THE RELATIONSHIP BETWEEN PARENTAL SUPPORT, PARENT EMOTIONAL REACTION, AND PARENTING STRESS WITH CHILDREN'S POSTTRAUMATIC STRESS SYMPTOMS FOLLOWING TRAUMA-FOCUSED COGNITIVE BEHAVIORAL THERAPY

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Abstract

The reciprocal relationship between parent factors (parental support, parent emotional reaction, and parenting stress) and child symptoms of posttraumatic stress was examined in the current study. Three hypotheses were tested: 1) parents and children interact in a transactional manner through the course of clinical services, 2) change in parental support and parent emotional reaction would be stronger predictors of child symptoms at post-therapy and 6-month follow-up compared to baseline scores, and 3) child and caregiver characteristics would account for the most amount of variance in pre-assessment scores of parental support and parent emotional reaction when compared with abuse characteristics. **Method:** 115 children with trauma and their non-offending caregivers completed questionnaires. Parents completed the Parental Support Questionnaire, Parent Emotional Reaction Questionnaire, and the Parenting Stress Index. Child symptoms were assessed with the parent report Trauma Symptom Checklist for Young Children and child report Trauma Symptom Child Checklist. Data collections occurred at pre-assessment, pre-therapy, post-therapy, and 6-month follow-up. **Results:** No relationship was found between parental support and child symptoms. Parent emotional reaction, parent depression, and parenting competency were related with child symptoms. Parental support did not predict child symptoms. Baseline and post-therapy reports of parent emotional reaction were related to child symptoms. Parental support and parent emotional reaction pre-assessment ratings were only predicted by baseline reports of these factors. **Conclusion:** The findings with relation to parental support may be an artifact of the data or may support the findings in the broader literature that indicate that parental support is not a reliable indicator of child well-being. A better indicator appears to be parent emotional reaction. This may be due to a 'spill-over' effect of parents' emotions on their children which influences their perception of

their child's emotional state and/or impacts their child by subtly dictating how a child should

react in response to his/her parent. By assessing parent emotional reaction, clinicians can

identify important areas for intervention to ensure that parents are supported in their own

emotional processing and in their understanding of the links between the parent and child

emotional experience and expression of emotions.

Key words: abuse, maltreatment, parental support, parent emotional reaction, parenting stress.

Dedication

I dedicate this dissertation to my children, Danielle and Nathan Cinamon, and to my

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The focus of the current study is to examine the reciprocal relationship of parental support, parent emotional reaction, and parenting stress (referred to here as a group as *parent factors*) with child outcome as represented by symptoms of posttraumatic stress following assessment and treatment for childhood trauma. Participating children and their non-offending caregivers took part in a course of Trauma-Focused Cognitive Behavioral Therapy (TF-CBT; Cohen, Mannarino, & Deblinger, 2006), a specialized treatment model addressing the specific needs of children and adolescents with trauma and their non-offending caregiver (i.e., the caregiver who did not perpetrate the abuse). Participants completed questionnaires at pre-assessment, pre-therapy, post-therapy, and 6-month follow-up. First, using a cross-lagged design, parent factors and child posttraumatic stress symptoms were examined as variables influencing each other in a reciprocal manner over time. Second, multiple linear regression was used to determine the extent to which change in parental support and parent emotional reaction predicted change in child posttraumatic stress at post-therapy and at 6-month follow-up, over and above baseline reports of parent factors. Last, multiple linear regression was run to determine the extent to which a selection of child, caregiver, and abuse characteristics predicted parental support and parent emotional reaction at the pre-assessment data collection. The following sections will first review the relevant literature, then introduce the design of the study, delineate the analyses and results of the three goals in more detail, and finish with a discussion of the relevant clinical implications of the findings.

Literature Review

Child Maltreatment

Over 85,000 cases of child maltreatment were substantiated by Canadian child protection agencies in 2008 (Trocmé et al., 2010). Approximately 18% of those cases involved more than one category of substantiated abuse and 5% of cases were identified as being at risk of future maltreatment (Trocmé et al., 2010). At that time, almost 18,000 additional child welfare agency investigations were identified as suspected abuse cases (Trocmé et al., 2010). In 2013, 29% of Canadian children and youth under 18 years of age were reported to be victims of family-related violence (Statistics Canada, 2015a). Girls represented a higher proportion of young victims compared to boys (between 1.5 to 4 times greater depending on the type of victimization) and parents were the known perpetrators of the violence in 60% of cases (Statistics Canada, 2015a). According to Canadian government reports, these prevalence rates for childhood abuse are only the "tip of the iceberg" (Trocmé, et al., 2005). Known rates of sexual, physical, and psychological abuse, as well as neglect and witnessing domestic violence are alarming, but are considered only a small proportion of actual occurrences (Trocmé, et al., 2005). A recent 'one-day snapshot' survey of Canadian shelters revealed that almost one quarter of the reasons women gave for seeking refuge from abuse were related to the protection of their children (Statistics Canada, 2015b).

Child maltreatment and trauma can have both short-term and long-term effects on victims. Common symptoms of distress following maltreatment, particularly sexual abuse, include posttraumatic stress disorder (PTSD), depression, anxiety, sexualized behaviour, dissociation, anger, delinquency, and aggressive behavior (Cohen, Brown, & Smailes, 2001; Cohen & Mannarino, 1998b; Kendall-Tackett, Williams, & Finkelhor, 1993; Oddone Paolucci,

Genuis & Violato, 2001; Stouthamer-Loeber, Loeber, Homish & Wei, 2001, Teisl & Cicchetti, 2008). Decreased self-worth has also been noted (Jumper, 1995; Kendall-Tackett et al., 1993), as has an increase in stressful life events (Esparza, 1993), poor emotion regulation (Teisl & Cicchetti, 2008), poor school adaptation and attachment patterns (Cicchetti & Toth, 1995), and atypical development of neurobiological functions (Cicchetti & Rogosch, 2001; Cicchetti & Toth, 2005). It is now known that these effects are not limited to direct victims; family members, particularly non-offending caregivers, experience some similar symptoms following the disclosure of abuse (Davies, 1995; Kelley, 1990).

In contrast to an early viewpoint which blamed mothers for the sexual abuse of their children (e.g. Kaufman, Peck, & Taguiri, 1954) (Deblinger, Hathaway, Lippman, & Steer, 1993; Sirles & Franke, 1989), non-offending mothers are now more commonly viewed as secondary victims in need of assistance to access services, strengthen their maternal support for their children, and encourage the development of helpful emotional reactions (Byerly, 1985 as cited in Schonberg, 1992; see Schonberg, 1992 for a review of shifts in theory and research). Non-offending caregivers often experience vicarious trauma after learning of the abuse of their child. Intrusive thoughts and avoidant behaviours are common manifestations of PTSD symptoms experienced by many parents following their child's disclosure of sexual abuse (Davies, 1995; Kelley, 1990). Feeling alone has also been associated with levels of distress reported by mothers of sexually abused children (Deblinger et al., 1993). Parents often experience feelings of guilt, shame, and distress in relation to their child's abuse (Holt, Cohen, Mannarino, & Jensen, 2014). The psychological distress that is experienced by non-offending caregivers often reaches clinical levels and can persist for a number of years following the child's disclosure of abuse (Kelley, 1990). High levels of parenting stress have been found to be associated with more child

behaviour problems (Ellens, 2008; Levendosky & Graham-Bermann, 1998; McNamara, 2000; Wolfe, Jaffe, Wilson, & Zak, 1985). Non-offending caregivers may find themselves struggling with their own symptoms of PTSD in addition to managing those of their children. This may negatively impact parents' ability to support children and respond to children's needs. In a qualitative study on parenting strategies employed by parents of children exposed to a traumatic event, Alisic and colleagues (2012) discovered that parents' most commonly reported parenting strategy involved being aware of their child's needs and working to meet those needs; however, their ability to meet their child's needs depended, in part, upon their own level of psychological distress.

These symptoms may also affect interpersonal relationships. Ruptures can occur between spouses, within the parent-child dyad (Davies, 1995; Plummer & Eastin, 2007), and among connections with family members and close friends (Davies, 1995). Lower ratings of family functioning, parenting satisfaction, parents' self-esteem, and parenting self-competence are reported by parents of sexually abused children compared to ratings of parents of non-abused children (Manion, McIntyre, Firestone, Ligezinska, Ensom, & Wells, 1996). Parents may feel anger towards the child for not having disclosed the abuse at an earlier time, preventing the parent from protecting him/her sooner (Regehr, 1990). In cases of child sexual abuse, parents may also become concerned with the child's future sexual promiscuity and sexual orientation (Regehr, 1990). Parents often struggle with the management of their child's sexualized and externalizing behaviour and this internal conflict negatively impacts their bond with their child (Plummer & Eastin, 2007). Vicarious PTSD symptoms and deteriorating interpersonal relationships are exacerbated, particularly in cases of incest or caregiver abuse, when the non-offending caregiver experiences the loss of an intimate relationship and tangible changes to

housing, income, and employment (Massat & Lundy, 1998). If the perpetrator was the primary income earner, the non-offending spouse stands to suffer a substantial reduction in income and an increase in financial demands. This may affect housing as well (Massat & Lundy, 1998). Negative fallouts may cause the caregiver(s) to respond by emotionally withdrawing from the child, treating him/her as older than their chronological age, and unknowingly sending the child the message that s/he is 'damaged' (Regehr, 1990).

System intervention is another aspect that may burden recovering families (Plummer & Eastin, 2007). In a study by Plummer and Eastin (2007), mothers reported feeling blamed and unsupported by child protection agents and legal representatives for not protecting their child. They also reported feeling confused about how to balance the advice of system representatives with their own maternal instincts when managing their children's symptoms. "Some of the mothers contended that they and their children had been more harmed by the system than by the actual abuse" (Plummer & Eastin, 2007, p.1062). Their experiences led many mothers to feel resentful and distrusting of the system. Non-offending parents have also reported worrying about potentially re-traumatizing their children with the long and arduous process of the police investigation and court proceedings (Regehr, 1990).

Treatment for ensuing symptoms can help alleviate the distress caused to the victim and his/her family. Trauma-Focused Cognitive Behavioral Therapy is a well-supported, efficacious intervention model (Saunders, Berliner, & Hanson, 2004) designed for the treatment of PTSD and trauma-related symptoms in children (Cohen et al., 2006). Non-offending caregivers are included in treatment in order to equip them with skills to manage their own and their child's distress and to gradually expose the child and parent to the events of the trauma, with the goal of gradual extinction of trauma symptoms. This promotes open communication between the child

and the parent, allows the parent the opportunity to properly support their child, and gives the parent a safe space to express his/her own emotions and stress reactions.

Parent Factors and Child Symptoms

An infant's survival depends upon a caregivers' responsiveness to his/her physical and emotional needs. Maternal (or caregiver) sensitivity and awareness of a child's state directly impacts the child's physiological, cognitive, and psychosocial development (World Health Organization, WHO, 2004). Parent-child interactions create a model for the lens through which children view their world, be it with love and affection, or distrust (WHO, 2004). Moreover, negligent or inadequate caregiving has detrimental effects on a child's global well-being (WHO, 2004).

Three parent factors were examined in the current study: parental support, parent emotional reaction, and parenting stress. In cases of sexual abuse, parental support has not yet been clearly defined within the research literature, but is typically considered to be manifested through a caregiver's degree of belief of the disclosure, protective action taken towards the child, and recognition of, and support for, the child's subsequent distress (Bolen, et al., 2015; Kendall-Tackett et al., 1993; Smith, 2010). Parent emotional reaction is characterized by the range of possible emotions experienced by the non-offending parent(s) in connection with the abuse (e.g., anger, blame, sadness) (Mannarino & Cohen, 1996). Last, parenting stress (Abidin, 1992; 1995) is the level of stress a caregiver feels in relation to parenting in general and in their perception of the relationship with their child. It incorporates the interplay of developmental, environmental, social, and behavioural variables of both the parent and the child in a reciprocal relationship, thus, caregivers and children influence each other in a non-linear fashion and parenting stress is a

result of the transactional nature in which the parent and the child interact over the course of time (Abidin, 1992).

Two large-scale national American studies (Enns, Cox, & Clara, 2002; Shaw, Krause, Chatters, Connell, & Ingersoll-Dayton, 2004), one longitudinal study (Russek & Schwartz, 1997), and one large sample study (Wills & Cleary, 1996) found that perceived lack of parental support during childhood (not specifically related to traumatic events) is linked to long-term mental and physical health problems. Reported mental health difficulties included depression, PTSD, dysthymia, panic disorder, agoraphobia (Enns et al., 2002; Shaw et al., 2004), as well as alcohol and substance abuse (Russek & Schwartz, 1997; Shaw, 2006; Wills & Cleary, 1996). Chronic health conditions (Shaw et al., 2004), cardiovascular disease, and ulcers (Russek & Schwartz, 1997) were also common amongst study participants.

Within the context of sexual abuse, parent factors have been linked to the development of child psychopathology such that lack of maternal support for the child, more negative emotional reactions by a parent in response to the abuse, and more parenting stress were found to be associated with child symptoms of internalizing and externalizing disorders, general distress, posttraumatic stress, anger, sexualized behaviour, and later romantic attachment styles (specifically, anxious attachment and avoidance of intimacy) (Ellens, 2008; Everson, Hunter, Runyon, & Edelsohn, 1989; Godbout, Briere, Sabourin, & Lussier, 2014; Johnson & Kenkel, 1991; Kendall-Tackett et al., 1993; Levendosky & Graham-Bermann, 1998; Mannarino & Cohen, 1996; McNamara, 2000; Wolfe, et al., 1985; Zajac, Ralston, & Smith, 2015). Victims of child sexual abuse have reported perceiving less maternal support compared to non-victims (Guelzow, Cornett, & Dougherty, 2002) and adult survivors of intrafamilial sexual abuse have reported less parental support compared with peers with either no abuse or with extrafamilial

sexual abuse experiences (Wiessmann Wind & Silvern, 1994). Perceived lack of maternal support was found to be predictive of adolescent incest victims' self-reported level of distress (Johnson & Kenkel, 1991).

Low maternal support in cases of child sexual assault has been linked to depression and low self-esteem among child victims (Everson et al., 1989; Wiessmann Wind & Silvern, 1994) and has been associated with a mother's rating of her child's stress response (Esparza, 1993). Godbout and colleagues (2014) also found that adult survivors of child sexual assault were less likely to manifest avoidant attachment styles in adult romantic relationships if their non-offending caregiver was supportive at the time of the disclosure. Furthermore, they postulated that a lack of support by a non-offending caregiver may reinforce the victim's distrust of others and feelings of low self-worth which may affect their ability to engage in a reciprocal adult relationship without worrying about intimacy, trust, love, or abandonment (Godbout et al., 2014). Supportive mothers have been found to be more in-tune with their child's struggles (Everson et al., 1989) and parental support has been identified as a key predictor of resiliency among youths with a history of child sexual assault (Spaccarelli & Kim, 1995). Zajac, Ralston, and Smith (2015) found that maternal support was related to child symptoms of depression and post-traumatic stress following sexual abuse disclosure. Maternal support in this study was based on an expanded definition of support which included emotional support, blame/doubt, vengeful arousal, and skeptical preoccupation. Children's reports of maternal support were also incorporated in this study.

Despite these findings, a recent meta-analysis of 29 studies conducted by Bolen and Gergely (2015) found that non-offending caregiver support and child outcome following disclosure of sexual abuse were generally not related. Significant relationships were found for

caregiver support and child depression, self-concept, and acting out; however, the effect sizes for these relationships were weak. Additional indicators of post-disclosure functioning such as anxiety, self-competence, internalizing, and externalizing behaviour, and sexualized behaviour were not related to non-offending caregiver support.

Together, the studies in this area highlight equivocal findings regarding the potential relationship between non-offending caregiver support and child outcome following disclosure of sexual abuse. It is possible that the relationship partly depending on the symptom type, conceptualization of non-offending caregiver support, and support reporter.

Though a larger portion of research has looked at parental support, parent emotional reaction and parenting stress have also been linked to child psychopathology. Parent emotional reaction accounted for almost a quarter of the variance in adolescents' self-reported levels of distress in one study (Johnson & Kenkel, 1991) and Mannarino and Cohen (1996) found that as negative parent emotional reaction increased, so did parent ratings of child behavioural problems in general, sexualized behaviour, and internalizing and externalizing symptoms of distress. Ellens (2008) found that parenting stress accounted for 40% of total behavioural problems among maltreated children. Parenting stress may be related to parenting self-efficacy as a perceived lack of self-competence may fuel a stress response. In one study, child conduct behaviour was associated with maternal parenting satisfaction and parenting efficacy among parents of children with child sexual assault (Hiebert-Murphy, 2000). Cobham and McDermott (2014) found that parents who altered their cognitions and behaviours to become more protective of their children and allow less autonomy following a natural disaster also had children who had a greater risk for posttraumatic stress symptoms. The relationship is likely explained by the

combination of shared family genetics and the reciprocal relationship between parents and children across time (Cobham & McDermott, 2014).

Moreover, parent factors predict a child's response to treatment. Parental support and parent emotional reaction were found to be strong predictors of child outcome following Trauma-Focused Cognitive Behavioral Therapy provided for the treatment of child sexual abuse in a series of studies published by Cohen and Mannarino (1996b; 1998a; 2000). In one study, parent emotional reaction was found to be the only significant predictor of internalizing, externalizing, and total behaviour problems in preschoolers at post-therapy. This was above and beyond additional maternal, child, and family factors including maternal depression, social support to the mother, the level of the child's receptive language, and family adaptability and cohesion (Cohen & Mannarino, 1996b). Interestingly, parental support for the child and social support for the mother were later found to be stronger predictors of social competence, externalizing behaviour, and total behaviour problems compared to parent emotional reaction as a predictor at 6- and 12-month follow-up (Cohen & Mannarino, 1998a). The change in significant predictors may highlight the effect of the dynamic relationship between the parent and child within a changing environment over time. Cohen and Mannarino (1998a) hypothesized that the difference in significant predictors at post-therapy and follow-up was caused by the acuteness of parents' emotional distress during the treatment phase to which children may adapt to over time, emphasizing the importance of parent inclusion in therapy. Therapy can also be used to address the caregiver's struggles, support them in their own recovery, and to model supportive behaviours towards the child (Cohen & Mannarino, 1998a). A similar study with children aged 7 to 14 years old demonstrated that parental support was a

significant predictor of child anxiety and that parental support and perceived credibility were strong predictors of child depression post-therapy (Cohen & Mannarino, 2000).

Higher levels of maternal support following treatment for child sexual abuse were found to be associated with greater positive change in both male and female youths' symptoms of internalizing and externalizing problems, a higher level of therapeutic goal achievement, and improvements in depression and self-concept (Deblinger, Lippmann, & Steer, 1996; Friedrich, Luecke, Beilke, & Place, 1992; Merrick, Allen, & Crase, 1994; Morrison & Clavenna-Valleroy, 1998). Sexually abused girls involved in trauma therapy also reported wanting to be believed by their mothers and wanting their involvement in therapy (Morrison & Clavenna-Valleroy, 1998). Additionally, parenting stress was found to be predictive of treatment attrition among trauma-exposed children (McNamara, 2000). The simple involvement of parents in trauma treatment can impact a child's symptoms. Deblinger and colleagues (1996) found that parents participating in a trial of Trauma-Focused Cognitive Behavioral Therapy in either a parent-only or a parent-child group reported fewer problematic child behaviours demonstrated compared to parents of children treated in the child-only group. Further, children of involved parents also reported lower levels of depression (Deblinger, et al., 1996).

In a study on depression, self-concept, and maternal support in cases of child sexual abuse, Morrison and Clavenna-Valleroy (1998) found, that despite equal levels of depression and self-concept at treatment start, daughters who perceived their mothers to be supportive demonstrated far greater improvements in both domains at discharge and 3-month follow-up compared with daughters who perceived their mothers to be unsupportive. Daughters of unsupportive mothers reported unchanged levels of self-concept and worsening symptoms of depression at discharge. They also evidenced less change in self-concept and depression at

follow-up compared to the supported group. All daughters scored in the "severely depressed"

range at the start of treatment, yet only those with supportive mothers moved out of this range by

treatment end. Moreover, though unsupported daughters eventually moved out of the clinical

range, they remained near the clinical cut-off for the "severely depressed" category at follow-up.

Parent Involvement in Child Treatment

The benefits of including parents in treatment can be extracted from the trauma literature,

as well as the anxiety and depression literature. Research in these areas identify the parent as a

key figure in reinforcing new strategies learned in treatment, the parent's adopted role of "co-

therapist" outside of the therapeutic context, and benefits naturally occurring when more than

one client attends therapy (Mendlowitz, Manassis, Bradley, Scapillato, Miezitis, & Shaw, 1999).

The clinical benefit of parent participation in therapy may be a consequence of both the child and

parent learning therapeutic techniques in conjoint sessions, parents being able to observe their

child's progress first-hand, and the therapist being able to observe the parent-child interaction

(Ginsburg & Schlossberg, 2002). Parental willingness, parental participation in therapy, and the

parent-therapist alliance are all factors that are related to child therapeutic outcome, for non-

trauma related issues (Karver, Handelsman, Fields, & Bickman, 2006). Parental involvement in

therapy also improves the parent-child relationship, provides parenting support and

psychoeducation on outcomes, recovery, and the therapeutic process, increases protective action

taken by parents, and reduces child behavioural issues and client attrition (Tavkar & Hansen,

2011).

The benefits of parent involvement in child trauma treatment extend to parents as well.

Caregivers involved in their child's trauma treatment report a decrease in their own intrusive

thoughts, negative reactions to their children's abuse, depressive symptoms, and self-blame

following treatment (Deblinger, Mannarino, Cohen, & Steer, 2006; Deblinger, Stauffer, & Steel, 2001). They also report an increase in perceived caregiver support, improved parenting skills, and improved family relationships post-therapy (Celano, Hazzard, Webb, & McCaul, 1996; Deblinger, Lippmann, & Steer, 1996; Friedrich et al., 1992). Thus, including parents in treatment, as is done in Trauma-Focused Cognitive Behavioral Therapy, appears to be clinically useful in addressing the posttraumatic stress symptoms and relational issues encountered by caregivers above and beyond the benefits experienced by children.

Parent Factors are Amenable to Change

Between one- and two-thirds of non-offending caregivers report some degree of ambivalence in feelings in relation to their child's disclosure of sexual abuse (Elliot & Carnes, 2001; Everson et al., 1989). In their review of the literature, Elliot and Carnes (2001) discussed the wave of emotions that take over parents following a disclosure of sexual abuse. They liken the denial, disbelief, and confusion to the emotions felt by parents reacting to the unexpected news of the death of their child. Parents' "disbelief" of the disclosure can be viewed as shock over the news, rather than a reflection of their opinion of their child's credibility (Bolen, Desser, & Sutter, 2015). Disbelief of credibility can also be explained by the fact that caregivers are forced to rely solely on their child's word given a lack of physical evidence and absence of eyewitnesses in the vast majority of cases (Elliot & Carnes, 2001). Believing a child's word prior to investigation can be particularly difficult when the alleged perpetrator is known to the parent (Elliot & Carnes, 2001). Non-offending caregivers experience internal conflict between their roles as a protective parent and a loyal partner (Everson et al., 1989). The pull between both allegiances causes "emotional turmoil" for non-offending parents (Everson et al., 1989, p. 205). This emotional rollercoaster extends beyond the initial period following the disclosure and

encompasses guilt, blame, and anger towards the self, the child, the perpetrator, and the justice system that remain long afterward. The most common feeling from non-offending caregivers towards themselves is guilt; towards their child is anger and fear of permanent psychological damage; towards the offender is a fear of encountering him/her within the community and a generalized fear of others; and towards the justice system is a growing feeling of mistrust and re-traumatization (Myrick & Green, 2013). This emotional turbulence can also result in ambivalence in a parent's stance on the abuse which may cause a vacillation in a parent's support for and protectiveness of their child (Elliot & Carnes, 2001).

Maternal belief is often associated with protectiveness (Coohey, 2006), but is not always an accurate reflection of protective action. Elliot and Carnes (2001) found that many studies involving families seeking treatment for abuse reported that at least 65% of mothers believed *a part* of their child's disclosure. Initial belief, however, did not always predict protectiveness. For example, a mother may not completely believe her child's disclosure yet may remove the perpetrator from the home. Despite establishing separate living arrangements, that same parent may not obtain therapeutic services for her child due in part to her denial of the abuse (Elliot & Carnes, 2001). Davies (1995) discovered ambivalence amongst mothers even in cases of extrafamilial sexual abuse and Everson, Hunter, Runyon, and Edelsohn (1989) classified one-third of sampled mothers as ambivalent in their behaviours and beliefs towards their children following a disclosure of sexual abuse. Of the 84 families referred for child sexual abuse in their sample, Everson and colleagues (1989) found that 44% of mothers were consistently supportive, 32% were ambivalent or inconsistently supportive, and 24% were either unsupportive or rejecting. Ambivalence and support have been found to be unrelated among many non-offending caregivers (Bolen & Lamb, 2007). Moreover, support may be amenable to change.

Approximately three-quarters of parents experience a natural increase in parental support with

the passage of time (Cyr, Hébert, Frappier, Tourigny, McDuff, & Turcotte, 2014) and

intervention (Celano et al., 1996).

Though the ambivalence may be understandable in many circumstances, it can result in

very serious and negative consequences. In substantiating a mother's failure-to-protect,

American Child Protective Services consider whether or not the mother had knowledge of the

abuse and whether or not she acted protectively to reduce imminent and future danger to the

child (Coohey, 2006). Coohey (2006) reviewed decisions made in 93 cases of child sexual

assault in the United States of America and found that failure-to-protect was 23 times more

likely to be substantiated in cases with mothers who did not consistently believe their child's

disclosure. Mothers who acted less supportively (i.e., expressed anger towards their child for

disclosing or lying about the abuse, blamed the child's behaviour as the cause of the abuse,

appeared unconcerned about the effect of the abuse on the child, did not identify the abuser as

the responsible party, minimized the abuse, and/or did not seek counselling support for the child)

were twice as likely to be substantiated as failing to protect their child, and those who did not

consistently act protectively were 81 times more likely to be substantiated as failing to protect

their child (Coohey, 2006). Substantiating failure-to-protect due to a lack of maternal support is

a documented reason to remove victimized children from the home and child protection services

sometimes overlooks a mother's previous knowledge of the abuse as reason for substantiating

failure-to-protect when the mother demonstrates consistent belief of the child's disclosure and no

additional challenges exist, such as drug and alcohol abuse (Coohey, 2006). Aside from being a

possible reason to remove children from the home, lack of support by a non-offending caregiver

is also one factor predicting the recantation of disclosures by abused children (Malloy, Lyon, &

Quas, 2007).

Cyr et al. (2014) found that both male and female non-offending caregivers became more

supportive of their sexually abused children over the course of time by increasing their *emotional*

support for their child and choosing their child above the perpetrator. Despite the natural

increase in parental support over time, a significant proportion of parents remained generally

unsupportive. Cyr et al. (2014) also found that approximately one quarter of parents failed to

improve the consistency of their emotional support for their abused children in spite of taking

protective action and believing their children. Trauma therapy may help to enhance naturally

occurring improvements in parent factors as well as help to germinate positive growth where

none has started. Scheeringa and Zeanah (2001) proposed a model for understanding young

children's trauma symptoms within the context of the parent-child relationship. In their model,

vicarious parent PTSD and distress are associated with higher rates of PTSD and poorer outcome

among preschoolers. As such, Scheeringa and Zeanah (2001) believed that a primary area for

intervention is to first address the caregiver's symptoms, thereby better supporting the parent in

attending to the child's needs and strengthening the parent-child bond. Everson and colleagues

(1989) also agreed that treatment should focus on the caregiver's symptoms and well-being in

order to promote positive change and help the parents become confident in their ability to

support their child through the recovery process.

Involving non-offending caregivers in trauma treatment has additional demonstrated and

suggested benefits. Parent emotional reaction has been found to improve through the course of

trauma treatment (Holt, Jensen, & Wentzel-Larsen, 2014), even among foster parents (Vranjin,

2012). Improvements have been documented up to at least one year following therapy

termination (Mannarino, Cohen, Deblinger, Runyon, & Steer, 2012). General parenting

programs for parents of children with challenging behaviours have demonstrated improvement in

parenting self-efficacy and parenting stress (Bloomfield & Kendall, 2012; Heath, Curtis, Fan, &

McPherson, 2015). Increases in parenting stress have been associated with decreases in

parenting self-efficacy following a disclosure of abuse, particularly when parents feel

overwhelmed by their child's externalizing and sexualized behaviour (Plummer & Eastin, 2007).

Therapy may also help to improve parent self-efficacy (Cyr et al., 2014) and reduce the shame

felt by parents which may become an obstacle to accessing services (Holt, et al., 2014).

Furthermore, parents who are typically optimistic have been found to adopt maladaptive

cognitions that are abuse-specific (e.g., "my child's life is ruined") and which have predicted the

caregiver's level of self-reported depression (Runyon, Spandorfer, & Schroeder, 2014). Given

that cognitive shifts can be made following trauma, it stands to reason that cognitive shifts might

also be made following intervention (Runyon et al., 2014).

Thus, low caregiver support, more intense negative emotional reaction by the caregiver,

and more parenting stress can have serious and devastating consequences for families, including

recantations, and/or child apprehension by the child welfare system. This, combined with the

findings that parents experience vicarious trauma and that their level of support naturally

vacillates over time, highlights the necessity for the evaluation and treatment of caregiver

symptoms (Deblinger, Hathaway, Lippmann, & Steer, 1993; Manion, McIntyre, Firestone,

Ligezinska, Ensom, & Wells, 1996; Scheeringa & Zeanah, 2001). Support also increases over

the course of intervention when parents are involved in treatment (Celano et al., 1996). Trauma-

Focused Cognitive Behavioral Therapy provides a framework for working with parents to

address their own emotional turmoil and recovery process, while supporting their child's

recovery. Both children and parents can reap the benefits of positive change gained through this treatment model in parent factors such as parental support, parent emotional reaction, and parenting stress.

Predictors of Maternal Support

It is clearly clinically desirable to increase positive parental involvement in treatment. Much of the literature attempts to delineate the factors that predict maternal support, as opposed to the other two parent factors, parent emotional reaction and parenting stress. The range of possible influential variables on parental support is vast as it spans many categories such as abuse characteristics, victim characteristics, parent characteristics, and environmental context. Research in this area is limited and studies point to a long list of factors that may influence maternal support following the disclosure of child sexual assault (e.g. Cyr, Wright, Toupin, Oxman-Martinez, McDuff, & Thériault, 2003; Everson et al., 1989; Knott 1998).

Cyr and colleagues (2003) examined a group of possible predictors of maternal support. Nineteen predictor variables from four different categories (maternal characteristics, disclosure characteristics, abuse characteristics, and victim characteristics) were included in their study of adolescents who had been sexually abused. The variables included both commonly and uncommonly examined factors such as maternal history of sexual abuse, timing of disclosure, severity of abuse, and age and gender of the victim. The researchers also obtained both maternal and victim ratings of each factor. When comparing mother and child reports, only five variables were associated with maternal support, four of which were identified by both the mothers and children. The four mutual predictors were: initial disclosure of abuse to mother (as opposed to another individual), admission of guilt by the perpetrator, mother's living status with the perpetrator, and mother's occupational status. For the fifth variable, the mothers' view of the

quality of their relationship with their child was predictive of maternal support based on maternal report, whereas, the victims themselves perceived a confirmation of abuse by alternative sources to be predictive of perceived maternal support.

Additional factors predicting maternal support found among other studies include the mother's relationship to the perpetrator, child removal from the home by a child protection agency, offender admission of guilt, and whether or not the child testified in court against the accused perpetrator (Everson et al., 1989). The child's age, his/her sexualized behaviour, the caregiver's mental health, presence of co-occurring maltreatment, the duration of abuse, the occurrence of multiple incidents of child sexual abuse, and the child's relationship with the offender have similarly been noted to predict negative maternal response (Knott, 1998). Caregiver (mother, father, or legal guardian) attachment style, the child's perception of the child-caregiver relationship, and child's disclosure of abuse to his/her caregiver have all been documented as predictors of maternal response (Bolen & Lamb, 2002). Knott (1998) found that child and maternal characteristics accounted for the greatest amount of variance in maternal response compared to abuse characteristics, where child characteristics accounted for 14.7% of the variance and caregiver characteristics accounted for 11.3% of the variance. This is in contrast to abuse characteristics which accounted for 5.6% of the variance in maternal response (Knott, 1998). Knott (1998) also found that multiple types of maltreatment accounted for 9.2% of negative maternal response.

Together, these studies point to a list of factors that may influence maternal support following disclosure of child sexual assault. Although the research remains in a budding stage, with seemingly low cohesion among studies, a common trend can be gleaned from these initial studies. Specifically, it would appear that child and caregiver characteristics are most predictive

of the level of maternal support provided to the child victim. Abuse-specific characteristics appear less influential. The current body of literature would benefit from additional research narrowing the number of potential predictors of parental support. Moreover, these variables may influence maternal support in a variety of ways and help explain why support is not static and ambivalence is common (Bolen & Lamb, 2004; Elliot & Carnes, 2001; Everson et al., 1989).

The Transactional Theories of Child Development and of Child Sexual Assault

There is some evidence for a reciprocal parent-child relationship among parent factors and child outcome. Williford and colleagues (2007) examined the association between parenting stress and externalizing behaviour longitudinally in families with young children, and found that some child characteristics predicted parenting stress. Specifically, higher levels of child externalizing behaviour, anger proneness, and emotion dysregulation predicted higher initial parenting stress. Moreover, high levels of parenting stress were associated with high levels of externalizing behaviours across time.

The transactional theory for understanding child sexual assault proposed by Spaccarelli (1994) is founded on Sameroff and Fiese's (1990) transactional model of child development. In the transactional theory, Sameroff and Fiese (1990) explained child symptomatology as the outcome of caregiver and child variables that influence each other bi-directionally over the course of time. Thus, the relationship between the parent and child was hypothesized to be non-linear. Rather, it was viewed as a relationship whose course can change given the influence of multiple variables occurring at different times and as a result of each party's reaction to the other's behaviour (Sameroff & Fiese, 1990). Sameroff (2000) also explained that the child's development of psychopathology is based on the interplay of the environment and the child's

genetic predisposition. All three of these components (phenotype, environtype, and genotype

regulate and are regulated by one another over time (Sameroff, 2000).

Spaccarelli (1994) hypothesized that positive support displayed by a parent could buffer

the negative effects of sexual abuse on a child by decreasing the perceived threat/harm and

encouraging active coping strategies. Child psychopathology following sexual abuse was

viewed as a product of both an ever-changing environment that can affect one's internal

resources *and* as a product of one's internal resources that can affect his/her surrounding

environment (Spaccarelli, 1994). Thus, child sexual assault was perceived within a broad

context that includes the family as well as the community. Sameroff and Fiese (1990) also

discussed intervention as a specific context in which change can occur in the caregiver-child

relationship. These two transactional theories shed some light on the reciprocal parent-child

relationship, the role of parent factors in child outcome in cases of maltreatment, and changes

that can occur in the context of therapy; however, they did not focus on all the parent factors

included in the present study. Moreover, Spacarelli's (1994) model described the interplay of

parent and child factors within the context of sexual abuse only, not in regards to multiple types

of trauma. Thus, the general perspective that the parent-child relationship is reciprocal and

changes across time was used to inform the hypotheses tested in the current study.

This transactional perspective provides insight into the relationships among parental

support, parent emotional reaction, parenting stress, and child posttraumatic stress symptoms

following treatment for trauma. Prior research has examined the role of these specific parent

factors as predictors of child outcome following trauma and therapy, but has not addressed the

reciprocal nature of these relationships as was done in the current study. Evaluating the bi-

directional relationship between parent and child factors within the context of assessment and

therapy is of clinical and theoretical importance to the promotion of a supportive relationship between parents and children.

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)

Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT; Cohen, et al., 2006) is an evidence-based treatment model for therapy with children and adolescents who have experienced trauma and their non-offending caregiver(s) (Cohen & Mannarino, 2008). The goal of Trauma-Focused Cognitive-Behavioral Therapy is to implement basic principles of Cognitive Behavioral Therapy while adapting them to address the specific affective, behavioural, and cognitive areas of concern related to trauma (Cohen, et al., 2006; Cohen & Mannarino, 2008). Trauma-Focused Cognitive-Behavioral Therapy is a 12- to 16- session model in which specific components are addressed in parallel child and caregiver sessions. Each one-and-a-half hour session is split into two parts, with the child and caregiver each spending 45 minutes in an individual session with the therapist.[1] Model components are summarized by using the PRACTICE acronym: psychoeducation, parenting skills, relaxation, affect regulation, cognitive coping, trauma narrative, in vivo mastery of trauma reminders, conjoint child-parent sessions, and enhancing safety. The majority of empirical studies evaluating the effectiveness of Trauma-Focused Cognitive-Behavioral Therapy focus on victims of sexual abuse; however, its use for treating symptoms following other types of trauma including community violence, natural disasters, and traumatic grief have been noted (Cohen & Mannarino, 2008). The model continues to be implemented internationally (Cohen & Mannarino, 2008).

The trauma narrative is a unique component of the model designed to allow victims to process the trauma and address any cognitive distortions they may have regarding its events through some creative story-telling means. This is a key element to the model as it gradually

exposes children to the anxiety-provoking traumatic events. The narrative is shared with the caregiver by the therapist, thereby gradually exposing also the parent to the details of the trauma. This gradual sharing with the parent provides a safe environment away from the child in which the parent can process their trauma-related emotions and concerns. It further provides space for the therapist and parent to practice appropriate responses for the conjoint session(s). The trauma narrative has demonstrated to be an effective component of the model over and above the model being practiced without the trauma narrative (Mannarino et al., 2012).

Trauma-Focused Cognitive Behavioral Therapy has been shown to successfully treat symptoms of internalizing and externalizing problems, PTSD, and sexual concerns among sexually abused children in a number of studies (Cohen & Mannarino, 1996a; Cohen & Mannarino, 1998a; Cohen & Mannarino, 1998b; Deblinger et al., 1996; Deblinger, McLeer, & Henry, 1990), with gains maintained at 1- and 2-year follow-up (Cohen & Mannarino, 1997; Deblinger, Steer, & Lippmann, 1999). As noted above, parent sessions led to improved parenting skills, lower ratings of externalizing behaviours based on parent report, and lower levels of children's symptoms of depression based on child self-report (Deblinger et al., 1996). Child outcome from Trauma-Focused Cognitive Behavioral Therapy has been predicted from parental support and parent emotional reaction in past studies (Cohen & Mannarino, 1996b; 1998a; 2000). Maternal involvement in child trauma-specific Cognitive Behavioral Therapy treatment has also led to improvements in parental support, parent negative emotional reaction, parenting skills, and family relationships (Celano, Hazzard, Webb, & McCaul, 1996; Deblinger, Lippmann, & Steer, 1996; Friedrich et al., 1992; Mannarino et al., 2012), in addition to a decrease in intrusive thoughts, negative reactions to their child's sexual abuse, self-blame, and depressive symptoms following treatment (Deblinger et al., 2001; Deblinger et al., 2006).

Limited research has shown that improvements in parent factors can lead to improvements in trauma-related symptoms for the child and parent, as well as an improvement in the dyadic relationship. The parent-child design of Trauma-Focused Cognitive Behavioral Therapy makes it an ideal model for treating both child and parent symptoms of trauma while strengthening the dyadic relationship. By addressing parent factors such as parental support, parent emotional reaction, and parenting stress, both parents and children can experience clinical benefits.

The Current Study

The present study examined the reciprocal relationship among three parent factors (parental support, parent emotional reaction, and parenting stress) and child symptoms of posttraumatic stress following a course of Trauma-Focused Cognitive Behavioral Therapy for the treatment of trauma. The dynamic caregiver-child relationship that is amenable to change within the context of therapy illustrates the transactional theory of child development (Sameroff & Fiese, 1990) and transactional theory of child sexual assault (Spaccarelli, 1994). The hypotheses tested in this study were informed by the general theoretical perspective of this reciprocal relationship in the context of therapy, but they expand on the model by including variables that were not previously incorporated in the theories, specifically parental support, parent emotional reaction, and parenting stress in relation to child symptoms of posttraumatic stress.

To date, unpacking the role of parent factors such as support, emotional reaction, and parenting stress in child treatment outcome has proven to be difficult. Prior research generally tested only one aspect of the bi-directional parent-child relationship. Methodological inconsistencies, inconsistencies in the operationalization of concepts, and a narrow focus on

child sexual abuse in research have also limited our understanding of how parent factors influence the child symptoms of posttraumatic stress and how the child's symptoms impact parental support, parent emotional reaction, and parenting stress. As such, understanding how to promote positive change in parent factors is also limited. The current study adds to the existing literature by addressing methodological and theoretical gaps.

There is a need to focus on victims of child maltreatment given the prevalence of abuse in Canada (Trocmé et al., 2005; 2010), the resultant negative psychological and neurobiological sequelae for the victim (Cicchetti & Toth, 2005), the financial cost of maltreatment to the broader society (Cicchetti & Toth, 2005), and the potential devastating effects to the family system (Coohey, 2006; Malloy, et al., 2007). The majority of previous studies focused on maternal support in relation to female children's disclosure of sexual abuse. The current study extends the existing findings by surveying a community sample of female and male children who are seeking treatment at local agencies for multiple types of trauma. It is an advantage of the current study that these variables were assessed through the course of Trauma-Focused Cognitive Behavioral Therapy. This therapeutic model is well supported and was developed to target the specific needs of trauma-exposed children and their non-offending caregivers, a vulnerable segment of the population. The findings from the present study may help to identify ways to promote positive change in parent domains that can directly lead to positive change in child outcome and illustrate the impact of change in child symptoms on change in parenting factors. They may also help to clarify the equivocal literature regarding key predictors of caregiver support.

The goals of the current study are to identify: 1) The extent to which parent factors effected significant improvements in child symptoms of PTS *and* the extent to which child PTS

promoted significant improvements in parent factors; Identifying the point(s) at which these changes occur (i.e. during assessment, therapy, or follow-up) is useful when planning clinical intervention strategies. Therefore, these constructs were assessed at all four time points (pre-assessment, pre-therapy, post-therapy, and 6-month follow-up). 2) The extent to which the effect of change in parental support and emotional reaction on child posttraumatic stress outcome at post-therapy and 6-month follow-up differs from the effect of baseline parent factors on child PTS. 3) To help to clarify the existing literature on the significant predictors of parental support. Child (age and relationship to perpetrator), caregiver (parenting stress, negative parent emotional reaction, and the parent's view of the parent-child relationship), and abuse characteristics (type of abuse and charges laid) were evaluated to determine the extent to which they predicted caregiver support at pre-assessment, pre-therapy, post-therapy, and 6-month follow-up. These goals were tested while controlling for age of onset and duration of abuse. Examining these three research questions in one study is expected to provide us with a better understanding of how caregiver factors both impact child outcome and are impacted by changes in child outcome within the context of assessment and therapy.

Goals and Hypotheses of This Study

Goal 1. To examine the reciprocal nature of the caregiver-child relationship and determine: 1) the extent to which parent factors (parental support, parent emotional reaction, and parenting stress) predicted parent and child reports of child posttraumatic stress at pre-assessment, pre-therapy, post-therapy, and 6-month follow-up, and 2) the extent to which child and parent reports of child posttraumatic stress predict parent reports of parent factors at pre-assessment, pre-therapy, post-therapy, and 6-month follow-up.

Rationale. The hypothesis for Goal 1 was informed by the transactional models of the parent-child relationship within the context of typical child development and child sexual abuse (Sameroff & Fiese, 1990; Spaccarelli, 1994) and which illustrate a reciprocal relationship between the caregiver and child. This relationship changes over time and can be influenced by the environment or specific context such as therapy. Prior research indicated that low levels of parental support, more negative parent emotional reaction, and higher parenting stress can negatively impact child outcome in situations of child sexual abuse; however, most prior research does not examine the effect of child posttraumatic stress on parenting variables. General improvements in child posttraumatic stress in the current study were expected given the documented efficacy of Trauma-Focused Cognitive Behavioral Therapy in the broader literature and outcome findings with this particular sample (Konanur, 2013; Konanur, Muller, Cinamon, Thornback, & Zorzella, 2015).

Hypotheses. Levels of parent factors were expected to predict child posttraumatic stress symptoms and child posttraumatic stress symptoms was expected to predict parent factors. Also, general downward effects (i.e., improvements in posttraumatic stress symptoms indicated by a reduction of symptoms) were expected. However, hypotheses regarding the relative strength of these relationships, the point at which the relationships vary in strength, and the effect of changes in child posttraumatic stress on levels of parent factors were exploratory given the lack of prior research on the effects of child posttraumatic stress on parent factors.

Analyses. Based on the works of Kenny (1975), a cross-lagged design tested with Structural Equation Modeling was implemented (see Figure 1). The cross-lagged design allowed for the evaluation of the reciprocal relationship between parent factors and child posttraumatic stress symptoms across time. Each preceding parent factor was evaluated for its impact on the

next child posttraumatic stress symptom score, while each preceding child posttraumatic stress symptom score was evaluated for its impact on the next parent factor. Preceding parent factors were evaluated for their effect on the following parent factor, as was the case with child symptoms of posttraumatic stress. Analogous models for each parent factor and both parent and child report of child posttraumatic stress symptoms were designed to include all four time points (pre-assessment, pre-therapy, post-therapy, and 6-month follow-up).

Goal 2. To determine the extent to which change in parental support and parent emotional reaction predicted child posttraumatic stress at post-therapy and at 6-month follow-up, over and above baseline reports of parent factors.

Rationale. In a review of the literature on parental support for and belief of the disclosure of a child following abuse, Elliot and Carnes (2001) found that many non-offending mothers display ambivalent responses with regards to the abuse, initial levels of belief do not predict later acts of protectiveness, and level of support can change over time. Additional research supports these findings as well. Based on these findings, it was hypothesized that changes in support and emotional reaction would be stronger predictors of child posttraumatic stress post-therapy and at follow-up than the predictive strength of baseline ratings of these parent factors. Findings from Elliot and Carnes (2001) indicated that changes in support can occur in both positive and negative directions and that neither direction of change accurately predicts later maternal behaviour. Thus, this hypothesis was exploratory with respect to direction of change and later child outcome.

Hypotheses. Change scores in parents' ratings of parental support and parent emotional reaction between baseline and post-therapy or baseline and 6-month follow-up will be stronger predictors of parent and child ratings of child posttraumatic stress symptoms at post-therapy and

6-month follow-up than the predictive strength of baseline ratings of these parent factors. Given the lack of research in this area, these hypotheses were exploratory with respect to the direction of change.

Analyses. These hypotheses were tested using multiple linear regression. Baseline ratings of parental support and parent emotional reaction were assessed retrospectively using paper-and-pencil questionnaires assessing support and emotional reaction at the time of disclosure.

Goal 3. To add clarity to the existing literature regarding key predictors of caregiver support.

Rationale. Based on the findings of Cyr et al., (2003), Everson, et al., (1989), and Knott (1998) many factors have been found to predict maternal support of children following the disclosure of child sexual assault. Knott (1998) showed that child and maternal characteristics predicted maternal support better than abuse characteristics.

Hypotheses. Child characteristics (child's age and relationship to perpetrator) and caregiver characteristics (baseline levels of parental support and emotional reaction, and pre-assessment level of parenting stress) will predict caregiver support of the child more strongly than abuse characteristics (type of abuse and whether or not criminal charges were laid) at pre-assessment.

Analyses. This hypothesis was tested using hierarchical multiple linear regression with the above listed variables separated into blocks of characteristics (child, caregiver, abuse). In this manner both the predictive strength of categories and of individual variables were evaluated.

Method

Procedure

Data from the current study were taken from a larger project, the Healthy Coping

Program (Konanur, Muller, Cinamon, Thornback, & Zorzella, 2015; Muller & Di Paolo, 2008),

which evaluated the effectiveness of Trauma-Focused Cognitive Behavioral Therapy provided in

the naturalistic setting of community children's mental health agencies. Data for the Healthy

Coping Project were collected from March of 2006 to May of 2013. Research funding was

provided by the Provincial Centre of Excellence for Child and Youth Mental Health at the

Children's Hospital of Eastern Ontario (CHEO) (Muller & Di Paolo, 2008) and the Hedge Funds

Care Canada Foundation. Ethics approval was obtained from York University and from each of

the participating children's mental health agencies[2].

Participants were recruited through the sexual abuse programs of Boost and Peel

Children's Centre, two agencies providing assessment and treatment services to families who

have been exposed to trauma. Referrals to the programs were typically made by either the

Children's Aid Society (CAS) or local police services. Recruitment occurred during an initial

orientation meeting at either Boost or Peel Children's Centre at which time a researcher from the

York University Healthy Coping Project team met with the family and an agency clinician. It

was then that the agency clinician would inform the caregiver about the assessment and

treatment process, and the researcher verified eligibility, described study procedure, and obtained

consent from participating families.

Eligibility. The eligibility criteria were as follows: 1) The child was 7 to 12 years of age

at the time of treatment; 2) The child had experienced a verified traumatic event (e.g., abuse,

community violence, home invasion). The traumatic events were verified through police and/or

CAS investigation; 3) A non-offending caregiver(s) was willing and able to participate in

assessment and Trauma-Focused Cognitive Behavioral Therapy treatment; 4) The child and/or

caregiver(s) did not have an active substance abuse problem or psychotic disorder that interfered

with functioning; 5) The child was not actively suicidal; 6) The child did not have a documented

developmental disorder (e.g., Autism Spectrum Disorder) that interfered with his/her ability to

participate in therapy; 7) The child and/or caregiver(s) were on a stable regimen if they were

taking any psychotropic medications and; 8) The child had not received prior treatment for the

referral trauma. Participation in clinical services and the research study was voluntary.

Caregivers provided written informed consent and participating children provided written assent.

All families received monetary compensation ($20 to $30 per meeting depending on data

collection time point) and were offered public transportation tickets for their research collection

appointments. Toronto families were offered an additional opportunity to bypass the waitlist at

their local treatment agency; however, due to agency policies, this specific benefit was not

available to the Peel Children's Centre clients. Of the larger sample, 131 children were referred

to the study through Boost. Of those children, 10 were excluded after referral and 21 declined

participation, resulting in the inclusion of 100 children (76%). Thirty one children were referred

from Peel Children's Centre. Five children were excluded after referral and 11 declined

participation resulting in the inclusion of 15 children (48%). Families who declined participation

were still offered typical clinical services.

  Research Procedure and Clinical Services. All participating families took part in a

clinical assessment at either Boost or Peel Children's Centre, which was then followed by

intervention services at local agencies. Eligible families agreeing to participate in the project

completed a series of questionnaires at pre-assessment, pre-therapy, post-therapy, and 6-month

follow-up. A three-month waitlist condition was implemented at Boost during the months of

March 2006 to August 2008. Waitlisted families also completed one additional data collection

prior to beginning services (the pre-waitlist data collection). Please refer to Figure 2 for an

illustration of the data collection schedule and sample size at each time point. For the purposes

of the current study, only data collected from pre-assessment (data 2) to 6-month follow-up (data

5) were used in the structural equation modeling models; however, the AMOS program used all

available data in the dataset including the pre-waitlist data (data 1) (Figure 2).

Assessment. Children participated in an assessment prior to beginning therapy with the

purpose of obtaining a clinical picture of the child's symptoms and needs in order to plan for

treatment. Assessments typically involved individual parent and child meetings. The child's

perspective and understanding of the trauma were assessed through interview questions,

drawings activities, and questionnaires with the children who generally compiled their work into

a scrapbook. Parents also completed questionnaires and interview questions assessing

background information, developmental history, family dynamics, information about the

disclosure of abuse, and how the family is coping with the effects of the trauma. Relevant

information regarding children's symptoms and trauma history were shared with the research

team and included as demographic information. A feedback meeting with the caregiver, child,

assessor, and treatment therapist was held at the end of the assessment and prior to beginning

therapy. The purpose of this meeting was to share the assessment findings, recommendations,

and explain the treatment model to the families.

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT). The treatment model in

the current study was Trauma-Focused Cognitive Behavioral Therapy (Cohen, Mannarino, &

Deblinger, 2006) an evidence-based model for therapy with children and adolescents who have

experienced trauma and their non-offending caregiver(s) (Cohen & Mannarino, 2008). As noted

above, model components are summarized by the acronym, PRACTICE: psychoeducation,

parenting skills, relaxation, affect regulation, cognitive coping, trauma narrative, in vivo mastery

of trauma reminders, conjoint child-parent sessions, and enhancing safety. The trauma is

processed in different ways in parallel individual sessions with the parent and child and in joint

sessions. In the current sample, 58 children and 53 parents completed treatment and the post-

therapy data collection. The mean length of treatment time was approximately 15 sessions in the

GTA (range: 10 to 31 sessions). Of the 49 children who completed treatment in the GTA, 3

received more than 26 sessions and two children were missing data on the length of treatment.

The remaining 44 children received 10 to 21 sessions of Trauma-Focused Cognitive Behavioral

Therapy. The mean number of sessions in Peel Region was approximately 31 (range: 19 to 45

sessions).[3] Of the nine children who completed treatment in Peel, one received 19 sessions, one

received 45 sessions and the remaining children received between 25 and 35 sessions. Typical

reasons for dropout prior to therapy completion included children no longer being able to attend

therapy, families no longer interested in services, and another type of treatment (e.g., family

therapy) was found to be more fitting for the children. The most common reason for dropout

after the post-therapy data collection was due to disinterest in continuing with the research.

Each model component covers a different area of the trauma or skill to help process the

trauma in a supportive manner. *Psychoeducation* is provided by the therapist to convey

information about the effects of trauma, parent and child responses to therapy, the process of

therapy, and to dispel commonly held myths about trauma. *Parenting skills* are taught to the

parent to help improve parent-child interactions. Specific techniques include positive

reinforcement, selective attention, time-outs, and contingency reinforcement (e.g., behaviour

charts). *Relaxation* techniques such as deep breathing and meditation are taught to the child and

parent in order to help reduce trauma-related physiological symptoms (e.g., increased heart rate, muscle tension, and hypervigilance). *Affective expression and modulation* focuses on feeling identification and emotion regulation techniques including positive imagery, thought stopping, positive self-talk, and problem solving skills. *Cognitive coping and processing* involves identifying maladaptive automatic thoughts (e.g., "The abuse was my fault") and replacing them with alternative healthier thoughts. The *trauma narrative* is a product of the child's account of the trauma and his/her experiences of the trauma. It often takes the form of a written work such as a written story, poem, or play, but can also be acted out with figurines or any type of expressive piece created by the child. The trauma narrative provides an opportunity to process the trauma. It also provides an opportunity to identify and address cognitive distortions, desensitize the child and caregivers to the details of the trauma through gradual exposure, and employ the previously taught cognitive and affective strategies to reduce the trauma-related thoughts, feelings, and symptoms. Parts of the narrative are shared with the parent in individual sessions as it is being compiled by the child in order to allow the parent to process their own thoughts and feelings and practice effective responses in preparation for the conjoint sessions. *In vivo mastery of trauma reminders* involves reducing generalized fears of innocuous trauma cues and acquired avoidant behaviour of these trauma reminders through the gradual exposure of the child to trauma reminders. *Conjoint parent-child sessions* allow the child to share the trauma narrative with his/her caregiver and discuss the knowledge and skills they have learned in therapy. It also provides an opportunity for the parent to demonstrate the practiced healthy, positive, and supportive responses to the child following the sharing of the trauma narrative. *Enhancing future safety and development* enhances the child's personal safety skills (e.g., recognizing danger, learning to trust their "gut," and safety planning).

Participants and Research Sample

Participant information is provided for children and caregivers who completed at least one data collection with the Healthy Coping Project.

Children. One hundred and fifteen children and their caregivers agreed to participate in the study and completed at least one data collection. Of the 115 children, 106 children completed the pre-assessment data collection from which demographic information was obtained as the path analysis includes the pre-assessment data collection as the first data collection in the models. It is important to note, however, that the AMOS program uses all available data to test model fit. Thus, though the models included pre-assessment, pre-therapy, post-therapy, and 6-month follow-up, pre-waitlist data were also analyzed and the reported model statistics reflect analyses using all available data.

The current study includes data from 106 (73 female, 33 male) children at pre-assessment. The mean age of children at the time of the pre-assessment data collection was 9.4 years of age ($SD = 1.75$). Ethnic backgrounds included: European-Canadian (29.2%), African Canadian (13.9%), Latin Canadian (8.0%), South Asian Canadian (4.4%), East Asian Canadian (3.6%), Native Canadian (1.5%), other/bi-racial (16.1%). Children experienced a variety of traumatic events: sexual abuse (78.6%), physical abuse (28.8%), witnessed domestic violence (55.8%), and neglect (10%). Eighty percent of children experienced at least one other type of trauma in addition to maltreatment (death/illness of a loved one: 35.4%; witnessed/involved in serious accident: 8.7%; witness/victim of community violence: 19.6%; fire/natural disaster: 4.3%; medical trauma: 8.7%; exposure to war/ethnic conflict: 2.2%; divorce/separation: 67.3%; bullying/assault by peer: 11.9%).

Caregivers. The mean age of caregivers was 37.2 years ($SD = 8.12$) at the time of the family's first data collection. Non-offending caregivers were by and large female (89.8%). Most were biological mothers (83.3%), while the remainder of the sample consisted of biological fathers (6.5%), foster parents (6.5%), step/adoptive parents (1.8%), and other relative or agency worker (1.9%). Participating caregivers listed their marital status as follows: single (31.5%), married (27.8%), divorced (13.9%), common-law (12.0%), widowed (1.9%), and other (13.0%). Thirty-four percent had completed a university or college degree. Household income ranged considerably such that the mean income reported was $20,000-$29,999, with approximately equal proportions of caregivers reporting a household income of $10,000-$14,999 (17.1%) and those reporting a household income of $60,000 or above (21.0%). The number of completed questionnaires at various time points differs slightly due to the inclusion of sibling cases, in which case the caregiver may have completed questionnaires for only one child due to time constraints. All caregivers participating in the research project also participated in the assessment and therapy components of their child's services.

Perpetrators. Limited demographic information about the perpetrators was available. Perpetrators were known to the child victim (92.0%), male (96.5%), and adults (80.5%). One quarter of perpetrators (25.5%) were biological or adoptive fathers, 1.8% were biological or adoptive mothers, 4.5% were step-fathers, 9.1% were other adult relatives (e.g., uncle, grandfather), 36.4% were non-relative adults (e.g., carpet cleaner, mother's partner), 3.6% were siblings, 5.5% were older peers who were relatives of the victim, 10.9% were older peers who were not relatives of the victim, and 2.7% of victims were abused by multiple perpetrators (e.g. mother and sibling, multiple older peers).

Agencies and Therapists. Participants were provided therapy at one of eight children's

mental health agencies across the Greater Toronto Area and Peel Region, typically through the

agency's sexual abuse program. Thirty-four therapists from the agencies were involved in the

treatment in total. The majority of therapists were female (33 female, 1 male) and ranged in age

from 24 to 57 years old ($M = 34.18$ years, $SD = 7.32$ years). Education and training backgrounds

were varied; however, many were from social work (60.6%) or psychology (24.3%). Most

therapists reported obtaining a master's degree (75.8%). Therapists also reported a number of

theoretical backgrounds including cognitive behavioral therapy, family systems, client-

centered/non-directive, psychoanalytic/psychodynamic, and eclectic. Therapists' clinical

experience with trauma-exposed children ranged from less than one year to 27 years.

All therapists were required to participate in ongoing training and supervision to

guarantee clinical support, as well as model competency and fidelity. Therapists read "Treating

Trauma and Traumatic Grief in Children and Adolescents" (Cohen, et al., 2006) and completed

the Trauma-Focused Cognitive Behavioral Therapy web-based training (https://tfcbt.musc.edu/).

Clinicians attended workshops led by Trauma-Focused Cognitive Behavioral Therapy experts

and model creators, regular clinical consultation meetings, and completed therapy adherence

checklists throughout the project. Each agency had an appointed therapy facilitator who

provided case supervision specific to project participants as an adjunct to standard agency

clinical supervision.

Measures

Outcome measures – child report.

Trauma Symptom Checklist for Children (TSCC: Briere, 1996). As described in Briere

(1996) the TSCC is a standardized 54-item self-report of children's posttraumatic distress and

related psychological symptomatology following the experience of traumatic events such as sexual and physical abuse, major losses, peer victimization, witnessing of violence, and natural disasters. This version of the TSCC contains eight scales, two of which are validity scales that assess the degree to which a child either over-responds or under-responds to questionnaire items. The remaining six scales are clinical scales that assess symptoms of anxiety, depression, anger, posttraumatic stress, dissociation (overt dissociation and fantasy), and sexual concerns (sexual preoccupation and sexual distress). Children rate the frequency of occurrence of each item on a 4-point Likert scale, ranging from 0 = never to 3 = almost all of the time.

The TSCC was administered at all time points. Internal consistency is high for five of the scales, with alphas ranging from .82 to .89, and moderate for the overall Sexual Concerns scale (α = .77) (Briere, 1996). There is variability in the internal validity of the smaller subscales included in the Dissociation and Sexual Concerns scales (alphas ranging from .58 to .81) (Briere, 1996). The Underresponse validity scale has an α = .85 and the Hyperresponse validity scale has an α = .66 (Briere, 1996). The Posttraumatic Stress scale was used in the current study. The Cronbach's alpha reliability for that scale in the current study was .86 at pre-assessment.

As reported in Briere (1996), several studies have examined the convergent and discriminant validity of the TSCC with existing questionnaires assessing similar constructs such as the parent- and youth-report versions of the Child Behavior Checklist, the Children's Depression Inventory, and the Revised Children's Manifest Anxiety Scale. These studies reportedly found the subscales of the TSCC to be significantly related to subscales with similar content and unrelated to those without similar content. Construct validity has also been assessed in a number of studies with a variety of samples. In normative samples, higher and more variable TSCC scores were found for children who were exposed to violence or stressful life

events than for those who were not exposed to such events. In child abuse samples, distinct patterns in TSCC scores were found for children with different abuse and trauma histories. Finally, studies have reported reductions in trauma symptoms as measured by the TSCC following abuse-focused therapy.

Outcome measures – parent report.

*Trauma Symptom Checklist for Young Children (TSCYC: Briere, 2005)***.** The TSCYC is a standardized 90-item caregiver report of trauma related symptomatology for trauma-exposed children between the ages of 3 and 12 years old. The TSCYC contains 11 scales, two of which assess the validity of the caregiver's responses (Response Level and Atypical Response scales). The remaining nine scales assess the degree to which a child is perceived by their caregiver to display symptoms of anxiety, depression, posttraumatic stress (comprised of several scales: Posttraumatic Stress-Intrusion, Posttraumatic Stress-Avoidance, Posttraumatic Stress-Arousal, and Posttraumatic Stress-Total), dissociation (overt and fantasy), and sexual concerns. Caregivers rate the frequency of observed behaviours/symptoms over the previous month on a 4-point Likert scale, from 1 = not at all to 4 = very often. The TSCYC was administered at all time points. The Posttraumatic Stress Total scale was used in the current study. The Chronbach's alpha reliability for that scale in the current study was .90 at pre-assessment.

As reported in Briere (2005), the TSCYC has good reliability, with internal consistency alphas of .78 to .92 for the clinical scales, and two-week test-retest reliabilities ranging from .68 to .96. The TSCYC has demonstrated validity in several analyses of separate samples. As explained in Briere (2005), higher TSCYC scores were found in abuse samples compared with nonabuse samples, TSCYC scores successfully discriminated abused from nonabused children, and different types of maltreatment were associated with specific questionnaire scales. Several

studies examined the divergent and concurrent validity of some of the TSCYC scales and found that specific TSCYC scales were significantly associated with similar scales among other questionnaires. The scale has demonstrated good predictive validity of PTSD diagnostic status. The posttraumatic scales of the TSCYC have not been compared with additional caregiver trauma scales.

Parental Support Questionnaire (PSQ: Mannarino & Cohen, 1996). The PSQ is a 19-item questionnaire designed to assess a caregiver's self-reported perception of their support of their child following abuse or trauma (Support subscale). It also assesses specific attributions regarding responsibility for the abuse/trauma (Blame subscale). Example items from the Support subscale (8 items) include "Have you been supportive of your child since they reported the abuse/trauma?" and "Since your child reported the abuse/trauma, have you reassured him/her that you would stand by him/her?" Items from the Blame subscale (11 items) include "Do you ever think your child did something to cause the abuse/trauma?" and "Do you blame the perpetrator for the abuse/trauma?" Items are rated on a 5-point Likert scale, where 1 = never and 5 = always. A higher total score indicates greater support for and less blame of the abused child. Two versions of the PSQ were given in the current study to assess the frequency of these cognitions and perceptions during the first two weeks *following disclosure* (administered at the first data collection and for the purposes of the current study, considered the *baseline* evaluation of parental support), and during the *past two weeks* (administered at each data collection).

Cohen and Mannarino (1996b) reported adequate internal consistency for the Support and Blame subscales (α = .73 and .70, respectively). Test-retest reliability over a two week period was also adequate (Support α = .70, Blame α = .83, and α = .82 for the full scale). In a sample of sexually abused children, the PSQ was predictive of outcome following therapy, while the Blame

subscale was predictive of depression (Cohen & Mannarino, 2000). Continued testing is needed to establish further validity. The Cronbach's alpha for the full scale in the current sample was .78 at baseline (data 0) and .79 at pre-assessment (data 2).

Parent Emotional Reaction Questionnaire (PERQ: Mannarino & Cohen, 1996). The PERQ is a 15-item self-report measure of a parent's emotional reactions to their child's maltreatment. Emotions such guilt, anger, fear, upset, and embarrassment are assessed with this questionnaire. Caregivers rate the frequency with which they experienced the noted emotions in response to the abuse on a 5-point Likert scale ranging from 1 = never to 5 = always. Higher total scores indicate more severe and intense negative emotional reaction. Example items include: "I have felt upset about my child being abused/traumatized," " I am afraid of what other people will think about my child being abused/traumatized," and "I feel guilty that I did not know about the abuse/trauma sooner." Similar to the PSQ, two versions of the PERQ were given in the current study: one assessing the frequency of these emotions during the first four weeks *following disclosure* (administered at the first data collection and for the purposes of the current study, considered as the *baseline* evaluation of parental emotional reaction), and one assessing the frequency of these emotions during the *past four weeks* (administered at each data collection). Assessing parent emotional reaction at these different time points allowed for an assessment of potential change in reactions from the time of initial disclosure (i.e., baseline) to throughout the assessment, intervention, and follow-up periods.

The PERQ demonstrated good internal consistency ($\alpha = .87$) and test-retest reliability over a two week period ($\alpha = .90$). The Cronbach's alpha for the current sample was .90 at baseline (data 0) and .94 at pre-assessment (data 2). Significant improvements in caregivers' scores on the PERQ were noted among those participating in Trauma-Focused Cognitive

Behavioral Therapy (Cohen, Deblinger, Mannarino, & Steer, 2004). Parental distress as measured by this scale has also been shown to decrease with treatment in a sample of sexually abused children (Cohen et al., 2004). Further, the PERQ was found to predict treatment outcome in a sample of trauma-exposed preschool children (Cohen & Mannarino, 1996). Additional studies are needed to establish other forms of validity.

Parenting Stress Index, 3rd edition (PSI: Abidin, 1995). The PSI is a standardized 120-item parent self-report of perceived parenting stress. It was designed for use with parents of children aged one month to 12 years of age as an indicator of potential characteristics within the family that may lead to poor child development and adjustment. As such, the PSI assesses multiple components within the parent-child relationship. Items are rated on a 5-point Likert scale ranging from Strongly Agree to Strongly Disagree. Profiles include summary scores on the Parent Domain and Child Domain, as well as a Total Stress score. The Parent Domain consists of seven subscales: Competence (in parenting), Isolation, Attachment (to the child), Health, Role Restriction, Depression, and Spouse (i.e., spousal support). The Child Domain is comprised of six subscales assessing the parent's perception of their child in the areas of: Distractibility/Hyperactivity, Adaptability, Reinforces Parent, Demandingness, Mood, and Acceptability. The Total Stress score is the combination of one's scores on the Parent and Child domains. Higher scores indicate a greater amount of stress. The PSI was also administered at all time points in the current study.

The PSI has strong internal consistency, with Cronbach's alphas ranging from .90 to .95 for the two Domain and the Total Stress scores (Abidin, 1995). Scales on the Child Domain have alphas ranging from .76 to .83, while scales on the Parent Domain have alphas ranging from .70 to .84. According to Abidin (1995), several studies have evaluated the test-retest

reliability of the PSI. One to three month test-retest reliabilities range from .88 to .96 for the

Total Stress score, .63 to .77 for the Child Domain, and .69 to .91 for the Parent Domain (Abidin,

1995). The PSI was successfully translated for use with non-English speaking populations,

validated for use with diverse samples of at-risk parents, and utilized for forensic purposes,

specifically in matters of child custody. The alpha reliabilities in the current study were α = .95

for the Total Stress score, α = .92 for the Child Domain, and α = .93 for the Parent Domain at

pre-assessment.

Demographic and trauma history information were assessed using questionnaires

developed for use in this study.

Results

Preliminary Analyses

Data were examined using IBM SPSS 21.0 for accuracy of entry and fit between variable

distributions and the assumptions of multivariate analyses with ungrouped data. The examined

variables first included total scores on the Parental Support Questionnaire (PSQ), Parent

Emotional Reaction Questionnaire (PERQ), Parenting Stress Index (PSI), Trauma Symptom

Checklist for Children (TSCC), and the Trauma Symptom Checklist for Young Children

(TSCYC)[5]. Relevant subscale scores were also examined for these issues once included in the

analyses (the rationale for including subscales is provided below in the Secondary Analyses

Supplementary Analysis sections).

Missing data. Subscale and total scores for standardized questionnaires (i.e., TSCC,

TSCYC, and PSI) were calculated according to manual scoring instructions and missing item

guidelines. A screening of the data indicated that missing data were within acceptable limits for

the TSCC and TSCYC for all participants across all time points. Three participants were missing

more than the allowable number on the Parenting Stress Index (PSI)[4]. One participant (ID 2.1) had missing data on the PSI-Total and PSI-Parent Domain at pre-therapy (time 3), another (ID 10) had missing data on the PSI-Depression subscale at follow-up (time 5), and one (ID 44) had missing data on the PSI-Competency subscale at pre-assessment (time 2). In all cases, the participants' scores at the specific time points were excluded from the analyses. Scores for the unstandardized questionnaires, the Parental Support Questionnaire (PSQ) and the Parent Emotional Reaction Questionnaire (PERQ), were calculated only in the cases of participants who completed a minimum amount of items approximating 75%, as determined by the writer due to a lack of standardized scoring guidelines. All respondents were within appropriate ranges of these amounts and no person was excluded due to missing items on these questionnaires.

Missing data on the PSI were due, in part, to two items (item 8 of the Distractibility subscale on the Child Domain and item 55 of the Competency subscale on the Parent Domain) routinely not administered to caregivers during the study. These items were not administered as parents in early data collections found these items to be irrelevant to their family due to child age and family composition and were leaving these items blank. Missing values on these items were replaced with subscale average scores according to manual instructions. Thus, the same data were missing from all participants and the method used to treat the missing data was uniform and followed scoring procedures.

Pre-assessment scores on all variables included in the initial analyses (PSQ-Total, PERQ-Total, PSI-Total, TSCC Posttraumatic Stress; TSCYC Posttraumatic Stress Total) were compared among groups of participants completing pre-waitlist, pre-assessment, pre-therapy, post-therapy, or 6-month follow-up as a final data collection before completing or withdrawing from the research project in order to evaluate whether or not attrition was related to pre-

assessment scores. One-way ANOVAs revealed no statistically significant differences among groups. In order to test whether or not data were missing at random, pre-assessment scores on all outcome variables were compared among those who completed only the pre-assessment data collection and those who completed up to the pre-therapy, post-therapy, and follow-up data collection prior to dropping out of the study. By and large, one-way ANOVAs revealed no significant differences among the groups on all outcome measures, indicating that data are likely missing at random. This was true for scores on the TSCC-PTS [$F(3,101) = .07$, $p = .98$), TSCYC-PTS-T [$F(3, 91) = 2.19$, $p = .10$), PSQ-T [$F(3, 83) = .05$, $p = .98$), PERQ-T [$F(3,87) = 1.59$, $p = .20$], and the PSI-T [$F(3, 80) = 2.53$, $p = .06$). Post-hoc Tukey HSD pairwise comparisons revealed only one significant difference which was found on the PSI-T on which those who completed the pre-therapy data collection reported significantly higher scores than those who completed the post-therapy data collection before dropping out of the study (mean difference: 49.32, $p = .04$). These findings further supported the use of a full information maximum likelihood approach to handling missing data, as is incorporated in the Amos structural equation modeling package (used in Goal 1 of the current study). An important advantage of using Amos is that it adopts the full information maximum likelihood approach to handling missing data, which does not require the deletion of participants with any missing data, but instead uses all available information when computing the model parameters, making it ideal for use in clinical research.

Correlations. Parent factors and child posttraumatic stress symptoms function as both predictor and outcome variables in the hypothesized cross-lagged design model depicted in Figure 1. As such, two-tailed bivariate Pearson product-moment correlations were run among total scores for each parent factor (PSQ-T, PERQ-T, and PSI-T), among each child symptom

inventory (TSCC-PTS and TSCYC PTS-T), and between parent and child variables at pre-assessment (data 2), pre-therapy (data 3), post-therapy (data 4), and 6-month follow-up (data 5). Correlation coefficients for these variables are displayed in Table 1. This resulted in a large number of correlations, increasing the chance of Type 1 error. Generally, correlations between child reports of symptoms and parent factors were not statistically significant. Moderate correlations were found amongst parent report of child symptoms and parent self-reports of support and parent emotional reaction. Correlations between parent report of child symptoms and parenting stress were not significant.

Tests of normality. The predictor and outcome variables (PSQ-T, PERQ-T, PSI-T, TSCC-PTS and TSCYC PTS-T) were all evaluated with IBM SPSS 21.0 for assumptions of normality, linearity, and identification of outliers. Pre-assessment (data 2) to 6-month follow-up (data 5) were included in these analyses. Examination of the variables by histograms, box plots, normal Q-Q plots, as well as the Kolmogorov-Smirnov and the Shapiro-Wilk tests of normality (Shapiro & Wilk, 1965) revealed some degree of deviation from the norm. By and large, a slight positive skew was observed in the child report TSCC-PTS, parent report TSCYC PTS-T, and the PERQ (M. Ondrack, personal communication, July 24, 2014). The PSQ-T scores were negatively skewed. Variable transformations did not correct the skew across all time points, therefore, all variables were maintained in their original form.

Scatterplots depicting same time point and cross-lagged relationships between predictor and outcome variables depicted linear relationships for many of the pairs of variables between the PERQ-T and the parent report TSCYC PTS-T as well as the PSI-T and the TSCYC PTS-T. Non-linear relationships were observed in several plots examining the relationships between the PERQ-T and the child report TSCC-PTS such that a quadratic or cubic equation fit the data

better than a linear equation. Scatterplots indicated weaker relationships between the PSI-T and

TSCC-PTS scores and the PSQ-T and both child symptom inventory scores, without good fit of

either a linear or non-linear equation, indicating no relationship between variables. Similarly, no

linear relationship was found between the PSQ subscale scores and either of the child symptom

questionnaire scores. This was perhaps due to an "over-fitting" of the data where outliers

influence the linearity of a relationship (D. Flora, personal communication, August 15, 2014).

Outliers. Several outliers were identified; however, they were generally not the same

participants across time points. Outliers were given scores closer to the general sample and then

analyses were run a second time with the new scores to evaluate outliers' influence on the results

of the path analyses (i.e., windsorizing technique). For instance, one participant's TSCYC PTS-

Total score in data 3 (pre-therapy) was 99. As noted above, the TSCYC PTS-T had a slight

positive skew, and the highest score that was not considered an outlier was 72. Thus, the outlier

score was changed from 99 to 73 in a separate data file and path analyses were run a second

time. The model fit and chi-square test statistics on the hypothetical model were compared with

those from analyses performed with the original data and were found to yield equivalent or

worse models than those found with the original data in each case. As such, outliers were

maintained with the sample and results incorporate all original scores.

Following preliminary data screening, it was determined that the data were fit for testing

using a linear structural equation modeling (SEM) method given the potential "over-fitting" of

the data which may have influenced the linearity of the relationships among the parent and child

scores. The use of non-linear SEM would likely not yield stronger or more interpretable results

(D. Flora, personal communication, August 15, 2014).

Primary Analyses

Goal 1. The first goal of the current study was to examine the reciprocal nature of the parent-child relationship and determine: 1) the extent to which parent factors predicted parent and child reports of child posttraumatic stress symptoms at pre-assessment, pre-therapy, post-therapy, and 6-month follow-up, and 2) the extent to which child and parent reports of child posttraumatic stress symptoms predicted parent reports of parent factors at pre-assessment, pre-therapy, post-therapy, and 6-month follow-up.

Hypotheses. Given the lack of prior research on the effects of child posttraumatic stress symptoms on parent factors, this hypothesis was exploratory. Levels of parent factors were expected to predict child posttraumatic stress symptoms and child posttraumatic stress symptoms was expected to predict scores on parent factors. Also, general downward effects (i.e., improvements in posttraumatic stress symptoms) were expected. However, hypotheses regarding the relative strength of these relationships, the point at which the relationships vary in strength, and the effect of changes in symptoms on parent factors and vice versa were exploratory.

Path Analyses using Structural Equation Modeling (SEM) Technique. Path analyses were performed with the IBM SPSS Amos 21 software package using data from all participants except those who were excluded from models involving the Parenting Stress Index due to a high number of missing items on specific scores (those participants were excluded only from analyses involving the specific scores with missing data and included in the rest of the analyses). Sample size and descriptive statistics for each variable are displayed in Table 2. A systematic approach was established by the writer in order to evaluate the best fitting models in all cases where the basic model fit the data reasonably well. The step-by-step process is outlined below and Figures

1, 3, and 4 portray examples of this systematic approach with each figure representing one main type of model (i.e., the hypothesized model, a skipped time points cross-lagged model, and a same time points model). When the basic model did not fit the data well, and changes to the hypothesized design were thought to not ameliorate its fit, no further model modifications were made with that design. Rather, the skipped time points cross-lagged model and same time points models were then evaluated for model fit. The systematic approach is outlined below:

1) First, a basic cross-lagged design (herein, the "hypothesized model," as depicted in Figure 1) was evaluated. Based on model fit statistics, a decision was then made to continue testing the hypothesized model with modifications as outlined in Step 2, or to stop analyses with this hypothesized model and continue at Step 3;

2) Second, models in which non-significant paths were sequentially deleted in a step-wise fashion beginning with the least-fitting path were evaluated;

3) Third, a model evaluating skipped cross-lagged time points (e.g., parent factor score at pre-assessment → Symptom score at post-therapy) along with significant (or approaching significance) immediate cross-lagged time points from the hypothesized model was tested (Figure 3);

4) Fourth, a model evaluating the strength of direct paths between same time points was tested (Figure 4); and,

5) Compiled models testing paths that were noted to be significant, or approaching significance, throughout the above process were evaluated to determine the relative strength of each pathway.

When necessary, additional iterations of models were evaluated to ascertain the impact of specific paths. Therefore, some pairs of variables were tested with more than five models. Fit

statistics (i.e., the CFI and RMSEA) and χ^2 (Chi squared) test statistics were compared between

models to determine which one model best fit the data. The χ^2 test statistic assesses the fit

between the sample and estimated population covariance matrices (Tabachnick & Fidell, 2007).

A nonsignificant χ^2 is desired; however, small sample sizes, and issues with distribution and

assumptions make it necessary to employ additional fit statistics (such as the CFI and RMSEA)

to evaluate model fit more accurately (Tabachnick & Fidell, 2007). The χ^2 difference test was

used to statistically compare multiple good-fitting models in order to determine whether or not

the models differed significantly from one another. The comparative fit index (CFI; Bentler,

1988) evaluates model fit in comparison to the saturated and independence models. A CFI value

closer to 1.00 is desired and a value over .95 indicates a good fitting model (Tabachnick &

Fidell, 2007). CFI values of .90 are considered acceptable (Hu & Bentler, 1999). The root mean

square error of approximation (RMSEA; Browne & Cudeck, 1992) is an indication of error, or

lack of fit, compared with the saturated model, thus, a value of zero indicates a perfect model

(Tabachnick & Fidell, 2007). Values less than .05 indicate good-fitting models (Tabachnick &

Fidell, 2007), values .06 to .08 indicate acceptable models (Kline, 2015) and values greater than

.10 are indicative of poor fitting models (Tabachnick & Fidell, 2007). Statistically significant

paths are indicated by *p*-values less than, or equal to .05; however, this criterion was adjusted in

the current study to account for the small sample size. As such, parameter estimates of $p \le .05$

were considered significant, and estimates of $p < .10$ were considered as approaching

significance. A breakdown of the SEM analyses run testing each parent factor with each

symptom report follows below. Tables displaying model fit statistics are provided for every

model modification, while figures illustrate the one model chosen as best fitting for the data.

     Parental Support Questionnaire-Total (PSQ-T).

Trauma Symptom Checklist for Children-Posttraumatic Stress (TSCC-PTS) (Child Self-

Report of Symptoms). The hypothesized model (i.e., basic cross-lagged design as shown in

Figure 1) was tested and did not fit the data well, χ^2 (15, N = 115) = 44.77, p < .001, comparative

fit index (CFI) = .64, root mean square error of approximation (RMSEA) = .13. The only

significant pathways in this model were the ones between the previous TSCC-PTS scores

predicting the following ones (p < .001 for all paths). Previous PSQ-T scores did not predict

future ones and pre-assessment (data 2) TSCC-PTS and PSQ-T did not co-vary. Given the poor

fit statistics, model modifications were not attempted with the hypothesized model. Rather,

skipped cross-lagged and same time points models were tested. All models fit the data poorly.

Model fit statistics are displayed in Table 3.

     Supplementary Analyses. Given the poor fitting models with the Parental Support

Questionnaire Total (PSQ-T) score, supplementary analyses were conducted to determine

whether or not the Blame and Support subscale scores fit the data better than the PSQ-T models.

The descriptive statistics for these variables can be found in Table 4.

     Parent Support Questionnaire-Blame and Support Subscales (PSQ-B and PSQ-S).

Similar to the models with the Parental Support Questionnaire total scores, the hypothesized

models with the Blame and Support subscales fit the data poorly (Blame subscale: χ^2 (15, N =

115) = 45.27, p < .001, CFI = .68, RMSEA = .13; Support subscale: χ^2 (15, N = 115) = 39.80, p

< .001, CFI = .67, RMSEA = .12). Also, pre-assessment (data 2) PSQ subscale scores and child

self-report TSCC-PTS scores did not co-vary. Unlike the models with the PSQ-T scores,

previous PSQ-B scores predicted future ones at two time points (PSQ-B 2 → PSQ-B 3, p = .03;

PSQ-B 3 → PSQ-B 4, p = .03; PSQ-B 4 → PSQ-B 5, p = ns). As noted above, previous child

self-report TSCC-PTS predicted future ones. Model modifications with the hypothesized model

were not done due to the poor fit of the model. Instead, models testing the skipped cross-lagged and same time point pathways were run. All models fit the data poorly. Model fit statistics for the Blame subscale are displayed in Table 5 and fit statistics for the Support subscale are displayed in Table 6. Given that no adequate models were found, there are no figures for these models.

Trauma Symptom Checklist for Young Children-Posttraumatic Stress-Total (TSCYC PTS-T) (Parent Report of Child Symptoms). The hypothesized model did not fit the data well, χ^2 (15, $N = 115) = 44.68$, $p < .001$, CFI = .76, RMSEA = .13; however, fit statistics indicated possible improvement with model modifications. As noted above, previous Parental Support Questionnaire Total scores did not predict future ones. Previous parent reports of child symptoms, as indicated by the TSCYC PTS-T scores, did predict future ones ($p < .001$ for all paths). Pre-assessment (data 2) parental support and child symptom scores did not co-vary. One cross-lagged pathway was significant (TSCYC PTS-T 2 → PSQ-T 3, $p = .03$). Model modifications resulted in a compiled model, Model J, χ^2 (19, $N = 115) = 44.17$, $p < .001$, CFI = .80, RMSEA = .11. Though Model J still did not fit the data well, it provided valuable information as it indicated that cross-lagged pathways were stronger predictors than same time point pathways (TSCYC PTS-T 2 → PSQ-T 3, $p = .03$; PSQ-T 2 → TSCYC PTS-T 4, $p = .09$). Model fit statistics for all iterations are displayed in Table 7. Model J is illustrated in Figure 5.

Parent Support Questionnaire-Blame and Support Subscales (PSQ-B and PSQ-S). As in the case of the child self-report TSCC-PTS, the hypothesized model was run with the Parental Support Questionnaire Blame and Support subscale scores and the parent report of child symptoms in order to determine whether or not subscale scores fit the data better than total scores. The hypothesized model fit the data poorly with the subscales as well (Blame subscale:

χ^2 (15, $N = 115$) = 45.99, $p < .001$, CFI = .76, RMSEA = .14; Support subscale: χ^2 (15, $N = 115$) = 44.23, $p < .001$, CFI = .75, RMSEA = .13). No significant pathways or pathways approaching significance were found. Some differences existed between these subscale models and the models with the total scores. These differences are discussed below.

As noted above, previous Parental Support Questionnaire Blame Subscale scores predicted future ones at two time points. The relationship between the blame subscale scores and the parent report of child symptoms TSCYC PTS-T scores approached significance at pre-assessment (data 2) ($p = .09$). All previous TSCYC PTS-T scores predicted future ones ($p < .001$ for all paths). Model modifications with the hypothesized model were not run because no cross-lagged pathway was significant. Instead, models testing a skipped cross-lagged model and a same time point model were run. No significant cross-lagged or same time point pathways were found in these models. Model fit statistics with the Parental Support Questionnaire Blame subscale can be found in Table 8. There is no figure illustrating a chosen model for the blame subscale as no adequate-fitting model was found.

Previous Parental Support Questionnaire – Support Subscale scores did not predict future ones and pre-assessment (data 2) PSQ-S and parent report of child symptoms TSCYC PTS-T scores did not co-vary significantly. All previous TSCYC PTS-T scores predicted future ones ($p < .001$ for all paths). One cross-lagged pathway was significant (TSCYC PTS-T 2 → PSQ-S 3, $p = .02$). Although fit statistics were poor, model modifications to the hypothesized model were performed given that one significant pathway was found. This cross-lagged pathway was included in the skipped cross-lagged pathway model as well. The compiled model, Model I, included two same time point pathways (PSQ-S 3 → TSCYC PTS-T 3 and TSCYC PTS-T 3 → PSQ-S 3) and the cross-lagged pathway (TCYC PTS-T 2 → PSQ-S 3), however, no pathways

were significant in the compiled model, χ^2 (18, $N = 115$) = 45.57, $p < .001$, CFI = .77, RMSEA = .12. Model fit statistics for all of the iterations can be found in Table 9. There is no figure illustrating a chosen model for the PSQ-S as no adequate-fitting model was found.

Parent Emotional Reaction Questionnaire-Total Score (PERQ-T).

Trauma Symptom Checklist for Children-Posttraumatic Stress (TSCC-PTS) (Child Self-Report of Symptoms). The hypothesized model fit the data well, χ^2 (15, $N = 115$) = 23.89, $p = .07$, CFI = .96, RMSEA = .07 and two cross-lagged paths were significant or approaching significance (PERQ-T 3 → TSCC-PTS 4, $p = .003$; PERQ-T 4 → TSCC-PTS 5, $p = .07$). Pre-assessment (data 2) parent emotional reaction scores and child self-reports of symptoms did not co-vary. All previous parent emotional reaction scores predicted future ones, as did child reports of symptoms scores ($p < .001$ for all pathways). Model iterations were run according to the established method of testing in order to rule out the potential of a better fitting model. There were several good fitting models with very similar CFI values, lower RMSEA values, and nonsignificant χ^2 statistics. Model iterations highlighted several significant immediate and skipped cross-lagged paths as well as same time point pathways. The PERQ-T 4 → TSCC-PTS 5 pathway was no longer significant once considering skipped cross-lagged paths. The compiled model, Model H, had the best fit statistics, but did not differ significantly from the other models, χ^2 (19, $N = 115$) = 21.01, $p = .18$, CFI = .98, RMSEA = .05. A χ^2 difference test comparing the hypothesized model to the compiled model, Model H, indicated that there was no statistically significant difference between the two models, $p = .09$. A χ^2 difference test was also used to compare the compiled model to Model G, the same time point model, and showed no difference between models, $p = .14$. The only significant pathway in the compiled model was a same time point pathway (PERQ-T 5 → TSCC-PTS 5, $p = .02$). According to the findings, parent

emotional reaction and child report of symptoms were positively related. Table 10 depicts the fit

statistics for all tested models in the path analysis and Figure 6 displays the compiled model,

Model H.

   Trauma Symptom Checklist for Young Children-Posttraumatic Stress-Total (TSCYC PTS-

T) (Parent Report of Child Symptoms). The hypothesized model did not fit the data well but

indicated that model modification may result in a better fitting model, χ^2 (15, $N = 115) = 29.03$, p

$< .02$, CFI $= .94$, RMSEA $= .09$. All previous parent emotional reaction total scores predicted

future ones, as did parent report TSCYC PTS-T symptom scores ($p < .001$ for all pathways).

Pre-assessment (data 2) parent emotional reaction and parent report of symptoms did co-vary

significantly, $p = .03$. Two good fitting models were found, Model F with same time point

pathways (χ^2 (15, $N = 115) = 17.02$, $p = .32$, CFI $= .99$, RMSEA $= .03$), and the compiled model,

Model G (χ^2 (15, $N = 115) = 19.37$, $p = .20$, CFI $= .98$, RMSEA $= .05$). The compiled model

evaluated the predictive strength of several cross-lagged and same time point pathways. Only

same time point pathways were significant in Model G (PERQ-T 3 → TSCYC PTS-T 3, $p = .01$,

and PERQ-T 5 → TSCYC PTS-T 5, $p = .04$). These pathways indicated a positive relationship

between parent emotional reaction and parent-report of child symptoms. In other words, as

parents' self-reported negative emotions increased in intensity, they also rated their children as

experiencing more problematic symptoms of posttraumatic stress. Both of these models differed

significantly from the hypothesized model (Model A) (χ^2 difference test comparing A vs. F, $p <$

$.001$; A vs. G, $p = .002$), but not from each other ($p = .13$). Model F was chosen as the best

fitting model given the fit statistics and the inclusion of same time point pathways only. Three

pathways were found to be significant in this model (PERQ-T 3 → TSCYC PTS-T 3, $p = .03$;

TSCYC PTS-T 4 → PERQ-T 4, $p = .04$; and PERQ-T 5 → TSCYC PTS-T 5, $p < .001$). Table

11 displays model fit statistics for all model iterations and Figure 7 illustrates the path

coefficients in Model F.

Parenting Stress Index-Total (PSI-T).

Trauma Symptom Checklist for Children-Posttraumatic Stress (TSCC-PTS) (Child Self-

Report of Symptoms). The hypothesized model did not fit the data well, χ^2 (15, $N = 115$) =

50.48, $p < .001$, CFI = .82, RMSEA = .14. All previous Parenting Stress Index Total scores

predicted future ones, as did child self-report of symptoms according to the TSCC-PTS scores (p

< .001 for all pathways). Parenting stress and child self-report of posttraumatic stress scores did

not co-vary at pre-assessment (data 2). Only one cross-lagged path was significant in this model

(PSI-T 3 → TSCC-PTS 4, $p < .001$). Non-significant paths were deleted consecutively, yet no

amelioration was achieved. Incorporating skipped time point cross-lagged pathways and

evaluating same time point pathways also did not achieve a better fitting model. The compiled

model, Model G, χ^2 (19, $N = 115$) = 51.02, $p < .001$, CFI = .82, RMSEA = .12 included one same

time point path that approached significance (PSI-T 4 → TSCC-PTS 4, $p = .05$) and the one

significant cross lagged path from the basic model (PSI-T 3 → TSCC-PTS 4). In this model,

only the cross-lagged pathway was significant (PSI-T 3 → TSCC-PTS 4, $p = .002$). This

pathway indicated a negative relationship between parenting stress and child self-report of

symptoms. Model fit statistics for the compiled model were not significantly better than the base

model fit statistics (χ^2 difference test comparing G vs. A, $p = .97$). Fit statistics of the individual

model iterations can be found in Table 12 and Model G is illustrated in Figure 8.

Supplementary Analyses. Supplementary analyses with questionnaire domain and

specific subscale scores were run to evaluate whether or not these scores were a better fit for the

models compared to the parenting stress total scores. The domains included the two PSI

domains (Child Domain and Parent Domain). Subscale scores were chosen based on the

possible influence the parent-child bond and specific parent characteristics given the relevant

literature in this area, as discussed in the literature review section. These subscales were the

Attachment Subscale, Parenting Competency Subscale, and the Parent Depression Subscale.

 PSI-Child Domain (PSI-CD) and TSCC-PTS (Child Self-Report of Symptoms). The

hypothesized model did not fit the data well, χ^2 (15, N = 115) = 33.04, p = .005, CFI = .89,

RMSEA = .10. Similar to the models with the parenting stress total scores, all previous PSI-CD

scores predicted future ones, as did child report TSCC-PTS scores (p < .001 for all pathways).

PSI-CD and TSCC-PTS scores did not co-vary at pre-assessment (data 2). The same cross-

lagged pathway was significant in this model as in the model with the total scores (PSI-CD 3 →

TSCC-PTS 4, p = .06) and was the only significant path. Model iterations according to the

established system did not reveal a significantly better fitting model. No additional significant

pathways were found. The model which included only the PSI-T 3 → TSCC-PTS 4 pathway

was Model F, χ^2 (20, N = 115) = 33.90, p = .03, CFI = .92, RMSEA = .08 (PSI-CD 3 → TSCC-

PTS 4, p = .08). A negative relationship was found between pre-therapy ratings of problems

within the child domain and post-therapy child-reports of posttraumatic stress symptoms. A χ^2

difference test comparing Model F and the hypothesized model was not significant (p = .91).

Model fit statistics for all modifications are displayed in Table 13. Model F is illustrated in

Figure 9.

 PSI-Parent Domain (PSI-PD) and TSCC-PTS (Child Self-Report of Symptoms). The

hypothesized model did not fit the data well, χ^2 (15, N = 115) = 41.07, p < .001, CFI = .89,

RMSEA = .12. Similar to the other PSI models described above, all previous parent domain

stress scores predicted future ones, as did child self-report of posttraumatic stress symptoms

scores ($p < .001$ for all pathways). Parenting stress and symptom scores did not co-vary at pre-assessment (data 2). The same cross-lagged path was significant in this model as in the models with the total and child domain scores (PSI-PD 3 → TSCC-PTS 4, $p < .001$). It was the only significant pathway. Model iterations according to the established system did not reveal a significantly better fitting model, however additional significant pathways were found including skipped time points and same time points. When all significant/approaching significance paths were included in the same model, (the first compiled model, Model I) the same time pathways were somewhat stronger predictors than the skipped time point pathways (TSCC-PTS 3 → PSI-PD 3, $p = .04$; PSI-PD 4 → TSCC-PTS 4, $p = .008$; TSCC 4 → PSI-PD 4, $p = .06$; PSI-PD 2 → TSCC-PTS 5, $p = .07$; and PSI-PD 3 → TSCC-PTS 5, $p = .08$), χ^2 (16, $N = 115$) = 41.74, $p = <.001$, CFI = .89, RMSEA = .12. This model did not differ significantly from the hypothesized model, the model which included only significant same time point pathways (Model H), and the final compiled model (Model K) (χ^2 difference tests comparing Model I vs. Model A, $p = .40$; I vs. K, $p = .32$; I vs. H, $p = .16$; and A vs. K, $p = .39$). Model I was chosen as the best fitting model as it included both same time point and skipped cross-lagged pathways, providing a more inclusive picture of the relationship between the variables as both categories of pathways were significant or approached significance. Findings indicated both positive and negative relationships between problems within the parent domain and child self-report of symptoms. Model fit statistics for all of the model iterations are presented in Table 14. Model I is displayed in Figure 10.

PSI-Attachment (PSI-AT) and TSCC-PTS (Child Self-Report of Symptoms). The hypothesized model did not fit the data well, but fit statistics indicated that post-hoc modification indices should be considered in order to improve the fit of the model, χ^2 (15, $N = 115$) = 31.88, p

= .01, CFI = .91, RMSEA = .10. In this model, all previous attachment scores and child report

TSCC-PTS scores predicted future ones ($p < .001$ for all pathways). Pre-assessment (data 2)

attachment ratings and child symptom scores did not co-vary. Three cross-lagged pathways

approached significance and model modifications revealed a model in which several cross-

lagged pathways approached significance. This model, Model E (χ^2 (12, $N = 115$) = 24.16, $p =$

.02, CFI = .93, RMSEA = .09), included four pathways which approached significance (PSI-AT

2 $\rightarrow$ TSCC-PTS 3, $p = .07$; TSCC-PTS 2 $\rightarrow$ PSI-AT 3, $p = .09$; TSCC-PTS 2 $\rightarrow$ PSI-AT 4, $p =$

.08; TSCC-PTS 2 $\rightarrow$ PSI-AT 5, $p = .05$). Same time point pathways were not significant. Chi

square difference tests indicated that Model E's fit statistics were somewhat better than the

hypothesized model (approaching significance, $p = .05$) and not statistically different than the

compiled models (E vs. G, $p = .18$; E vs. H, $p = .26$, E vs. I, $p = .17$). Model E was selected as

the best fitting model as it included more pathways providing more information about the parent-

child relationship. Findings revealed that parent ratings of depression were generally found to be

negatively related to child self-report of posttraumatic symptoms. Model statistics are displayed

in Table 15 and Model E is displayed in Figure 11.

PSI-Depression (PSI-DP) and TSCC-PTS (Child Self-Report of Symptoms). Unlike the

case in the previous subscales and domains, the hypothesized model was a good fitting model

with this subscale, χ^2 (15, $N = 115$) = 19.28, $p = .20$, CFI = .98, RMSEA = .05. All previous

parent depression scores and child self-report TSCC-PTS scores predicted future ones ($p < .001$

for all pathways) and pre-assessment (data 2) depression and symptom scores did not co-vary.

Again, only one cross-lagged pathway was significant, and it was the same pathway as in the

case of the total, child domain, and parent domain score (PSI-DP 3 $\rightarrow$ TSCC-PTS 4, $p < .001$).

Model modifications yielded slight improvements to the hypothesized model when immediate

and skipped time point cross-lags were included. The compiled model, Model I, included two cross-lagged pathways (PSI-DP 3 → TSCC-PTS 4 and PSI-DP 2 → TSCC-PTS 4) as well as the one same time point pathway (PSI-DP 4 → TSCC-PTS 4) and revealed that only the skipped time point cross lagged pathway remained significant. This model had perfect fit statistics, χ^2 (18, N = 115) = 17.72, p = .47, CFI = 1.00, RMSEA = .00 (PSI-DP 2 → TSCC-PTS 4, p = .01). Chi-squared difference tests showed no statistically significant differences between the compiled model and an alternate model (I vs. hypothesized model, p = .67; I vs. H p = .32), however, it was deemed to be the best fitting model given its perfect fit CFI and RMSEA statistics, and its ability to evaluate the relative strength of all three pathways which each predicted children's PTS scores at post-therapy (data 4). Thus, parents' self-reported ratings of depressive symptoms at pre-assessment (data 2) were most predictive of children's self-reported ratings of posttraumatic stress symptoms at post-therapy (data 4). Pre-assessment ratings of parent depression and post-therapy child self-report of symptoms were found to be negatively related. All model statistics can be found in Table 16. Model I is illustrated in Figure 12.

PSI-Competency (PSI-CO) and TSCC-PTS (Child Self-Report of Symptoms). The hypothesized model did not fit the data well, χ^2 (15, N = 115) = 39.66, p = .001, CFI = .85, RMSEA = .12. Again, all previous competency scores and child report TSCC-PTS scores predicted future ones) (p < .001 for all pathways) and pre-assessment (data 2) competency and child symptom scores did not co-vary. Only one cross-lagged pathway was significant (PSI-CO 3 → TSCC-PTS 4, p = .04). Model modifications resulted in a good fitting model, Model I, χ^2 (18, N = 115) = 25.18, p = .12, CFI = .96, RMSEA = .06. Three significant pathways were found in this compiled model, indicating that both a cross-lagged and same time point relationship existed between parenting competency and children's self-report of their PTS

symptoms (PSI-CO 2 → TSCC-PTS 4, *p* <.001; TSCC-PTS 3 → PSI-CO 3, *p* = .003; PSI-CO 3

→ TSCC-PTS 4, *p* = .08). This model did not differ significantly from Model J which excluded

the PSI-CO 3 → TSCC-PTS 4 pathway (*p* = .16) but was significantly better than the

hypothesized model (*p* = .002). Model I was chosen as the best model as it incorporated more

pathways. Findings revealed both positive and negative relationships between competency and

child self-report of symptoms. Model fit statistics for all model modifications are displayed in

Table 17. Model I is displayed in Figure 13.

      Trauma Symptom Checklist for Young Children-Posttraumatic Stress-Total (TSCYC PTS-

T) (Parent Report of Child Symptoms). The hypothesized model did not fit the data well, χ^2 (15,

N = 115) = 67.34, *p* < .001, CFI = .80, RMSEA = .18. All previous parenting stress total scores

predicted future ones, as did previous TSCYC PTS-T scores (*p* < .001 for all pathways). Pre-

assessment (data 2) total stress scores and parent report TSCYC-T scores co-varied significantly

(*p* = .02). Two cross-lagged pathways were significant (PSI-T 2 → TSCYC-PTS 3, *p* = .02; PSI-

T 4 → TSCYC-PTS 5, *p* = .001). Model modifications yielded a compiled model, Model H,

with very slightly better fit statistics, χ^2 (18, *N* = 115) = 61.85, *p* < .001, CFI = .83, RMSEA =

.15. This model did not differ significantly from the hypothesized model (*p* = .14), but did reveal

that same time point pathways were stronger predictors than cross-lagged pathways. The two

significant/approaching significance pathways in Model H were: PSI-T 3 → TSCYC-PTS 3, *p* =

.06 and PSI-T 5 → TSCYC-PTS 5, *p* < .001. Findings indicated that parenting stress was

positively related with parent report of child symptoms. As parenting stress increased, so did

child symptoms based on parent report. Model fit statistics for all the model iterations can be

found in Table 18 and Model H is displayed in Figure 14.

Supplementary Analyses. Given the poor fitting model with the parenting stress total score, supplementary analyses with questionnaire domain and specific subscale scores were run to evaluate whether or not these scores were a better fit for the models. As with the child report TSCC-PTS, domains included the two PSI domains (Child Domain and Parent Domain) and subscales were the Attachment Subscale, Parenting Depression Subscale, and the Parent Competency Subscale. Descriptive statistics for these variables can be found in Table 3.

PSI-Child Domain (PSI-CD) and TSCYC PTS-T (Parent Report of Child Symptoms). The hypothesized model did not fit the data well, χ^2 (15, $N = 115$) $= 48.37$, $p < .001$, CFI $= .82$, RMSEA $= .17$. All previous child domain and parent report TSCYC-T symptoms scores predicted future ones ($p < .001$ for all pathways). Pre-assessment child domain and symptom scores did co-vary significantly ($p = .003$). Two significant cross-lagged pathways were found in this model (PSI-CD 2 → TSCYC PTS-T 3, $p = .03$; PSI-CD 4 → TSCYC PTS-T 5, $p = .005$). Model modifications resulted in a compiled model, Model J, which fit the data significantly better than the hypothesized model, χ^2 (18, $N = 115$) $= 41.95$, $p < .001$, CFI $= .91$, RMSEA $= .11$, χ^2 difference test $p < .001$. In this model, same time point pathways were stronger predictors than cross-lagged pathways, (PSI-CD 3 → TSCYC PTS-T 3, $p < .001$; TSCYC PTS-T 4 → PSI-CD 4, $p = .008$; PSI-CD 5 → TSCYC PTS-T 5, $p = .004$). All cross-lagged time points were non-significant. The fit statistics for the compiled model were slightly better than the statistics for the same time point model, Model G, and pathway p-values for the compiled model were almost exactly the same as those in Model G. Thus, the compiled model was chosen as the best fitting model. Child Domain ratings were positively related to parent report of child symptoms; as parents reported more problems within the child domain, they also reported higher levels of

child posttraumatic stress symptoms. Model fit statistics for all the model iterations are

displayed in Table 19. Model J is illustrated in Figure 15.

PSI-Parent Domain (PSI-PD) and TSCYC PTS-T (Parent Report of Child Symptoms).

The hypothesized model with the parent domain scores did not fit the data well, χ^2 (15, $N = 115$)

= 48.37, $p < .001$, CFI = .88, RMSEA = .14. In this model, previous parent domain scores

predicted future ones as did previous symptom scores ($p < .001$ for all pathways). Parent domain

scores and parent report TSCYC PTS-T scores did not co-vary at pre-assessment (data 2). Two

cross-lagged pathways were significant in the hypothesized model (PSI-PD 2 → TSCYC PTS-T

3, $p = .04$; PSI-PD 4 → TSCYC PTS-T 5, $p = .002$). Model modifications revealed models of

similar fit as the hypothesized model. The compiled model, Model J, though not statistically

different than other models, showed that same time point pathways were stronger predictors than

cross-lagged pathways, χ^2 (19, $N = 115$) = 47.63, $p < .001$, CFI = .90, RMSEA = .12 (PSI-PD 3

→ TSCYC PTS-T 3, $p = .04$; PSI-PD 5 → TSCYC PTS-T 5, $p < .001$). All cross-lagged time

point pathways were not significant. Findings indicated that as more problematic issues were

reported in the Parenting Domain of the Parenting Stress Index, parents also reported more

symptoms of posttraumatic stress. Model fit statistics for all the model iterations are displayed in

Table 20. Model J is depicted in Figure 16.

PSI-Attachment (PSI-AT) and TSCYC PTS-T (Parent Report of Child Symptoms). The

hypothesized model did not fit the data well, χ^2 (15, $N = 115$) = 41.30, $p < .001$, CFI = .88,

RMSEA = .12. In this model, all previous attachment scores predicted future ones, as did parent

report TSCYC PTS-T scores ($p < .001$ for all pathways). Pre-assessment (data 2) attachment and

parent report TSCYC PTS-T scores did not significantly co-vary. Model iterations achieved a

model that, though not statistically significant, did reveal one skipped time point cross-lagged

pathway that was a stronger predictor than immediate cross-lagged pathways and same time

point pathways which were all non-significant in this model, Model J, χ^2 (19, $N = 115$) = 38.60, p

= .005, CFI = .91, RMSEA = .10; PSI-AT 3 → TSCYC PTS-T 5, p = .01. A positive

relationship between problematic attachment and parent reports of child symptoms was found.

Please see Table 21 for model iteration fit statistics and Figure 17 for an illustration of Model J.

PSI-Depression (PSI-DP) and TSCYC PTS-T (Parent Report of Child Symptoms). The

hypothesized model did not fit the data well but fit statistics indicated that a good fitting model

may be possible to achieve, χ^2 (15, $N = 115$) = 27.11, p = .03, CFI = .95, RMSEA = .08. Pre-

assessment (data 2) scores did not co-vary, but previous depression and parent report TSCYC

PTS-T scores did predict future ones ($p < .001$ for all pathways). Two cross-lagged pathways

were significant in the hypothesized model (PSI-DP 2 → TSCYC PTS-T 3, p = .05; PSI-DP 4 →

TSCYC PTS-T 5, p = .01). Model iterations resulted in a compiled model, Model I, which

though not statistically significantly different than other models, did have slightly better fit

statistics, χ^2 (16, $N = 115$) = 24.37, p = .08, CFI = .97, RMSEA = .07. Several significant (or

approaching significance) skipped time points cross-lagged and same time point pathways were

found (TSCYC PTS-T 2 → PSI-DP 5, p = .05; TSCYC PTS-T 3 → PSI-DP 5, p = .07; PSI-DP 5

→ TSCYC PTS-T 5, p = .01; PSI-DP 3 → TSCYC PTS-T 3, p = .03; TSCYC PTS-T 3 → PSI-

DP 3, p = .09). Both positive and negative relationships were found between parent self-report

of symptoms of depression and parent ratings of child symptoms. The direction of the

relationship depended on the specific pairs of ratings. All model fit statistics are shown in Table

22 and Model I is shown in Figure 18.

PSI-Competency (PSI-CO) and TSCYC PTS-T (Parent Report of Child Symptoms). The

hypothesized model did not fit the data well, but indicated that model modifications may result in

a good fitting model, χ^2 (15, $N = 115$) = 29.61, $p = .01$, CFI = .92, RMSEA = .09. Pre-assessment (data 2) scores did not co-vary, but previous competency and parent report TSCYC PTS-T scores did predict future ones ($p < .001$ for all pathways). There was one cross-lagged pathway that approached significance (PSI-CO 2 → TSCYC PTS-T 3, $p = .05$). Model iterations resulted in a good fitting model, Model J, in which only one pathway (a same time point pathway) was significant, χ^2 (20, $N = 115$) = 30.44, $p = .06$, CFI = .95, RMSEA = .07; P3→T3, $p = .03$). The findings indicated that parenting competency and parent report of symptoms were negatively related at pre-therapy (data 3). As parenting competency decreased, symptom ratings increased. Model statistics for all model iterations are displayed in Table 23 and Model J is illustrated in Figure 19.

 Goal 1 Summary of Findings. Parental support as measured by the total score on the Parental Support Questionnaire was found to be generally unrelated to child symptoms of posttraumatic stress by either parent or child report. The hypothesized model fit the data poorly with child symptoms of posttraumatic stress. Alternative models also fit the data poorly. Supplementary analyses with the two subscale scores, Blame and Support, were also conducted and yielded similar results. Previous parental support scores generally did not predict future ones, except in the case of the Blame subscale in which scores at pre-assessment (data 2) predicted scores at pre-therapy (data 3) and scores at pre-therapy predicted scores at post-therapy (data 4). Thus, parental support, as measured by total and subscale scores, was unrelated to child symptoms of posttraumatic stress based on both parent and child report of child symptoms.

 Good fitting models were achieved with the Parent Emotional Reaction Questionnaire total scores. Analyses indicated that parent emotional reaction and children's symptoms of posttraumatic stress were related at the same time points, rather than in a cross-lagged design, as

hypothesized. The relationships were reciprocal with a slighter predominance of predicting child posttraumatic stress symptoms and the relationship came out more clearly in the parent report of child symptoms of posttraumatic stress.

Models with the Parenting Stress Index total scores did not fit the data well and supplementary analyses were conducted with the Child and Parent Domain scores, as well as the Attachment, Depression, and Competency subscale scores. Perfect, or near-perfect fitting models were achieved with the Depression subscale scores. PSI-Depression scores and child symptom scores predicted one another in a cross-lagged and same time point manner. This relationship emerged more clearly with the parent report outcome measure, the TSCYC PTS-T. Good-fitting models were also achieved with the Competency subscale. Analyses with this subscale also indicated that parents and children influenced each other in a cross-lagged and same time point relationship. This relationship was more evident with the child-rated TSCC-PTS. The direction of the significant relationships with both subscales and child symptoms was both positive and negative.

Goal 2. The second goal of the current study was to determine the extent to which change in parental support and emotional reaction predicted child posttraumatic stress symptoms at post-therapy and at 6-month follow-up, over and above baseline reports of parental support and parent emotional reaction.

Hypotheses. Change scores in parents' ratings of parental support and parent emotional reaction between pre-assessment and post-therapy will be stronger predictors of parent and child ratings of child posttraumatic stress symptoms at post-therapy and 6-month follow-up than the predictive strength of baseline ratings of parental support and parent emotional reaction. Given

the lack of research in this area, this hypothesis was exploratory with respect to the direction of change.

      Analyses. This hypothesis was tested using multiple linear regression with the child report TSCC-PTS and parent report TSCYC PTS-T as dependent variables at post-therapy (data 4) and 6-month follow-up (data 5). Baseline and change scores for the total scores on parental support and parent emotional reaction were entered as independent variables in separate regressions to avoid collinearity as baseline scores were used to calculate change scores (L. Fiksenbaum, personal communication, May 4, 2016).

      Parental Support Questionnaire-Total (PSQ-T).

      Trauma Symptom Checklist for Children-Posttraumatic Stress (TSCC-PTS) at Post-Therapy (Data 4). Multiple regression analysis was used to test if baseline (data 0) total scores of parental support significantly predicted children's self-report ratings of posttraumatic stress symptoms at post-therapy (data 4). The results indicated that this variable explained 0.3% of the variance in symptoms ($R^2 = .003$, $F(1,36) = .11$, $p = .74$). Participants' change in parental support between baseline and post-therapy was also not a significant predictor of child's symptoms of posttraumatic stress at post-therapy, ($R^2 = .01$, $F(1,34) = .44$, $p = .51$). To verify the predictive strength of post-therapy parental support scores on child symptoms, an additional regression was run. Results of this supplementary analysis indicated that post-therapy parental support scores explained 3% of the variance in symptoms ($R^2 = .03$, $F(1,47) = 1.40$, $p = .24$).

      Trauma Symptom Checklist for Children-Posttraumatic Stress (TSCC-PTS) at 6-Month Follow-Up (Data 5). Multiple regression analysis was used to test if baseline (data 0) total scores of parental support significantly predicted children's ratings of their posttraumatic stress symptoms at follow-up (data 5). The results indicated that this variable explained 3% of the

variance in symptoms ($R^2 = .03$, $F(1,27) = .73$, $p = .40$). Participants' change in parental support between baseline and 6-month follow-up was also not a significant predictor of children's symptoms of posttraumatic stress at follow-up, ($R^2 = .001$, $F(1,22) = .02$, $p = .88$). Supplementary analysis showed that follow-up parental support total scores explained 2% of the variance in symptoms ($R^2 = .02$, $F(1,30) = .60$, $p = .44$).

Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC PTS-T) at Post-Therapy (Data 4). Multiple regression analysis was used to test if baseline (data 0) total scores of parental support significantly predicted parent report of children's posttraumatic stress symptoms at post-therapy (data 4). The results indicated that this variable explained 2% of the variance in symptoms ($R^2 = .02$, $F(1,35) = .59$, $p = .45$). Participants' change in parental support between baseline and post-therapy was also not a significant predictor of children's symptoms of posttraumatic stress at post-therapy, ($R^2 = .002$, $F(1,34) = .07$, $p = .79$). Supplementary analysis showed that post-therapy parental support scores explained 2% of the variance in symptoms ($R^2 = .02$, $F(1,47) = .70$, $p = .41$).

Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC PTS-T) at 6-Month Follow-Up (Data 5). Multiple regression analysis was used to test if baseline (data 0) scores of parental support significantly predicted parents' ratings of their children's posttraumatic stress symptoms at follow-up (data 5). The results indicated that this variable explained 0.1% of the variance in symptoms ($R^2 = .001$, $F(1,29) = .03$, $p = .86$). Participants' change in parental support between baseline and 6-month follow-up was also not a significant predictor of children's symptoms of posttraumatic stress at follow-up, ($R^2 = .09$, $F(1,25) = 2.55$, $p = .12$). Supplementary analysis indicated that follow-up parental support scores explained 2% of the variance in symptoms ($R^2 = .02$, $F(1,34) = .65$, $p = .43$).

Parent Emotional Reaction Questionnaire-Total (PERQ-T).

Trauma Symptom Checklist for Children-Posttraumatic Stress (TSCC-PTS) at Post-Therapy (Data 4). Multiple regression analysis was used to test if baseline (data 0) scores of parent emotional reaction significantly predicted children's self-report ratings of posttraumatic stress symptoms at post-therapy (data 4). The results indicated that this variable explained 3% of the variance in symptoms ($R^2 = .03$, $F(1,37) = .98$, $p = .33$). Participants' change in parental emotional reaction scores between baseline and post-therapy was also not a significant predictor of children's symptoms of posttraumatic stress at post-therapy, ($R^2 < .001$, $F(1,36) = .004$, $p = .95$). Supplementary analysis of the data indicated that post-therapy parent emotional reaction scores explained 4% of the variance in symptoms ($R^2 = .04$, $F(1,48) = 1.72$, $p = .20$).

Trauma Symptom Checklist for Children-Posttraumatic Stress (TSCC-PTS) at 6-Month Follow-Up (Data 5). Multiple regression analysis was used to test if baseline (data 0) scores of parent emotional reaction significantly predicted children's self-report ratings of their posttraumatic stress symptoms at follow-up (data 5). The results indicated that this variable explained 0.2% of the variance in symptoms ($R^2 = .002$, $F(1,27) = .07$, $p = .80$). Participants' change in emotional reaction between baseline and 6-month follow-up was also not a significant predictor of child symptoms of PTS at follow-up, ($R^2 = .12$, $F(1,26) = 3.43$, $p = .08$). Again, a supplementary analysis showed that follow-up parent emotional reaction scores explained 5% of the variance in symptoms but was not a significant predictor of symptoms ($R^2 = .05$, $F(1,34) = 1.80$, $p = .19$).

Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC PTS-T) at Post-Therapy (Data 4). Multiple regression analysis was used to test if baseline (data 0) scores of parent emotional reaction significantly predicted parents' reports of

their children's symptoms at post-therapy (data 4). The results indicated that this variable

explained 11% of the variance in symptoms, and was a significant predictor ($R^2 = .11$, $F(1,36) = 4.26$, $p = .05$) ($\beta = .33$, $p = .05$). Participants' change in parent emotional reaction between

baseline and post-therapy was not a significant predictor of children's symptoms of

posttraumatic stress at post-therapy, ($R^2 = .09$, $F(1,36) = 3.43$, $p = .07$). Supplementary analysis

indicated that post-therapy parent emotional reaction scores explained 17% of the variance in

symptoms ($R^2 = .17$, $F(1,48) = 9.77$, $p = .003$) and was a significant predictor of child PTS, ($\beta = .41$, $p = .003$).

Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score

(TSCYC PTS-T) at 6-Month Follow-Up (Data 5). Multiple regression analysis was used to test if

baseline (data 0) scores of parent emotional reaction significantly predicted parents' ratings of

their children's posttraumatic stress symptoms at follow-up (data 5). The results indicated that

this variable explained 16% of the variance in symptoms ($R^2 = .16$, $F(1,29) = 5.41$, $p = .03$).

Parent emotional reaction scores at baseline significantly predicted parent report TSCYC PTS-T

scores ($\beta = .40$, $p = .03$). Participants' change in emotional reaction between baseline and post-

therapy was not a significant predictor of symptoms ($R^2 = .06$, $F(1,29) = 1.98$, $p = .17$). An

additional regression analysis showed that parent emotional reaction scores at follow-up

explained 35% of the variance in symptoms ($R^2 = .35$, $F(1,38) = 20.36$, $p < .001$). This variable

was a significant predictor of symptoms, ($\beta = .60$, $p < .001$).

Goal 2 Summary of Findings. Multiple regression analyses revealed that neither

baseline nor change scores of parental support significantly predicted child symptoms of

posttraumatic stress at post therapy (data 4) or 6-month follow-up (data 5) on either symptom

inventory. Further, supplemental analyses indicated that parental support at post-therapy and at follow-up were also not related to child symptom scores at those time points.

Neither baseline nor change scores on the Parent Emotional Reaction Questionnaire were related to child symptoms of posttraumatic stress at post therapy (data 4) nor at 6-month follow-up (data 5) on the child report TSCC-PTS. Supplemental analyses also indicated that emotional reaction was not related to child report of posttraumatic stress symptom scores at post-therapy or follow-up. Conversely, baseline (data 0) and post-therapy (data 4) parent emotional reaction scores were related to child symptoms of posttraumatic stress based on parents' reports on the TSCYC. Similar results were found when analyzing scores at follow-up (data 5).

Goal 3. The final goal of the current study was implemented in order to add clarity to the existing literature regarding key predictors of parental support.

Hypotheses. Child characteristics (child's age and relationship to perpetrator) and caregiver characteristics (baseline levels of parental support and emotional reaction, and pre-assessment level of parenting stress) would predict caregiver support of the child more strongly at pre-assessment than abuse characteristics (type of abuse and whether or not criminal charges were laid).

Analyses. This hypothesis was tested using hierarchical multiple linear regression with the above listed variables separated into blocks of characteristics (child, caregiver, abuse). In this manner both the predictive strength of both categories of variables and of individual variables was evaluated.

Prior to conducting the analyses, the relevant assumptions were tested. The number of predictors had to be considered given the small sample size. Nine independent variables were included in the model, which is the maximum number of variables as recommended by Green

(1991). The assumption of singularity was generally met, with the exception of one variable, parental support at baseline, which could be related to the dependent variable of parental support at pre-assessment. Although they may be related in theory, according to the SEM results previous parental support total scores did not predict future scores. Therefore, it was deemed appropriate to include it in the model. Extreme univariate outliers were examined as discussed above and included in the sample with their original scores as winsorizing or excluding them from the sample did not change results in the preliminary analyses. An examination of correlations revealed that no variables were highly correlated, with the exception of sexual abuse and multiple abuse ($r = -.91$, $p < .001$) which was to be expected given that the majority of participants who experienced multiple abuse types also experienced sexual abuse as one of those types of abuse.

A three stage hierarchical model was conducted with parental support total scores at pre-assessment (data 2) as the dependent variable. The order of stages was informed by Knott (1998) who found that child characteristics accounted for the largest amount of variability in maternal support, followed by parental characteristics, and then abuse characteristics. The child characteristics in the current study consisted of age of the child in years at the time of the first data collection, and the child's relationship to the perpetrator. The 'Relationship to Perpetrator' variable was dichotomized into 'caregiver or not' in order to reduce the number of options which would each have had to be dummy coded and entered as a separate independent variable into the model, in turn reducing power. The parent characteristics consisted of baseline (data 0) total scores of parental support and parent emotional reaction, as well as pre-assessment total scores of parenting stress. The abuse characteristics consisted of the type of abuse experienced by the child and whether or not criminal charges were laid. 'Type of Abuse' was dummy coded to

capture what type of maltreatment (not general trauma) the children experienced. The sample

was split almost evenly between children who experienced sexual abuse only and those who

experienced multiple forms of abuse: sexual abuse only (41.6% of the sample), multiple types of

maltreatment (47.8% of the sample), or single non-sexual abuse or non-maltreatment trauma

(9.7% of the sample).

Predicting Parental Support at Pre-Assessment from Child, Parent, and Abuse

Characteristics. The hierarchical regression model indicated that Block One, child

characteristics of Age and Relationship to Perpetrator accounted for 5.1% of the variance in

parental support at pre-assessment (data 2) but did not significantly contribute to the model,

$F(2,41) = 1.10$, $p = .34$. Adding parent characteristics of parental support at baseline (data 0),

parent emotional reaction at baseline (data 0), and parenting stress at pre-assessment in Block

Two, accounted for an additional 17.9% of the variance in parental support at assessment but

was not significant as a predictor, $F(5,38) = 2.28$, $p = .07$. Last, adding abuse characteristics of

Presence of Charges and Type of Abuse in Block Three, accounted for an additional 15.2% of

the variance in the model and significantly contributed to the model, $F(9,34) = 2.34$, $p = .04$.

Together, the independent variables accounted for 38.2% of the variance in predicting parental

support at pre-assessment (data 2). The only significant predictor in all blocks was parental

support at baseline ($p = .01$ in Block Two and $p = .003$ in Block Three). Descriptive analyses

showed that on average parents' reports of their support decreased 1.69 points ($SD = 9.27$) from

baseline to pre-assessment; however, 24.6% of the sample reported no change in scores. The

median amount of change was zero, as was the mode. To contextualize, the mean parental

support score at baseline was 86.15 ($SD = 9.48$) and the mean pre-assessment parental support

score was 85.16 (*SD* = 9.71), indicating a very small change in scores. Please see Table 24 for a

summary of these statistics.

Supplementary Analyses. Parent emotional reaction emerged in the SEM analyses as a

significant factor predicting children's symptoms of posttraumatic stress at some points during

assessment and therapy, thus, the decision was made to run the hierarchical regression model

with pre-assessment parent emotional reaction scores as the dependent variable. This decision

was based on the potential clinical implications of being able to identify factors that predict

parent emotional reaction so that they can be identified in case conceptualization. The

hierarchical regression analysis followed the same stages outlined above.

Predicting Parent Emotional Reaction at Pre-Assessment from Child, Parent, and Abuse

Characteristics. The hierarchical regression model indicated that Block One, child

characteristics accounted for 8.8% of the variance in parental support at pre-assessment (data 2)

but did not significantly contribute to the model, $F(2,42) = 2.04$, $p = .14$. Adding parent

characteristics in Block Two, accounted for an additional 60.9% of the variance in parental

support at assessment and significantly contributed to the model, $F(5,39) = 17.94$, $p < .001$.

Adding abuse characteristics in Block Three, accounted for 3.6% of the variance in the model

and significantly contributed to the model, $F(9,35) = 10.70$, $p < .001$, however, examination of

the specific independent variables revealed that only two independent variables were significant

in the model, neither of which was an abuse characteristic. A child characteristic, the child's

relationship to the perpetrator was significant (or approached significance) in the second and

third blocks ($p = .11$ in Block One, $p = .02$ in Block Two, and $p = .05$ in Block Three). A parent

characteristic, baseline (data 0) parent emotional reaction score, was the other significant

predictor ($p < .001$ in both Blocks Two and Three). Together, the independent variables

accounted for 73.3% of the variance in predicting parent emotional reaction at pre-assessment

(data 2), the vast majority of which resulted from the addition of the parent characteristics in

Block Two. Baseline scores of the parent emotional reaction accounted for 68.7% of the

variance and Relationship to Perpetrator accounted for 18.6% of the variance in pre-assessment

emotional reaction scores in the final block (Table 25). The finding that the Relationship to

Perpetrator variable was a significant predictor may be indicative of a *suppressor* effect, given

that it only emerged as a significant predictor after the caregiver characteristics were added in the

model. A suppressor effect exists when an independent variable strengthens the effect of another

independent variable on the dependent variable (Tabachnick & Fidell, 2007). Thus, in the

current study, the addition of the parent characteristics may be enhancing the effect of the

Relationship to Perpetrator variable on parent emotional reaction scores at pre-assessment.

Change scores were calculated to assess the degree of perceived change between baseline

reports and pre-assessment reports on the Parent Emotional Reaction Questionnaire. Change

scores were more evenly distributed, particularly compared to the Parental Support

Questionnaire, Total scores. Parents' scores decreased between baseline and pre-assessment

(i.e., parents reported less negative emotional reaction), $M = -8.92$, $SD = 8.76$, Median = -8.50,

Mode = 0.00, on the emotion reaction questionnaire.

Goal 3 Summary of Findings. Hierarchical multiple regression was used to test the

relative predictability of child, parent, and abuse characteristics when predicting parental support

scores at pre-assessment. Given the emergent importance of the Parent Emotional Reaction

Questionnaire, the same analyses were run with the emotional reaction scores. The only factor

that significantly predicted parental support at pre-assessment was parental support at baseline.

The same was found for parent emotional reaction. Any additional significant predictors were

found to be artifacts of the data. Of note, there was very little range among parental support

scores.

Discussion

The current study examined the reciprocal relationship between parents and their children

through the course of assessment and treatment for trauma. This relationship was examined

through three goals which focused on specific parent factors and child symptoms of

posttraumatic stress. Parent factors consisted of parental support for the disclosure of abuse,

parent emotional reaction in regards to the abuse, and general parenting stress. Children's

symptoms of posttraumatic stress were assessed by child self-report and parent-report. The

hypothesis that parents and children influence each other in a transactional manner over time was

tested in the first goal of the study. Structural equation modeling was used to test a cross-lagged

design, suggesting that parent factors at one time point predict child posttraumatic stress

symptoms the next time point and vice versa from the beginning of assessment to 6-month

follow-up. Multiple regression analysis was used in the second goal of the study to evaluate the

predictive strength of the change in parental support and emotional reaction on the improvement

of symptoms at treatment end and follow-up, compared with the predictive strength of baseline

ratings of parent factors. Hierarchical multiple regression was used in the third goal of the

current study in order to examine the predictive strength of child, parent, and abuse

characteristics on pre-assessment scores of parental support. The intention of the third goal was

to add to the existing literature on predictors of parental support.

Parents and children can influence each other at various points through assessment,

treatment, and follow-up depending on the specific parent factor and symptom reporter. In some

cases, parent factors and child symptoms influenced each other at skipped time points (e.g. pre-

assessment parent factor predicted post-therapy child symptoms) or at same time points (e.g. pre-therapy child symptoms predicted pre-therapy parent factors). These relationships existed with the Parent Emotional Reaction Questionnaire and the depression and competency subscales of the Parenting Stress Index, yet did not exist with the Parental Support Questionnaire or other subscales of the Parenting Stress Index.

Parental support was not related to and did not predict child symptoms in the current sample. This was the case with the total and subscale scores in correlations and in structural equation modeling (SEM). There was some hint of a possible cross-lagged relationship between the parental support and parent report of child symptoms, however, those findings were very tentative given the extremely poor fit of the SEM models.

By and large, previous parental support scores did not predict future scores. The only exceptions to this finding were on the blame subscale scores at pre-assessment and pre-therapy. It is possible that this finding, in the context of the current study, may reflect an artifact of the data as there was minimal variability within scores at each time point and between time points. From a statistical standpoint, low variability in one variable may obscure a relationship with another variable, even if one exists. Taken from a broader perspective of the literature on parental support, this finding, if it is not purely an artifact of the data, is enlightening given the heavy focus on parental support in the literature. As discussed in detail in Elliot and Carnes (2001), caregiver support naturally vacillates over time. Thus, a perceived, or displayed, level of maternal support at an earlier time point does not necessarily predict future levels of support. Though past literature has shown a relationship between parental support and child outcome, a recent meta-analysis by Bolen and Gergely (2015) found that studies examining the relationship between caregiver support and child functioning post sexual abuse disclosure failed to find a

relationship between the two factors. Weak relationships were found between non-offending caregiver support and child outcome as measured by acting out, depression, and self-concept. Child outcome based on reports of additional symptoms such as anxiety and sexualized behaviour were not related to caregiver support. The results in the current study may reflect the Elliot and Carnes (2001) and Bolen and Gergely (2015) findings. It is crucial to keep this in mind in clinical work as children are removed from their parents' care in cases when parents are deemed to be inadequately supportive for their child following a disclosure of abuse.

The lack of relationship between parental support and child outcome may be due to a lack of consensus within the literature on how to define non-offending caregiver support (Bolen & Gergely, 2015), or a lack of having captured the essence of support. It is likely the case that parental support is complex and deserves a more comprehensive operational definition and method of assessment. Bolen, Dessel, and Sutter (2015) developed an eight dimension concept of non-offending caregiver support through qualitative methods. They found that caregivers identified dimensions of support that were traditionally not considered by system workers. The eight dimensions consisted of: basic support (e.g., housing, financial support), safety and protection (e.g., protecting the child from the perpetrator, creating a sense of safety in the home, protecting the child from self-harm), decision-making (e.g., seeking evidence for believing the disclosure), active parenting (e.g., daily parenting activities, boundary-setting, discipline), instrumental support (e.g., obtaining formal and informal support services for children), availability (e.g., physical, emotional, and communicative availability to the child), sensitivity to the child (e.g., the caregiver's ability to convey an understanding of the child's emotions, moods, and personality), and affirmation (e.g., praising, expressing love, improving child's self-concept).

Zajac, Ralston, and Smith (2015) found that maternal support was, in fact, related to child symptoms of PTSD and depression at the time of disclosure and at 9-month follow-up; however, they expanded their concept of support to include emotional support (e.g., reassurance, belief of disclosure), blame/doubt (e.g., blaming the child for the abuse), vengeful arousal (e.g., a parent's statements of wanting to harm the perpetrator), and skeptical preoccupation (e.g., the caregiver's persistent attempt at obtaining information about the abuse). These were assessed with established questionnaires; however, these factors are not often included in other studies, nor were they assessed in the current study. The alternate dimensions listed above require continued testing, yet do indicate that parental support is likely comprised of much more than just support for the child and assigning blame for the abuse towards either the perpetrator or the child.

Another possibility for the lack of a relationship between parental support and child symptoms of posttraumatic stress symptoms in the current study and in the broader literature is the lack of assessment of the child's perspective of parental support. It is possible that the child's *perception* of parental support, rather than parent self-report, is more informative in understanding a child's experience of caregiver support following an abuse disclosure. In their study of maternal support following the disclosure of sexual abuse, Zajac et al. (2015) included both parent and child ratings of caregiver support. They found that children's ratings of their mother's vengeful statements were related to children's self-report of symptoms of PTSD, and that children's ratings of their mother's emotional support were related to children's self-reported anger, at the time of disclosure. Morrison and Clavenna-Valleroy (1998) found that adolescent females who perceived their mothers as supportive improved more quickly, had better levels of self-concept, and lower levels of depression compared to their counterparts who perceived their mothers to be unsupportive of them following their disclosure of sexual abuse.

In contrast to the lack of relationship found between the parental support and child symptoms of posttraumatic stress, *parent emotional reaction* was found to be related to child symptoms. This finding was illuminating given the heavy focus on parental support in the literature, compared to the lack of focus on parent emotional reaction. Parent emotional reaction was associated with child symptoms when assessed at the same time point (rather than transactionally as hypothesized) and this relationship was more clearly shown when assessing parent ratings of child symptoms. Most of the significant relationships showed that parent factors influenced child symptom ratings. As parent emotional reaction improved over time, so did child symptoms of posttraumatic stress. This finding was pivotal as it highlights parent emotional reaction as a key factor within the parent-child relationship. Though research studies focus less on parent emotional reaction compared to parental support, it is clinically significant.

The Parent Emotional Reaction Questionnaire (Mannarino & Cohen, 1996) covers a range of negative emotions that a caregiver can experience in relation to their child's disclosure. It assesses the frequency of feelings such as sadness, upset, shame, and responsibility. Emotional reaction, while not synonymous, is linked to emotion regulation (Please see Cole, Martin, & Dennis, 2004 and Eisenberg & Spinrad, 2004 for a discussion of the conceptualization and operationalization of emotion reaction and emotion regulation). According to Cole et al. (2004) emotions are biological processes that require appraisals for action. Distinguishing emotions from emotional regulation and defining emotional regulation appears to be more complex. At the very least, emotion regulation is an attempt to regulate emotions through processes such as initiating, avoiding, inhibiting, and maintaining the intensity, duration, and type of emotion through attention, behaviour, physiology, and motivation (Eisenberg & Spinard, 2004). These processes occur to achieve behavioural, social, or personal goals (Eisenberg &

Spinard, 2004). Cole et al. (2004) further believe that emotion regulation refers to a process inherent in emotion that encompasses both changes to the quality of the emotion itself and to the changes in the related psychological processes. Therefore, emotion regulation is more broadly defined and refers to both emotions as regulated and emotions as regulating (Cole et al., 2004). For the purposes of the current study, emotion regulation is referred to as an attempt to manage emotional reactions in-line with the Eisenberg and Spinard (2004) working definition.

Parents help children regulate their emotions in typical development, children are sensitive to their parents' emotions, and emotions act as a lens through which one's environment is understood. Not specific to trauma, a caregiver's ability to match his/her child's affect can help develop the child's capacity for emotional self-regulation. Feng and colleagues (2007) found that children of mothers who responded positively to their child's expressions of positive emotions were more likely to express less negative emotions towards their mother such as whining, crying, and hitting over time. The relationship they found was bidirectional, but mostly parent-driven. Parents' ability to help guide a child through the expression of negative emotions is key in helping children manage their own emotions and is also related to the occurrence of disruptive child behaviours. Duncombe, Havinghurst, Holland, and Frankling (2012) found that parents' expression of negative emotions towards other family members was a strong predictor of child disruptive behaviours and children's difficulties with emotion regulation. Also, better emotion coaching by parents related to expressions of anger, sadness, and happiness was associated with fewer child disruptive behaviours (Duncombe et al., 2012).

Hooven, Gottman, and Katz (1995) found that parents of typically developing preschoolers who had a greater awareness of their own sad feelings and a better ability to coach their children through anger displayed less hostile behaviours within their marriage and had more

positive parent-child interactions compared with parents without these emotional characteristics. The children of these parents also evidenced better cognitive, social, academic, and physical health outcomes compared with their counterparts in the long-term (Hooven et al., 1995). The quality of the parent-child relationship is directly impacted by a parent's ability to guide the child through emotional processing. In a study on the effects of high levels of daily parenting stress, children of parents who valued the expression of both positive and negative child emotions reported more security in the parent-child relationship (Stalter & Halderstadt, 2011). Furthermore, Eisenberg, et al. (1999) found some evidence of a two-way relationship between parents' punitive methods and children's externalizing behaviour. Therefore, parents act as an emotional coach who can help their children to understand their emotions, feel that their emotions are valid and accepted by their parents, and express both positive and negative emotions appropriately.

Children unknowingly perceive their parents' emotional stability and this can directly affect their own emotional well-being. Sullivan (1953) (as summarized in Altman, Briggs, Frankel, Gensler, & Pantone, 2002) noted that children sense their parents' anxieties and learn to adapt their emotions and behaviours to fit within the family's acceptable parameters. A child's ability to perceive exactly what role to fill for his/her parent in order to adapt to the parent's emotional needs becomes heightened in highly rigid or abusive family environments (Ferenczi, 1933 as cited in Altman et al., 2002). This can impact children's abilities to process trauma, manage their own feelings, and feel secure within their environment. From an attachment and psychoanalytic perspective, infants depend on their primary caregiver to protect them from their distressing and overwhelming feelings (Altman et al., 2002). When the primary caregiver is

unable to mediate the child's emotional arousal, the child must learn to regulate his/her own emotions. This may result in children who display difficulties with emotion regulation.

Parents' ability to manage their own strong emotions has a potential spill-over effect. How successful parents are at containing their negative emotional reactions in relation to their children's disclosure of abuse can directly impact the child's emotional stability, as well as the parents' own perception of how well they believe their child is functioning post-abuse. It is possible that a parents' inability to process their own strong emotional reactions of shame, guilt, and responsibility can affect their perception of their child's posttraumatic stress symptoms. Traumatic experiences may colour a parent's perception of his/her child and, in turn, a child's view of him/herself (Altman, et al., 2002). Parent emotional reaction is also complex and represents a unique experience for each caregiver. Though originally designed without subscales (Mannarino & Cohen, 1996), Holt, Cohen, Mannarino, and Jensen (2014) separated the items on the Parent Emotional Reaction Questionnaire into three subscales: Distress, Guilt, and Shame in a recent study. They found that the specific type of emotion endorsed by parents was related to the type of abuse their child experienced. It is possible that an even greater understanding of the relationship between parent emotional reaction and child symptoms of posttraumatic stress could be gained by examining these different dimensions.

Parent emotional reaction and emotional regulation should be a focus in intervention with children and non-offending caregivers. Therapy can act as a space within which the parent can express his/her own true emotional state in relation to the abuse, as is the case in the Trauma-Focused Cognitive Behavioral Therapy model. It would be important to attend to not only the parent's emotional reactions to the abuse, but to the ways in which these emotions contribute to a parent's pattern of responding to his/her child in daily life. These emotions can also be used as a

vehicle through which to examine the parent's own parenting style and the attachment style between the parent and the child, as well as the parent's own attachment style within his/her family of origin. It would then be easier to identify points of intervention. Attachment styles and parenting practices have even been found to moderate anxiety among youths exposed to natural disasters. Costa, Weems, and Pina (2009) found that trust, communication, acceptance, and control moderated the level of anxiety experienced by children and adolescents following Hurricane Katrina. Similarly, Cobham and McDermott (2014) found that parents' cognitions about safety and autonomy following a natural disaster influenced their child's level of posttraumatic stress symptoms. Adding a more in-depth individual therapy component with another therapist to address attachment, parenting practices, and cognitions may be beneficial, depending on the needs of the parent.

Cyr, McDuff, and Hébert (2013) also noted that therapy should be tailored to each parent's type of reaction to the abuse. Four types of maternal reaction patterns were identified in their study. Each subgroup differed in their ability to support the child, manage hostile feelings towards the child, and implement appropriate parenting strategies. The subgroups were as follows: resilient (e.g., believed child, emotionally supportive, appropriately disciplined child), avoidant-coping (e.g., avoidant coping strategies, emotionally supportive but not in relation to the abuse), traumatized (e.g., symptoms of PTSD, possible intergenerational abuse, high levels of stress), and anger-oriented (e.g., angry towards child despite belief of the disclosure, did not provide adequate supervision, harsh discipline tactics). The results of the study suggested that identifying the type of parent emotional reaction would be key in therapy in order to develop a treatment plan that meets the individual needs of each parent. By supporting parents in

processing their specific emotional reactions to the abuse, therapists can help improve parental

support which can, in turn, help to break down the emotional barriers in the parent-child dyad.

Tailoring therapy to improve parent emotional reaction may be done through teaching

mentalization. Mentalization is the concept of an individuals' ability to hypothesize and

understand their own, and another's mental states. It is the parent's capacity to imagine within

his/her own mind their child's experiences (Fonagy, 2006). Mentalization is an imaginative

process that requires an individual to hypothesize about another's desires, beliefs, feelings, and

needs (Fonagy, 2006). Within the context of the parent-child dyad, it is a foundation of secure

attachment. Parents who can mentalize their child's mental states are better able to meet the

child's needs, creating a secure attachment. A child develops trust in their primary caregiver

when they feel that s/he understands, or attempts to understand, their mental states. This trust

strengthens the parent-child bond and secure attachment is fostered even further which creates a

setting within which the child feels comfortable experimenting with his/her own mentalization

capacity with other non-attachment figures (Fonagy, 2006).

Infants learn to distinguish their mental states through the parents' mirroring of their

emotions and parents distinguishing their child's emotions as separate from their own (a process

also referred to as 'markedness') (Fonagy, 2006). Parents' inability to regulate their own

emotions hinders their ability to tune into a child's emotional state, making it nearly impossible

to provide parental support to meet the child's basic and emotional needs. Inconsistent mirroring

and markedness create confusion within the child about their own mental states and can lead to

negative personality development later in life (Fonagy, 2006). Once the parents' emotional

barriers are broken down in therapy, affection can come through and a secure attachment

between the parent and child can begin to develop. Securely attached parents, even those with

histories of loss and separations with their own primary attachment figures, foster secure attachments with their children (Main, 1996). Within the parent-child attachment relationship, parents' abilities to mentalize their child's mental states, mirror and mark their child's emotions as separate from their own, and validate their expressions of emotions can help reduce the expression of negative emotions over time.

The third parenting factor, parenting stress, was also evaluated in relation to child posttraumatic stress symptoms by evaluating total scores, child and parent domain scores, and specific subscale scores (attachment, depression, and competency) on the Parenting Stress Index in relation to posttraumatic stress symptoms. Though parenting stress and child symptoms were not related in a transactional manner with the total scores, domain scores, and attachment subscale scores, model modifications indicated some evidence that parents and children do influence each other in a variety of ways on the parent depression and parenting competency subscales. Depression scores were more strongly related to parent report of child symptoms and competency scores were more closely related to child self-report of symptoms. Both positive and negative relationships were found across time points and at the same time points. Many of the associations were parent-driven; however, reciprocal relationships were found, particularly between parent depression and parent ratings of child symptoms of posttraumatic stress.

Perfect fit statistics were found in the model with the parenting stress depression scores and the child self-report of symptoms. This could be a result of over-fitting of the data, or it could be a reflection of the clearer relationship between maternal depression and children's posttraumatic stress symptoms, in comparison to the other dimensions of parenting stress. Maternal depression is a particularly well-researched area in the literature and it is well documented that a mother's level of depression affects her child's emotional well-being and self-

concept. Children of depressed mothers have higher (Dougherty, Tolep, Smith, & Rose, 2013) and more inflexible (Apter-Levi, et al., 2016) stress responses as measured by cortisol levels. They may also be more likely to experience internalizing and externalizing issues (Foster et al., 2008). In the Apter-Levi et al. (2016) study, depressed mothers displayed more negative affect, overt expressions of anger, hostility, anxiety, and depression in parent-child interactions. Shifts in mood, negative emotions, and maternal withdrawal were unpredictable to children whose salivary cortisol levels did not decrease naturally over time in stressful situations. These children were more likely to display social withdrawal and higher rates of psychopathology over the long-term (Apter-Levi et al., 2016). Apter-Levi and colleagues (2016) suggested that child outcomes may be due to a depressed mother's inability to buffer her child's physiological stress response, in other words, her inability to tune into and match her child's needs in a dependable manner. Hostile parenting practices such as expressions of criticism, frustration, and anger displayed by depressed mothers were also associated with higher and increasing cortisol levels in children as well as oppositional behaviours in yet another study on child stress response (Doherty et al., 2013). Somewhat higher rates of emotional and behavioural problems among children exposed to high rates of prenatal depression and anxiety have also been found (Leis, Heron, Stuart, & Mendelson, 2014). Parents' emotional reaction, mental states, ability to regulate their own emotions, and ability to guide their children through emotion regulation directly impact the quality of the parent-child relationship. Children's capacity for adequate emotional self-regulation and their symptoms of externalizing behaviour are outcomes of these factors.

Results of the current study indicated that child symptoms of posttraumatic stress sometimes increased and at other times decreased in relation to parent depression and parenting competency. This may be due to several reasons. Within a dynamic dyadic relationship,

changes in mental health can change each person's attunement to the other's state. As parents'

depression and level of parenting competency improved over time, they may have also become

more aware of their child's struggles. Children may also have been able to express more

symptoms if they sensed an improvement in their parents' well-being. Both situations could

correspond with an increase in reported symptoms. In other cases, an improvement in parent

factors could be associated with a decrease in child symptoms and vice versa.

In Goal 2, the predictive strength of baseline, post-therapy, 6-month follow-up, and

change scores of parental support and parent emotional reaction when predicting child symptoms

at post-therapy and follow-up were examined. Total parental support did not predict child

symptoms at any time point. Baseline, post-therapy, and follow-up reports of parent emotional

reaction predicted child symptoms of posttraumatic stress at post-therapy and follow-up, but only

according to parent report, not child self-report. Improvements in parent emotional reaction

from baseline to post-therapy (i.e., change scores) approached significance in predicting parent

reports of child symptoms. Essentially, as parents experienced improvements, or a reduction in

their negative emotional reaction about the abuse, they also perceived improvements in their

child's symptoms of posttraumatic stress. Again, parent emotional reaction emerged as a more

informative indicator of child well-being when compared to parental support. This may be

another illustration of a potential spill-over effect of strong parent emotions onto children, or of

parents' emotions acting as a filter through which they understand their children.

Given that parent emotional reaction emerged as a significant factor in predicting child

symptoms of posttraumatic stress, it became important to attempt to determine what variables

predicted pre-assessment reports as assessed by the Parent Emotional Reaction Questionnaire;

thus, it was added to Goal 3. Predictors of parental support and parent emotional reaction were

evaluated using multiple regression analyses, first with pre-assessment parent support scores as the dependent variable and then with pre-assessment parent emotional reaction scores as the dependent variable. Child characteristics (age and relationship to perpetrator), parent characteristics (baseline scores of parental support and parent emotional reaction, and pre-assessment total parenting stress scores), and abuse characteristics (whether or not charges were laid, and type of abuse) were added sequentially into each regression in order to determine which group of variables (and which individual variable) was a stronger predictor of parental support and parent emotional reaction at the time of disclosure. Only baseline scores of the parental support predicted support at pre-assessment.

This finding was interesting in and of itself given that previous parental support scores did not predict future scores between pre-assessment and 6-months follow-up in the structural equation modeling analyses. It is possible that this finding simply reflects parents' self-report of highly similar scores at each time point. One quarter of the sample reported no change in their level of support between the time of disclosure and pre-assessment. It is impossible to determine whether this was a true reflection of support at each time, or if it was an effect of asking parents to complete the baseline questionnaire retrospectively and at the same time as completing the pre-assessment questionnaire for the families not on the waitlist (i.e., the majority of the sample).

Pre-assessment scores of parent emotional reaction were also primarily predicted by baseline scores. Relationship to perpetrator, a child characteristic added to the model in the first step, significantly predicted pre-assessment emotional reaction scores; however, this relationship appeared only after adding parent characteristics in the second step. Thus, this finding may indicate a suppression effect. Suppression effects occur when the addition of an independent variable strengthens the effect of another independent variable on the dependent variable

(Tabachnick & Fidell, 2007). The most reliable finding was the finding that pre-assessment parent emotional reaction scores were most predicted by baseline scores. Change scores were also calculated to determine the amount of change that occurred between the time of disclosure and pre-assessment. Unlike the scores on the Parental Support Questionnaire, a better range in scores was found in the parent emotion reaction change scores. Given that the majority of parents also completed the baseline and pre-assessment Parent Emotional Reaction Questionnaire at the same data collection, as was the case with the Parental Support Questionnaire, it is reasonable to hypothesize that parents were reporting honest perceptions of their level of support and emotional reaction at each time point.

Limitations

To the author's knowledge, the current study is a first of its kind examining the reciprocal relationship between parents and children through the course of assessment and therapy for child trauma. Multiple parent factors were considered together alongside both parent and child reports of posttraumatic stress symptoms. Though this study addresses several gaps in the literature, namely evaluating the potential transactional nature of the parent-child relationship, limitations still exist. First, parent factors (parental support, parent emotional reaction, and parenting stress) were based on self-report only, leaving room for a social desirability reporting bias. The lack of variability in parental support may indicate that parents are more likely to view themselves as consistently supportive. It is unknown whether or not these ratings reflect their children's perceptions of their parents' support as the current study did not include a questionnaire to assess the child's experience of parental support.

Second, although baseline reports of support and emotional reaction were obtained, these were assessed retrospectively at the first data collection, also introducing a potential reporting

bias. Parents tended to report themselves as high in support throughout the data collection period, thus there was low range and variability within the data. This could have obscured an existing relationship with child symptoms rather than accurately reflecting that there is no relationship between support and symptoms. The literature in this area appears to be somewhat equivocal with methodological limitations that make it difficult to determine whether or not a stronger relationship would have come through had there been more variability within the data.

Another limitation of the data was the sample size. The current sample of 115 represented a well-established clinical sample and met the Green (1991) criteria for including nine predictors in the regression analyses. The predictor variables required dummy coding and one variable became several variables, thus additional variables were excluded from the analyses in order to maintain statistical power. A power analysis for structural equation modeling indicated that a minimum sample size of 87 was required to run the analyses.[6] Given the type of path analyses in the current study, the sample size can also be calculated using the Green (1991) criteria. Though the sample size met requirements by both guidelines at the pre-assessment data collection, attrition occurred through the project resulting in a small sample at 6-month follow-up.

Last, though an initial goal of the larger study was to recruit children who experienced varying types of abuse, the end sample was comprised primarily of children who experienced sexual abuse. Their non-offending caregivers were also primarily biological mothers. It is noteworthy though, that almost half of the sample experienced multiple forms of abuse. Additionally, the sample was recruited through community programs and did represent the larger community of families seeking therapeutic services for sexual abuse mainly. Despite these realities, the composition of the sample can be considered a limitation of the study as it may limit

the generalizability of the results when considering other types of index trauma and relationships to non-offending caregivers. Future research should focus on the application of the Trauma-Focused Cognitive Behavioral model on children and adolescents exposed to different types of trauma, not only mainly sexual abuse.

Conclusion

The current study highlights the importance of parent involvement in child therapy and outcome following trauma. The findings demonstrate that parents and children influence each other through the course of assessment and treatment. Parent emotional reaction emerged as a main factor influencing child symptom outcome and as an important factor in child therapy outcome. Strong negative parent emotional reactions can colour a parent's perspective on a child's well-being. They also may inadvertently convey messages to a child about how the child should manage their own emotions and behaviour. Identifying maladaptive patterns in a parent's response towards a child can act as a vehicle for addressing deeper-rooted family dynamics such as attachment and parenting styles. Children's sense of stability in the parent-child relationship, sense of security within the greater environment of the external world, and ability to manage their own emotions well can be strengthened in this manner. Going forward, parent emotional reaction should be a greater focus in clinical practice and clinical research.

A direct effect of breaking down the emotional barriers created by a parent's negative emotional reaction would likely be the fostering of strong, positive parental support. Focusing on parent emotional reaction is particularly beneficial at this point in time given the lack of consensus of a definition of parental support. Future clinical research should address the methodological gaps in this area and evaluate the alternate dimensions of parental support that are beginning to emerge in the literature (e.g. Bolen et al., 2015; Zajac et al., 2015). Studies

should strive to include child reports of parental support in order to reduce method variance and a social desirability reporting bias inherent in parent self-report.

Focusing on parent emotional reaction and emotion regulation to improve child outcome and parental support within the context of treatment for trauma is a fresh look on the literature to-date. Rather than treating parental support as the main factor in predicting child outcome, this study highlighted the impact of parents' abilities to navigate their own emotions following a disclosure of abuse by their child. As the victim of the abuse, children can become overwhelmed by their distressing emotions. They depend on their parent to act as an anchor through an extremely difficult period of life. A principal focus of therapy should be to develop a tailored intervention that would promote personal strength for parents to be able to manage their emotions in an adaptive and healthy manner so that they are better able to provide positive emotional support for their child.

Footnotes

[1] Model structure differed across regions: All 7 Toronto-based agencies typically structured their sessions according to the two 45-minute individual sessions each week. Peel Children's Centre (PCC) structured their sessions differently due to agency resources and organization. At PCC, children were seen individually for one hour sessions with therapists. One hour individual parent sessions occurred every several weeks. Despite organizational differences, model component information was covered similarly between regions.

[2] Aisling Discoveries Child and Family Centre, Boost Child Abuse Prevention and Intervention (Boost; formerly Toronto Child abuse Centre), Child Development Institute, COSTI Family and Mental Health Services, Peel Children's Centre (PCC), The Etobicoke Children's Centre, The Hincks-Dellcrest Treatment Centre (Jarvis Site), The Hincks-Dellcrest Treatment Centre (Sheppard Site), and Yorktown Child and Family Centre.

[3] Peel Children's Centre treatment sessions were 1 hour per session, instead of 1.5 hours due to the structure of agency services.

[4] The Parenting Stress Index – 3rd Edition stipulates the following when calculating scores with missing data: not more than 1 item missing from a subscale score, not more than 3 items missing from either domain score, and not more than 5 items missing from the total score.

[5] Please refer to Appendix A for a list of relevant acronyms.

[6] Structural Equation Modeling power analysis was run online on Daniel Soper's "Calculator: A-Priori Sample Size Calculator for Structural Equation Models" (http://www.danielsoper.com/statcalc/calculator.aspx?id=89) using "1" latent variable. Though there are no latent variables in the models, an integer of at least one had to be inputted in order to run the calculation.

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Appendix A

Definitions of Acronyms

PSQ: Parental Support Questionnaire

PSQ-T: Parental Support Questionnaire – Total Score

PSQ-B: Parental Support Questionnaire – Blame Subscale Score

PSQ-S: Parental Support Questionnaire – Support Subscale Score

PERQ: Parent Emotional Reaction Questionnaire

PERQ-T: Parent Emotional Reaction Questionnaire – Total Score

PSI: Parenting Stress Index

PSI-T: Parenting Stress Index – Total Score

PSI-CD: Parenting Stress Index – Child Domain Score

PSI-PD: Parenting Stress Index – Parent Domain Score

PSI-CO: Parenting Stress Index – Competency Subscale Score

PSI-DP: Parenting Stress Index – Depression Subscale Score

PSI-AT: Parenting Stress Index – Attachment Subscale Score

TSCC: Trauma Symptom Checklist for Children (child self-report of symptoms)

TSCC-PTS: Trauma Symptom Checklist for Children – Posttraumatic Stress Subscale Score

                  (child self-report of symptoms)

TSCYC: Trauma Symptom Checklist for Young Children (parent report of child

                  symptoms)

TSCYC PTS-T: Trauma Symptom Checklist for Young Children - Posttraumatic Stress Total

                  Score (parent report of child symptoms)

Table 1

Correlations Between Independent and Dependent Variables at Pre-Assessment (Data 2), Pre-Therapy (Data 3), Post-Therapy (Data 4), and Six-Month Follow-Up (Data 5)

	1	2	3	4	5	6	7	8	9	10	11
TSCC-PTS											
Data 2	-										
Data 3	.57[a]	-									
Data 4	.40[a]	.48[a]	-								
Data 5	.38[b]	.54[a]	.62[a]	-							
TSCYC PTS-T											
Data 2	.24[b]	.23	-.06	.05	-						
Data 3	.24	.13	-.01	.04	.72[a]	-					
Data 4	.28[b]	.16	.10	.05	.52[a]	.65[a]	-				
Data 5	.09	.09	.00	.19	.59[a]	.66[a]	.64[a]	-			
PSQ-T											
Data 0	-.11	.16	.06	-.16	.23	.18	.13	.03	-		
Data 2	-.09	-.16	-.18	-.17	.13	.17	-.07	.13	.48[b]	-	
Data 3	.07	.16	-.01	.11	.25	.20	.25	.14	.15	.17	-
Data 4	.02	.01	.17	.10	.10	.20	.12	.21	.03	.53[b]	.22
Data 5	.09	.23	.09	.14	.23	.20	.08	.14	.42[b]	.52[b]	.44[b]
PERQ-T											
Data 0	.19	-.07	-.16	-.05	.12	.50[a]	.33[b]	.40[b]	.09	.07	.35[b]
Data 2	.10	-.04	-.26	.02	.22[b]	.45[a]	.19	.44[a]	-.10	.18	.32[b]
Data 3	-.10	-.02	-.29[b]	.03	.40[a]	.56[a]	.36[b]	.57[a]	-.14	.12	.39[a]
Data 4	-.11	.00	-.19	.17	.37[a]	.52[a]	.41[a]	.61[a]	-.00	.21	.26
Data 5	-.00	.17	-.02	.22	.36[b]	.47[a]	.32[b]	.59[a]	.05	.21	.13
PSI-T											
Data 2	.02	-.06	-.31[b]	-.29	.26[b]	.42[a]	.18	.30	.05	-.05	.10
Data 3	.00	.12	-.25	-.23	.14	.38[a]	.20	.39[b]	.17	.12	-.15
Data 4	-.16	-.00	-.20	-.10	-.02	.31[b]	.24	.51[a]	-.14	-.09	.17
Data 5	-.08	.13	-.17	-.09	.11	.26	.17	.43[a]	.03	.13	-.03

Note. TSCC-PTS = Trauma Symptom Checklist for Children - Posttraumatic Stress Subscale (Child Self-Report of Symptoms); TSCYC PTS-T = Trauma Symptom Checklist for Young Children – Posttraumatic Stress Total Subscale (Parent Report of Child Symptoms); PSQ-T = Parental Support Questionnaire – Total Score; PERQ-T = Parent Emotional Reaction Questionnaire – Total Score; PSI-T = Parenting Stress Index Total Score

[a]$p < .01$. [b]$p < .05$.

Table 1 Continued

Correlations Between Independent and Dependent Variables at Pre-Assessment (Data 2), Pre-Therapy (Data 3), Post-Therapy (Data 4), and Six-Month Follow-Up (Data 5)

12	13	14	15	16	17	18	19	20	21	22
-										
.29	-									
-.12	.21	-								
.02	.21	.82[a]	-							
.11	.10	.70[a]	.77[a]	-						
.22	.26	.47[a]	.67[a]	.78[a]	-					
.09	.21	.52[a]	.68[a]	.77[a]	.78[a]	-				
-.04	-.10	.35[a]	.35[a]	.24	.41[a]	.36[a]	-			
.09	.11	.12	.12	.16	.37[b]	.29	.66[a]	-		
.05	-.00	.32	.41[a]	.45[a]	.52[a]	.44[a]	.76[a]	.76[a]	-	
.13	.20	.36	.58[a]	.45[a]	.56[a]	.47[a]	.77[a]	.85[a]	.82[a]	-

Note. TSCC-PTS = Trauma Symptom Checklist for Children - Posttraumatic Stress Subscale (Child Self-Report of Symptoms); TSCYC PTS-T = Trauma Symptom Checklist for Young Children – Posttraumatic Stress Total Subscale (Parent Report of Child Symptoms); PSQ-T = Parental Support Questionnaire – Total Score; PERQ-T = Parent Emotional Reaction Questionnaire – Total Score; PSI-T = Parenting Stress Index Total Score

[a]$p < .01$. [b]$p < .05$

Table 2

Descriptive Statistics for Variables Included in Structural Equation Modeling

Variable Name	N	*M (SD)*
Data 2: Pre-assessment		
TSCC-PTS	106	10.64 (7.74)
TSCYC PTS-T	96	45.40 (12.07)
PSQ-T	88	85.16 (9.71)
PERQ-T	92	43.88 (14.98)
PSI-T	85	229.68 (43.94)
Data 3: Pre-therapy		
TSCC-PTS	76	9.33 (6.79)
TSCYC PTS-T	67	45.84 (13.09)
PSQ-T	60	85.98 (11.03)
PERQ-T	64	41.88 (14.70)
PSI-T	58	230.83 (47.18)
Data 4: Post-therapy		
TSCC-PTS	58	7.71 (5.32)
TSCYC PTS-T	53	40.23(11.70)
PSQ-T	49	87.59 (8.35)
PERQ-T	50	37.12 (13.80)
PSI-T	48	214. (47.04)
Data 5: Six-Month Follow-Up		
TSCC-PTS	43	7.16 (6.24)
TSCYC PTS-T	40	38.90 (11.82)
PSQ-T	36	88.06 (5.99)
PERQ-T	40	35.58 (13.92)
PSI-T	36	216.80 (45.62)

Note. TSCC-PTS = Trauma Symptom Checklist for Children - Posttraumatic Stress Subscale (Child Report of Symptoms); TSCYC PTS-T = Trauma Symptom Checklist for Young Children – Posttraumatic Stress Total Subscale (Parent Report of Child Symptoms); PSQ-T = Parental Support Questionnaire Total Score; PERQ-T = Parent Emotional Reaction Questionnaire Total Score; PSI-T = Parenting Stress Index Total Score

Table 3

Structural Equation Modeling Fit Statistics for the Parental Support Questionnaire Total Score (PSQ-Total) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS) (Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.64	.13	44.77	15	<.001
Skipped cross-lags	B	.64	.13	44.77	15	<.001
Same time points	C	.67	.13	42.86	15	<.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation.

Table 4

Descriptive Statistics for Variables Included in Structural Equation Modeling Supplementary Analysis

Variable Name	N	Mean	SD
Data 2: Pre-assessment			
PSQ-B	87	50.25	4.29
PSQ-S	93	35.54	5.79
PSI-CD	85	27.15	5.17
PSI-PD	85	120.24	6.57
PSI-AT	85	12.51	4.20
PSI-DP	85	19.68	6.57
PSI-CO	82	27.15	5.17
Data 3: Pre-therapy			
PSQ-B	60	50.78	5.62
PSQ-S	65	35.05	6.82
PSI-CD	59	112.14	25.70
PSI-PD	58	122.55	25.24
PSI-AT	59	12.51	4.01
PSI-DP	59	19.78	5.93
PSI-CO	59	27.85	6.05
Data 4: Post-therapy			
PSQ-B	49	51.10	4.21
PSQ-S	51	36.41	5.69
PSI-CD	48	98.25	22.42
PSI-PD	48	115.29	27.42
PSI-AT	48	11.88	3.37
PSI-DP	48	17.90	5.57
PSI-CO	48	26.44	6.88
Data 5: Six-Month Follow-Up			
PSQ-B	36	51.17	5.10
PSQ-S	40	36.33	5.98
PSI-CD	37	100.33	23.60
PSI-PD	37	114.12	27.12
PSI-AT	37	11.68	3.64
PSI-DP	36	18.72	5.80
PSI-CO	37	25.76	7.03

Note. PSQ-B = Parental Support Questionnaire – Blame Subscale; PSQ-S = Parental Support Questionnaire – Support Subscale; PSI-CD = Parenting Stress Index – Child Domain; PSI-PD = Parenting Stress Index – Parent Domain; PSI-AT = Parenting Stress Index – Attachment Subscale; PSI-DP = Parenting Stress Index – Depression Subscale; PSI-CO = Parenting Stress Index – Competency Subscale

Table 5

Structural Equation Modeling Fit Statistics for the Parental Support Questionnaire-Blame Subscale (PSQ-B) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS) (Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*P*
Hypothesized	A	.68	.13	45.27	15	<.001
Skipped cross-lags	B	.71	.13	42.16	15	<.001
Same time points	C	.70	.13	43.31	15	<.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation.

Table 6

Structural Equation Modeling Fit Statistics for the Parental Support Questionnaire-Support Subscale (PSQ-S) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS) (Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*P*
Hypothesized	A	.67	.12	39.79	15	<.001
Skipped cross-lags	B	.66	.12	40.06	15	<.001
Same time points	C	.69	.12	38.22	15	<.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation.

Table 7

Structural Equation Modeling Fit Statistics for the Parental Support Questionnaire-Total Score (PSQ-T) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Subscale (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*P*
Hypothesized	A	.76	.13	44.68	15	<.001
Deleted ns path T4→P5	B	.77	.13	44.76	16	<.001
Deleted ns path P2→T3	C	.77	.12	44.86	17	<.001
Deleted ns path P3→T4	D	.78	.12	45.10	18	<.001
Deleted ns path P4→T5	E	.78	.11	45.89	19	<.001
Deleted ns path T3→P4	F	.78	.11	46.48	20	<.001
Skipped cross-lags & T2→P3	G	.77	.13	42.84	14	<.001
Same time points	H	.75	.13	45.74	15	<.001
Compiled (included: T2→P3; P2→T4; T3→P3)	I	.79	.11	44.14	18	.001
Deleted ns path (T3→P3)	J	.80	.11	44.17	19	.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 8

Structural Equation Modeling Fit Statistics for the Parental Support Questionnaire-Blame Subscale (PSQ-B) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Subscale (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*P*
Hypothesized	A	.76	.14	45.99	15	<.001
Skipped cross-lags	B	.74	.14	48.91	15	<.001
Same time points	C	.75	.14	47.39	15	<.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 9

Structural Equation Modeling Fit Statistics for the Parental Support Questionnaire-Support Subscale (PSQ-S) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Subscale (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*P*
Hypothesized	A	.75	.13	44.23	15	<.001
Deleted P2→T3	B	.76	.12	44.23	16	<.001
Deleted T4→P5	C	.77	.12	44.36	17	<.001
Deleted P4→T5	D	.78	.11	44.56	18	<.001
Deleted P3→T4	E	.78	.11	44.84	19	.001
Deleted T3→P4	F	.78	.11	46.02	20	.001
Skipped cross-lags & T2→P3	G	.76	.13	42.28	14	<.001
Same time points	H	.76	.13	43.94	15	<.001
Compiled (included: P3→T3; T3→P3; P2→P3)	I	.77	.12	45.57	18	<.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 10

Structural Equation Modeling Fit Statistics for the Parent Emotional Questionnaire-Total Score (PERQ-T) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS) (Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*P*
Hypothesized	A	.96	.07	23.89	15	.07
Deleted ns path T4→ P5	B	.96	.07	23.90	16	.09
Deleted ns path T3→ P4	C	.97	.06	23.97	17	.12
Deleted ns path T2→ P3	D	.97	.06	24.25	18	.15
Deleted ns path P2→ T3	E	.97	.05	24.74	19	.17
Sig cross-lags (P3→T4; P4→T5) and all skipped cross lags	F	.96	.07	20.99	13	.07
Same time points	G	.96	.07	23.21	15	.08
Compiled model (included: P3→ T4; T3→P5; T4→P4; P4→T4; P5→T5)	H	.98	.05	21.01	16	.18

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 11

Structural Equation Modeling Fit Statistics for the Parent Emotional Questionnaire-Total Score (PERQ-T) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*P*
Hypothesized	A	.94	.09	29.03	15	.02
Deleted ns path (T4→P5)	B	.95	.09	29.12	16	.02
Deleted ns path (P3→T4)	C	.95	.08	29.26	17	.08
Deleted ns path (T2→P3)	D	.95	.08	31.81	18	.02
Sig cross-lags (P2→T3; T3→P4; P4→T5) and skipped cross-lags	E	.94	.10	30.16	14	.07
Same time points	F	.99	.03	17.02	15	.32
Compiled model (included: P2→T3; P3→T3; T3→P4; T4→P4; P4→T5; P5→T5)	J	.98	.05	19.37	15	.20

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 12

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Total Score (PSI-T)
and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS)
(Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	p
Hypothesized	A	.82	.14	50.48	15	<.001
Deleted ns path (P2→T3)	B	.82	.14	51.00	16	<.001
Deleted ns path (T2→P3)	C	.83	.13	51.00	17	<.001
Deleted ns path (P4→T5)	D	.83	.13	51.12	18	<.001
Skipped cross lags & P3→T4	E	.83	.15	48.36	14	<.001
Same time points	F	.81	.15	52.46	15	<.001
Compiled (included: P3→T4; P4→T4)	G	.84	.12	51.02	19	<.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 13

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Child Domain Score (PSI-CD) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS) (Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.89	.10	33.04	15	.005
Deleted ns path (T4→P5)	B	.90	.10	33.05	16	.007
Deleted ns path (T3→P4)	C	.91	.09	33.16	17	.01
Deleted ns path (T2→P3)	D	.91	.09	33.36	18	.02
Deleted ns path (P2→T3)	E	.92	.08	33.51	19	.02
Deleted ns path (P4→T5)	F	.92	.08	33.90	20	.03
Skipped cross lags & P3→T4	G	.89	.10	31.44	14	.005
Same time points	H	.89	.10	32.99	15	.005

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 14

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Parent Domain Score (PSI-PD) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS) (Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.89	.12	41.07	15	<.001
Deleted ns path (P4→T5)	B	.89	.12	41.08	16	.001
Deleted ns path (T2→P3)	C	.90	.11	41.08	17	.001
Deleted ns path (P2→T3)	D	.90	.11	41.79	18	.001
Deleted ns path (T3→P4)	E	.90	.11	42.71	19	.001
Deleted ns path (T4→P5)	F	.89	.10	44.17	20	.001
Skipped cross lags & P3→T4	G	.89	.13	39.56	14	<.001
Same time points	H	.88	.13	43.67	15	<.001
Compiled (included: P2→T5; P3→T5; T3→P3; P4→T4; T4→P4)	I	.89	.12	41.74	16	<.001
Deleted ns path (P2→T5)	J	.88	.12	43.97	17	<.001
Deleted ns path (P3→T5)	K	.89	.11	44.05	18	.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 15

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Attachment Subscale (PSI-AT) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS) (Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.91	.10	31.88	15	.01
Deleted ns path (P3→T4)	B	.91	.09	32.09	16	.01
Deleted ns path (T3→P4)	C	.91	.09	32.69	17	.01
Deleted ns path (P4→T5)	D	.91	.09	33.29	18	.02
Skipped cross lags & P2→T3; T2→P3; T4→P5	E	.93	.09	24.16	12	.02
Same time points	F	.87	.12	38.17	15	.001
Compiled (included: P2→T3; T2→P3; T2→P4; T2→P5)	G	.92	.09	31.79	17	.02
Compiled G & deleted ns path (P2→T4)	H	.92	.08	31.87	18	.02
Compiled H & deleted ns path (T2→P3)	I	.91	.09	34.58	19	.02

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 16

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Depression Subscale (PSI-DP) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.98	.05	19.28	15	.20
Deleted ns path (P2→T3)	B	.98	.04	19.29	16	.25
Deleted ns path (T3→P4)	C	.99	.04	19.43	17	.30
Deleted ns path (T2→P3)	D	.99	.03	19.50	18	.36
Deleted ns path (P4→T5)	E	.99	.03	19.73	19	.41
Deleted ns path (T4→P5)	F	.99	.03	21.65	20	.36
Skipped cross lags & P3→T4	G	.99	.04	16.04	14	.31
Same time points	H	.97	.06	21.23	15	.13
Compiled (included: P3→T4; P2→T4; P4→T4)	I	1.00	.00	17.72	18	.47

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 17

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Competency Subscale (PSI-CO) and the Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS) (Child Self-Report of Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.85	.12	39.66	15	.001
Deleted ns path (T4→P5)	B	.86	.11	39.67	16	.001
Deleted ns path (P4→T5)	C	.86	.11	39.89	17	.001
Deleted ns path (P2→T3)	D	.86	.10	40.35	18	.002
Deleted ns path (T3→P4)	E	.86	.10	41.64	19	.002
Deleted ns path (T2→P3)	F	.86	.10	43.21	20	.002
Skipped cross lags & P3→T4	G	.91	.10	28.43	14	.01
Same time points	H	.88	.11	34.66	15	.003
Compiled (included: P2→T4; P3→T4; P3→T3)	I	.96	.06	25.18	18	.12
Deleted approach sig path (P3→T4)	J	.95	.06	27.12	19	.10

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 18

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Total Score (PSI-T) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.80	.18	67.34	15	<.001
Deleted ns path (P3→T4)	B	.80	.17	67.34	16	<.001
Deleted ns path (T4→P5)	C	.81	.16	67.36	17	<.001
Deleted ns path (T3→P4)	D	.81	.16	67.67	18	<.001
Deleted ns path (T2→P3)	E	.81	.15	68.75	19	<.001
Skipped cross lags & P2→T3; P4→T5	F	.80	.19	65.83	13	<.001
Same time points	G	.83	.16	59.23	15	<.001
Compiled (included: P2→T3; P3→T3; P5→T5)	H	.83	.15	61.85	18	<.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 19

*Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Child
Domain Score (PSI-CD) and the Trauma Symptom Checklist for Young Children-
Posttraumatic Stress Total Score (TSCYC-PTS-T) (Parent Report of Child Symptoms)*

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.82	.17	62.30	15	<.001
Deleted ns path (P3→T4)	B	.82	.16	62.35	16	<.001
Deleted ns path (T4→P5)	C	.82	.15	62.49	17	<.001
Deleted ns path (T3→P4)	D	.82	.15	63.14	18	<.001
Deleted ns path (T2→P3)	E	.82	.15	65.29	19	<.001
Skipped cross lags & P2→T3; P4→T5	F	.81	.18	62.48	13	<.001
Same time points	G	.90	.15	40.71	15	<.001
Compiled (included: P2→T3; P4→T5; P3→T3; T4→P4; P5→T5)	H	.90	.12	41.02	16	.001
Deleted ns path (P4→T5)	I	.91	.11	41.32	17	.001
Deleted ns path (P2→T3)	J	.91	.11	41.95	18	.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 20

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Parent Domain Score (PSI-PD) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.88	.14	48.37	15	<.001
Deleted ns path (T4→P5)	B	.88	.13	48.37	16	<.001
Deleted ns path (P3→T4)	C	.89	.13	48.64	17	<.001
Deleted ns path (T2→P3)	D	.89	.12	49.01	18	<.001
Deleted ns path (T3→P4)	E	.89	.12	48.88	19	<.001
Skipped cross lags & P2→T3; P4→T5	F	.89	.14	43.42	13	<.001
Same time points	G	.89	.15	45.45	15	<.001
Compiled (included: P2→T3; P4→T5; P3→T3; P5→T5)	H	.89	.12	47.23	17	<.001
Deleted ns path (P4→T5)	I	.89	.12	47.30	18	<.001
Deleted ns path (P2→T3)	J	.90	.12	47.63	19	<.001

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 21

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Attachment Subscale Score (PSI-AT) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.88	.12	41.30	15	<.001
Deleted ns path (T4→P5)	B	.89	.12	41.33	16	<.001
Deleted ns path (T2→P3)	C	.89	.11	41.77	17	.001
Deleted ns path (P2→T3)	D	.89	.11	42.55	18	.001
Deleted ns path (P3→T4)	E	.89	.11	43.28	19	.001
Deleted ns path (T3→P4)	F	.89	.10	44.49	20	.001
Skipped cross lags & P4→T5	G	.90	.12	35.48	14	.001
Delete all ns paths & leave only P4→T5; P3→T5	H	.92	.09	37.71	19	.006
Same time points	I	.89	.12	38.82	15	.001
Compiled (included: P3→T5; P5→T5)	J	.91	.10	38.60	19	.005

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 22

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Depression Subscale Score (PSI-DP) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	*p*
Hypothesized	A	.95	.08	27.11	15	.03
Deleted ns path (T4→P5)	B	.95	.08	27.28	16	.04
Deleted ns path (T3→P4)	C	.96	.07	27.61	17	.05
Deleted ns path (P3→T4)	D	.96	.07	29.01	18	.05
Deleted ns path (T2→P3)	E	.95	.07	30.74	19	.04
Skipped cross lags & P2→T3; P4→T5	F	.95	.09	24.46	13	.03
Same time points	G	.95	.08	26.24	15	.04
Compiled (included: P2→T3; T2→P5; T3→P5; P3→T3; T3→P3; P5→T5)	H	.96	.07	24.36	15	.06
Deleted ns path (P2→T3)	I	.97	.07	24.37	16	.08
Deleted least sig path (T3→P3)	J	.96	.07	27.51	17	.05

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 23

Structural Equation Modeling Fit Statistics for the Parenting Stress Index-Competency Subscale Score (PSI-CO) and the Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC-PTS-T) (Parent Report of Child Symptoms)

Description	Model	CFI	RMSEA	χ^2	df	p
Hypothesized	A	.92	.09	29.61	15	.01
Deleted ns path (P3→T4)	B	.93	.09	29.64	16	.02
Deleted ns path (T3→P4)	C	.93	.08	29.80	17	.03
Deleted ns path (T2→P3)	D	.94	.08	30.25	18	.04
Deleted ns path (T4→P5)	E	.94	.07	30.64	19	.04
Deleted ns path (P4→T5)	F	.94	.07	31.14	20	.05
Skipped cross lags & P2→T3	G	.94	.09	26.27	14	.02
Same time points	H	.93	.09	28.70	15	.02
Compiled (included: P4→T5; P3→T3)	I	.94	.07	29.95	19	.05
Deleted ns path (P4→T5)	J	.95	.07	30.44	20	.06

Note. CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; ns = not significant.

Table 24.

Hierarchical Regression Statistics Predicting Parental Support at Pre-Assessment from Child, Parent, and Abuse Characteristics

Variable	Unstandardized Coefficients		Standardized Coefficients	R	R^2	R^2 Change	F	p
	B	SE	β					
Step 1 – Child Characteristics				.23	.05	.05	1.10	.34
Age	.98	.84	.18					
Relationship to Perpetrator	-3.70	3.19	-.18					
Step 2 – Child and Parent Characteristics				.48	.23	.18	2.28	.07
Age	.67	.80	.13					
Relationship to Perpetrator	-3.62	3.00	.18					
PSQ-T Baseline	.43	.16	.41[**]					
PERQ-T Baseline	.02	.12	.03					
PSI-T Pre-assessment	.02	.03	.10					
Step 3 – Child, Parent, and Abuse Characteristics				.62	.38	.15	2.34	.04
Age	.72	.77	.13					
Relationship to Perpetrator	-4.68	2.92	-.23					

PSQ-T Baseline	.49	.15	.47**
PERQ-T Baseline	.02	.12	.02
PSI-T Pre-Assessment	.02	.04	.11
Charges	2.48	3.45	.12
Sexual Abuse	1.02	8.74	.06
Multiple	7.96	8.64	.44
Other	4.45	12.16	.07

Note. PSQ-T = Parental Support Questionnaire – Total Score; PERQ-T = Parent Emotional Questionnaire – Total Score; PSI-T = Parenting Stress Index – Total Score.

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

Table 25

Hierarchical Regression Statistics for Predicting Parent Emotional Reaction at Pre-Assessment from Child, Parent, and Abuse Characteristics

	Unstandardized Coefficients		Standardized Coefficients					
Variable	B	SE	β	R	R^2	R^2 Change	F	p
Step 1 – Child Characteristics				.30	.09	.09	2.04	.14
Age	1.02	1.36	.11					
Relationship to Perpetrator	8.51	5.17	.25					
Step 2 – Child and Parent Characteristics				.84	.73	.61	17.94	<.001
Age	-.04	.84	-.01					
Relationship to Perpetrator	7.40	3.10	.22**					
PSQ-T Baseline	-.27	.16	-1.67					
PERQ-T Baseline	.83	.12	.68***					
PSI-T Pre-assessment	.05	.03	.15					
Step 3 – Child, Parent, and Abuse Characteristics				.86	.73	.04	10.70	<.001
Age	-.03	.84	.003					
Relationship to Perpetrator	6.35	3.16	.19*					

PSQ-T Baseline	-.23	.17	-.13
PERQ-T Baseline	.83	.12	.69***
PSI-T Pre-Assessment	.05	.04	.14
Charges	1.93	3.47	.06
Sexual Abuse	4.98	9.50	.16
Multiple	10.33	9.39	.34
Other	7.66	13.22	.08

Note. PSQ-T = Parental Support Questionnaire – Total Score; PERQ-T = Parent Emotional Questionnaire – Total Score; PSI-T = Parenting Stress Index – Total Score.

*$p \leq .05.$ **$p < .01.$ ***$p < .001$
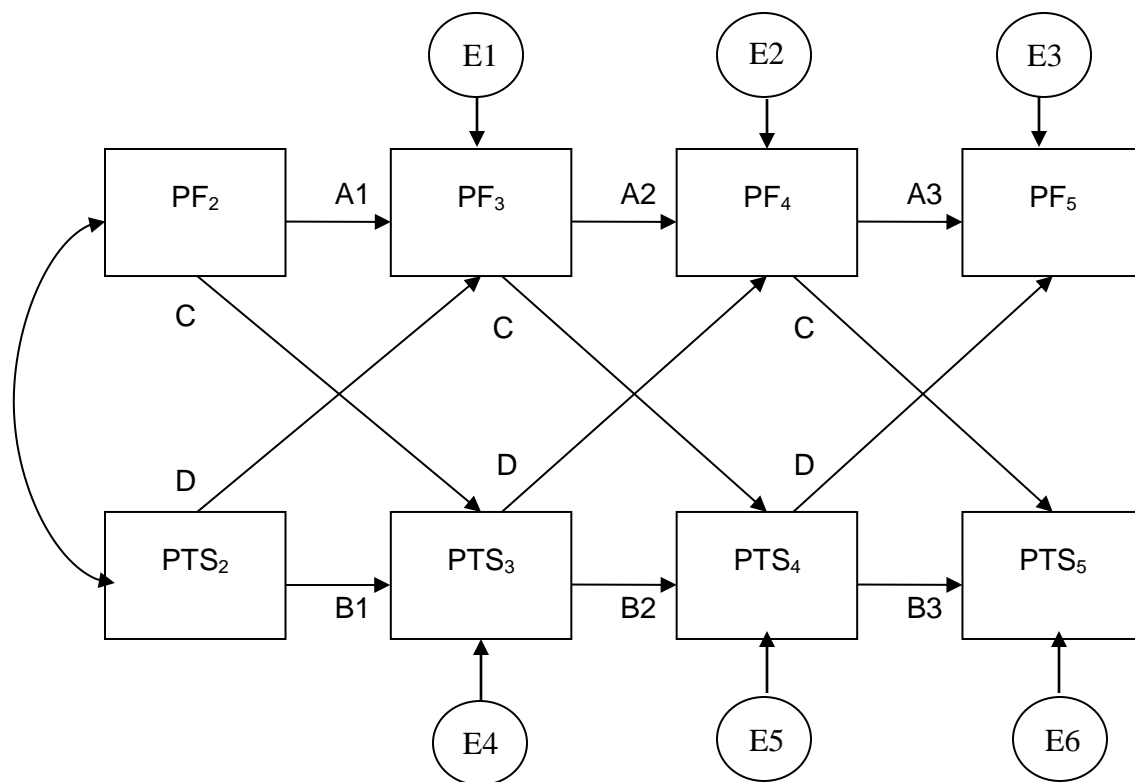
Figure 1. The hypothesized cross-lagged design between parent factors and child symptoms of posttraumatic stress. A cross-lagged design illustrating the relationship between parent ratings on a given parent factor (PF) at pre-assessment (data 2), pre-therapy (data 3), post-therapy (data 4) and 6-month follow-up (data 5) with child posttraumatic stress (PTS) symptoms at each data collection. Separate models were used to assess parent and child ratings of child symptoms of posttraumatic stress. In this model, A and B are autoregressive parameters and represent the effect of the previous measure on the following one. C is the effect of a previous parent factor measure on the following measure of child posttraumatic stress symptoms, while D is the effect of a previous child posttraumatic stress symptom rating on the following measure of a parent factor.
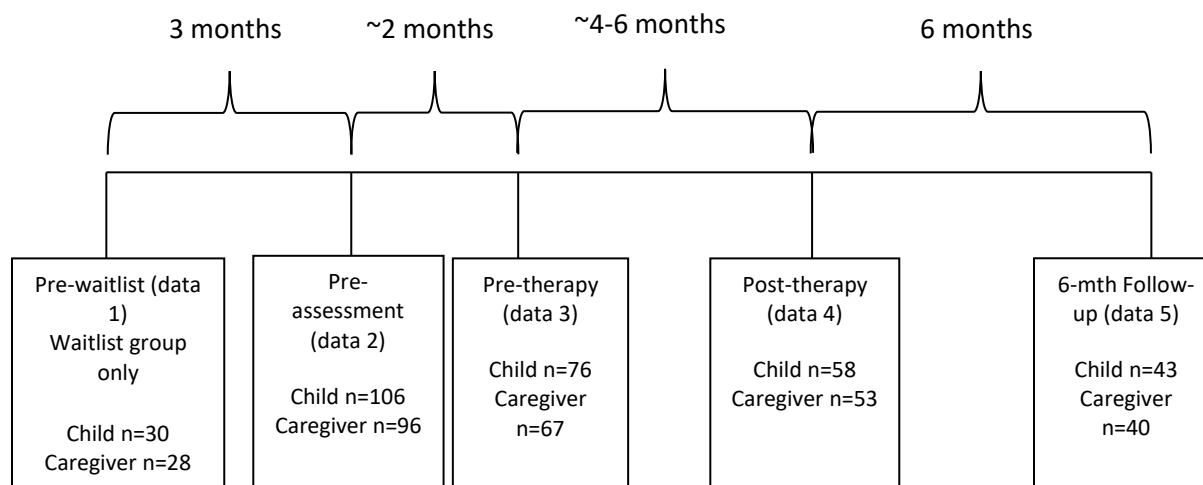
Figure 2. An illustration of the research procedure. Child and caregiver sample sizes are noted for each data collection.
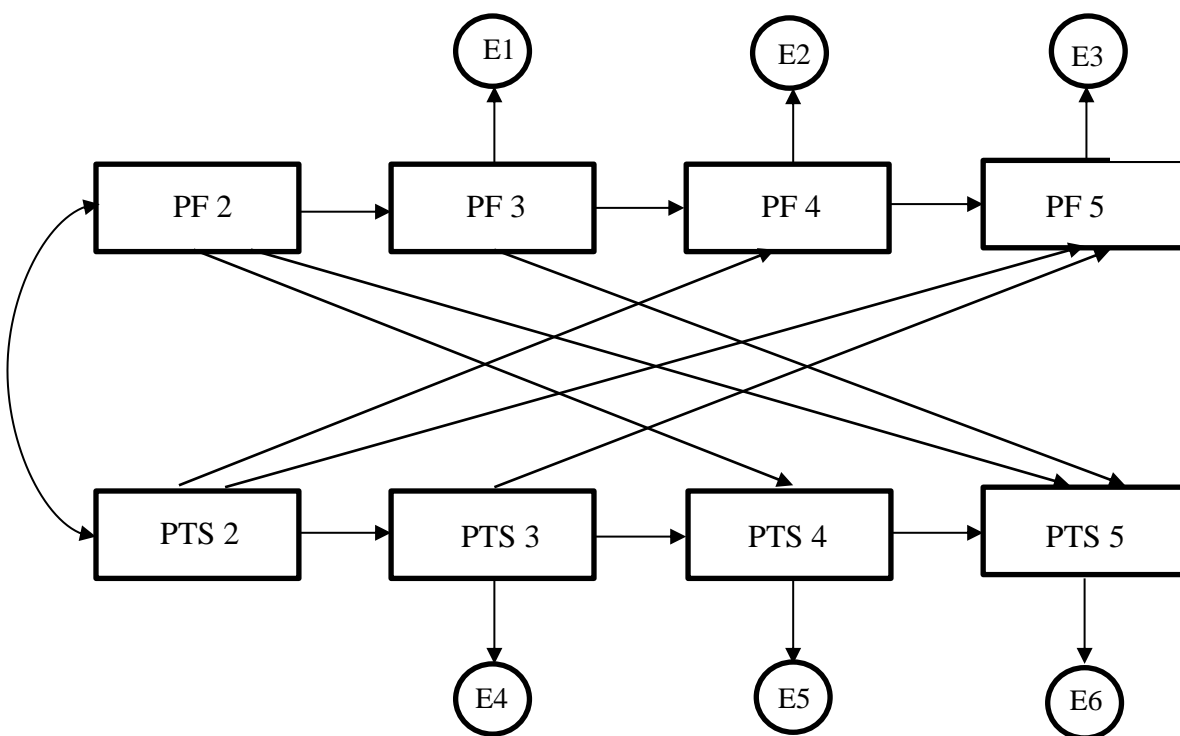
Figure 3. Skipped time points crossed-lagged model tested in structural equation modeling analysis. PF = Parent Factor (Parental Support Questionnaire, PSQ; Parent Emotional Reaction Questionnaire, PERQ; Parenting Support Index, PSI). PTS = Score on PTS Symptom Scale (Trauma Symptom Checklist for Children, TSCC-PTS; Trauma Symptom Checklist for Young Children, TSCYC PTS-T).
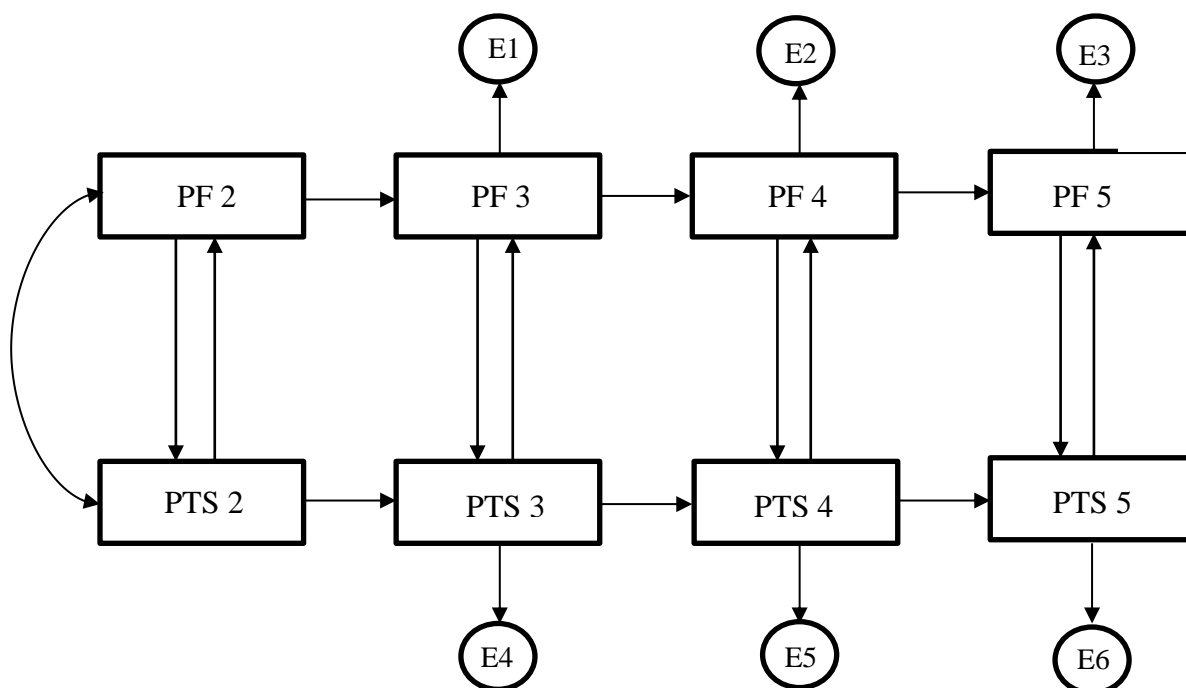
Figure 4. Same time point model tested in structural equation modeling analysis. PF = Parent Factor (Parental Support Questionnaire, PSQ; Parent Emotional Reaction Questionnaire (PERQ); Parenting Support Index, PSI). PTS = Score on PTS Symptom Scale (Trauma Symptom Checklist for Children, TSCC; Trauma Symptom Checklist for Young Children, TSCYC).
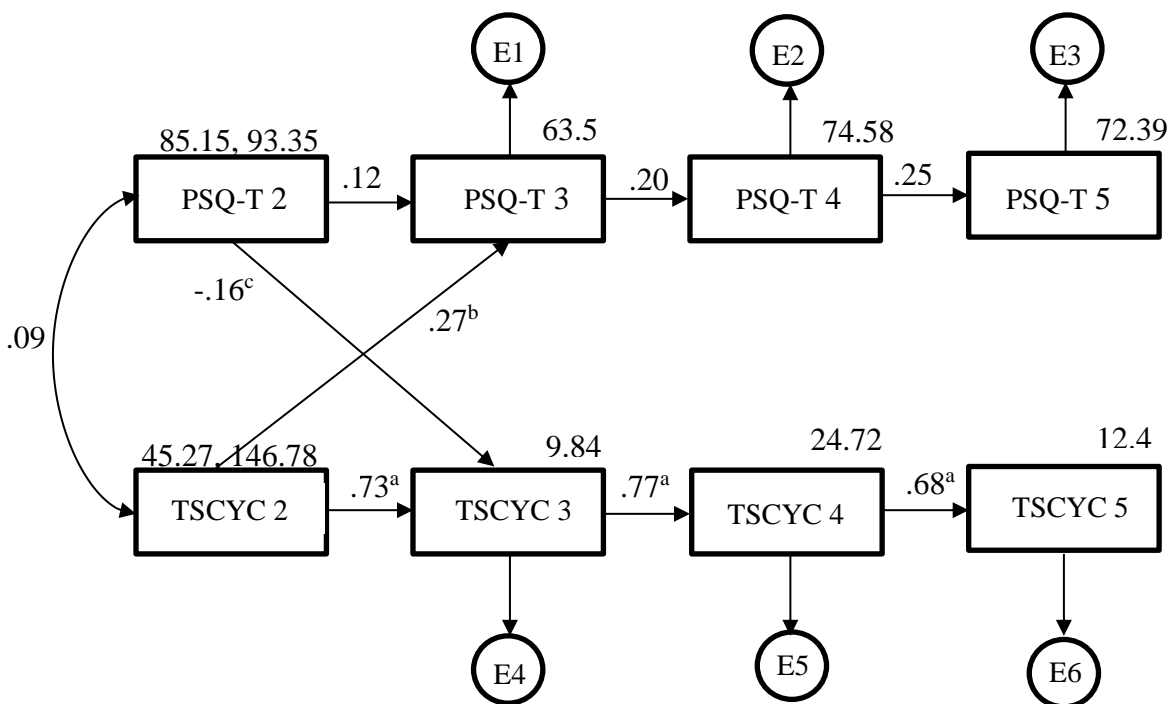
Figure 5. Model J in path analysis of the Parental Stress Questionnaire – Total Score (PSQ-T) and the parent report Trauma Symptom Checklist for Young Children – Posttraumatic Stress Total Score (TSCYC PTS-T).
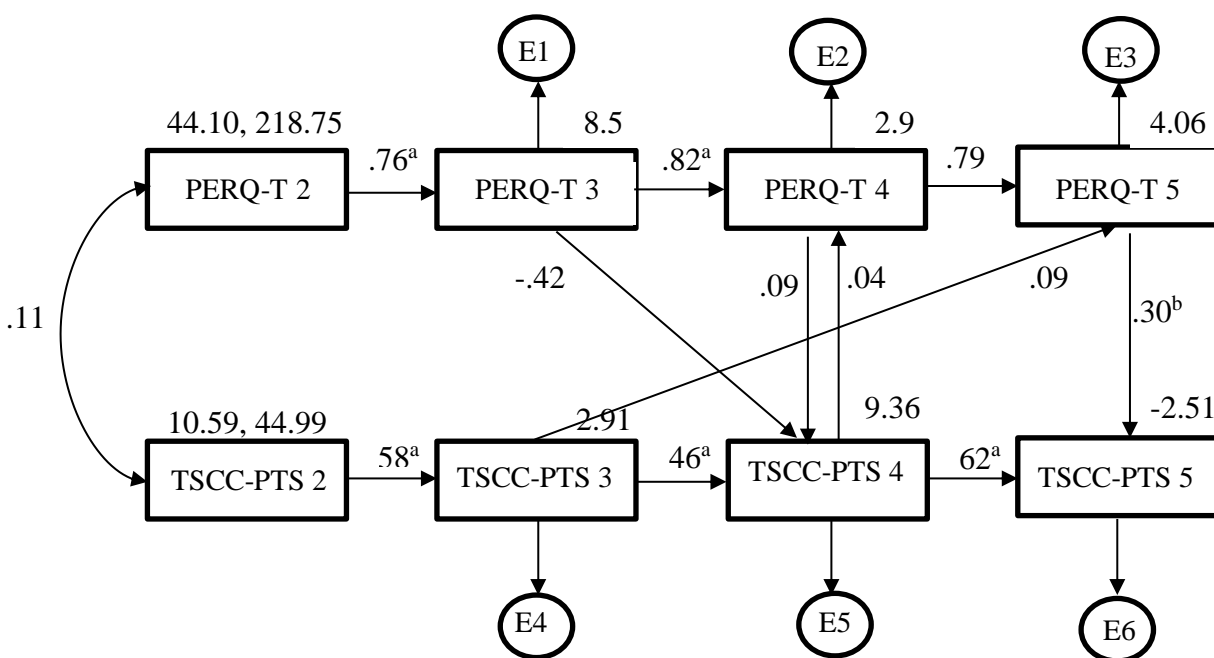
[a]*p* < .001. [b]*p* < .05. [c]*p* < .10.

Figure 6. Model H in path analysis of the Parent Emotional Questionnaire – Total Score (PERQ-T) and the child report Trauma Symptom Checklist for Children – Posttraumatic Stress Subscale Score (TSCC-PTS).

[a]$p < .001.$ [b]$p < .05.$
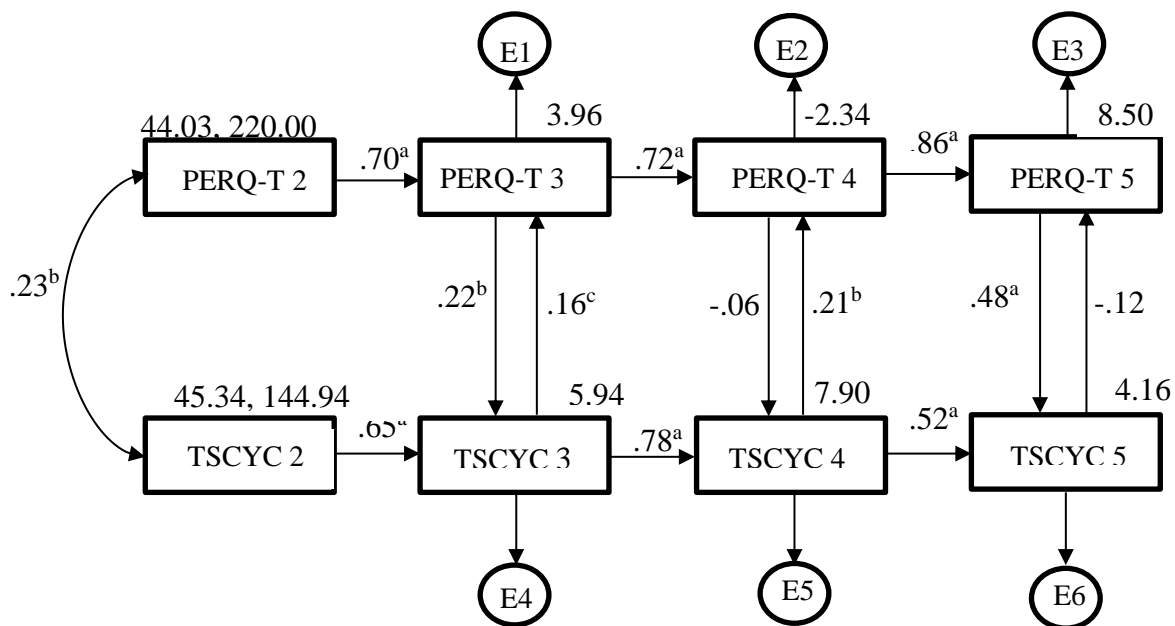
Figure 7. Model F in path analysis of the Parent Emotional Reaction Questionnaire – Total Score (PERQ-T) and the parent report Trauma Symptom Checklist for Young Children – Posttraumatic Stress Total Score (TSCYC-PTS-T).

[a]$p < .001.$ [b]$p < .05.$ [c]$p = .10.$
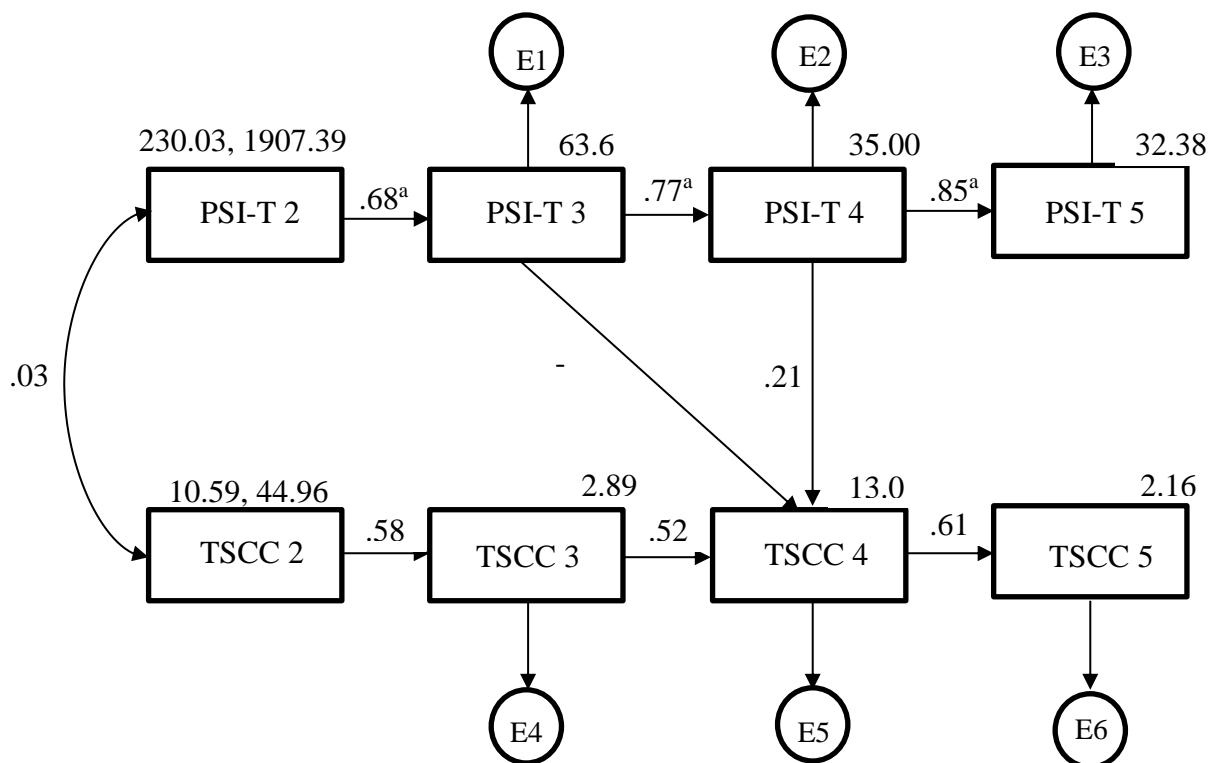
Figure 8. Model G in path analysis of the Parenting Stress Index – Total Score (PSI-T) and the child report Trauma Symptom Checklist for Children – Posttraumatic Stress Subscale Score (TSCC-PTS).
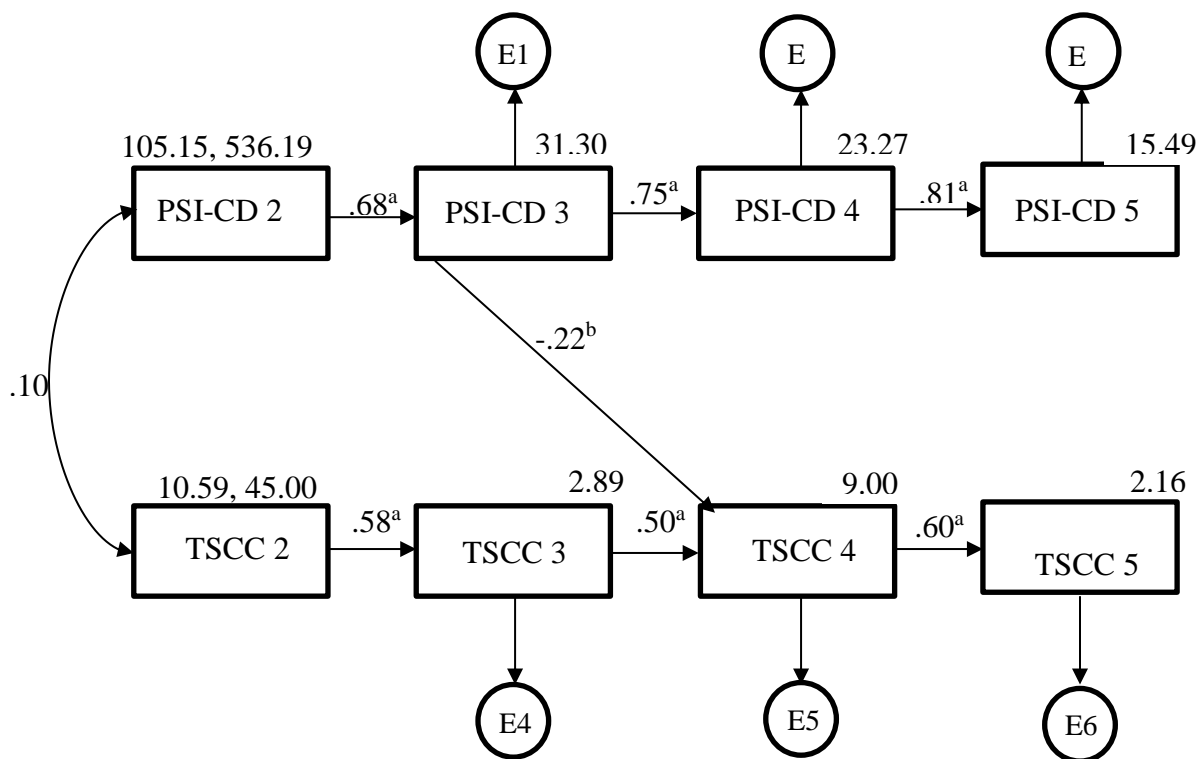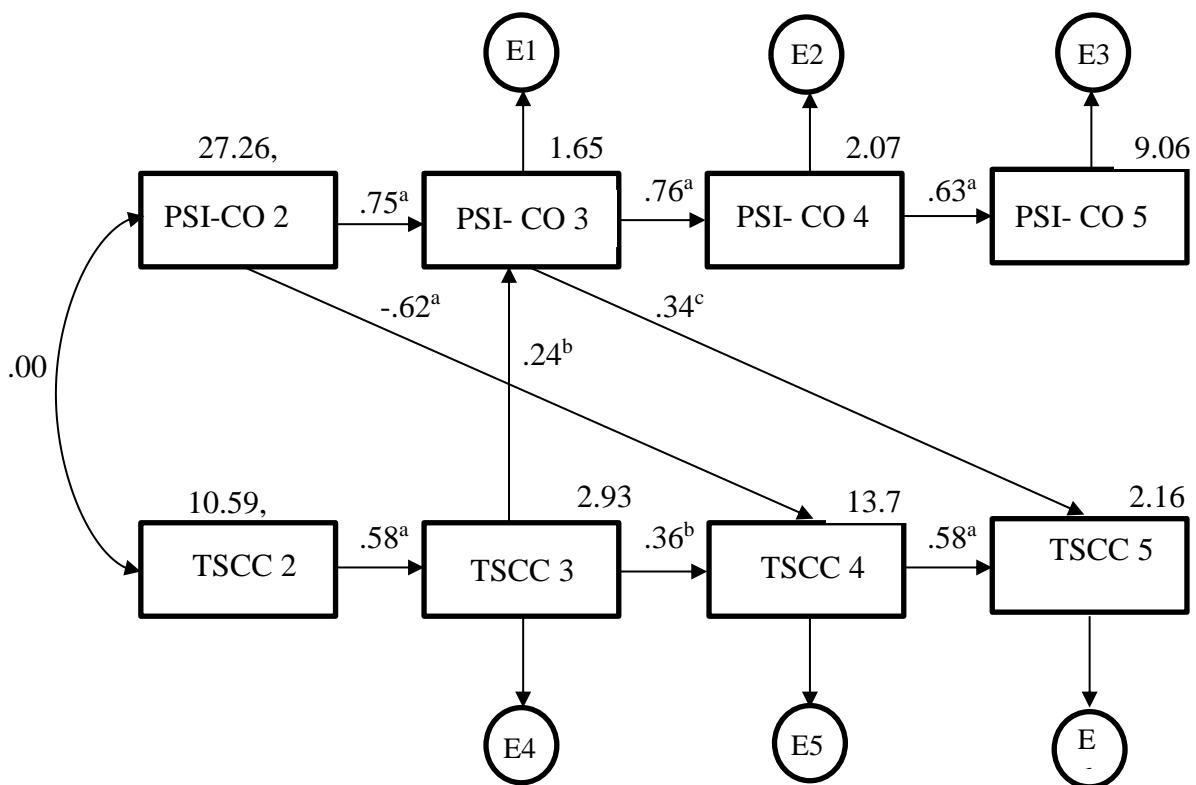
[a]*p* < .001.

Figure 9. Model F in structural equation model analysis of the Parenting Stress Index-Child Domain (PSI-CD) and Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS).
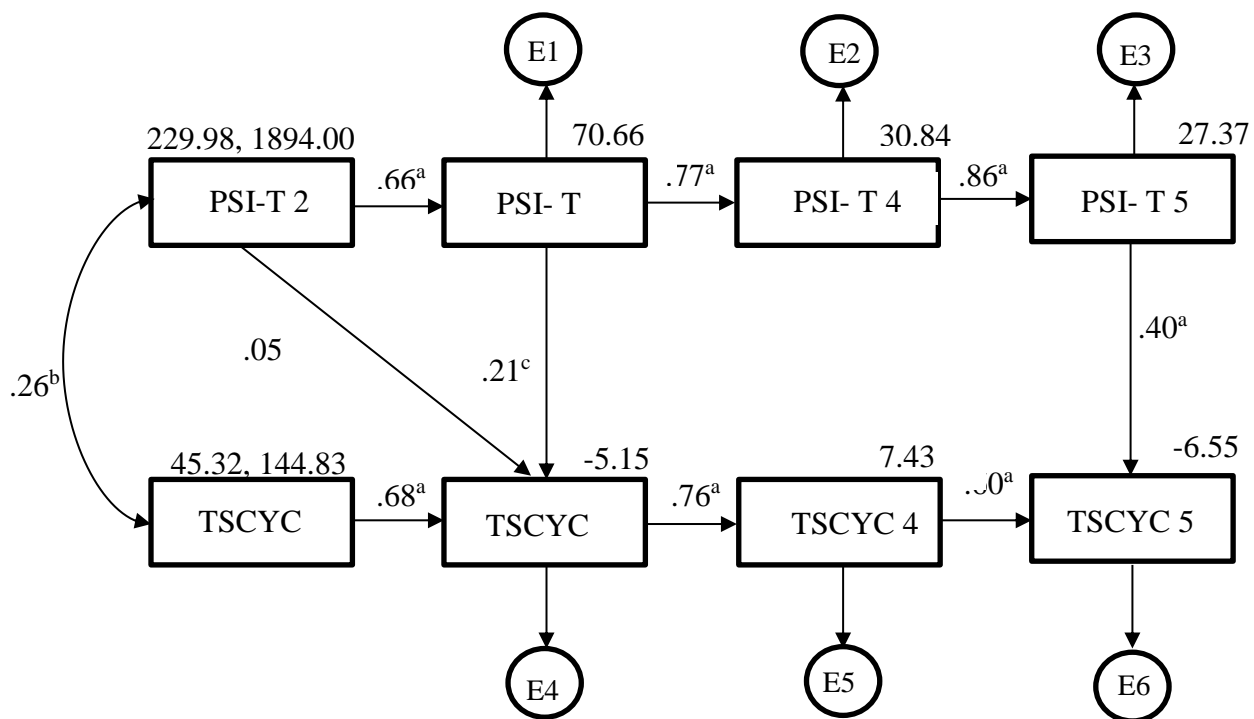
[a]p < .001. [b]p < .10.
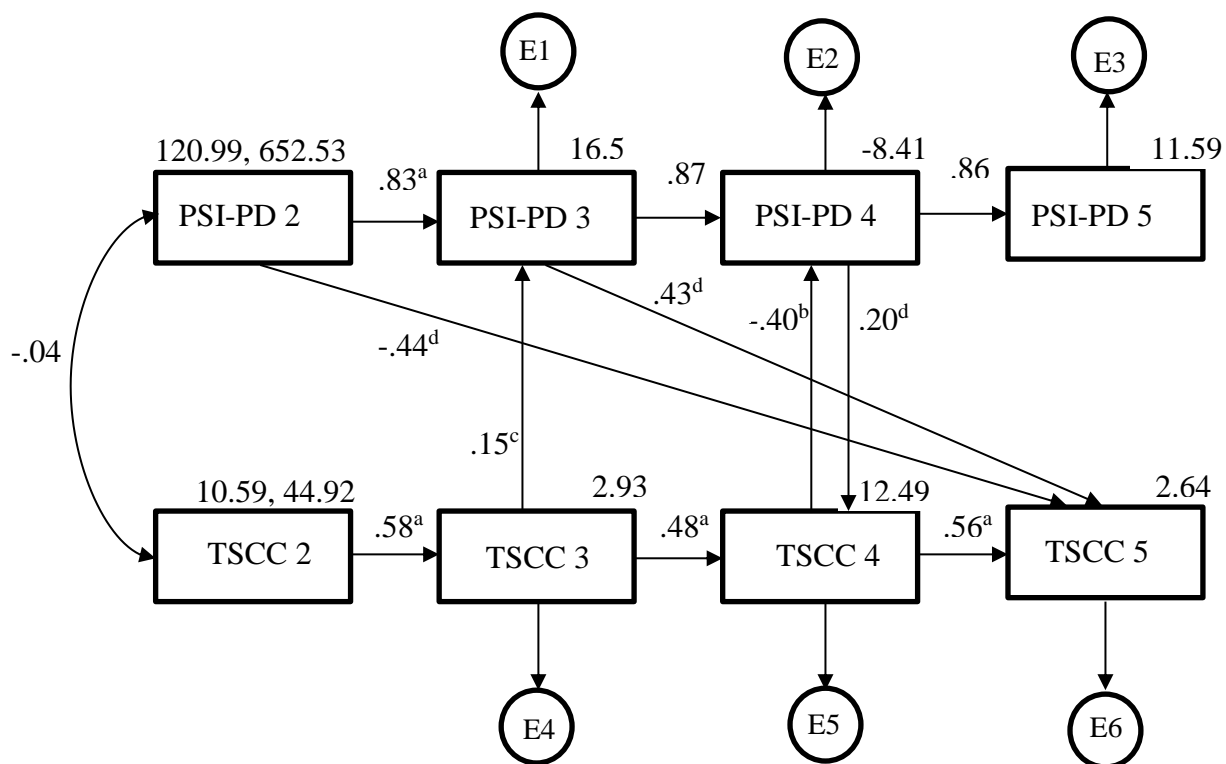
Figure 10. Model I in structural equation model analysis of the Parenting Stress Index-Parent Domain (PSI-PD) and Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS).

[a]$p < .001$. [b]$p < .01$. [c]$p < .05$. [d]$p < .10$.
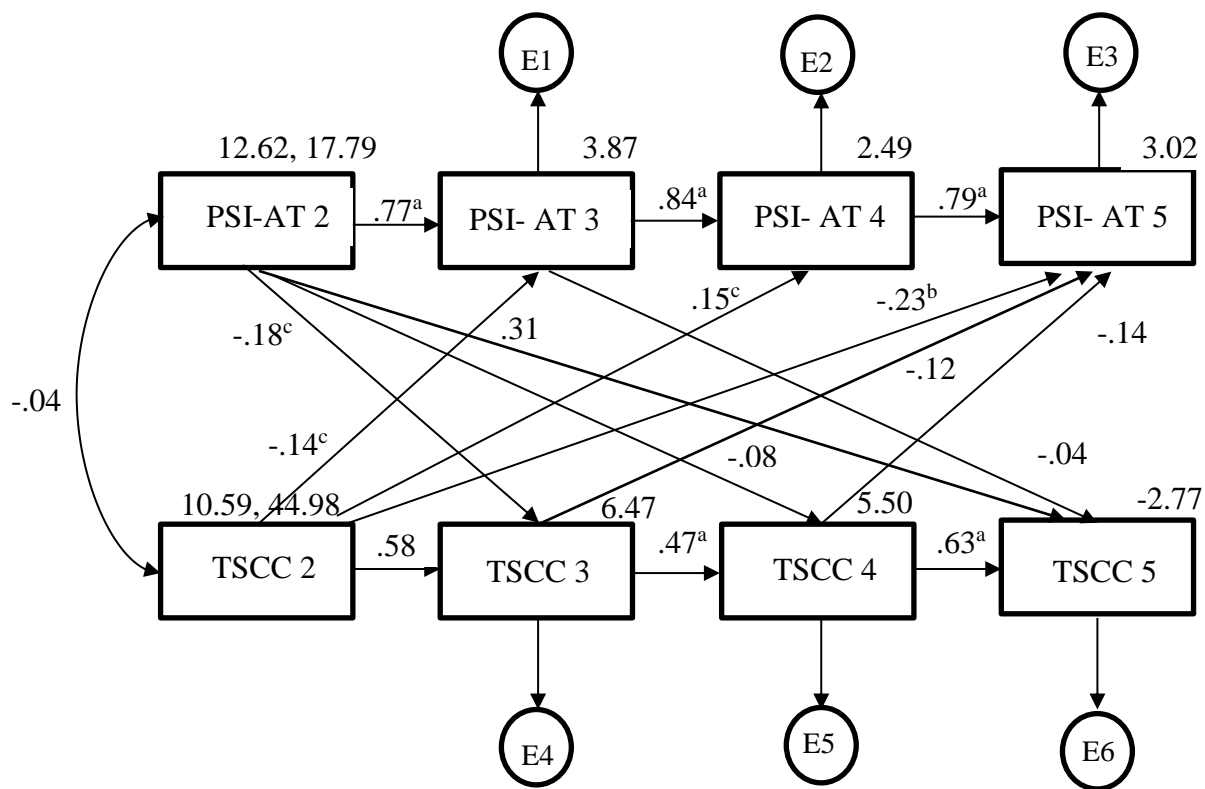
Figure 11. Model E in structural equation model analysis of the Parenting Stress Index-Attachment Subscale (PSI-AT) and Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS).
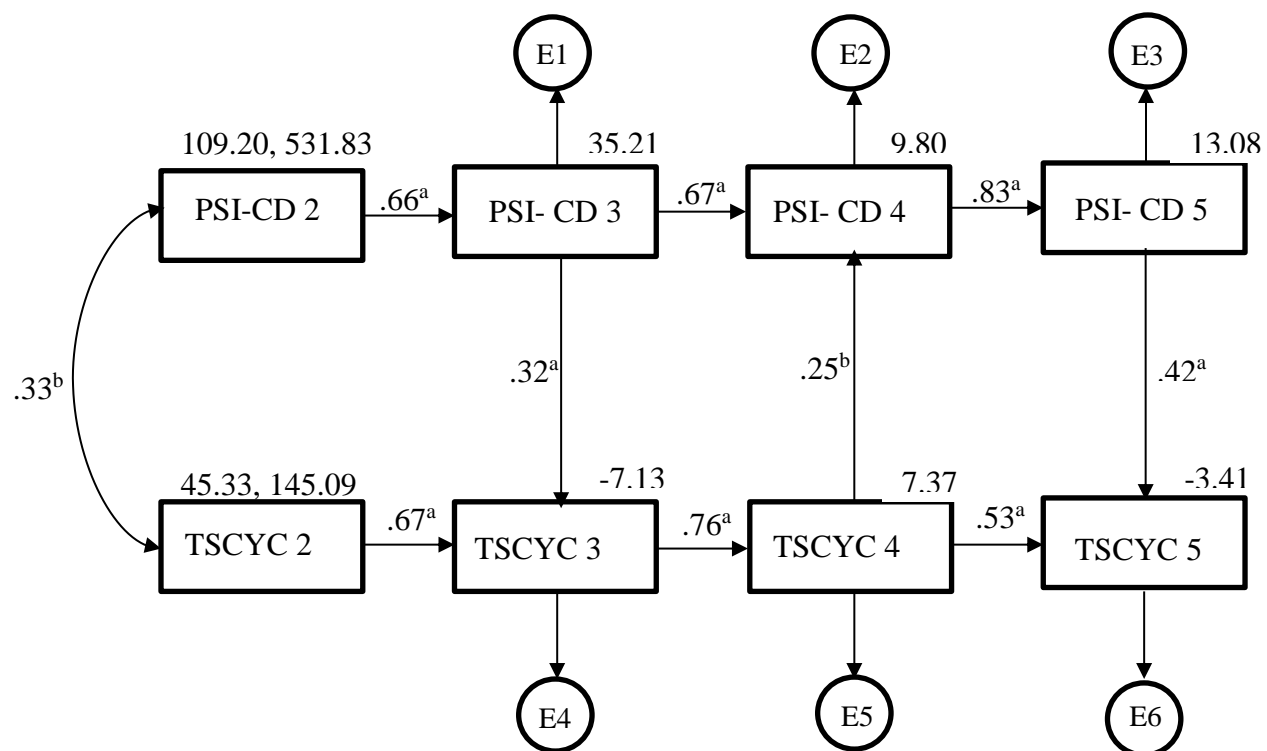
[a]*p* < .001. [b]*p* < .05. [c]*p* < .10.
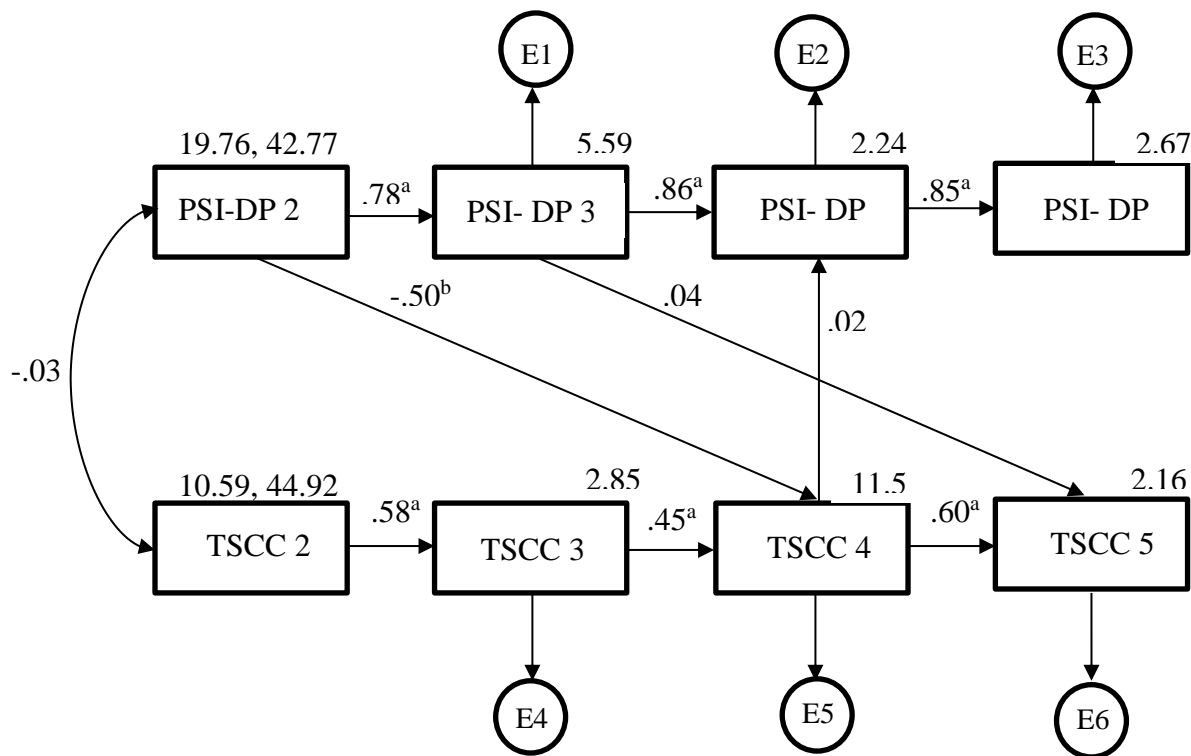
Figure 12. Model I in structural equation model analysis of the Parenting Stress Index-Depression Subscale (PSI-DP) and Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS).

[a]*p* < .001. [b]*p* < .01.

Figure 13. Model I in structural equation model analysis of the Parenting Stress Index-Competency Subscale (PSI-CO) and Trauma Symptom Checklist for Children-Posttraumatic Stress Subscale (TSCC-PTS).

[a]*p* < .001. [b]*p* < .01. [c]*p* < .10

Figure 14. Model H in structural equation model analysis of the Parenting Stress Index-Total Score (PSI-T) and Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC).
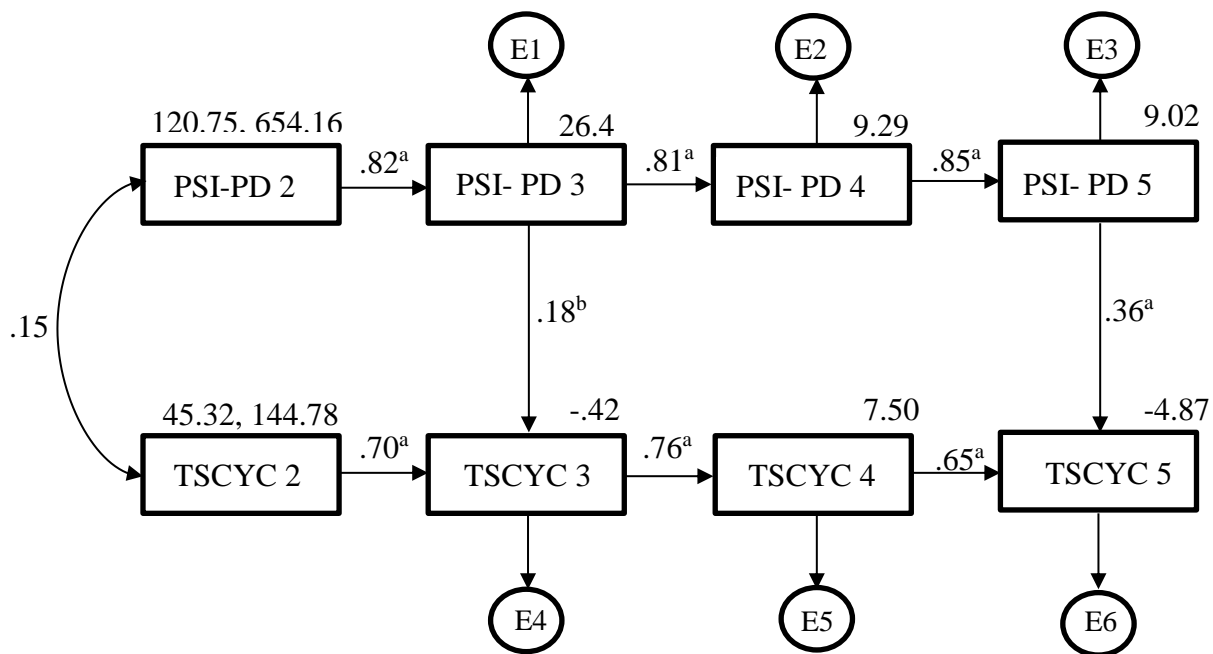
[a]*p* < .001. [b]*p* < .05. [c]*p* < .10

Figure 15. Model J in structural equation model analysis of the Parenting Stress Index-Child Domain (PSI-CD) and Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC).

[a]*p* < .001. [b]*p* < .01.

Figure 16. Model J in structural equation model analysis of the Parenting Stress Index-Parent Domain (PSI-PD) and Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC).
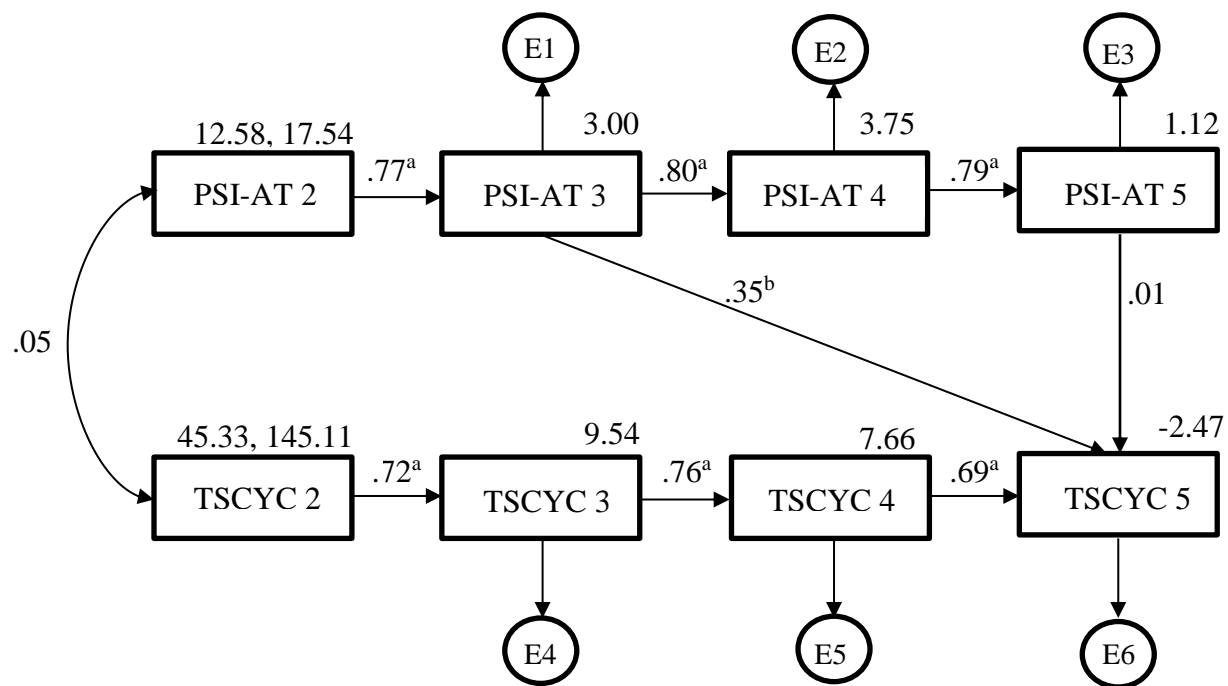
$^a p < .001.$ $^b p < .01.$

Figure 17. Model J in structural equation model analysis of the Parenting Stress Index-Attachment Subscale (PSI-AT) and Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC).
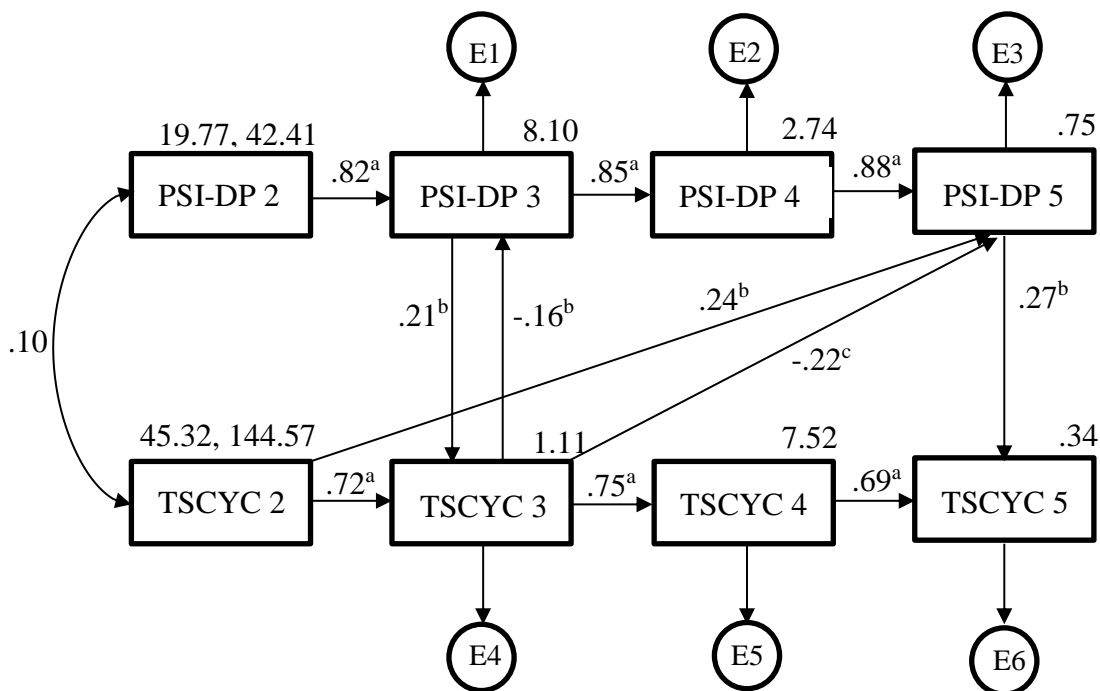
$^a p < .001.$ $^b p < .01.$

Figure 18. Model I in structural equation model analysis of the Parenting Stress Index-Depression Subscale (PSI-DP) and Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC).
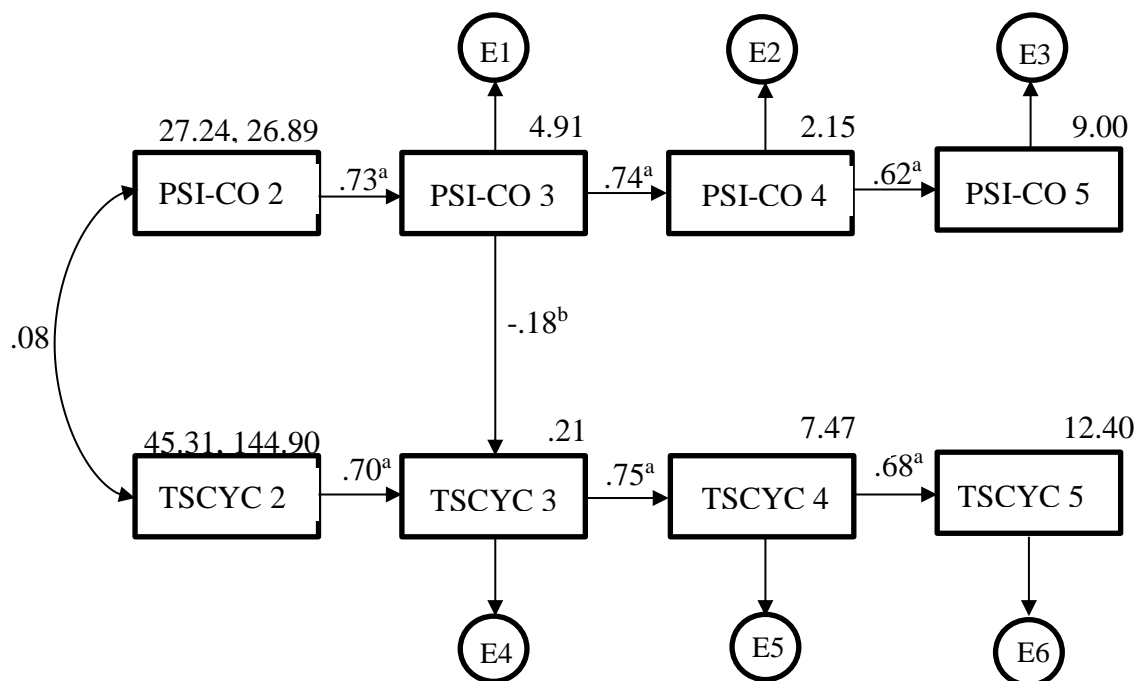
[a]*p* < .001. [b]*p* < .05. [c]*p* < .10.

Figure 19. Model J in structural equation model analysis of the Parenting Stress Index-Competency Subscale (PSI-CO) and Trauma Symptom Checklist for Young Children-Posttraumatic Stress Total Score (TSCYC).

$^a p < .001.$ $^b p < .01.$