2.84	51.93 – 63.21
Placement Status			
Bio/Adopt	54.35	2.42	49.55 – 59.15
Other Relative	58.19	3.48	51.28 – 65.09
State	57.40	1.99	53.45 – 61.35
Internalizing CBCL Term (DV)			
Grand Mean	58.67	1.26	56.17 – 61.16

Table 8 (continued)

Estimated Means: ANCOVA

	M	SD	Confidence Intervals (95%)
Gender			
Male	57.74	1.52	54.72 – 60.77
Female	59.59	1.74	56.13 – 63.05
Treatment Type			
TF-CBT	56.59	1.42	53.77 – 59.41
PCIT	60.74	2.09	56.60 – 64.88
Placement Status			
Bio/Adopt	55.86	2.08	51.73 – 59.99
Other Relative	60.61	2.75	55.16 – 66.07
State	59.53	1.54	56.47 – 62.59
Externalizing CBCL Term (DV)			
Grand Mean	63.93	1.28	61.38 – 66.48
Gender			
Male	62.58	1.56	59.50 – 65.67
Female	65.28	1.79	61.73 – 68.83
Treatment Type			
TF-CBT	61.58	1.46	58.68 – 64.48
PCIT	66.29	2.15	62.02 – 70.55
Placement Status			
Bio/Adopt	64.83	2.15	60.57 – 69.10
Other Relative	63.06	2.76	57.57 – 68.54
State	63.91	1.60	60.74 – 67.07
Total Problem CBCL Term (DV)			
Grand Mean	63.52	1.28	60.98 – 66.06
Gender			
Male	62.00	1.55	59.50 – 65.67
Female	65.04	1.78	61.51 – 68.57
Treatment Type			
TF-CBT	60.76	1.45	57.88 – 63.63
PCIT	66.28	2.14	62.05 – 70.52
Placement Status			
Bio/Adopt	63.19	2.14	58.94 – 67.43
Other Relative	63.80	2.78	58.28 – 69.32
State	63.58	1.57	60.45 – 66.70

Testing of Hypotheses 5 and 6

Hypothesis 5. *Children will experience a greater reduction in internalizing symptoms at the end of TF-CBT treatment compared to externalizing symptoms at the end of treatment regardless of gender.*

Hypothesis 6. *Children receiving PCIT will experience a greater reduction in externalizing symptoms compared to internalizing symptoms at the end of treatment.*

In order to test hypotheses 5 and 6, change scores were computed for both the CBCL Internalizing and Externalizing scale scores. Independent samples *t*-tests were then conducted to examine treatment differences for the two scales (externalizing and internalizing) for both TF-CBT and PCIT. Results indicated no significant differences between pre-test Internalizing and Externalizing scale scores and scores at the end of treatment for either TF-CBT or PCIT. Table 9 displays the Independent *t*-test statistics.

Table 9

Change in Internalizing and Externalizing Scores Following TF-CBT and PCIT

	N	M	SD	t	*df*	p	Confidence Intervals (95%)
Externalizing Scores							
TF-CBT	76	-6.17	11.16	.051	104	.96	-4.850 – 5.12
PCIT	30	-6.30	12.82				
Internalizing Scores							
TF-CBT	76	-6.28	11.57	-.881	104	.38	-6.97 – 2.68
PCIT	30	-4.13	10.51				
Daily Functioning							
TF-CBT	60	-3.25	4.12	.760	81	.45	-1.22 – 2.72
PCIT	23	-4.00	3.77				

Testing of Hypothesis 7

Hypothesis 7. *Children and their caregivers will report improved daily functioning at the end of treatment regardless of treatment condition.*

A paired samples *t*-test was conducted to examine differences in Daily Functioning scores from baseline to end of treatment. Results indicated significant differences between baseline and termination scores, $t = -7.84$, df (82), $p \leq .001$. The average baseline and termination Daily Functioning scores were 16, $M = 16.42$, $SD = 4.06$, and 20, $M = 19.88$, $SD = 3.77$, respectively. Correlations were examined between the end of treatment PTS, CBCL, and Daily Functioning scores. Results indicate a significant negative correlation between the three CBCL scale scores and the Daily Functioning scores; as CBCL scale scores decrease at the end of treatment, daily functioning scores increase. The correlation between end of treatment PTS scale and Daily Functioning scores was not significant indicating that changes in PTS scale scores at the end of treatment were not found to have a significant relationship with Daily Functioning scores at termination. Table 10 displays the correlations between these variables.

Table 10

Correlations Between End of Treatment Daily Functioning, PTS and CBCL Scores

	Daily Functioning Term
Internalizing Term	-.355*
Externalizing Term	-.461*
Total Problem Term	-.541*
PTS Term	-.083

$p \leq .001$*

Additional Analyses

The independent variables of gender, placement status, type of treatment, the number of different types of traumas experienced, and the child's age at start of treatment, were selected for inclusion in the model due to previous research demonstrating their ability to predict symptom severity (Alisic et al., 2011; Greeson et al., 2011, Finkelhor et al., 2005a; Finkelhor et al., 2005b; Kisiel et al., 2009; Newton et al., 2000; Oswald et al, 2010). Significant mean differences were not found between these variables and end of treatment symptom severity scores for this sample, therefore the decision was made to test their ability to predict symptom severity at baseline assessment based on their demonstrated relevancy in the literature. To this end, an ANOVA was conducted to examine whether significant mean differences exist between the independent variables and baseline treatment symptom scores. Type of treatment was not included in this analysis. No significant differences were found between the predictor variables and baseline PTS, Internalizing, Externalizing, and Total Problem Behavior scale scores. Table 11 displays ANOVA statistics.

Table 11

Group Differences in End of Treatment Scores by Factor (excluding Type of Treatment): ANOVA Statistics

	N	F	p	Grand Mean	SD	C.I.
PTS Base (DV)	103			69.27	1.81	65.68 - 72.86
Gender		1.54	.18			
Placement Status		1.19	.28			
Child Age		.01	.94			
# Diff Traumas		3.44	.07			
CBCL Int. Base (DV)	105			64.54	1.27	62.02 – 67.07
Gender		.29	.66			
Placement Status		2.85	.06			
Child Age		1.07	.30			
# Diff Traumas		1.38	.24			
CBCL Ext. Base (DV)	105			68.82	1.23	66.38 – 71.26
Gender		.21	.65			
Placement Status		1.62	.20			
Child Age		1.25	.27			
# Diff Traumas		2.82	.10			
CBCL Tot Prob Base (DV)	105			68.61	1.14	66.35 – 70.86
Gender		.08	.78			
Placement Status		2.15	.12			
Child Age		.33	.57			
# Diff Traumas		2.38	.13			

Finally, an ANCOVA was conducted with type of treatment entered as the only independent variable with baseline scores entered as the covariate to examine whether significant differences exist between the type of treatment and symptom outcome scores when the other predictors were removed from the model. The Levene's Test supported the assumption of equality of variances for each of the four ANCOVAs conducted. Results indicated that when baseline symptom scale scores were controlled, no significant differences were found between the type of treatment received by the child and end of treatment symptom scores. Table 12 displays ANCOVA statistics.

Table 12

Group Differences in End of Treatment Scores by Type of Treatment: ANCOVA Statistics

	N	F	p	ηp2	R^2
PTS Term (DV)	100				.091
Corrected Model		4.89	.010*		
Intercept		50.43	.000**		
Type Tx		.33	.570	.003	
Baseline PTS		9.67	.002	.091	
CBCL Int. Term (DV)	106				.329
Corrected Model		25.22	.000**		
Intercept		12.44	.001**		
Type Tx		2.67	.105	.015	
Baseline CBCL Int		47.46	.000**	.315	
CBCL Ext. Term (DV)	106				.305
Corrected Model		22.59	.000**		
Intercept		7.89	.006*		
Type Tx		.10	.757	.001	
Baseline CBCL Ext		44.26	.000**	.301	
CBCL Total Prob Term (DV)	106				.305
Corrected Model		22.61	.000**		
Intercept		6.56	.012*		
Type Tx		1.14	.288	.011	
Baseline CBCL Tot. Prob.		43.32	.000* *	.296	

$p \leq .05$*, $p \leq .001$**

Chapter 6

Discussion

Young children with histories of repeated trauma exposure present special challenges to the clinicians who serve them. Due to the complexity of their histories, isolating the factors that explain symptom change following treatment intervention continues to be a challenge. Understanding factors that affect change during treatment can aid in the development of modifications to current treatment protocols and can assist in matching children to specific treatments based on individual needs. As previously discussed, the manifestation of adverse symptoms following a significant trauma is well documented (Alisic et al., 2011, Crusto et al., 2010; Feldman & Vengrober, 2011; Feldman & Vengrober, 2011; Greeson et al., 2011; Kaplow et al., 2005; Kelley et al., 2010; Kim & Cicchetti, 2003; Ozcol, Zucker, & Spinazzola, 2011; Steinberg et al., 2011), as well as the long-term negative ramifications of childhood traumatic exposure on emotional, behavioral, and physiological well-being into adulthood (Briere et al., 2008; Cloitre et al., 2009; Edwards et al., 2003; Felitti & Anda, 2009; Felitti et al., Limke et al., 2010). Researchers and clinicians alike are attempting to formulate a deeper understanding of the differential needs of multi-traumatized children (Cloitre et al., 2009; Crusto et al., 2010; Finkelhor et al., 2005a; Finkelhor et al., 2005b; Finkelhor et al., 2007; Greeson et al., 2011; Kisiel et al., 2009), which has led to the development of treatment interventions designed to best meet the often challenging symptom presentations of these children (Cicchetti, Rogosch, & Toth, 2006; Cohen et al., 2004, Cohen, Cohen & Mannarino, 1996; Eyberg et al., 2001; Ghosh Ippen et al., 2011; Hood & Eyberg, 2003; King et al., 2000; Kolko, 1996a; Kolko, 1996b; Lieberman et al., 2006; Lieberman et al.,

2005, McNeil et al., 1999; Schuhmann et al., 1998). This study builds on the literature by further examining how individual factors identified in the existing literature may predict symptom outcomes following trauma-informed evidence-based treatment for very young and school-age children ages 2-12 years. This study additionally helps to clarify the potential benefits of closely matching the individual emotional and behavioral symptoms of the traumatized children to specific treatment interventions.

Past research has suggested that the number of different types of traumatic exposures experienced by the child, his or her gender, placement status, and type of treatment received may help predict symptom severity at the end of treatment. This project included a young multi-traumatized sample of children with an aim toward clarifying the factors that may influence symptoms of post-traumatic stress, internalizing, externalizing, and total behavior problem scale scores at the end of treatment specific for this population. Further, this study examined a total daily functioning score in an attempt to capture a more qualitative measurement of how children and their caregivers experience symptom change in their daily lives following treatment.

The guiding theoretical frameworks for this study were Sameroff's Unified Developmental Theory (2010) and a Developmental Traumatology Model proposed by DeBellis and colleagues (De Bellis et al., 1999a, 1999b; De Bellis, 2001; De Bellis, 2005). These frameworks allowed for the conceptualization of the development of trauma-related symptoms that integrate personal (both intra-and inter-psychic processes), contextual, and neurobiological considerations that influence the development of trauma-based symptoms following a traumatic exposure. It was conceptualized that the development of traumatic responses, such as symptoms of anxiety, depression,

avoidance, intrusive thoughts, defiance, and aggression, are influenced by the context within which the traumatic experience(s) occurred, the reactions of caregivers and other adults around the child following the incident(s), and the access to or utilization of resources following the event(s). In circumstances where the traumatic exposures are repeated and pervasive in early childhood, the neurobiological development of brain structures that regulate parasympathetic responses to fear can be thwarted and diminish the child's ability to assess danger within their environment and regulate their emotional responses (i.e., maintaining high levels of fear and anxiety even in the absence of danger). Primary caregivers play a role in regulating their child's emotional responses through the re-establishment of safety and security within the child's environment following the traumatic event(s) and through the regulation of his or her own emotional responses related to the event and toward their child. The child's experience of safety and security are influenced by his or her perception of their self within the environment.

The guiding frameworks were helpful in conceptualizing treatment intervention as a protective or "promotive" (Sameroff, 2010, pp.14) factor in understanding symptom change at the end of treatment. The teaching of skills to help regulate emotions and cognitions used in TF-CBT, the use of PCIT to help develop consist and nurturing parenting skills, and the use of psycho-education in both of these approaches can help disrupt the adverse developmental consequences of traumatic exposure and can contribute to changing a child's and caregiver's perception of themselves and of the safety and security of the world around them.

Trauma Exposure

As discussed previously, the adverse effects of traumatic exposure in childhood on emotional and behavioral functioning have been well established both in the child and adult trauma literature (Briere et al., 2008; Cloitre et al.,. 2009; Crusto et al., 2010; Edwards et al., 2003; Felitti & Anda, 2009; Felitti et al., 1998; Greeson et al., 2011; Kisiel et al., 2009; Limke et al., 2010). Results of this study support the hypothesis that postulated that older children would exhibit higher levels of symptoms at the end of treatment compared to younger children in the sample. A child's age at the start of treatment was found to influence Externalizing and Total Problem scores at the end of treatment when baseline scale scores were held constant. Older children were found to have significantly higher levels of Externalizing and Total Problem scores at the end of treatment. These results support previous research that has found higher levels of emotional and behavioral symptoms for older children (Greeson et al., 2011), as well as research examining the potential for more complex symptomatology following repeated traumatic exposures (Cloitre et al., 2009). Child age as a factor influencing symptom severity is also supported by neurobiological research that suggests that traumatic exposure early in a child's life can have long standing negative effects on later functioning, especially if early treatment intervention does not occur. Early experiences of trauma can affect the development of brain structures critical to the formation of healthy attachment and emotional regulation (Corbin, 2007; Perry, 2001; Spiegel, 1999). It can also be reasoned that due to their age, older children have more opportunity to experience a trauma and have the potential to be exposed to different types of trauma. This study sample consisted of multi-traumatized children (the average number different

types of traumatic exposures for the sample was approximately five), most of whom, 81%, had experienced a traumatic exposure within the first 5 years of life. Thus, the older children within this sample appear to be at elevated risk of more profound emotional and behavioral problems compared to younger children in this study. In a related study conducted at the research clinic examining predictors of treatment attrition, older children were found to be at elevated risk of early dropout from treatment when viewed in conjunction with other demographic and symptom factors (Eslinger et al., 2012). These findings suggest that older children may be at risk for higher levels of symptoms and for dropping out of treatment prior to receiving the full treatment benefit. These findings reinforce the importance of early access to trauma-informed treatment interventions after a traumatic exposure and encourage awareness of the specific treatment and support needs of older children and their caregivers.

Overall symptom severity scores were found to be significantly improved following TF-CBT and PCIT from baseline to the end of treatment. However, significant differences were found between Total Problem CBCL termination scale scores and the type of treatment received indicating that differential effects on total problem symptom severity scores occurred by treatment type. A noted trend toward significance between the type of treatment received and Externalizing CBCL scale scores at the end of treatment suggests that type of treatment may also differentially affect end of treatment externalizing behavior scores. The re-examination of this relationship is encouraged in future studies. The influence of treatment type to Total Problem and Externalizing problem scale symptom severity scores at termination will be examined in more detail later in this section.

The hypothesis postulating that the number of different types of traumatic exposures would predict end of treatment symptom scores was not supported. Examination of these findings suggests possible reasons for the divergence of the findings away from previous research. The high number of children in the sample with multiple traumatic exposures may not have provided sufficient variance to detect this variable as a predictor of end of treatment symptom outcomes within the model. Re-examination of the number of different types of traumatic exposures as a factor influencing end of treatment symptom scores is recommended with a sample consisting of children with more diverse histories of numbers of different traumatic exposures.

The performance of the independent variable of placement status within the model also warrants closer examination. The hypothesis stating that children placed in state custody would have higher levels of end of treatment symptoms compared to children placed with relatives and those in the care of biological or adoptive parents was not supported. When examined on a bivariate level, mean differences were found between placement status and Internalizing scale scores at the end of treatment; however, this relationship disappeared when the variable of placement status was entered into the multivariate analyses. Examination of significant and non-significant bivariate relationships between the variable of placement status and end of treatment symptom scores suggest that children in the care of their relatives may exhibit symptom levels closer to those found for children residing in State's custody, and in some cases, may exhibit higher levels of problematic symptoms. Further, the number of different placements experienced by children within the sample, either within the State system, between family members, or prior to adoption, may have influenced symptom severity;

however, this was not controlled for in the analyses. A focus on the placement histories of children within the sample may help explicate how multiple factors associated with placement experiences may predict or influence end of treatment symptom outcomes. Lastly, an examination of how psycho-education may influence levels of caregiver stress and use of parenting strategies is worthy of further exploration. During monitoring of treatment fidelity, the study clinicians were encouraged to focus on caregiver psycho-education and involvement in treatment regardless of the custody status of the child throughout treatment, thus "treating" all caregivers as if they were biological parents of the child. While parent coaching is a fundamental part of PCIT, on-going parenting support and education is also encouraged throughout treatment with TF-CBT. This focus during treatment may minimize some of the differences between the guardianship groups by effectively stabilizing caregiver stress and providing psycho-education and guidance around parenting interventions regardless of the caregiver's relationship to the child.

Lastly, it was hypothesized that female children would exhibit higher levels of symptoms at the end of treatment compared to male children. Although previous research has found differences in the ways that male and female children may exhibit emotional symptoms and respond to stress (Maschi et al.,2008; Tollin & Foa, 2006), this hypothesis was not supported within the model. The use of a Total Post-Traumatic Stress scale score, primarily of caregiver report of symptoms, may have served to dilute some of the differences between male and female children in the sample that have been found in other related studies (Sprang & Craig, In review), and further research examining child-reported symptoms of post-traumatic stress may help clarify gender symptom differences in future studies. Additionally, while the individual symptom scores for intrusive,

avoidant, and arousal symptoms were not able to be examined in this study (a total PTS scale score only is available on the child-report TSCC-A), an examination of these constructs is encouraged in future research and may help clarify symptom differences between girls and boys.

Although previous research supports the inclusion of the number of different types of traumatic exposures, the placement status of the child, and a child's gender in the model, these variables were not found to predict variance in end of treatment symptom scores. Additionally, these predictors were not found to significantly predict baseline symptom scores. These findings prompt questions as to possible differences that may exist for the current study sample compared to other study samples, and how these differences may confound the relationships between the number of different types of traumatic exposures, gender, placement status, and outcome symptom scores.

Emotional and Behavioral Outcomes

Post-Traumatic Stress and Internalizing Symptom Outcomes

Past research has found elevated levels of symptoms related to post-traumatic stress (Alisic et al., 2011, Crusto et al., 2010; Feldman & Vengrober, 2011; Greeson et al., 2011; Kaplow et al., 2005; Kelley et al., 2010), depression (Alisic et al., 2011; Feldman & Vengrober, 2011; Greeson et al., 2011), anxiety (Alisic et al., 2011; Greeson et al., 2011; Kaplow et al., 2005), aggression (Ozcol, Zucker, & Spinazzola, 2011), and interpersonal problems (Feldman & Vengrober, 2011; Kim & Cicchetti, 2003) for traumatized children compared to other children without histories of trauma. Internalizing symptoms can include symptoms of depression, generalized anxiety,

somatic complaints, and symptoms of post-traumatic stress, such as intrusive thoughts, hyper-arousal, and avoidance of thoughts and feelings related to the traumatic event(s).

In the current study, no significant differences were found between the independent variables, including type of treatment, and PTS end of treatment scale scores when examined on a multivariate level. An examination of the baseline post-traumatic stress scores for this sample indicate that these scores were just over the clinical cut-off point, suggesting that per the PTS measures used in this study, this sample, as a whole, did not display substantially high levels of post-traumatic stress symptoms at the beginning or end of treatment. Internalizing scale scores from the CBCL indicate a similar pattern, with baseline Internalizing scores being at the clinical cut-off and end of treatment scores falling just below this threshold. While the PTS scales on the TSCYC and TSCC-A measure different types of symptoms than those captured by the Internalizing scale scores on the CBCL, it is interesting to note that the scores for these two scales clustered at and below their prescribed clinical cut-off points at baseline and termination suggesting a similar profile for symptoms related to emotional regulation. It is also worthy of note that post-traumatic stress-related symptoms often fluctuate during treatment, especially during exposure-base treatment such as TF-CBT, therefore, the inclusion of mid-treatment PTS and Internalizing symptom scores in future research may help provide clarification of factors that may influence symptom severity for this construct. Additionally, the reliance on caregiver report for post-traumatic stress and other internalizing symptoms, may, as discussed previously, have potentially influenced the accuracy of measuring this construct.

The study findings pose an interesting question as to current attempts to define and measure trauma-related internalizing symptoms for young children ages 2-12 years. Recent work toward defining post-traumatic stress symptoms for young children has helped clarify trauma-related symptoms specific to this age group (Scheeringa, Myers, Putnam, & Zeanah,, 2012; Scheeringa, Zeanah, & Cohen, 2011). Past research has suggested that young children exhibit levels of post-traumatic stress symptoms similar to older children (Scheeringa & Zeanah, 2008), and it has been suggested that the diagnostic criteria for Post-Traumatic Stress Disorder (PTSD) contained in the DSM-IV may inadvertently prevent young children from being properly diagnosed. While the post-traumatic stress-specific measures used in this study have been found to demonstrate solid reliability and validity in measuring post-traumatic stress and related symptoms, the predominant reliance on the caregiver's report of these symptoms may complicate the accurate identification of PTS symptom severity (Levendosky, Bogat, & Martinez-Torteya, 2013; Scheeringa & Zeanah, 2001).

Externalizing and Total Problem Score Symptom Outcomes

Children with complex trauma histories have been found to exhibit high levels of externalizing behavior problems (Cloitre et al., 2009; Greeson et al., 2011). Externalizing symptoms can include behaviors such as aggression, angry outbursts, and defiance. The Total Problem scale score from the CBCL used in this study captured internalizing and externalizing behavioral symptoms, as well as symptoms related to encopresis, enuresis, cruelty to animals, sleep disruption social, thought, and attention problems. These types of behaviors are commonly identified by caregivers as the most challenging problems in need of treatment.

In this study, children were found to exhibit higher levels of externalizing behaviors than internalizing behaviors both at the beginning and end of treatment as measured by the CBCL. This finding suggests that children in this sample may have been experiencing high levels of emotional arousal expressed specifically through behavioral problems. This reasoning is supported by past research that has found a connection between the exposure to violence and the presence of child behavior problems (Johnsona et al., 2002), and to aggression in particular (Conner, Doerfler, Volungis, Steingard, & Melloni, 2003). A recent study by Milot et al. (2010) found the presence of symptoms of post-traumatic stress to mediate the relationship between a history of maltreatment and the presence of behavior problems in preschoolers. Results indicated that children with symptoms of post-traumatic stress were found to have higher levels of behaviors problems (Milot et al., 2010). Further, patterns of externalizing behavior difficulties may be passed down from one generation to another in families with histories of traumatic exposure. Efrensaft and Cohen (2012) found that children whose parents were exposed to intimate partner violence (IPV) as a child were at increased risk for behavior problems. Thus, exposure to maltreatment or neglect, even in a generation once removed, may result in high levels of externalizing behavior problems. Although previous research has found higher levels of post-traumatic stress symptoms for girls compared with boys (Alisic et al., 2011; Maschi et al.,2008; Tollin & Foa, 2006), high levels of externalizing symptoms have been found across gender for younger children (Scheeringa & Zeanah, 2008).

Type of Treatment and Externalizing and Total Problem Outcome Scores

Questions as to how to best meet the needs of traumatized children have led to the development of treatment interventions designed to best meet the often challenging symptom presentations of these children (Cicchetti et al., 2006; Cohen et al., 2004, Cohen & Mannarino, 1996; Eyberg et al., 2001; Ghosh Ippen et al., 2011; Hood & Eyberg, 2003; King et al., 2000; Kolko, 1996a; Kolko, 1996b; Lieberman et al., 2006; Lieberman, Van Horn, & Ghosh Ippen, 2005, McNeil et al., 1999; Schuhmann et al., 1998). The two types of treatment examined in this study, TF-CBT and PCIT, have both been empirically studied and found to be successful at reducing emotional and behavioral symptoms for children. The results of this study found significant differences between the type of treatment received and Total Problem symptom scores on the CBCL at the end of treatment. A trend toward significant differences was noted between end of treatment Externalizing CBCL scores and the type of treatment. Children receiving TF-CBT were rated as having lower levels of Externalizing and Total Problem scale scores following treatment with TF-CBT. These results suggest that externalizing and other types of behavior problems, such as social, thought, and attention problems that result from trauma (especially trauma of an inter-personal nature), may resolve more successfully through cognitive techniques as opposed to more behaviorally-focused interventions. The focus on affect regulation and cognitive coping skills during TF-CBT, along with the gradual exposure to thoughts and feelings associated with the experienced trauma, may serve to more successfully resolve the emotional dysregulation that underlies disorganized patterns of behavioral responses (Cohen, Mannarino & Deblinger, 2006).

This reasoning is supported by neurobiological research that has focused on clarifying the processes by which post-traumatic stress symptoms may develop (De Bellis et al., 1999a; De Bellis et al., 1999b). Specifically, the amygdala, a part of the Limbic system, has been found to be responsible for the "development and expression of conditioned fear" (Davis, 2000, p. 214). It is postulated that post-traumatic stress symptoms develop through the processes of long term potentiation (LTP) and long term depression (LTD; Chapman and Chattarji, 2000; Labar and LeDoux, 2001). LTP is the strengthening of signals between neurons when the neurons are stimulated simultaneously and leads to the development of conditioned fear responses and patterns of hyper-arousal (Chapman and Chattarji, 2000; Labar and LeDoux, 2001). LTD, on the other hand, is the weakening of signals between neurons and can lead to either hyper- or hypo- arousal (Labar and LeDoux, 2001; Chapman and Chattarji, 2000). Both LTP and LTD can result in high levels of emotional dysregulation for the child leading to the expression of this distress through externalizing behaviors.

Further research into how externalizing and other types of behavior problems resulting from trauma may resolve differently from non-trauma-related behavior problems is needed. The clarification of these differences can help guide practitioners in identifying the most appropriate treatment interventions for a child's individual needs. The concept of differential therapeutics, the idea of applying research and clinical knowledge in a systematic way to identify treatments that may best fit an individual's specific needs (Clarkin, 2005), has been used in both the medical and psychiatric arenas to help develop criteria that can help practitioners make systematic decisions regarding the individual needs of their patient or client. Further research into the different ways in

which behavior problems resolve for traumatized versus non-traumatized children can lead to the refinement of research-based guidelines that can guide treatment selection toward a "best fit" for a particular child. As discussed, there are innate complexities involved in identifying the factors that are most salient to the decision-making process when determining a course of treatment. Due to the nature of the development of emotional and behavioral problems for a child following traumatic exposure, there is variability in the identification of the personal or situational factors that may "cause" trauma-related symptoms. Questions as to why children with similar trauma histories may experience a relative absence of problematic symptoms, while other children experience pervasive emotional, behavioral, and social problems remains, to a certain degree, unclear. A child's age, his or her trauma history (including the type and frequency of trauma exposure), the quality of the child-caregiver relationship and the stability of the caregiver's own mental and physical health issues must be considered when making decisions about treatment. Further, cultural considerations may need to taken into account when determining whether a specific treatment is a "best" fit for a child and his or her family. The continued examination of the relationships between demographic and environmental factors and end of treatment outcomes can help identify the aspects of a child's experience that carry the most influence over symptom outcomes and how these factors may help clarify the decision-making process related to determining the "best" treatment.

Daily Functioning Scores at the End of Treatment

The hypothesis stating that children and their caregivers would report improved daily functioning at the end of treatment regardless of treatment condition was supported

by the analyses; caregivers and their children reported an overall improvement in the child's daily functioning from the beginning to the end of treatment. Daily Functioning scores were also found to be negatively correlated to end of treatment symptom scale scores indicating that perceptions of improved daily functioning were congruent with the psychometric measurement of emotional and behavioral symptoms (as symptoms improved, ratings of the child's daily functioning also improved). This finding indicated a relationship between symptom reduction and improved daily functioning and suggests that treatment interventions can lead to qualitative improvements in the lives of children and their families.

Although the primary goal of treatment is to provide improved outcomes for children and their families, improvement is often measured exclusively by the presence or absence of symptoms, as opposed to other measurements of functioning, such as performance in school and relationships with others both in and outside the home. A child's level of functioning is defined not only by an absence or reduction in symptoms, but also by the child's ability to successfully interface and function within their environment. Child and caregiver subjective reports of daily functioning can provide a more contextual understanding of how a child and their caregiver may perceive improvement during and after treatment.

Past research has examined how a caregiver's own level of distress may affect ratings of perceived daily functioning (Kinsman & Wildman, 2001; Valentino et al., 2010). Caregivers of young children are typically the primary reporters of the child's functioning and make the ultimate decision as to whether a child remains in or discontinues treatment. While aspects of daily functioning can be observed and

measured by a caregiver, the potential influence of a caregiver's own emotional well-being on his or her perception of the child is an important consideration when interpreting results and encourages further examination of this construct.

Finally, a review of the research on child and caregiver perceptions of daily functioning at the end of treatment indicates a paucity of research examining this construct within the child trauma literature. This study contributes to this gap in the literature by examining child and caregiver perceptions of changes in the child's daily functioning following trauma-informed evidence-based treatment.

Limitations

There are several limitations for this study that need to be considered when interpreting the findings. First, this study utilized a relatively small non-randomized sample which limits the generalizability of the findings. However, an a-priori analysis indicated that a minimum sample size of 97 would provide sufficient statistical power to identify effect sizes classified as medium or larger. The inclusion of the corresponding pretest scores as a covariate in each model predicting post-test scores served to improve the statistical power for the analyses. Covariates are selected for both conceptual and empirical reasons. Conceptually, they are argued to have a meaningful relationship with the dependent variable. Empirically, the inclusion of a covariate allows the researcher to account for some of the variance in the dependent variable, thus increasing the likelihood of identifying a relationship between the predictor(s) and the outcome, if such a relationship actually exists. This is particularly important when meaningful effects may also be small effects. To this end, baseline outcome scores were included in the analyses to help increase the statistical power of the model.

It is also important to note that the sample sizes for the TF-CBT and PCIT treatment groups in this study were disproportioned to one another, with PCIT cases only making up approximately 1/3 of the total cases within the sample. Future research with more equal samples is recommended to help clarify differences in symptom outcomes following treatment.

Third, the primary reliance on caregiver reporting of a child's post-traumatic stress and other internalized symptoms may have limited the accuracy of obtaining a true measurement of post-traumatic stress symptoms, many of which are internally experienced by the child. While the PTS and Internalizing CBCL scale scores used in this study have been found to demonstrate solid reliability and validity in measuring these constructs, past research has indicated that caregiver and child reports of the child's trauma-related symptoms report may differ from one another (Kassam-Adams, Garcia-Espana, Miller, & Winston, 2006) and may additionally be influenced by the caregiver's own level of distress (Kinsman &Wildman, 2001).

Lastly, this study did include both full completion and adequate dose cases based on past literature that has suggested that therapeutic benefit may be obtained even if a child drops out prior to full completion of treatment (Lyon & Budd, 2010). While significant improvements in symptoms were found between baseline and end of treatment scores for both dosage groups, it should be noted that the average end of treatment scores for the full completion group were lower (indicated fewer symptoms) than the adequate dose group.

Practice Implications

The results of this study have implications for practice. First, practitioners are encouraged to consider how externalizing and other problem behaviors stemming from traumatic exposure may resolve differently from behaviors that result from environmental factors apart from trauma (such as inconsistent parenting or changes within the family structure. A broader understanding of how disruptions in neurobiological development can affect behavioral symptoms and the mechanisms inherent to assisting children with affect regulation can help practitioners make trauma-informed decisions about the specific treatment needs of children under their care.

Secondly, while this study reinforces the helpfulness of both TF-CBT and PCIT for children following traumatic exposure, the findings suggest that children with multi-trauma histories who exhibit high levels of externalizing behavior problems may benefit from a treatment that includes a cognitive exposure-based component to address the emotional dysregulation that underlies the presence of the externalizing behavior problems. Practitioners are encouraged to receive training in trauma-informed care and to systematically apply research and clinical knowledge to determine the best course of treatment for a child (Clarkin, 2005; Hoffman, 2003).

Third, clinicians are encouraged to be mindful of the specialized needs of older children who are seeking treatment related to trauma. As with other age groups, older children may have specific trauma-related symptoms that may benefit from an adjusted focus in treatment. As discussed previously, older children with histories of multiple traumatic exposures may be at risk for higher levels of externalizing symptoms. These symptoms may place the caregiver at risk for elevated care giving stress and for early

treatment dropout. The provision of trauma-informed psycho-education about trauma-related symptoms, with a specific focus on the potential cumulative emotional and behavioral effects of repeated trauma exposure, can assist children and their caregivers with formulating a deeper understanding of the basis for the exhibited symptoms. Additional parenting support may also be indicated to help reduce elevated levels of parenting stress and to help the caregiver manage their child's behavioral needs.

Fourth, obtaining feedback from children and their caregivers about their perceptions of change in daily functioning can help guide treatment. Prior research indicating differences in how children and caregiver rate a child's functioning reinforces the helpfulness of gathering information from both perspectives (Karem-Adams et al., 2006; Valentino et al., 2010). The examination of child and caregiver's ratings of daily functioning can help identify areas in need of psycho-education and additional supports. The assessment of perceptions of daily functioning can also help identify perceived barriers to treatment attendance, as well as areas of incongruence between perceptions of daily functioning and symptoms levels measured with psychometrics.

Lastly, the results of this study reinforce the importance of early intervention for reducing symptoms for children following traumatic exposure (Borrego et al., 1999; Borrego et al., 2004; Chaffin et al., 2004; Cohen & Mannarino, 1996; Cohen & Mannarino, 1998; Cohen et al., 2006; Scheeringa et al., 2011; Timmer et al., 2005) and preventing long-term emotional, physiological, and interpersonal problems into adulthood (Briere et al., 2008; Cloitre et al., 2009; Edwards et al., 2003; Felitti & Anda, 2009; Felitti et al., 1998; Limke et al., 2010). The early provision of trauma-informed psycho-education about emotional and behavioral responses to trauma, along with

evidence-informed recommendations for treatment can help place children and their families on a path to recovery.

Future Research

The study findings encourage areas of future research. The examination of the relationship between post-traumatic stress responses and externalizing behaviors is indicated. Specifically, clarification of how externalizing symptoms exhibited by traumatized children may be different from externalizing behaviors exhibited by children without such histories can help guide researchers and practitioners in creating guidelines to assist with the selection of treatment interventions best designed for a child's individual needs. This knowledge can also inform modifications to existing treatment protocols that address differing presentations of symptoms.

Second, research into how a child's history of placement disruption may moderate symptom severity outcomes is encouraged. The results of the multivariate analyses in this study did not find placement status to be a significant predictor of end of treatment symptom severity scores. These findings raise questions as to how the three placement groups included in the study may be more similar than different from one another. Of particular interest is the effect of a child's history of disrupted placements on symptom outcomes. As this study included a sample of children who were currently in foster care, had been adopted following placement in foster care, and/or were being cared for by other relatives, the similarities and differences in the placement histories of these children may provide clues as to potential moderating factors to symptom severity. Studies focused on accurately capturing the effects of placement disruption (either from home of origin or in other types of placements) on symptom development in children can further

inform our understanding of how such events can contribute to the complex symptom profiles of these children and the contribution of placement disruption to allostatic load. Lastly, it is notable that while placement status was not found to significantly influence outcome scores in the multivariate analyses, a significant relationship was found between placement status and Internalizing end of treatment scores on a bivariate level suggesting that a larger sample with increased power may yield different results.

Third, further research into how the trauma-related symptoms of young male and female children may differentially resolve during treatment is of continued interest. Past research has identified differences in the symptom profiles of male and female children following traumatic exposure (Alisic et al., 2011; Maschi et al.,2008; Tollin & Foa, 2006), however, studies focusing on the gender differences between younger girls and boys have been more limited. Questions related to gender differences in young children is of particular interest due to difficulties in defining and measuring levels of post-traumatic stress symptoms for this age group. Research examining gender differences in post-traumatic stress symptoms for young children is encouraged and can be guided by the scholarly work around the revisions to the Diagnostic and Statistical Manual (Scheeringa, Myers, Putnam, & Zeanah, 2012; Scheeringa et al., 2011).

Lastly, due to the inclusion of children ages 2-12 in this study, caregiver-reports of emotional and behavioral symptoms and ratings of daily functioning were primarily utilized. Past research has suggested that levels of distress experienced by the caregiver may influence the caregiver's perceptions of their child's functioning (Kinsman & Wildman, 2001; Valentino et al., 2010). Caregivers may have their own histories of trauma and/or may feel elevated distress connected to their child's traumatic

experience(s) increasing the difficulty that some caregivers may have in separating their own feelings of distress from those of their child. Research designed to control for the effects of caregiver distress can help identify sources of variance in symptom outcome scores and can lead to a clearer understanding of the relationships between child symptoms and levels of caregiver distress.

Implications for Social Work Education

The results of this study suggest that there is benefit to matching a child's characteristics and areas of need to treatment type. Due to the high prevalence of children entering the mental health system with experiences of trauma, social workers must be able to assess for a history of traumatic exposure and to make trauma-informed decisions as to the best method of care based on the individual needs of the child and his or her family. Social work educators are encouraged to help prepare social work students for this challenge by designing curriculum that is trauma-informed with an emphasis on helping the student learn how to think critically about a child's trauma history and symptoms and to integrate this knowledge into trauma-informed treatment decisions. The curriculum should facilitate student competency in the area of trauma-informed care, including understanding the basic tenets of neurobiology, attachment, cognition, emotional regulation, and available trauma-informed evidence-based treatments. Fostering social work students who are able to make research-informed decisions about best practice interventions will facilitate the development of social workers who are more prepared to meet the complex needs of children with varying histories of trauma.

Policy Implications

There is strong support for the use of trauma-informed evidence-based protocols with traumatized children and their families (Cicchetti et al., 2006; Cohen et al., 2004, Cohen & Mannarino, 1996; Eyberg et al., 2001; Ghosh Ippen et al., 2011; Hood & Eyberg, 2003; King et al., 2000; Kolko, 1996a; Kolko, 1996b; Lieberman et al., 2006; Lieberman et al., 2005, McNeil et al., 1999; Schuhmann et al., 1998), and the results of this study reinforce the importance of considering a child's individual needs when determining the best course of treatment. Successful matching of a child's symptom profile to the chosen intervention can expedite the treatment process leading to increased positive outcomes for the child.

Although the evidence for the reduction of trauma-related symptoms following evidence-based practices is robust, study results indicate that discrepancies continue to exist between the use of best practice guidelines, offered by associations such as the International Association of Traumatic Stress Studies (ISTSS), and the types of intervention strategies commonly used by practitioners when treating trauma-exposed children. In a study examining the use of research-based treatment interventions by mental health providers in a southern state, Sprang, Craig, and Clark (2008) found that the majority of 1121 providers surveyed using a Trauma Practices Questionnaire (TPQ) identified using a generalist approach when providing trauma-related practices. Further, approximately half of the sample did not identify an assessment method of choice, with only a very small percentage of practitioners (3.9%) having reported utilizing trauma-specific questionnaires to help identify symptoms. More experienced clinicians were found to be more likely to receive training in trauma-informed care, and that the receipt

of such training increased the use of research-based practice methods (Sprang et al., 2008). Similarly, a study surveying the factors associated with the use of evidence-based practices by clinical psychologists and social workers in a randomized national sample (N = 711), Craig and Sprang (2010) found that the receipt of specialized training in trauma, the age of the provider, and the proportion of post-traumatic stress cases on a provider's caseload were predictive of the use of evidence-based practices (Craig & Sprang, 2010). These findings suggest that research-based treatment for traumatized children has largely not been translated into practice. The development of policies that encourage mental health and other community agencies to train their providers in trauma-informed care can help increase the use of evidence-based decision-making with children.

First, state policies can encourage the training of child welfare and mental health professionals in trauma-informed care by providing funding that supports a training mandate. Emotional and behavioral problems stemming from past trauma exposure are often mislabeled leading to referrals for services that are, while unintentionally, misguided. The misidentification of the mental health needs of children exposed to trauma can lead to referrals for services that may fail to address underlying trauma-related impairments. State funding of training in trauma-informed care can help child welfare workers make more informed decisions about the families under their care, and can facilitate the connection of a child and family to the most appropriate resources. Training can help mental health providers develop trauma-specific assessments skills and can encourage the application of research-based decision-making when determining treatment intervention for a child. It is recommended that training in trauma-informed care include an overview of trauma-related disorders, how symptoms may manifest for

children across the developmental continuum, basic neurobiological consequences of repeated exposure to traumatic stimuli, and an introduction to attachment theory. These training programs have been developed by the National Child Traumatic Stress Network (e.g. the Child Welfare Trauma Training Toolkit), and are available at www.nctsn.org. However, these programs are just emerging in some states, and delivery of such programs is still the exception, rather than the rule.

Secondly, policies can increase the use of evidence-based practices with traumatized children by providing monetary incentives for community agencies and practitioners to provide these interventions. Large caseloads and high rates of staff turnover can make the shift toward the systematic use of evidence-based practices within community mental health settings more difficult. Past research has indicated that more experienced providers are more likely to utilize trauma-informed evidence-bases practices (Craig & Sprang, 2010; Sprang et al., 2008), and the large number of relatively inexperienced providers that seek employment through community mental health agencies may be an additional barrier to the use of research-informed treatment. Additionally, the unprecedented funding and financial constraints experienced by community mental health agencies can affect an agency's ability to shift their treatment culture away from more generalized or eclectic practice to evidence-based care. Thus, incentives, such as higher rates of reimbursement, can help agencies change their treatment culture by rewarding agencies for the use of evidence-based care with traumatized children. The use of evidence-based practices can also be encouraged through the provision of financial incentives for local and state agencies who can

demonstrate improved symptom and daily functioning outcomes for trauma-exposed children following treatment.

Conclusion

Research into how best to help children resolve emotional and behavioral symptoms following traumatic exposure continues to be an area of robust study. The short and long-term adverse effects of traumatic exposure, especially for children with multi-trauma histories, are clear and behoove researchers and practitioners to translate research knowledge into practice. This process has led to the development of trauma-informed evidence-based interventions designed to address childhood post-trauma symptoms and to decrease the potential for long-term psychological problems into adulthood. The treatment interventions of TF-CBT and PCIT have demonstrated efficacy in resolving the emotional and behavioral needs of traumatized children and both have strong empirical support. While some commonalities in symptom profiles have been identified for children following traumatic exposure, much remains to be learned about the differential needs of traumatized children. Research that is focused on clarifying the factors that differentiate symptom resolution during treatment can inform how existing treatment protocols may need to be modified to meet the specific needs of an individual child.

This study contributes to the existing literature by examining how factors identified in the existing literature may predict symptom outcomes following trauma-informed evidence-based treatment for young children ages 2-12 years. This study generated questions as to how externalizing and other problems behaviors of traumatized children may resolve during treatment and suggests the potential benefits of closely

matching the individual emotional and behavior needs of traumatized children to specific treatment interventions. Lastly, this study encourages the inclusion of a daily functioning measurement along with the more empirical measurements of specific symptoms. This approach can provide a qualitative understanding of how a child and their caregiver may be perceiving treatment progress.

In closing, many children develop emotional and behavioral difficulties following exposure to a traumatic experience. Translational research provides hope for these children and their families by continuing to examine, develop, and modify treatment interventions focused on resolving emotional and behavioral problems. Tensions between the *known* and the *unknown* in the area of trauma-informed treatment for children continues to propel research forward to clarify factors that may influence symptom severity follow treatment.

Appendix 1

Please print. Be sure to answer all items.

CHILD BEHAVIOR CHECKLIST FOR AGES 1½-5

For office use only
ID #

CHILD'S FULL NAME First Middle Last

CHILD'S GENDER ☐ Boy ☐ Girl

CHILD'S AGE

CHILD'S ETHNIC GROUP OR RACE

TODAY'S DATE Mo. ____ Day ____ Year _____

CHILD'S BIRTHDATE Mo. ____ Day ____ Year ____

Please fill out this form to reflect *your* view of the child's behavior even if other people might not agree. Feel free to write additional comments beside each item and in the space provided on page 2. ***Be sure to answer all items.***

PARENTS' USUAL TYPE OF WORK, even if not working now. *Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.*

FATHER'S TYPE OF WORK _____

MOTHER'S TYPE OF WORK _____

THIS FORM FILLED OUT BY: (print your full name)

_____

Your relationship to child:

☐ Mother ☐ Father ☐ Other (specify):

Below is a list of items that describe children. For each item that describes the child ***now or within the past 2 months***, please circle the ***2*** if the item is ***very true or often true*** of the child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of the child. If the item is ***not true*** of the child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to the child.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 1. Aches or pains (without medical cause; ***do not*** include stomach or headaches)
0 1 2 2. Acts too young for age
0 1 2 3. Afraid to try new things
0 1 2 4. Avoids looking others in the eye
0 1 2 5. Can't concentrate, can't pay attention for long
0 1 2 6. Can't sit still, restless, or hyperactive
0 1 2 7. Can't stand having things out of place
0 1 2 8. Can't stand waiting; wants everything now
0 1 2 9. Chews on things that aren't edible
0 1 2 10. Clings to adults or too dependent
0 1 2 11. Constantly seeks help
0 1 2 12. Constipated, doesn't move bowels (when not sick)
0 1 2 13. Cries a lot
0 1 2 14. Cruel to animals
0 1 2 15. Defiant
0 1 2 16. Demands must be met immediately
0 1 2 17. Destroys his/her own things
0 1 2 18. Destroys things belonging to his/her family or other children
0 1 2 19. Diarrhea or loose bowels (when not sick)
0 1 2 20. Disobedient
0 1 2 21. Disturbed by any change in routine
0 1 2 22. Doesn't want to sleep alone
0 1 2 23. Doesn't answer when people talk to him/her
0 1 2 24. Doesn't eat well (describe): _____
0 1 2 25. Doesn't get along with other children
0 1 2 26. Doesn't know how to have fun; acts like a little adult
0 1 2 27. Doesn't seem to feel guilty after misbehaving
0 1 2 28. Doesn't want to go out of home
0 1 2 29. Easily frustrated
0 1 2 30. Easily jealous
0 1 2 31. Eats or drinks things that are not food—***don't*** include sweets (describe): _____
0 1 2 32. Fears certain animals, situations, or places (describe): _____
0 1 2 33. Feelings are easily hurt
0 1 2 34. Gets hurt a lot, accident-prone
0 1 2 35. Gets in many fights
0 1 2 36. Gets into everything
0 1 2 37. Gets too upset when separated from parents
0 1 2 38. Has trouble getting to sleep
0 1 2 39. Headaches (without medical cause)
0 1 2 40. Hits others
0 1 2 41. Holds his/her breath
0 1 2 42. Hurts animals or people without meaning to
0 1 2 43. Looks unhappy without good reason
0 1 2 44. Angry moods
0 1 2 45. Nausea, feels sick (without medical cause)
0 1 2 46. Nervous movements or twitching (describe): _____
0 1 2 47. Nervous, highstrung, or tense
0 1 2 48. Nightmares
0 1 2 49. Overeating
0 1 2 50. Overtired
0 1 2 51. Shows panic for no good reason
0 1 2 52. Painful bowel movements (without medical cause)
0 1 2 53. Physically attacks people
0 1 2 54. Picks nose, skin, or other parts of body (describe): _____

Be sure you answered all items. Then see other side.

Please print your answers. Be sure to answer all items.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 55. Plays with own sex parts too much
0 1 2 56. Poorly coordinated or clumsy
0 1 2 57. Problems with eyes (without medical cause) (describe): _____
_____
0 1 2 58. Punishment doesn't change his/her behavior
0 1 2 59. Quickly shifts from one activity to another
0 1 2 60. Rashes or other skin problems (without medical cause)
0 1 2 61. Refuses to eat
0 1 2 62. Refuses to play active games
0 1 2 63. Repeatedly rocks head or body
0 1 2 64. Resists going to bed at night
0 1 2 65. Resists toilet training (describe): _____
_____
0 1 2 66. Screams a lot
0 1 2 67. Seems unresponsive to affection
0 1 2 68. Self-conscious or easily embarrassed
0 1 2 69. Selfish or won't share
0 1 2 70. Shows little affection toward people
0 1 2 71. Shows little interest in things around him/her
0 1 2 72. Shows too little fear of getting hurt
0 1 2 73. Too shy or timid
0 1 2 74. Sleeps less than most kids during day and/or night (describe): _____
_____
0 1 2 75. Smears or plays with bowel movements
0 1 2 76. Speech problem (describe): _____
_____
0 1 2 77. Stares into space or seems preoccupied
0 1 2 78. Stomachaches or cramps (without medical cause)
0 1 2 79. Rapid shifts between sadness and excitement
0 1 2 80. Strange behavior (describe): _____
_____
0 1 2 81. Stubborn, sullen, or irritable
0 1 2 82. Sudden changes in mood or feelings
0 1 2 83. Sulks a lot
0 1 2 84. Talks or cries out in sleep
0 1 2 85. Temper tantrums or hot temper
0 1 2 86. Too concerned with neatness or cleanliness
0 1 2 87. Too fearful or anxious
0 1 2 88. Uncooperative
0 1 2 89. Underactive, slow moving, or lacks energy
0 1 2 90. Unhappy, sad, or depressed
0 1 2 91. Unusually loud
0 1 2 92. Upset by new people or situations (describe): _____
_____
0 1 2 93. Vomiting, throwing up (without medical cause)
0 1 2 94. Wakes up often at night
0 1 2 95. Wanders away
0 1 2 96. Wants a lot of attention
0 1 2 97. Whining
0 1 2 98. Withdrawn, doesn't get involved with others
0 1 2 99. Worries
0 1 2 100. Please write in any problems the child has that were not listed above.
0 1 2 _____
0 1 2 _____
0 1 2 _____

Please be sure you have answered all items. Underline any you are concerned about.

Does the child have any illness or disability (either physical or mental)? ☐No ☐Yes—Please describe:

What concerns you most about the child?

Please describe the best things about the child:

LANGUAGE DEVELOPMENT SURVEY FOR AGES 18-35 MONTHS

For office use only
ID #

The Language Development Survey assesses children's word combinations and vocabulary. By carefully completing the Language Development Survey, you can help us obtain an accurate picture of your child's developing language. ***Please print your answers. Be sure to answer all items.***

I. Was your child born earlier than the usual 9 months after conception?

☐ No ☐ Yes—how many weeks early? _____weeks early.

II. How much did your child weigh at birth? _____ pounds _____ounces; or _____ grams.

III. How many ear infections did your child have before age 24 months?

☐ 0-2 ☐ 3-5 ☐ 6-8 ☐ 9 or more

IV. Is any language beside English spoken in your home?

☐ No ☐ Yes—please list the languages: _____ _____

_____ _____

V. Has anyone in your family been slow in learning to talk?

☐ No ☐ Yes—please list their relationships to your child; for example, brother, father:

_____

VI. Are you worried about your child's language development?

☐ No ☐ Yes—why? _____

_____

VII. Does your child spontaneously say words in any language? (not just imitates or understands words)?

☐ No ☐ Yes—if yes, please complete item VIII and page 4.

VIII. Does your child combine 2 or more words into phrases? For example: "more cookie," "car bye-bye."

☐ No ☐ Yes—please print 5 of your child's longest and best phrases or sentences.

For each phrase that is not in English, print the name of the language.

1. _____
2. _____
3. _____
4. _____
5. _____

Be sure you have answered all items. Then see other side.

Please circle each word that your child says SPONTANEOUSLY (not just imitates or understands). If your child says non-English versions of words on the list, circle the English word and write the first letter of the language (e.g., S for Spanish). Please include words even if they are not pronounced clearly or are in "baby talk" (for example: "baba" for bottle).

FOODS
1. apple
2. banana
3. bread
4. butter
5. cake
6. candy
7. cereal
8. cheese
9. coffee
10. cookie
11. crackers
12. drink
13. egg
14. food
15. grapes
16. gum
17. hamburger
18. hotdog
19. ice cream
20. juice
21. meat
22. milk
23. orange
24. pizza
25. pretzel
26. raisins
27. soda
28. soup
29. spaghetti
30. tea
31. toast
32. water

TOYS
33. ball
34. balloon
35. blocks
36. book
37. crayons
38. doll
39. picture
40. present
41. slide
42. swing
43. teddy bear

OUTDOORS
44. flower
45. house
46. moon
47. rain
48. sidewalk
49. sky
50. snow
51. star
52. street
53. sun
54. tree

ANIMALS
55. bear
56. bee
57. bird
58. bug
59. bunny
60. cat
61. chicken
62. cow
63. dog
64. duck
65. elephant
66. fish
67. frog
68. horse
69. monkey
70. pig
71. puppy
72. snake
73. tiger
74. turkey
75. turtle

BODY PARTS
76. arm
77. belly button
78. bottom
79. chin
80. ear
81. elbow
82. eye
83. face
84. finger
85. foot
86. hair
87. hand
88. knee
89. leg
90. mouth
91. neck
92. nose
93. teeth
94. thumb
95. toe
96. tummy

VEHICLES
97. bike
98. boat
99. bus
100. car
101. motorcycle
102. plane
103. stroller
104. train
105. trolley
106. truck

ACTIONS
107. bath
108. breakfast
109. bring
110. catch
111. clap
112. close
113. come
114. cough
115. cut
116. dance
117. dinner
118. doodoo
119. down
120. eat
121. feed
122. finish
123. fix
124. get
125. give
126. go
127. have
128. help
129. hit
130. hug
131. jump
132. kick
133. kiss
134. knock
135. look
136. love
137. lunch
138. make
139. nap
140. open
141. outside
142. pattycake
143. peekaboo
144. peepee
145. push
146. read
147. ride
148. run
149. see
150. show
151. shut
152. sing
153. sit
154. sleep
155. stop
156. take
157. throw
158. tickle
159. up
160. walk
161. want
162. wash

HOUSEHOLD
163. bathtub
164. bed
165. blanket
166. bottle
167. bowl
168. chair
169. clock
170. crib
171. cup
172. door
173. floor
174. fork
175. glass
176. knife
177. light
178. mirror
179. pillow
180. plate
181. potty
182. radio
183. room
184. sink
185. soap
186. spoon
187. stairs
188. table
189. telephone
190. towel
191. trash
192. T.V.
193. window

PERSONAL
194. brush
195. comb
196. glasses
197. key
198. money
199. paper
200. pen
201. pencil
202. penny
203. pocketbook
204. tissue
205. tooth brush
206. umbrella
207. watch

PLACES
208. church
209. home
210. hospital
211. library
212. park
213. school
214. store
215. zoo

MODIFIERS
216. all gone
217. all right
218. bad
219. big
220. black
221. blue
222. broken
223. clean
224. cold
225. dark
226. dirty
227. dry
228. good
229. happy
230. heavy
231. hot
232. hungry
233. little
234. mine
235. more
236. nice
237. pretty
238. red
239. stinky
240. that
241. this
242. tired
243. wet
244. white
245. yellow
246. yucky

CLOTHES
247. belt
248. boots
249. coat
250. diaper
251. dress
252. gloves
253. hat
254. jacket
255. mittens
256. pajamas
257. pants
258. shirt
259. shoes
260. slippers
261. sneakers
262. socks
263. sweater

OTHER
264. any letter
265. away
266. booboo
267. byebye
268. excuse me
269. here
270. hi, hello
271. in
272. me
273. meow
274. my
275. myself
276. nightnight
277. no
278. off
279. on
280. out
281. please
282. Sesame St.
283. shut up
284. thank you
285. there
286. under
287. welcome
288. what
289. where
290. why
291. woofwoof
292. yes
293. you
294. yumyum
295. any number

PEOPLE
296. aunt
297. baby
298. boy
299. daddy
300. doctor
301. girl
302. grandma
303. grandpa
304. lady
305. man
306. mommy
307. own name
308. pet name
309. uncle
310. name of TV or story character

Other words your child says, including non-English words:

_____
_____
_____
_____

Appendix 2

Please print **CHILD BEHAVIOR CHECKLIST FOR AGES 6-18** For office use only ID #

CHILD'S FULL NAME First Middle Last

CHILD'S GENDER ☐ Boy ☐ Girl | CHILD'S AGE | CHILD'S ETHNIC GROUP OR RACE

TODAY'S DATE Mo. ____ Day ____ Year ____ | CHILD'S BIRTHDATE Mo. ____ Day ____ Year ____

GRADE IN SCHOOL _____

NOT ATTENDING SCHOOL ☐

Please fill out this form to reflect *your* view of the child's behavior even if other people might not agree. Feel free to print additional comments beside each item and in the space provided on page 2. ***Be sure to answer all items.***

PARENTS' USUAL TYPE OF WORK, even if not working now.
(Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)
FATHER'S TYPE OF WORK _____
MOTHER'S TYPE OF WORK _____

THIS FORM FILLED OUT BY: (print your full name)
_____

Your gender: ☐ Male ☐ Female

Your relation to the child:
☐ Biological Parent ☐ Step Parent ☐ Grandparent
☐ Adoptive Parent ☐ Foster Parent ☐ Other (specify)

I. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

Compared to others of the same age, about how much time does he/she spend in each?

Compared to others of the same age, how well does he/she do each one?

	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average	Don't Know
☐ None								
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

II. Please list your child's favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, cars, computers, singing, etc. (Do ***not*** include listening to radio or TV.)

Compared to others of the same age, about how much time does he/she spend in each?

Compared to others of the same age, how well does he/she do each one?

	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average	Don't Know
☐ None								
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

III. Please list any organizations, clubs, teams, or groups your child belongs to.

Compared to others of the same age, how active is he/she in each?

	Less Active	Average	More Active	Don't Know
☐ None				
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, working in store, etc. (Include both paid and unpaid jobs and chores.)

Compared to others of the same age, how well does he/she carry them out?

	Below Average	Average	Above Average	Don't Know
☐ None				
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

Be sure you answered all items. Then see other side.

Please print. Be sure to answer all items.

V. 1. About how many close friends does your child have? (Do *not* include brothers & sisters)
☐None ☐1 ☐2 or 3 ☐4 or more

2. About how many times a week does your child do things with any friends outside of regular school hours? (Do *not* include brothers & sisters) ☐Less than 1 ☐1 or 2 ☐3 or more

VI. Compared to others of his/her age, how well does your child:

	Worse	Average	Better	
a. Get along with his/her brothers & sisters?	☐	☐	☐	☐ Has no brothers or sisters
b. Get along with other kids?	☐	☐	☐	
c. Behave with his/her parents?	☐	☐	☐	
d. Play and work alone?	☐	☐	☐	

VII. 1. Performance in academic subjects. ☐Does not attend school because _____

Check a box for each subject that child takes	Failing	Below Average	Average	Above Average
a. Reading, English, or Language Arts	☐	☐	☐	☐
b. History or Social Studies	☐	☐	☐	☐
c. Arithmetic or Math	☐	☐	☐	☐
d. Science	☐	☐	☐	☐
e. _____	☐	☐	☐	☐
f. _____	☐	☐	☐	☐
g. _____	☐	☐	☐	☐

Other academic subjects–for example: computer courses, foreign language, business. Do ***not*** include gym, shop, driver's ed., or other nonacademic subjects.

2. Does your child receive special education or remedial services or attend a special class or special school?
☐No ☐Yes—kind of services, class, or school:

3. Has your child repeated any grades? ☐No ☐Yes—grades and reasons:

4. Has your child had any academic or other problems in school? ☐No ☐Yes—please describe:

When did these problems start?

Have these problems ended? ☐No ☐Yes–when?

Does your child have any illness or disability (either physical or mental)? ☐No ☐Yes—please describe:

What concerns you most about your child?

Please describe the best things about your child.

Be sure you answered all items.

Please print. Be sure to answer all items.

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please circle the ***2*** if the item is ***very true or often true*** of your child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is ***not true*** of your child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

0 1 2 1. Acts too young for his/her age
0 1 2 2. Drinks alcohol without parents' approval (describe): _____
0 1 2 3. Argues a lot
0 1 2 4. Fails to finish things he/she starts
0 1 2 5. There is very little he/she enjoys
0 1 2 6. Bowel movements outside toilet
0 1 2 7. Bragging, boasting
0 1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
0 1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Cruel to animals
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Daydreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys things belonging to his/her family or others
0 1 2 22. Disobedient at home
0 1 2 23. Disobedient at school
0 1 2 24. Doesn't eat well
0 1 2 25. Doesn't get along with other kids
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Breaks rules at home, school, or elsewhere
0 1 2 29. Fears certain animals, situations, or places, other than school (describe): _____
0 1 2 30. Fears going to school
0 1 2 31. Fears he/she might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels or complains that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with others who get in trouble
0 1 2 40. Hears sound or voices that aren't there (describe): _____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Would rather be alone than with others
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, highstrung, or tense
0 1 2 46. Nervous movements or twitching (describe): _____
0 1 2 47. Nightmares
0 1 2 48. Not liked by other kids
0 1 2 49. Constipated, doesn't move bowels
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy or lightheaded
0 1 2 52. Feels too guilty
0 1 2 53. Overeating
0 1 2 54. Overtired without good reason
0 1 2 55. Overweight
56. Physical problems ***without known medical cause:***
0 1 2 a. Aches or pains (***not*** stomach or headaches)
0 1 2 b. Headaches
0 1 2 c. Nausea, feels sick
0 1 2 d. Problems with eyes (***not*** if corrected by glasses) (describe): _____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____

Please print. Be sure to answer all items.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

0 1 2 57. Physically attacks people
0 1 2 58. Picks nose, skin, or other parts of body (describe): _____
_____
0 1 2 59. Plays with own sex parts in public
0 1 2 60. Plays with own sex parts too much
0 1 2 61. Poor school work
0 1 2 62. Poorly coordinated or clumsy
0 1 2 63. Prefers being with older kids
0 1 2 64. Prefers being with younger kids
0 1 2 65. Refuses to talk
0 1 2 66. Repeats certain acts over and over; compulsions (describe): _____
_____
0 1 2 67. Runs away from home
0 1 2 68. Screams a lot
0 1 2 69. Secretive, keeps things to self
0 1 2 70. Sees things that aren't there (describe): ___
_____
_____
0 1 2 71. Self-conscious or easily embarrassed
0 1 2 72. Sets fires
0 1 2 73. Sexual problems (describe): _____
_____
_____
0 1 2 74. Showing off or clowning
0 1 2 75. Too shy or timid
0 1 2 76. Sleeps less than most kids
0 1 2 77. Sleeps more than most kids during day and/or night (describe): _____
_____
0 1 2 78. Inattentive or easily distracted
0 1 2 79. Speech problem (describe): _____
_____
0 1 2 80. Stares blankly
0 1 2 81. Steals at home
0 1 2 82. Steals outside the home
0 1 2 83. Stores up too many things he/she doesn't need (describe): _____
_____
_____
0 1 2 84. Strange behavior (describe): _____
_____
0 1 2 85. Strange ideas (describe): _____
_____
0 1 2 86. Stubborn, sullen, or irritable
0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot
0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language
0 1 2 91. Talks about killing self
0 1 2 92. Talks or walks in sleep (describe): _____
_____
0 1 2 93. Talks too much
0 1 2 94. Teases a lot
0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Thinks about sex too much
0 1 2 97. Threatens people
0 1 2 98. Thumb-sucking
0 1 2 99. Smokes, chews, or sniffs tobacco
0 1 2 100. Trouble sleeping (describe): _____
_____
0 1 2 101. Truancy, skips school
0 1 2 102. Underactive, slow moving, or lacks energy
0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud
0 1 2 105. Uses drugs for nonmedical purposes (***don't*** include alcohol or tobacco) (describe): ____
_____
_____
0 1 2 106. Vandalism
0 1 2 107. Wets self during the day
0 1 2 108. Wets the bed
0 1 2 109. Whining
0 1 2 110. Wishes to be of opposite sex
0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worries
113. Please write in any problems your child has that were not listed above:
0 1 2 _____
0 1 2 _____
0 1 2 _____

Please be sure you answered all items.

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Vita

Education

2009-Present	Doctoral Candidate, College of Social Work, University of Kentucky, Lexington, Kentucky Doctor of Philosophy to be conferred August 2013 Dissertation: Factors Affecting End of Treatment Symptom Severity for Children Receiving Trauma-Informed Evidence-Based Treatment for Trauma Dissertation successfully defended May 13, 2013
1992-1994	Masters of Social Work, College of Social Work University of Kentucky, Lexington, Kentucky
1988-1992	Bachelor of Arts in Psychology Susquehanna University, Selinsgrove, Pennsylvania

Research Experience

Research Associate, *Child and Adolescent Trauma Treatment and Training Institute, Center on Trauma and Children, University of Kentucky* (December 2012 – present).

Research Assistant*, Child and Adolescent Trauma Treatment and Training Institute, Center on Trauma and Children, University of Kentucky*. (June 2008 to December 2012).

Peer-Reviewed Publications

Eslinger, J. G., Sprang, G., & Otis, M. D. (2012). "Child and Caregiver Dropout in Child Psychotherapy for Trauma." *The Journal of Loss and Trauma: International Perspectives on Stress and Coping,* November 2, 2012, on-line.

Eslinger, J. G. (2011). Questions for Reflection. *Field Educator,* 1.1.

Other Publications

Eslinger, J. G., Sprang, G., & Otis, M. D. (2013). "Keeping Families in Trauma Treatment: Predictors to Success." *National Association of Social Workers Practice Specialty Newsletter,* April.

Professional Presentations

Eslinger, J. G., Sprang, G., & Otis, M. D. (2013). *Factors Affecting End of Treatment Symptom Severity for Children Receiving Trauma-Informed Evidence-Based Treatment*. Poster presentation at the 8th Annual Center for Clinical and Translational Science, Lexington, Kentucky. April 8, 2013.

Eslinger, J. G., Sprang, G., & Otis, M. D. (2012). *Caregiver Dropout in Child Psychotherapy for Trauma*. Paper presentation at the College of Social Work Advisory Board Meeting, University of Kentucky. June 2012.

Eslinger, J. G., Sprang, G., Otis, M. D. (2012). *Caregiver Dropout and Treatment Completion in Child Psychotherapy for Trauma.* Poster presentation at the 18th Annual National Conference on Child Abuse and Neglect. Washington, D. C. April 2012.

Eslinger, J. G., Sprang, G., & Otis, M. D. (2012). *Caregiver Dropout and Treatment Completion in Child Psychotherapy for Trauma*. Paper presentation at the College of Social Work Distinguished Lecture Series, University of Kentucky. April 2012.

Eslinger, J. G., Sprang, G., & Otis, M. D. (2012). *Caregiver Dropout and Treatment Completion in Child Psychotherapy for Trauma.* Poster presentation at the Annual Children at Risk Conference, University of Kentucky, Lexington, Kentucky. April 2012.

Eslinger, J. G., & Sprang, G. (2011). *Caregiver Dropout and Treatment Completion in Child Psychotherapy for Trauma.* Paper presentation at the Research Symposium for the Center on Trauma and Children, University of Kentucky. Lexington, Kentucky. April 2011.

Eslinger, J. G. (2011). *Teaching Reflective Practice in Social Work Field Education*. Workshop presentation at the Annual Kentucky Association of Social Work Education. Louisville, Kentucky. April 2011.

Craig, C., Sprang, G., Staton-Tindall, M., & **Eslinger, J**. (2010). *Gender Differences in Trauma Treatment at 90 and 180 Days of Treatment: Do Boys and Girls Respond to Evidence-Based Interventions in the Same Way?* Poster presentation at the 24th Annual Children's Mental Health, Research and Policy Conference. Tampa, Florida. March 2011.

Funding/Awards

College of Social Work Best Student Research Paper Award (PhD) (2012), University of Kentucky.

Doris Duke Foundation Fellowship for Child Abuse and Neglect (2012), Applied Only, University of Chicago.

Summer Research Fellowship (2012), University of Kentucky College of Social Work.

Teaching Experience

Teaching Assistant, University of Kentucky, College of Social Work. 8/2009 – 5/2013

Specialized Training

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT). Child and Adolescent Trauma Treatment and Training Institute, Center on Trauma and Children, University of Kentucky (September 2012).

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT Web). On-line training course for Trauma-Focused Cognitive Behavioral Therapy. Medical University of South Carolina (MUSC) (September, 2012).

Parent-Child Interaction Therapy (PCIT). Child and Adolescent Trauma Treatment and Training Institute (CATTTI), Center on Trauma and Children, University of Kentucky (September 2008).

Practice Experience

Therapist for Child and Adolescent Trauma Treatment and Training Institute, Center on Trauma and Children, University of Kentucky, *Lexington , Kentucky.*

Private Practice*, Louisville, Kentucky.*

Therapist for Transitions of Seven Counties Services, Inc*., Louisville, Kentucky.*

PRN Mental Health Therapist for Caritas Physicians Group*, Louisville, Kentucky.*

Therapist for Transitions of Seven Counties Services, Inc*., Louisville, Kentucky.*

Therapist for Ten Broeck Hospital at KMI, Extended Care Unit*, Louisville, Kentucky.*

Therapist and Clinical Supervisor for Bellewood Children's Home, *Louisville, Kentucky*.

Therapist for Transitions of Seven Counties Services, Inc., *Louisville, Kentucky*.

Therapist for Jessamine Counseling Center of Bluegrass East Comprehensive Care Center, *Nicholasville, Kentucky*.

Therapist for Powell County Comprehensive Care Center of Bluegrass East Comprehensive Care Center, *Stanton, Kentucky*.

Professional Licensure

Licensed Clinical Social Worker, Kentucky (1997 to present)

Social Work Supervision

Provision of clinical supervision of certified social workers for clinical social work licensure (2001-2011).

Professional Affiliations

National Association of Social Workers (1999 to present).