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Parenting stress and children's trauma symptoms over the course of TF-CBT: Examining differences between relative and foster/ adoptive caregivers

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ABSTRACT

Background: Through Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), the gold standard in children's trauma treatment, caregivers participate in sessions parallel to the child. However, much of the research examining the impact of this caregiver involvement has focused on biological or relative caregivers, despite the high prevalence of trauma and trauma symptoms among youth in foster care and high rates of parenting stress among foster/adoptive caregivers.

Objective: The current study examined differences among relative and foster/adoptive caregivers' levels of parenting stress throughout the course of TF-CBT and how these differences were associated with child trauma symptoms throughout treatment.

Participants and setting: Participants were 130 caregiver-child dyads (84 = foster/adoptive; 46 = biological/relative) who completed TF-CBT in either an academic-based clinic or an associated mental health agency. Providing clinicians were trained in TF-CBT, participated in case consultation, and received ongoing clinical supervision.

Methods: Children and caregivers completed baseline measures prior to beginning treatment and termination measures at the completion of treatment.

Results: Prior to treatment, foster/adoptive caregivers reported greater dysfunction in their parent-child interactions and relative caregivers reported greater personal stress. These differences were not seen at treatment termination, and significant reductions in child trauma symptoms and caregiver parenting stress were evidenced from pre to post treatment. Significant covariation between child trauma symptoms and relative caregiver parenting stress at termination was also found.

Conclusions: There were different profiles of parenting stress for relative versus foster/adoptive caregivers, but treatment completion attenuated group differences in parenting stress over the course of treatment.

1. Introduction

It is estimated that two-thirds of children experience at least one traumatic event by the age of 16 (Substance Abuse and Mental Health Services Administration, 2022), and for children experiencing posttraumatic stress symptoms it is important for them to receive evidence-based treatment to reduce symptoms and help minimize potential long-term effects. Caregiver involvement is often

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emphasized as a key component of trauma treatment for children (e.g., Cohen et al., 2012), and there is a growing research interest into the impact of this engagement in a child's trauma recovery (e.g., Cinamon et al., 2021; Lai et al., 2017). However, existing research focuses primarily on non-offending biological or relative caregivers (i.e., those not directly causing or perpetrating the trauma), and few investigations have examined outcomes related to foster/adoptive caregiver involvement in a child's trauma treatment, and if this differs from that of relative caregivers.

This is a significant limitation, as there are very large numbers of trauma exposed children in foster care placements. As of 2020, 407,493 children were in foster care in the United States, and 45 % of these children were in the care of a non-relative foster parent (AFCARS Report, 2021). The most common forms of abuse associated with youths' removal from their home was neglect (64 %), parental drug abuse (35 %), caregiver inability to cope with demands of caregiving (13 %), and physical abuse (13 %; AFCARS Report, 2021). Research has also shown that about 93 % of youth in foster care have experienced at least one form of trauma (Dorsey et al., 2012). Furthermore, Kolko et al. (2010) found that 19.2 % of children in foster care had significant posttraumatic stress symptoms, compared to a prevalence rate of 10.7 % among children whose care was under investigation of abuse/neglect but who remained in their homes. Rates of posttraumatic stress disorder (PTSD) have also been found be higher among adults who had been in foster care as children (25.2 %) compared to the general population of adults (~4 %; Pecora et al., 2005). As such, much more work is needed to examine caregiver involvement in youth trauma treatment and treatment outcomes among youth in foster care.

1.1. Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) and the role of caregivers

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) is a treatment approach for children and adolescents (ages 3–18) who have experienced trauma and display posttraumatic stress symptoms (Cohen et al., 2012). This intervention is designed to be completed within 12–15 sessions, or 16–25 sessions for children with more complex trauma histories (Cohen et al., 2012). The effectiveness of TF-CBT in reducing youth trauma symptoms has been demonstrated by multiple randomized controlled trials and is classified as "well supported by research evidence" (California Evidence-Based Clearinghouse for Child Welfare, 2019). Given this strong empirical base (e.g., Cohen et al., 2012), TF-CBT is commonly referred to as the gold standard trauma treatment for children and adolescents. TF-CBT emphasizes the role of caregivers in promoting a child's psychological health. As such, caregivers participate in sessions parallel to the child, gaining psychoeducation on trauma and its impact, learning coping skills, learning positive parenting strategies to support the parent-child relationship, and supporting the child sharing their trauma narrative during a conjoint session (Cohen et al., 2012).

Theoretically, TF-CBT draws from cognitive-behavioral principles to help facilitate coping skills building and thought monitoring and processing for youth. Additionally, the involvement of caregivers in treatment through parallel and conjoint sessions is guided by attachment and family systems theory (Cohen et al., 2012; Deblinger et al., 2006). Specifically, the developers of TF-CBT encourage the participation of family caretakers and provide skills to support the bond and positive relationship between child and caregiver. Further, therapeutic skill utilization is recommended for both members of the dyad to facilitate change within the family system (Cohen et al., 2012; Deblinger et al., 2006). Involved caregivers may be biological or relative family members who were either not involved in the youths' trauma or who have received treatment and are able to be supportive (Cohen et al., 2012). Alternately, in cases where the child or adolescent is not in the care of a relative or biological caregiver, the engagement of foster or adoptive caregivers is recommended (Cohen & Mannarino, 2015).

Research, within the United States, has found that children residing with a foster caregiver were less likely to drop out of TF-CBT than those living with their biological or relative caregiver (Eslinger et al., 2014). However, limited work has examined differences in the impact of relative/biological versus foster/adoptive caregivers' involvement in TF-CBT.

1.2. Caregivers' parenting stress and children's trauma treatment

As researchers explore caregiver factors associated with TF-CBT completion and improvement, one factor that has emerged as important is parenting stress (e.g., Cinamon et al., 2021; Lai et al., 2017). Parenting stress is "the aversive psychological reaction to the demands of being a parent" which is "represented as a complex process linking (a) the task demands of parenting, (b) the parent's psychological well-being and behavior, (c) the qualities of the parent-child relationship, and (d) the child's psychosocial adjustment" (Deater-Deckard, 2005, p. 315).

Researchers have found that caregivers who reported high levels of parenting stress at the onset of TF-CBT were more likely to complete treatment than those who reported lower initial levels of parenting stress (Lai et al., 2017). Although this was not examined by Lai et al. (2017), it is possible that caregivers with high initial parenting stress may be more likely to complete TF-CBT due to improvements they experience as result of participation in their child's trauma therapy. This would be consistent with results indicating that completing at least eight sessions of TF-CBT was associated with declines in caregiver posttraumatic stress, depression, anxiety, and maladaptive trauma cognitions (Tutus et al., 2021). Additionally, Cinamon et al. (2021) examined associations between parental factors (e.g., parental support, parent emotional reaction, and parenting stress), for biological and adoptive caregivers, and children's posttraumatic stress symptoms, throughout the course of trauma therapy. Results indicated that caregivers' depression and competency subscales of a parenting stress measure were reciprocally related to their children's trauma symptoms over the course of TF-CBT. That is, child trauma symptoms prior to beginning treatment were associated with caregiver depression related parenting stress six-months after termination, and parenting stress related competency prior to beginning the intervention was associated with child trauma symptoms at the end of the clinical encounter and six months later (Cinamon et al., 2021).

Although this is the only study to date which has directly examined the potential bidirectional effects of parenting stress and

children's trauma symptoms, prior research has also demonstrated an association between parenting stress and children's emotion regulation difficulties and internalizing and externalizing symptoms (Samuelson et al., 2017). Given the potential role of parenting stress in TF-CBT completion (Lai et al., 2017) and bidirectional effects of certain components of parenting stress (e.g., depression and parenting competency) and children's trauma symptoms over the course of TF-CBT (Cinamon et al., 2021), there is some foundation for the potential connection between parenting stress and child trauma symptoms throughout treatment. However, more research is needed to explore this connection among different types of caregivers and within different domains of parenting stress.

Though Cinamon et al. (2021) examined multiple components of parenting stress, they did not discuss domains such as caregiver perception of children's behavior or dyadic interactions, which may tap further into caregiver appraisals of their parenting experience and their child. This is highly important, as caregiver appraisals (i.e., subjective interpretations) of their caregiving relationship and experiences have been found to longitudinally predict parenting practices, which is a robust indicator of child behavior (Bornstein et al., 2018). Further, caregiver hostile attributions of their children (e.g., attributing their child's behavior as having hostile intent towards them) is associated with harsher parenting practices (Crouch et al., 2017).

No prior research has examined the relation between these specific domains of parenting stress and child trauma symptoms. However, research has found that when controlling for caregivers' mental health symptoms, the parenting stress domain of parentchild dysfunctional interactions was associated with children's internalizing symptoms, and the parenting stress domain of appraising the child's behavior as difficult was associated with children's internalizing and externalizing symptoms (Costa et al., 2006). Similarly, Vaughan et al. (2013) found positive correlations between appraising the child's behavior as difficult, parent distress, and parent-child dysfunctional interactions and children's externalizing and internalizing symptoms. However, it is important to note that this prior research did not examine children's trauma symptoms, and associations between these different domains of parenting stress and children's trauma symptoms may differ from those previously found for internalizing and externalizing symptoms. As such, additional study is needed to more fully examine caregivers' cognitive and dyadic components of parenting stress, how these components may change over the course of a child's trauma focused therapy, and how these different components are associated with children's trauma symptoms.

Prior literature examining parenting stress and children's symptoms has thus far focused on biological, relative, or adoptive caregivers, despite prior evidence indicating that biological/relative and foster caregivers may have different experiences of parenting stress. For example, research has evidenced that biological non-offending parents report high levels of parenting stress following their child's disclosure of sexual abuse (Davies & Bennett, 2021). However, in a longitudinal comparison study, foster caregivers reported higher levels of parenting stress, over time, than did biological or relative caregivers, particularly in domains of parenting stress related to appraising the child's behavior as difficult or challenging (Bergsund et al., 2020). Similarly, Lohaus et al. (2017), examined parenting stress among a sample of caregivers in Germany and found that foster mothers, whose foster children had been in their care for an average of about 17 months, reported greater parenting stress than biological mothers, only when not accounting for child behavior problems. It is possible that biological or relative caregivers may have greater cognitions of self-blame following their child's behaviors, thus leading to differing experiences of parenting stress.

1.3. Current study

Little research has examined the role of foster caregivers in TF-CBT, despite the encouragement of their participation in TF-CBT (e. g., Cohen & Mannarino, 2015). To build on prior literature but address existing gaps, the current study had three main aims. First, the current study examined if there were differences in multiple parenting stress domains between relative caregivers and foster/adoptive caregivers prior to beginning TF-CBT and at TF-CBT completion or termination. It was predicted that although the total level of parenting stress for relative and foster/adoptive caregivers may be similar at both time points, that there would be differences seen in different domains of parenting stress. Based on prior literature, it was hypothesized that prior to beginning treatment, relative caregivers may report higher parental distress but that foster/adoptive caregivers may report greater stress related to parent-child dysfunctional interactions and perceptions of the child's behavior being difficult or challenging.

The second aim of the current study was to examine reductions in child trauma symptoms and all domains of parenting stress from treatment baseline to termination. It was predicted that both relative and foster/adoptive caregiver groups would demonstrate significant reductions in child trauma symptoms and all domains of parenting stress. Third, the current study examined if there was a bidirectional, reciprocal, relation between child trauma symptoms and caregiver parenting stress domains over the course of TF-CBT. Reciprocal relations were predicted for both caregiver groups, but the current study also explored differences between the groups.

2. Methods

2.1. Participants

Participants were 130 caregiver-child dyads who had completed TF-CBT in the state of Kentucky. Children were between the ages of 7–12 (M = 9.35, SD = 1.89), 46.9 % were male, and 81.4 % were white. All children were being treated for significant symptoms and impairment related to trauma exposure. Among the sample, children were exposed to a range of trauma types, with the most frequent being neglect/having an impaired caregiver (83.5 %), exposure to domestic violence (57.4 %), and physical abuse (50.9 %).

Forty-six of the dyads were caregivers that were biological or relative (e.g., grandparent) caregivers to the child, and 84 were caregivers that were foster/adoptive caregivers to the child. Among the 84 foster/adoptive caregivers, 77 were identified as non-

relative foster caregivers and 7 were identified as adoptive caregivers. Children had lived in their current placement for an average of 20 months (SD = 22.88). Caregivers were primarily female (85.3 %) and white (80.4 %) with an average age of 45.56 (SD = 12.93). Sample demographics are further broken down by the relative caregiver and foster/adoptive caregiver groups in Table 1. The sample's racial demographics are similar to the state of Kentucky's demographics, at large, in which the 2020 census estimated 87.1 % of the population identifies as white and that the average household income was \$52,238 (United States Census Bureau, 2020).

2.2. Procedures

Data were collected from an academic-based trauma clinic and an associated community mental health agency from 2007 to 2021. All clinicians had obtained either masters or doctoral-level training or were in training. Clinicians were trained in TF-CBT by certified trainers with a year or more of required TF-CBT case consultation in addition to ongoing clinical supervision and support provided by the study site approximately two-times per month. Participants received the full protocol of TF-CBT. Engagement of caregivers in parallel collateral sessions was a standardized part of care in addition to their participation in conjoint sessions.

For all participants, treatment was completed within an average of 8.5 months (SD = 3.71); assuming one session per week, this would equate to about 34 sessions. This longer treatment duration is consistent with recommendations for youth with complex trauma experiences (Cohen et al., 2012); as among the present sample, over 55 % experienced three or more trauma types. Nine children completed another trauma-informed intervention prior to their participation in TF-CBT (e.g., Parent Child Interaction Therapy), but these children did not significantly differ from those without prior trauma-informed intervention in their baseline trauma or parenting stress scores. TF-CBT was completed in-person with children and caregivers, with the exception of those seen from March 2020–2021 during which time telehealth was utilized due to COVID-19. It is possible that children had more than one caregiver engage in treatment with them, but a primary caregiver was identified as the caregiver most consistently participating in collateral and conjoint sessions. Data from this primary caregiver were used in the present study. For children in foster care, treatment may be recommended by child welfare, but no families were court mandated to participate in treatment.

During the baseline assessment, all participants were screened for trauma exposure and completed a battery of measures to gather baseline symptomatology and functioning. The same assessment battery was administered at treatment termination/completion. Measures were completed by both child and caregiver. Study protocols were approved by the Institutional Review Board of the affiliated university and all study participants provided assent (children and adolescents ages 6 and up) and/or research consent (caregivers/guardians). Participants who completed the measures below, at treatment baseline, and whom remained in the care of the same caregiver at treatment baseline and termination were included in the current study.

2.3. Measures

The youth self-report version of the UCLA PTSD Reaction Index DSM-5 (PTSD-RI DSM-5; Pynoos & Steinberg, 2015) was used to assess for child traumatic stress symptoms. The UCLA PTSD-RI DSM-5 is a semi-structured interview that assesses youths' (ages 7 and up) experience of PTSD symptoms per DSM-5 criteria. Children completed this interview with a clinician at intake and treatment termination sessions. It contains a trauma exposure screener and thirty-one questions related to A1 (i.e., the experience or witnessing of a traumatic event) and A2 (i.e., experiencing significant fear, helplessness, or horror related to the trauma) PTSD criteria. For the current study, each trauma exposure children reported experiencing (e.g., neglect/impaired caregiver, domestic violence, physical

Table 1

Sample demographics and differences.

1 0 1			
	Relative Caregivers ($n = 46$)	Foster/Adoptive Caregivers ($n = 84$)	Total $(n = 130)$
Caregiver Gender	87 % Female	84.3 % Female	85.3 % Female
Caregiver Age	M = 45.13 SD = 14.23	M = 45.82 SD = 12.3	M = 45.56 SD = 12.93
Child Gender	43.5 % Male	48.8 % Male	46.9 % Male
Child Age	$M = 9.30 \ SD = 1.82$	$M = 9.38 \ SD = 1.94$	M = 9.35 SD = 1.89
Child Ethnicity	89.1 % Not Hispanic/Latino	92.9 % Not Hispanic/Latino	91.5 % Not Hispanic/Latino
Child Race	73.9 % white	85.5 % white	81.4 % white
	26.1 % Black	23.8 % Black	24.8 % Black
	11.1 % Multiracial	13.1 % Multiracial	12.4 % Multiracial,
	4.3 % American Indian	0 % American Indian	1.6 % American Indian 0.8 % Asian0
	0 % Asian	1.2 % Asian	.8 % Native Hawaiian or other Pacific
	0 % Native Hawaiian or other Pacific	1.2 % Native Hawaiian or other Pacific	Islander
	Islander	Islander	
Child Trauma	62.5 % Neglect/Impaired Caregiver	94.7 % Neglect/Impaired Caregiver	83.5 % Neglect/Impaired Caregiver
Exposure	47.5 % Domestic Violence	62.7 % Domestic Violence	57.4 % Domestic Violence
	38.1 % Physical Abuse	58.3 % Physical Abuse	50.9 % Physical Abuse
	33.3 % Emotional Abuse	47.2 % Emotional Abuse	42.1 % Emotional Abuse
	29.3 % Sexual Abuse	40.5 % Sexual Abuse	36.5 % Sexual Abuse
	17.6 % Bereavement	30.8 % Bereavement	25.6 % Bereavement
	14.3 % Serious Illness/ Injury	8.2 % Serious Illness/ Injury	10.4 % Serious Illness/ Injury

Note. Children's race does not total to 100 %, as children could have been identified as more than one race.

abuse, emotional abuse, sexual abuse, bereavement, and serious illness/injury) were coded with a 1 and trauma exposures children reported not experiencing were coded with a 0. Further, for the current study, the UCLA PSTSD RI total PTSD score was used. Total scores at or upwards of 35 are considered to be clinically elevated (Kaplow et al., 2020). The UCLA PTSD RI total score has been found to have excellent reliability ($\alpha = 0.94$) (Kaplow et al., 2020).

The Parenting Stress Index-Short Form (PSI-SF4; Abidin, 2013) was used to measure caregiver parenting stress. This is a 36-item screening tool that is derived from the longer 120-item inventory. The PSI-SF identifies parent-child problem areas for children ages birth to twelve. The PSI-SF provides a total stress score and three subscale scores that include Parental Distress (PD; 12 items), Parent-Child Dysfunctional Interaction (P-CDI; 12 items), and Difficult Child (DC; 12 items). The subscales are constructed to capture distress a parent is experiencing in their role as a parent, such as lack of social support, conflict with partner or depression (PD), feelings of disappointment and alienation from their child (P-CDI), and ease or difficulty in managing the child's behaviors (DC) (Abidin, 2013). Percentile scores were used in all analyses. Scores at or above the 85th percentile or higher are considered to be clinically significant and suggest need for intervention (Abidin, 2013). Test-retest reliability and internal consistency for the PSI-SF has been found to range from 0.78 to 0.85 (test-retest) and 0.80–0.91 (internal consistency) and to be highly correlated with the PSI long form (Abidin, 2013).

2.4. Data analytic plan

To examine differences between relative caregiver and foster/adoptive caregiver parenting stress and child trauma symptoms, independent *t*-tests were conducted. Paired samples t-tests were then used to examine significant differences in scores at baseline and treatment termination. Correlations were also examined among different trauma types, length of treatment, and parenting stress domains and child trauma symptoms at treatment baseline and termination. SPSS 28.0 was used for *t*-tests and correlational analyses. For these analyses, missing data among the UCLA PTSD RI total scores and all PSI-SF scores at treatment termination were less than 8 %, and as such all missing data was handled using pairwise deletion.

Cross-lagged panel models (CLPM) were examined, using MPLUS 8.7, to test a reciprocal relation between child trauma symptoms and parenting stress over the course of TF-CBT. CLPM is a type of structural equation modeling (SEM) path analysis that can be used

Table 2

Mean differences.

T-Tests Comparing Means Between Caregiving Groups						
	Relative Caregivers (n = 46) M (SD)	Relative CaregiversFoster/Adoptive Caregivers $(n = 84)$ $(n = 46)$ M (SD)		d		
Baseline:						
Total Trauma Symptoms	26.49 (15.03)	21.94 (14.63)	1.61(0.11)	0.31		
Total Parenting Stress	59.72 (27.50)	64.52 (26.33)	-0.97(0.34)	-0.18		
PD	49.39 (28.87)	39.72 (26.26)	1.88(0.05)*	0.36		
P-CDI	57.96 (27.74)	69.60 (23.97)	-2.40(0.02)*	-0.46		
DC	66.59 (28.27)	71.57 (24.39)	-1.01(0.31)	-0.19		
Termination:						
Total Trauma Symptoms	11.81 (10.81)	10.83 (9.45)	0.47(0.64)	0.10		
Total Parenting Stress	47.79 (33.71)	47.34 (31.20)	0.06(0.95)	0.01		
PD	40.36 (30.02)	33.02 (27.31)	1.17(0.25)	0.26		
P-CDI	51.68 (30.48)	57.44 (29.07)	-0.90(0.37)	-0.20		
DC	51.82 (32.70)	52.54 (31.47)	-0.10(0.92)	-0.02		

Paired Samples T-Tests Comparing Treatment Baseline and Termination Scores								
	Relative Caregivers (n = 46) M (SD)		Foster/Adoptive Caregivers (n = 84) M (SD)					
	Baseline	Term.	Baseline	Term.	t (p)	d		
Total Trauma Symptoms	26.49 (15.03)	11.81 (10.81)	21.94 (14.63)	10.83 (9.45)	Rel: 5.66 (0.00)** Fost/Adopt: 6.88 (0.00)**	0.960		
Total Parenting Stress	59.72 (27.50)	47.79 (33.71)	64.52 (26.33)	47.34 (31.20)	Rel: 1.95 (0.06) Fost/Adopt: 3.83 (0.00)**	0.340		
PD	49.39 (28.87)	40.36 (30.02)	39.72 (26.26)	33.02 (27.31)	Rel: 1.24 (0.22)	0.220		
P-CDI	57.96 (27.74)	51.68 (30.48)	69.60 (23.97)	57.44 (29.07)	Rel: 0.63 (0.53) Fost/Adopt: 2.64 (0.01)**	0.110		
DC	66.59 (28.27)	51.82 (32.70)	71.57 (24.39)	52.54 (31.47)	Rel: 3.41(0.00)** Fost/Adopt: 3.78 (0.00)**	0.580 .48		

Cohen's d = d. PD = Parenting Distress Subscale, P-CDI = Parent-Child Dysfunctional Interaction Subscale, and DC = Difficult Child Subscale of the PSI-SF.

^{*} p ≤ .05.

 $^{**}~p\leq$.01.

with longitudinal data to examine autoregressive paths, or the stability of variables over time (e.g., the direct effect of variable X at time-point one on variable X at time-point two), as well as cross-lagged paths between variables (e.g., the direct effect of variable X at time-point one on variable Y at time-point two and the direct effect of variable Y at time-point one on variable X at time-point two; Kline, 2015). This form of path analysis also allows for the examination of within-time associations (e.g., the associations between variables X and Y at a single time-point). Using CLPM, autoregressive and cross-lagged paths are entered into the same model, such that each path is estimated controlling for the other paths (Kline, 2015). Missing data for these analyses were handled using full information maximum likelihood (FIML). As done in prior research examining cross-lagged paths at two time-points (e.g., Parmentier et al., 2019), four competing path models were examined for both caregiver groups. First, the stability model only included autoregressive paths for each variable. The causality model included autoregressive paths as well as paths for parenting stress domains at baseline predicting child trauma symptoms at treatment termination. Then, the reverse causality model included autoregressive paths as well as paths for child trauma symptoms at treatment baseline predicting parenting stress domains at treatment termination. Lastly, the reciprocal causality model included all CLPM paths- autoregressive paths and paths from the causality and reverse causality models. This comparison of different path models allows for the examination of best model fit, not assuming that the full CLPM will be the best fitting path model for the data (Parmentier et al., 2019). Model fit indices were examined and interpreted using criteria from Hu and Bentler (1999), in which acceptable model fit is evidenced by a non-significant chi-square (χ^2), CFI and TFI values at or above 0.95, and a RMSEA value at or below 0.06.

3. Results

3.1. Mean differences

Results of the independent *t*-tests are shown in Table 2. At baseline, relative caregivers had higher scores in PD and lower scores in P-CDI than foster/adoptive caregivers. There were no statistically significant mean differences between relative and foster/adoptive caregiver group scores at treatment termination. Further, differences in trauma exposure types were examined. The only statistically significant difference between the two groups were that children living with foster/adoptive caregivers were more likely to have experienced neglect/previously having an impaired caregiver than were children living with relative caregivers (t = -3.93, p = .00). Paired samples *t*-tests results are also shown in Table 2. For relative caregivers' there was a significant decrease in child trauma symptoms and scores on the PSI-SF DC subscale. For foster/adoptive caregivers, there was a significant decrease in child trauma symptoms, total parenting stress, P-CDI, and the DC subscales from baseline to treatment termination.

3.2. Correlations

Prior to conducting path analyses models, correlations were examined. Analyses for the relative caregiver group showed that child trauma symptoms at treatment termination were positively associated with trauma symptoms at baseline (r = 0.36, p = .03). Children's experience of domestic violence was associated with lower scores on PD (r = -0.44, p = .02), P-CDI (r = -0.43, p = .02), and DC (r = -0.44, p = .01) subscale scores at treatment termination. Physical abuse was associated with more child trauma symptoms at treatment baseline (r = 0.41, p = .01). Number of months in treatment was positively associated with all PSI-SF baseline scores (PD [r = 0.37, p = .04], P-CDI [r = 0.48, p = .00], and DC [r = 0.40, p = .02]) and P-CDI at treatment termination (r = 0.45, p = .01) and]). Lastly, all parenting stress variables were significantly positively correlated with one another at both treatment baseline and termination (r = 0.48-0.89, p = .00).

For the foster/adoptive caregiver group, a significant correlation was found between child trauma symptoms at termination and trauma symptoms at baseline (r = 0.43, p = .00). Physical abuse was associated with higher trauma symptoms at treatment baseline (r = 0.25, p = .05) and termination (r = 0.36, p = .00). Neglect/impaired caregiving was associated with PD (r = 0.26, p = .04) and DC (r = 0.24, p = .04) PSI-SF subscale scores at baseline and with P-CDI (r = 0.34, p = .01) and DC (r = 0.31, p = .02) scores at termination. Number of months in treatment was associated with DC scores (r = 0.29, p = .03) at termination. All parenting stress variables were significantly correlated with one another at both baseline and termination (r = 0.40-0.84, p = .00).

3.3. Cross lagged panel models

Based on the results of correlation analyses, all path models for the relative caregiver group controlled for length of treatment and children's experience of domestic violence and physical abuse. For the foster/adoptive caregiver group, all path models controlled for

Table	3
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Model fit indices.

Relative Caregivers					Foster/Adoptive Caregivers			
Models	X^2 (df)	CFI	TFI	RMSEA	X^2 (df)	CFI	TFI	RMSEA
Stability	24.53 (24) p = .43	0.99	0.99	0.03	26.12 (24) <i>p</i> = .35	0.98	0.98	0.04
Causality	23.09(21) p = .34	0.98	0.97	0.06	24.42(21) p = .27	0.97	0.96	0.06
Reverse Causality	22.98 (21) p = .35	0.98	0.97	0.06	21.90(21) p = .41	0.99	0.99	0.03
Reciprocal Causality	21.78 (18) $p = .24$	0.97	0.94	0.08	20.01 (18) $p = .33$	0.98	0.97	0.05

length of treatment and children's experience of neglect/impaired prior caregiving and physical abuse. Four different models were examined for each caregiver group, and the results of model fit indices are presented in Table 3.

For the foster/adoptive caregiver-child dyads, all four models had similar model fits. However, in all four models, the only significant paths were the autoregressive paths of variables from baseline to termination. As such, the stability model was chosen as the most appropriate and parsimonious model for the data, with X^2 , CFI, TFI, and RMSEA values indicating an acceptable fit. Fig. 1 displays the significant paths for the stability model. Child trauma symptoms at baseline were associated with symptoms at termination, and baseline scores were associated with the corresponding termination score for each parenting stress domain. Within the two timepoints, only the parenting stress domains covaried significantly with one another. For control variables, the experience of neglect was positively associated with P-CDI scores at termination ($\beta = 0.24$, p = .04); treatment length was positively associated with P-CDI ($\beta = 0.39$, p = .00) scores at termination; and physical abuse was associated with child trauma symptoms at termination ($\beta = 0.34$, p = .01).

Similar results were found for the dyads with relative caregivers, in which all models had similar fit indices, but when examining significant paths, in all models, the only significant paths were the autoregressive effects of each variable's baseline score on that variable's termination score. As such, the stability model was selected as the best and most parsimonious fit for data. Fig. 2 depicts this model and its significant paths. Child trauma symptoms at baseline were associated with trauma symptoms at termination, and baseline scores were significantly associated with termination scores for all parenting stress domains. However, for relative but not foster/adoptive caregivers, child trauma symptoms and caregiver parenting stress covaried at treatment termination. Regarding control variables, the child's experience of domestic violence was negatively associated with PD ($\beta = -0.47$, p = .00), P-CDI ($\beta = -0.44$, p = .00), and DC ($\beta = -0.43$, p = .00) scores at treatment termination; and treatment length was positively associated with child trauma symptoms at termination ($\beta = 0.39$, p = .01).

4. Discussion

The arc of parenthood is hallmarked by rewards and challenges, and stress in the parenting role is a given. For those who are caring for trauma-exposed children there are unique stressors to face (e.g., Roberts et al., 2013). This is one of the first known investigations to compare total parenting stress and subscale scores across diverse sets of caregivers during a course of TF-CBT. Comparisons of baseline PSI scores between the groups revealed that relative caregivers reported greater Parental Distress than the foster/adoptive group; who in turn reported more Parent-Child Dysfunctional Interaction than their relative caregiving counterparts. These findings may reflect the different contexts of the caregiving role and the impact of the child's trauma exposure.

Foster/adoptive caregivers apply and go through considerable training and preparation to provide out of home care to trauma-





Note. Standardized estimates for significant paths are shown. *p < .05, **p < .01. This model controlled for treatment length and the child's experience of physical abuse and neglect/previously having an impaired caregiver- relations with these variables are not shown but are described in text.



Fig. 2. Relative Caregiver Stability Model

Note. Standardized estimates for significant paths are shown. *p < .05, **p < .01. This model controlled for treatment length and child's domestic violence exposure and physical abuse. Relations with these control variables are not shown but are described in text.

exposed children. Relative caregivers, on the other hand, are more likely to be directly impacted and experience their own psychological distress following their biological or relative child's trauma exposure (Cyr et al., 2018). This may create more personal distress or may be associated with feelings of inadequacy in the parental role (Golfenshtein et al., 2016). However, for foster/adoptive caregivers, acceptability (i.e., how closely a child meets their caregiver's behavioral and social desirability expectations), a child factor in determining parenting stress may be at play and might explain why scores on the Parent-Child Dysfunctional Interaction scale were higher in this group. In fact, previous research has documented how acceptable a child is perceived to be by a caregiver can be altered by the child's health and behavioral health needs, and can interfere with a caregiver's relational engagement and performance (Halme et al., 2006; Johnston et al., 2003; Mughal et al., 2017).

The lack of statistically significant difference in the Difficult Child subscale scores between the two groups suggests that the level of perceived behavioral dysregulation in the child may be similar (in this case moderately high), but the transaction between caregiver and child may be experienced as more dysfunctional or unacceptable in the foster/adoptive group. A primary concern expressed by foster caregivers is the lack of preparation and support to manage the behavior problems of children in their care (Greiner et al., 2015). Unfortunately, the majority of services available to foster caregivers focus on addressing the child's needs (e.g. wraparound services, mental health services for the child) in isolation, with fewer resources available to address the relationship, or the caregiver's ability to manage difficult child behavior (Timmer et al., 2006). Additionally, foster caregivers may be addressing child behavior outside the context of overarching family connections, history and relationships that may benefit relative caregivers. Although there are only a few studies looking at these group differences for comparison, longitudinal research out of Norway reveals a similar pattern; foster caregivers scored higher on parenting stress scores, specifically within the child domain, than comparison groups at all-time points (Bergsund et al., 2020). Within the context of trauma treatment, all differences between the two caregiving groups dissipated from baseline to termination, suggesting that TF-CBT was successful in addressing the individual, relational and situational factors associated with parenting stress. This is not surprising given the mechanisms of action that frame TF-CBT are driven by socioecological perspectives and attachment theory (Cohen et al., 2012).

The hypothesis that both relative and foster/adoptive caregiver groups would demonstrate significant reductions in symptoms and across all domains of parenting stress was partially supported. Significant declines in child trauma symptoms and the Difficult Child subscale were found for each group from treatment baseline to termination, but only foster/adoptive caregivers showed significant declines in total parenting stress and Parent-Child Dysfunctional Interaction over time. However, it should be noted that relative caregivers baseline Parent-Child Dysfunction score was below threshold at baseline, and significantly lower than the scores reported by their foster/adoptive counterparts, suggesting that in the aggregate, this relational impact was not a salient issue for these relative caregivers at any point. Parental Distress scores at baseline and termination were well below clinical threshold, for both the relative and foster/adoptive caregiver groups, and while these scores also declined over the course of treatment, the differences were not statistically significant. In sum, these findings point to profiles of parenting stress that seems to differ by caregiver type, with foster/adoptive caregivers reporting more relational dysfunction, relative caregivers experiencing more parental distress at treatment

S. Gusler et al.

initiation, and both groups scoring high on the Difficult Child subscale. Based on the results of this study, these secondary outcomes improve significantly during TF-CBT.

It was predicted that a reciprocal relationship between child trauma symptoms and caregiver parenting stress domains would exist during the course of TF-CBT. However, reciprocal and bidirectional effects were not found for either group. Child trauma symptoms and Parental Distress, Parent-Child Dysfunction Interaction, and Difficult Child subscale scores only covaried at treatment termination for relative caregivers. This indicates that following treatment, relative caregiver stress is more closely connected to their child's trauma symptoms.

Further, for relative caregivers, the child's experience of domestic violence prior to treatment was associated with lower scores on all parenting stress domains at termination. It is possible that the primary caregiver involved in the child's treatment directly experienced the domestic violence that the child was exposed to and more strongly benefitted from parallel coping and cognitive processing, through TF-CBT. Also, for the relative caregiver group a longer length of treatment was associated with greater child trauma symptoms, but for the foster/adoptive caregiver group a greater length of time in treatment was associated with higher scores on the Parent-Child Dysfunction Interaction and Difficult Child subscales. This may suggest differences in salient challenges being targeted through TF-CBT, with children in foster or adoptive homes staying in treatment longer if there was greater dysfunction in their interactions with caregivers or if their behaviors were viewed as difficult.

Also, for the foster/adoptive group, neglect was significantly associated with greater Parent-Child Dysfunctional Interaction scores. This result is consistent with literature showing that the experience of neglect in childhood negatively affects the quality of relationships with others later in life (Haslam & Taylor, 2022). Additionally, in the CLPMs, trauma symptoms were higher at termination for children who experienced physical abuse and who were in the care of foster/adoptive caregivers. This is a novel result, which future research should explore to understand possible mechanisms of action, such as potential differences in trauma cognitions based on trauma type and the ability to successfully resolve different trauma cognitions with the support of foster/adoptive caregivers versus relative caregivers.

With the exception of differences noted above, similar patterns of results were found for both caregiver groups, in which the only significant paths noted were between child trauma symptoms at baseline and termination, and each parenting stress subscale at baseline and termination. Although Cinamon et al. (2021) found reciprocal effects for parental factors and child trauma symptoms, the specific parental factors found to be significant were caregiver depression and competency, and bidirectional effects were found at 6-months post-treatment. This suggests that caregiver depression, rather than a broader construct of parenting distress, and competency, but not child or dyadic components of parenting stress, may be reciprocally related to child trauma symptoms. It is also possible that these bidirectional effects are more likely to emerge post-treatment, once the caregivers and children are no longer receiving intervention. Present results indicate that although parenting stress and child trauma symptoms decline over the course of TF-CBT, they do so independently of one another.

4.1. Implications

For foster/adoptive caregivers, high scores on the Parent-Child Dysfunctional Interaction subscale may reflect a mismatch between expectations and the reality of caregiving that may leave them feeling disappointed, rejected, or defensive, and may interfere with emotional bonding with their child. These parent-child dyads could benefit from parent-child relational interventions, and emotion coaching on the development and use of attachment promoting behaviors to strengthen the relationship from both perspectives (Gus et al., 2015). This also has policy implications when considering state and agency required training courses and supports for foster caregivers. Present results suggest that more training should be given to foster caregivers on supporting their dyadic relationship with their foster child, which would include recognizing and addressing their own expectations and perceptions. Also, results suggest that foster caregivers may need more services available to them that help in addressing relationship difficulties and help the caregiver in addressing behavioral challenges of child, rather than services focused more directly on just the child or focused on crisis response as is most common among services provided for foster families (Timmer et al., 2006).

Additionally, for both caregiving groups, perceptions of the child as difficult should be addressed based on the age of the child. Caregiver assisted coping and trauma-informed parenting strategies may assist with improved emotional and behavioral regulation (Gigengack et al., 2019). The importance of early identification and intervention to address parenting stress and prevent placement disruptions for vulnerable children should be emphasized. Clinicians could achieve this goal by considering a lower cutoff score on the PSI for determining when a referral to services is appropriate for these high-risk parents. Previous research points to using cutoff scores in the 73rd percentile instead of the 85th percentile noted in the scoring manual, as the higher threshold may exclude high-risk foster/adoptive parents who are experiencing difficulties and may need immediate intervention to stabilize a placement (Barroso et al., 2016). Further, legislative support is needed to increase availability and connection of families to intervention supports once high levels of parenting stress have been identified.

4.2. Limitations

Limitations of the current study should be noted. First, the sample of the current study were primarily white/Caucasian. Although the sample demographics are similar to the state of Kentucky demographics for children in foster care (Kentucky Child Welfare Outcomes, 2020), national statistics show that children of color are overrepresented in foster care, representing 57 % of children in foster care, across the United States (AFCARS Report, 2021). As such, the generalizability of results may be limited. Additionally, although all children were receiving TF-CBT to treat significant symptoms and impairment related to trauma exposure, information

related to whether they met diagnostic criteria for PTSD or other comorbid disorders were not obtained. Therefore, conclusions cannot be made related to diagnoses and patterns of results.

Regarding the treatment procedures, it should be noted that a small portion of the sample (n = 5) seen from March 2020–2021 received treatment through a virtual video conferencing platform. Although, emerging evidence is indicating the effectiveness of TF-CBT when administered via telehealth (Stewart et al., 2020), this is still an emerging area of research. Additionally, the present study only included data from one primary caregiver. As such, this study is limited to the perceptions and report of one caregiver and does not include multiple caregiver reports or examine the similarities or differences between caregivers' perceptions. Given that only seven caregivers were adoptive caregivers, they were included in the same group as foster caregivers. This limits the examination of potential differences between child-caregiver dyads for those in foster care versus those who have completed adoption and who may have more stability and longevity in their relationship.

As for measurement and analyses, results of the PSI indicating low levels of Parental Distress at treatment initiation, for both caregiver groups, may represent a floor effect. This may be contributing to nonsignificant declines in these scores from treatment baseline to termination. Further, there was a larger number of foster/adoptive caregivers than relative caregivers, which may have an impact on the comparison results between the two group. Specifically, although, all *t*-tests were analyzed with equal variances not assumed, this group difference reduces the overall statistical power of analyses (Rusticus & Lovato, 2014). Additionally, because the present study utilized only two time-points (treatment baseline and termination), certain longitudinal analyses for examining bidirectional effects could not be conducted. Specifically, the Random-Intercept Cross Lagged Panel Model (RI-CLPM) and the Autoregressive Latent Trajectory Model with Structured Residuals (ALT-SR), are alternative approaches to CLPM that allow for the examination of within and between person effects. However, these approaches require three or more time-points (Mund & Nestler, 2019).

4.3. Future directions

future research would benefit from more diverse samples. It is important for future research to examine differences among parenting stress and trauma symptoms, across treatment, based on demographic factors such as race or ethnicity and race or ethnicity match versus non-match between children and caregivers. Further, the current study only included children who were in the care of the same caregiver for the duration of treatment, but further study is needed to examine the impact of placement disruption, while completing trauma treatment, for children in foster care. Understanding how placement disruption impacts the child's trauma symptoms and how clinicians navigate this change in the participating caregiver is an area to be addressed by future research. Additionally, further investigation is needed to understand the impact of children having two caregivers actively participate in treatment versus having one primary caregiver participate in parallel and conjoint sessions. There may be additional challenges for the clinician involving two caregivers who may have varying perceptions, but having two caregivers actively participating in treatment may be even more beneficial for the child, if living in a home with two caregivers. Lastly, although the focus of the current study was on parenting stress and children's trauma symptoms throughout TF-CBT, future research should examine potential bidirectional effects of parenting stress and children's externalizing and internalizing symptoms. Particularly, as caregiver involvement in TF-CBT has been associated with declines in internalizing and externalizing symptoms among youth (Yasinski et al., 2016).

4.4. Conclusions

Despite study limitations, the current study expands the understanding of caregivers roles in children's trauma treatment and differences between relative caregivers and foster/adoptive caregivers experience of parenting stress. Different profiles of parenting stress were found, prior to the child beginning TF-CBT, with foster/adoptive caregivers reporting greater dysfunction in their parent-child interactions, relative caregivers reporting greater personal stress, and both groups reporting moderately high levels of difficulties managing children's behaviors. However, these differences in the experience of parenting stress between relative and foster/adoptive caregivers dissipated at treatment termination. Results indicated that not only was TF-CBT effective at addressing each individual child's trauma symptoms, but also the unique needs of caregivers' in reducing their parenting stress.

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Declaration of competing interest

None.

Data availability

The data that has been used is confidential.

References

Abidin, R. (2013). Manual of the Parenting Stress Index (PSI).

- AFCARS Report. (2021). U.S. Department of Health and Human Services Administration for Children and Families. Retrieved September 22, 2022, from https://www.acf.hhs.gov/sites/default/files/documents/cb/afcarsreport28.pdf.
- Barroso, N. E., Hungerford, G. M., Garcia, D., Graziano, P. A., & Bagner, D. M. (2016). Psychometric properties of the Parenting Stress Index-Short Form (PSI-SF) in a high-risk sample of mothers and their infants. *Psychological Assessment*, 28(10), 1331–1335. https://doi.org/10.1037/pas0000257
- Bergsund, H. B., Wentzel-Larsen, T., & Jacobsen, H. (2020). Parenting stress in long-term foster carers: A longitudinal study. Child & Family Social Work, 25, 53–62. https://doi.org/10.1111/cfs.12713
- Bornstein, M. H., Putnick, D. L., & Suwalsky, J. T. (2018). Parenting cognitions→ parenting practices→ child adjustment? The standard model. Development and Psychopathology, 30(2), 399–416. https://doi.org/10.1017/S0954579417000931
- California Evidence-Based Clearinghouse for Child Welfare. (2019). Trauma-focused cognitive behavioral therapy—Detailed report. Retrieved April 5, 2022, from http://www.cebc4cw.org/program/17/detailed.
- Cinamon, J. S., Bambrah, V., Muller, R. T., Zorzella, K. P., Konanur, S., & Thornback, K. (2021). Examining the reciprocal relationships between parent functioning and child posttraumatic stress throughout trauma therapy. *Journal of Family Trauma, Child Custody & Child Development, 1–23.* https://doi.org/10.1080/ 26904586.2021.1886220
- Cohen, J. A., & Mannarino, A. P. (2015). Trauma-focused cognitive behavior therapy for traumatized children and families. *Child and Adolescent Psychiatric Clinics, 24* (3), 557–570. https://doi.org/10.1016/j.chc.2015.02.005

Cohen, J. A., Mannarino, A. P., & Deblinger, E. (Eds.). (2012). Trauma-focused CBT for children and adolescents: Treatment applications. Guilford Press.

- Costa, N. M., Weems, C. F., Pellerin, K., & Dalton, R. (2006). Parenting stress and childhood psychopathology: An examination of specificity to internalizing and externalizing symptoms. *Journal of Psychopathology and Behavioral Assessment, 28*(2), 113–122. https://doi.org/10.1007/s10862-006-7489-3
- Crouch, J. L., Irwin, L. M., Milner, J. S., Skowronski, J. J., Rutledge, E., & Davila, A. L. (2017). Do hostile attributions and negative affect explain the association between authoritarian beliefs and harsh parenting. *Child Abuse & Neglect*, *67*, 13–21. https://doi.org/10.1016/j.chiabu.2017.02.019Get
- Cyr, M., Frappier, J. Y., Hébert, M., Tourigny, M., McDuff, P., & Turcotte, M. E. (2018). Impact of child sexual abuse disclosure on the health of nonoffending parents: A longitudinal perspective. *Journal of child custody*, 15(2), 147–167. https://doi.org/10.1080/15379418.2018.1460649.
- Davies, M. A., & Bennett, D. B. (2021). Parenting stress in non-offending caregivers of sexually abused children. Journal of Child Sexual Abuse, 1–16. https://doi.org/ 10.1080/10538712.2021.1985676
- Deater-Deckard, K. (2005). Parenting stress and children's development: Introduction to the special issue. Infant and Child Development, 14(2), 111–115. https://doi.org/10.1002/icd.383
- Deblinger, E., Mannarino, A. P., Cohen, J. A., & Steer, R. A. (2006). A follow-up study of a multisite, randomized, controlled trial for children with sexual abuse-related PTSD symptoms. Journal of the American Academy of Child & Adolescent Psychiatry, 45(12), 1474–1484. https://doi.org/10.1097/00004583-200404000-00005
- Dorsey, S., Burns, B. J., Southerland, D. G., Cox, J. R., Wagner, H. R., & Farmer, E. M. (2012). Prior trauma exposure for youth in treatment foster care. Journal of Child and Family Studies, 21(5), 816–824. https://doi.org/10.1007/s10826-011-9542-4
 Eslinger, J. G., Sprang, G., & Otis, M. D. (2014). Child and caregiver dropout in child psychotherapy for trauma. Journal of Loss and Trauma, 19(2), 121–136. https://
- Estinger, J. G., Sprang, G., & Otis, M. D. (2014). Child and caregiver dropout in child psychotherapy for trauma. Journal of Loss and Trauma, 19(2), 121–136. https:// doi.org/10.1080/15325024.2012.742720
- Gigengack, M. R., Hein, I. M., Lindeboom, R., & Lindauer, R. J. (2019). Increasing resource parents' sensitivity towards child posttraumatic stress symptoms: A descriptive study on a trauma-informed resource parent training. *Journal of Child & Adolescent Trauma*, 12(1), 23–29. https://doi.org/10.1007/s40653-017-0162z
- Golfenshtein, N., Srulovici, E., & Medoff-Cooper, B. (2016). Investigating parenting stress across pediatric health conditions-a systematic review. Comprehensive Child and Adolescent Nursing, 39(1), 41–79. https://doi.org/10.3109/01460862.2015.1078423
- Greiner, M. V., Ross, J., Brown, C. M., Beal, S. J., & Sherman, S. N. (2015). Foster caregivers' perspectives on the medical challenges of children placed in their care: Implications for pediatricians caring for children in foster care. *Clinical Pediatrics*, 54(9), 853–861. https://doi.org/10.1177/0009922814563925
- Gus, L., Rose, J., & Gilbert, L. (2015). Emotion coaching: A universal strategy for supporting and promoting sustainable emotional and behavioural well-being. Educational & Child Psychology, 32(1), 31–41.
- Halme, N., Tarkka, M. T., Nummi, T., & Åstedt-Kurki, P. (2006). The effect of parenting stress on fathers' availability and engagement. Child Care in Practice, 12(1), 13–26. https://doi.org/10.1080/13575270500526220
- Haslam, Z., & Taylor, E. P. (2022). The relationship between child neglect and adolescent interpersonal functioning: A systematic review. *Child Abuse & Neglect*, 125. https://doi.org/10.1016/j.chiabu.2022.105510
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal, 6(1), 1–55.
- Johnston, C., Hessl, D., Blasey, C., Eliez, S., Erba, H., Dyer-Friedman, J.Reiss, A. L., ... (2003). Factors associated with parenting stress in mothers of children with fragile X syndrome. Journal of Developmental & Behavioral Pediatrics, 24(4), 267–275.
- Kaplow, J. B., Rolon-Arroyo, B., Layne, C. M., Rooney, E., Oosterhoff, B.Pynoos, R. S., ... (2020). Validation of the UCLA PTSD Reaction Index for DSM-5: A developmentally informed assessment tool for youth. Journal of the American Academy of Child and Adolescent Psychiatry, 59(1), 186–194. https://doi.org/ 10.1016/j.jaac.2018.10.019
- Kentucky Child Welfare Outcomes. (2020). Administration for children and families. Retrieved September 22, 2022, from https://cwoutcomes.acf.hhs.gov/ cwodatasite/pdf/kentucky.html.
- Kline, R. B. (2015). Principles and practice of structural equation modeling. Guilford publications.
- Kolko, D. J., Hurlburt, M. S., Zhang, J., Barth, R. P., Leslie, L. K., & Burns, B. J. (2010). Posttraumatic stress symptoms in children and adolescents referred for child welfare investigation: A national sample of in-home and out-of-home care. *Child Maltreatment*, 15(1), 48–63. https://doi.org/10.1177/1077559509337892
- Lai, B. S., Tiwari, A., Self-Brown, S., Cronholm, P., & Kinnish, K. (2017). Patterns of caregiver factors predicting participation in trauma-focused cognitive behavioral therapy. Journal of Child & Adolescent Trauma, 12(1), 97–106. https://doi.org/10.1007/s40653-017-0177-5
- Lohaus, A., Chodura, S., Möller, C., Symanzik, T., Ehrenberg, D., Job, A., Reindl, V., Konrad, K., & Heirichs, N. (2017). Children's mental health problems and their relation to parental stress in foster mothers and fathers. *Child and Adolescent Psychiatry and Mental Health*, 11(1), 1–9.
- Mughal, M. K., Ginn, C. S., Magill-Evans, J., & Benzies, K. M. (2017). Parenting stress and development of late preterm infants at 4 months corrected age. Research in Nursing & Health, 40(5), 414–423. https://doi.org/10.1002/nur.21809
- Mund, M., & Nestler, S. (2019). Beyond the cross-lagged panel model: Next-generation statistical tools for analyzing interdependencies across the life course. Advances in Life Course Research, 41. https://doi.org/10.1016/j.alcr.2018.10.002
- Parmentier, M., Pirsoul, T., & Nils, F. (2019). Examining the impact of emotional intelligence on career adaptability: A two-wave cross-lagged study. Personality and Individual Differences, 151, 1–6. https://doi.org/10.1016/j.paid.2019.05.052
- Pecora, P., Kessler, R., Williams, J., O'Brien, K., Downs, A. C., English, D., White, J., Hiripi, E., Roller, C. R., Wiggins, T., & Holmes, K. E. (2005). Improving family foster care: Findings from the northwest foster care alumni study. Seattle, WA: Casey Family Programs.

Pynoos, R. S., & Steinberg, A. M. (2015). The University of California, Los Angeles, Post-traumatic Stress Disorder Reaction Index (UCLA PTSD Index) for the diagnostic and statistical manual of mental disorders (5th ed.; DSM-5). Los Angeles: University of California.

- Roberts, Y. H., Campbell, C. A., Ferguson, M., & Crusto, C. A. (2013). The role of parenting stress in young children's mental health functioning after exposure to family violence. Journal of Traumatic Stress, 26(5), 605–612. https://doi.org/10.1002/jts.21842
- Rusticus, S. A., & Lovato, C. Y. (2014). Impact of sample size and variability on the power and type I error rates of equivalence tests: A simulation study. Practical Assessment, Research, and Evaluation, 19(1), 11. https://doi.org/10.7275/4s9m-4e81

- Samuelson, K. W., Wilson, C. K., Padron, E., Lee, S., & Gavron, L. (2017). Maternal PTSD and children's adjustment: Parenting stress and emotional availability as proposed mediators. Journal of Clinical Psychology, 73(6), 693–706. https://doi.org/10.1002/jclp.22369
- Stewart, R. W., Orengo-Aguayo, R., Young, J., Wallace, M. M., Cohen, J. A., Mannarino, A. P., & de Arellano, M. A. (2020). Feasibility and effectiveness of a telehealth service delivery model for treating childhood posttraumatic stress: A community-based, open pilot trial of trauma-focused cognitive-behavioral therapy. *Journal* of Psychotherapy Integration, 30(2), 274–289. https://doi.org/10.1037/int0000225
- Substance Abuse and Mental Health Services Administration. (2022). Understanding child trauma. Retrieved April 7, 2022, from https://www.samhsa.gov/child-trauma/understanding-child-trauma.
- Timmer, S. G., Urquiza, A. J., & Zebell, N. (2006). Challenging foster caregiver-maltreated child relationships: The effectiveness of parent-child interaction therapy. *Children and Youth Services Review*, 28(1), 1–19. https://doi.org/10.1016/j.childyouth.2005.01.006
- Tutus, D., Pfeiffer, E., Plener, P. L., Rosner, R., Bernheim, D., & Sachser, C. (2021). The change in parental symptoms and dysfunctional cognitions in the course of trauma-focused cognitive-behavioral therapy: Sustainability until one-year post-treatment. *Journal of Child and Adolescent Psychopharmacology*, 31(2), 129–136. https://doi.org/10.1089/cap.2020.0097
- U.S. Census Bureau. quickfacts: Kentucky (n.d.). Retrieved October 30, 2022, from https://www.census.gov/quickfacts/fact/table/KY/PST045221.
- Vaughan, E. L., Feinn, R., Berneton, S., Brereton, M., & Kaufman, J. S. (2013). Relationships between child emotional and behavioral symptoms and caregiver strain and parenting stress. Journal of Family Issues, 34(4), 534–556. https://doi.org/10.1177/0192513X12440949
- Yasinski, C., Hayes, A. M., Ready, C. B., Cummings, J. A., Berman, I. S., McCauley, T.Deblinger, E., ... (2016). In-session caregiver behavior predicts symptom change in youth receiving trauma-focused cognitive behavioral therapy (TF-CBT). Journal of Consulting and Clinical Psychology, 84(12), 1066–1077. https://doi.org/ 10.1037/ccp0000147