2022

# PATTERNS OF CHANGE IN CAREGIVER ANXIETY AND DEPRESSION DURING TRAUMA-FOCUSED COGNITIVE-BEHAVIORAL THERAPY

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# PATTERNS OF CHANGE IN CAREGIVER ANXIETY AND DEPRESSION DURING TRAUMA-FOCUSED COGNITIVE-BEHAVIORAL THERAPY

A thesis submitted in partial fulfillment

of the requirements for the degree of

MASTER OF ARTS

to the faculty of the

DEPARTMENT OF PSYCHOLOGY

of

ST. JOHN'S COLLEGE OF LIBERAL ARTS AND SCIENCES

at

ST. JOHN'S UNIVERSITY

New York

by

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# ABSTRACT

## PATTERNS OF CHANGE IN CAREGIVER ANXIETY AND DEPRESSION DURING TRAUMA-FOCUSED COGNITIVE-BEHAVIORAL THERAPY

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Caregivers play an integral role in their child's trauma-focused cognitive-behavior therapy (TF-CBT; Cohen & Mannarino, 2006), an intervention that has established efficacy in treating children's trauma-related symptoms (Cohen et al., 2017). Unfortunately, extant literature on TF-CBT lacks a comprehensive understanding and representation of demographic characteristics and baseline symptomatology for caregivers who participate in TF-CBT at community clinics. Furthermore, although researchers suggest that TF-CBT may improve caregivers' own distress, posttraumatic stress disorder (PTSD), and depression from pre- to post-treatment (e.g., Cohen et al., 2004a; Cohen et al., 2004b; Deblinger et al., 2011; Tutus et al., 2017), there is no assessment of caregiver's anxiety symptoms throughout treatment to date. Much of the existing literature regarding caregiver symptom improvement is methodologically flawed. Lastly, it is unclear which phase of TF-CBT results in the greatest symptom change for caregivers. The current study seeks to assess whether, and at which phase of treatment, caregivers who participate in TF-CBT at a community clinic report decreases in their depression and anxiety symptoms.

The current study examined 235 caregivers of children receiving TF-CBT. Caregivers' self-reported depression and anxiety symptoms were analyzed at pre-, mid-, and post-treatment time points. A one-sample Wilcoxon signed rank test was utilized to compare published norms of female adult nonpatient and female adult outpatient samples

(Derogatis, 1991). A multivariate multilevel model utilizing between-cluster variability was implemented to assess for statistically significant improvement in depression and anxiety scores in both completer and intent-to-treat (ITT) samples. Finally, multilevel models (MLM; Raudenbush, 1989) with restricted maximum likelihood estimation (REML; Lindstrom & Bates, 1988; Snijders & Bosker, 2012) were conducted on both completer and ITT samples to assess degree of change during both Phase I (i.e., PRAC) and Phase II (i.e., TICE) of treatment.

Caregivers in this sample more closely resembled nonpatient female adults in both depression and anxiety scores at baseline. Depression and anxiety scores decreased significantly for caregivers over the course of treatment, with greater changes seen in Phase I of treatment for both depression and anxiety. Clinical implications for caregiver engagement and assessment in the context of TF-CBT will be discussed.

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# INTRODUCTION

Childhood exposure to trauma is a pervasive problem in the United States. More than 60% of youth report having experienced at least one traumatic incident during childhood (McLaughlin et al., 2013. The psychological consequences of trauma exposure include posttraumatic stress disorder (PTSD), conduct problems, depression, and other significant symptoms like psychosocial impairments (e.g., Gustafsson et al., 2009; Nietlisbach & Maercker, 2009). The most researched treatment for these youth is Trauma-Focused Cognitive Behavior Therapy (TF-CBT; Cohen, Mannarino and Deblinger, 2006), a trauma-focused intervention for children and adolescents that emphasizes significant caregiver involvement throughout treatment. Although caregiver involvement is central to the treatment, little is known about how this intervention directly impacts participating caregivers' psychopathology. In this study, we will provide a rationale for evaluating the effect of TF-CBT on caregiver symptoms as well as an overview of the current study, which investigates changes in caregivers' anxiety and depression symptoms throughout TF-CBT.

## Child Trauma Prevalence and Intervention

Exposure to trauma during childhood is common and has been linked to problematic psychopathology for youth. According to a large epidemiological study conducted by Finkelhor and colleagues (2016), more than half of children in the United States experience multiple traumatic incidents before they become adolescents. In that same study, children who experienced multiple trauma types were more likely to exhibit psychological distress, including symptoms of PTSD, anger, anxiety, and depression. Thus, it is imperative for interventions aimed at treating traumatized children to successfully target internalizing and externalizing symptoms, as well as posttraumatic stress.

TF-CBT is the most rigorously studied evidence-based intervention used to treat trauma-related symptoms (Cohen et al., 2017). It is designed to address both externalizing and internalizing difficulties experienced by traumatized youth by including both child and caregiver components. TF-CBT intends to reverse pathways that have been identified as leading to the development of posttraumatic stress disorder (PTSD) by targeting children's overgeneralized fears and associated avoidance, physiological dysregulation, and trauma-related cognitions (Brown et al., 2020). To date, TF-CBT is considered the most effective and well-established evidence-based intervention for treating child and adolescent trauma-related symptoms for children between the ages of 3-18 who participate in treatment with their non-offending caregivers (Cohen et al., 2017; Dorsey et al., 2017; Martin et al., 2019). Researchers have reported improvements in child PTSD, internalizing, and externalizing symptoms during TF-CBT treatment (Cohen et al., 2017). Overall, the research supports TF-CBT as a gold standard intervention for treating child trauma-related symptoms.

## **Caregiver Participation in TF-CBT**

Emphasis on caregiver involvement across all treatment stages distinguishes TF-CBT from other trauma-informed, evidence-based interventions (Cohen et al., 2017). Specifically, research has indicated that caregiver involvement plays a critical role in child psychopathology improvements during TF-CBT. Deblinger and colleagues (1996) found that caregiver involvement in TF-CBT was not only linked to improvements in their parenting skills but was directly linked to decreases in their child's externalizing symptoms and self-reported depression scores. Importantly, caregivers are taught to scaffold and model the skills children learn in treatment (Martin et al., 2019), which helps reinforce the child's skills and provides them with opportunities to practice treatment components at home. Although caregiver participation is an integral part of children's treatment in TF-CBT, the extant literature provides an incomplete picture of the demographics and symptom profiles of caregivers involved in TF-CBT and their improvement over the course of treatment.

## Demographic and Symptom Profile of Caregivers at Baseline

Demographic data on caregivers participating in TF-CBT have not been reported consistently or comprehensively, which limits the generalizability of efficacy and effectiveness studies.  Although recent literature evaluating caregiver symptomatology has begun to report these data, more than half of these studies lack thorough information on their caregiver sample. Researchers have reported either one or several of the following demographic factors regarding the participating caregivers: race, highest level of education, marital status, relationship with the child (e.g., adoptive, foster, biological mother), age, trauma history, employment status, or average household income (e.g., Deblinger et al., 2001; Holt et al., 2015; Stauffer & Deblinger, 1996; Tutus et al., 2017). However, these caregiver samples are unrepresentative of a large, diverse metropolitan population. Most problematically, previous caregiver samples are often small in size and predominantly White, which is not representative of the racial, ethnic and socio-economic diversity often seen in community clinics in larger cities.

The developers of TF-CBT designed the intervention with an understanding that after a child is exposed to trauma, their caregivers are often negatively impacted themselves and may exhibit increased symptomatology at the onset of their child's treatment (Cohen et al., 2012; Cohen et al., 2017). In addition to managing their child's symptoms, caregivers may experience stigma, strain, burden, self-blame, and difficulty accessing services for their children (Mwei, 2015). Further, many caregivers of children who experienced trauma report their own trauma history (Davies & Seymour, 1999; Hooper, 1992; Oates et al., 1998), and a large number exhibit their own psychopathology (Chemtob et al., 2013). The added stress of hearing the details of their child's trauma may result in additional symptoms or exacerbation of pre-existing mental health difficulties.

Researchers suggest that caregivers may experience elevated symptoms at the start of their child's trauma treatment (e.g., Brown et al., 2020), which may impede children's progress during therapy (Maliken & Katz, 2013). It is unknown, however, whether previously studied samples of caregivers participating in TF-CBT met clinical levels of psychopathology. Unfortunately, few studies report information on caregiver symptomatology at baseline, and the two that do have very small sample sizes. In TF-CBT outcome studies, Cohen and colleagues (2007; *N* = 24) reported that a large portion of the caregivers started treatment at "normal" depression levels, whereas Nixon and colleagues (2012; *N* = 33) reported that caregiver psychopathology was generally "mild" at baseline. Although these studies are well designed, they are comprised of smaller and less racially and/or ethnically diverse samples. Because higher levels of caregiver symptomatology may negatively impact a child's treatment progress (Maliken & Katz, 2013), it is imperative to better understand the levels of symptomatology reported by caregivers involved in treatment.

## Overview of Caregiver Symptomatology During the Course of TF-CBT

Studies investigating caregiver symptomatology during TF-CBT suggest the potential for widespread gains during treatment and through follow-up. Reductions in caregiver PTSD, emotional distress, and depression, and improvements in caregivers' parenting practices from pre- to post-treatment are noted in several studies (e.g., Cohen et al., 2004a; Cohen et al., 2004b; Deblinger et al., 2011; Tutus et al., 2017). Researchers also have reported reductions in caregivers' own intrusive thoughts and distress related to their children's trauma between pre- and post-treatment (Deblinger et al., 2001; Stauffer & Deblinger, 1996). Importantly, these reductions in caregiver symptomatology are generally maintained (Deblinger et al., 2006; Mannarino et al., 2012) or further improved at follow-up (Mannarino et al., 2012; Nixon et al., 2017)

Several methodologically rigorous studies have been conducted in which researchers found notable decreases in caregiver depression throughout participation in TF-CBT. Cohen et al. (2004a) had a large sample size and used intent-to-treat analyses to evaluate caregiver depression. The reductions in this sample's symptomatology were maintained 6- and 12- months following post-assessment (Deblinger et al., 2006), suggesting lasting impacts of TF-CBT on caregiver depression following treatment termination. Although several studies indicating these decreases between pre- and post-treatment had small sample sizes, they were otherwise well-designed and noted significant decreases in caregiver depression (Cohen et al., 2004b; Cohen et al., 2007). One robust study with a medium-sized but largely diverse sample of children (40.4% White, 40.4% Black, 17% Mixed, Other 2.1%; Neill et al., 2018) was conducted with a novel approach to assessing symptomatology across time by measuring caregiver depression symptoms weekly and noting reductions. Unfortunately, it is unclear if reductions in depression symptoms in this sample are associated with specific phases of treatment or with the passage of time itself. These studies indicate that caregivers' self-reported depression symptoms decrease during TF-CBT; however, it is unclear when these decreases may occur during treatment.

There are recurring methodological weaknesses and several inconsistent findings in the extant literature on changes in caregiver depression during TF-CBT. Seven studies have small sample sizes (Cohen et al., 2004; Cohen et al., 2007; Neill et al., 2018; Nixon et al., 2012; Nixon et al., 2017; Stauffer & Deblinger, 1996; Stauffer et al., 2001), and two have even smaller TF-CBT subsamples in studies where TF-CBT was compared to another treatment modality (Nixon et al., 2012; Nixon et al., 2017). The samples of the aforementioned studies, as well as one large sample of caregivers involved in TF-CBT (Holt et al., 2014), have very little racial/ethnic diversity. Other studies fail to provide any racial/ethnic descriptive information about their participating caregivers. Because people of color experience the most trauma-related mental health problems (Roberts et al., 2011), the lack of descriptive information on ethnicity impacts the generalizability of the results. Furthermore, inconsistent with the aforementioned studies, one methodologically rigorous study with a small sample size did not report significant decreases in caregiver depression during treatment (Cohen et al., 2006), and researchers who conducted two less rigorous studies reported either partial or no reductions in caregiver depression during treatment (Holt et al., 2014; Tutus et al., 2017). Notably, only one study investigating caregiver response to child trauma treatment incorporates mid-treatment assessment in their analyses (Holt et al., 2014), and only one study considers specific aspects of treatment that may be responsible for greatest symptom reductions (Deblinger et al., 2011; Mannarino et al., 2012). Finally, due to the lack of large, representative samples reflected in these studies, more research is necessary to better understand caregiver responses to treatment.

In addition to the aforementioned methodological flaws, the extant literature further lacks analyses of caregivers' anxiety symptoms during their child's TF-CBT treatment. Although anxiety is a known reaction to trauma (i.e., "fight, flight, or freeze") and has been found to decrease in children who completed TF-CBT (Cohen, 1996; Deblinger, 2011), similar analyses were not conducted with participating caregivers. Given that a caregiver's worry and concern may be elevated when their children are distressed, it is reasonable to believe that their own "fight, flight, or freeze" responses may present in response to their child's trauma sequelae. It is possible that this construct has not been explored because researchers did not want to upset caregivers by asking about their own anxiety symptoms and instead asked them about related but less distressing constructs, like emotional distress (e.g., Cohen et al., 2004; Cohen et al., 2007; Deblinger et al., 201). Unfortunately, emotional distress does not accurately encompass specific components of anxiety, like elements of physiological distress or avoidance related to the "fight or flight response," that may be elevated in some caregivers. As such, it is important to consider caregivers' anxiety symptoms during their child's TF-CBT treatment and which treatment components are associated with the greatest reductions in their symptomatology.

## Caregiver's Treatment Gains Across Treatment Components

Researchers to date have not explored how and whether specific modules of TF-CBT differentially impact change in caregivers' depression and anxiety symptoms. In Phase I (PRAC) of TF-CBT, caregivers learn psychoeducation, parenting skills, coping skills, and affect modulation. In Phase II (TICE), caregivers are instructed on how to support imaginal and *in vivo* exposure, including listening to the trauma narration, and enhancing their child's safety (Brown et al., 2020). It is likely that caregivers have different responses to their participation in each phase of treatment because their involvement in skill mastery and psychoeducation during Phase I may benefit their symptoms directly, whereas facilitating their child's exposure during Phase II may provide less direct benefit. The only study evaluating caregiver depression symptoms on a weekly basis did not assess the components or phases of treatment contributing to the greatest reductions in symptomatology (Neill et al., 2018). Thus, little is known about how and when caregivers improve in TF-CBT.

Only two studies to date have explored how specific treatment components impact caregiver and child symptomatology. Deblinger et al. (2011) examined whether treatment length and the inclusion of the trauma narrative component impacted depression, emotional distress, and parenting practices in a predominantly White sample of caregivers. Caregivers and children were evaluated at pre-, post-, and follow-up assessments. Researchers found that although caregivers reported decreased emotional distress following the trauma narrative component, their depression symptoms remained unchanged. This is consistent with later research by Nixon and colleagues (2012), who demonstrated that caregiver depression scores decreased during treatment with medium effect sizes whether treatment included *in-vivo* exposures ($d = 0.33$) or not ($d = 0.36$). Deblinger and colleagues (2011) also found that children's anxiety decreased to the greatest degree due to completion of the trauma narrative component. However, changes in caregiver anxiety have not been explored. Therefore, research must examine whether caregivers also experience a reduction in anxiety symptoms throughout the course of TF-CBT, or because of a specific treatment component (e.g., trauma narrative).

In sum, there are several factors that must be addressed to better understand the clinical presentation of caregivers at baseline as well as changes in caregiver symptomatology during TF-CBT. First, it is imperative to consider the clinical needs of this population at baseline. Additionally, no study to date has considered caregiver changes in anxiety symptoms over time. Lastly, incorporating results from mid-assessment, as was done by Holt and colleagues (2014), will provide key information about the patterns of change in caregiver symptomatology over the course of treatment. By understanding typical trajectories of caregiver symptomatology in relation to the phases of TF-CBT, clinicians can better prepare families for treatment expectations and identify deviations from typical trajectories to better tailor treatment for caregivers who may need more support. This study aims to address these gaps in the literature and advance the current knowledge of caregivers' responses to TF-CBT.

## Current Study

The aim of this study was to examine whether caregivers who participate in TF-CBT with their children decrease in their depression and anxiety symptoms. Caregivers' self-reported depression and anxiety were assessed at pre-, mid-, and post-treatment, and follow-up time points. Only the data from baseline, mid-treatment, and post-treatment will be included in these analyses. Because methodologically rigorous studies (e.g., Brown et al., 2020) have suggested that caregiver symptoms are clinically significant at baseline, we hypothesized that caregivers involved in TF-CBT would have baseline levels of depression and anxiety similar to those found in a sample of diverse clinical adult females. We also hypothesized that TF-CBT would be associated with clinically significant improvement in caregivers' depression and anxiety symptoms. Lastly, we posed an exploratory hypothesis that the rate of depression and anxiety symptom reduction during Phase I (PRAC) would exceed the rate of symptom reduction during Phase II (TICE).

## METHODS

### Participants

Included caregivers (*N* = 235) were participating in an ongoing effectiveness study of TF-CBT for their children (ages 4-17 years) at a community-based mental health clinic in New York City. This clinic specializes in the delivery of TF-CBT to low-income, racially- and ethnically-diverse children. Inclusion criteria were: (1) exposure to interpersonal trauma, including sexual abuse, physical abuse, witnessing domestic violence, and/or traumatic bereavement, and (2) subthreshold or clinically significant symptom levels (scores of 60 or greater) of Anxiety, Depression, Aggression, or Conduct Disorder subscales, and Internalizing or Externalizing composites on child and/or parent reported Behavior Assessment System for Children, 3rd Edition (BASC-III measure), and (3) at least five items endorsed at a level of two or greater on the Child PTSD Symptom Scale, 5th Edition (CPSS-V), and (4) both caregiver and child's agreement to participate in weekly therapy, and 1.5 hour evaluations and pre-, mid-, post-, and follow-up. Exclusion criteria were a diagnosis of pervasive developmental disorder, psychotic symptoms, severe conduct disorder, significant cognitive impairment (i.e., expressive language skills less developed than a typical four-year old child), significant memory deficits (i.e., related to referral trauma or general memory deficits), and current participation in any other mental health services. Additionally, if the child and their caregiver received prior trauma-specific treatment, their participation in this study was determined on a case-by-case basis. Based on this criterion, no children were excluded. Table 1 displays demographic characteristics of participating children and their caregivers, including their age and gender, along with caregiver's marital status, education level, work status and race.

## Measures

***Caregiver psychopathology.*** Caregiver psychopathology was assessed using the 53-item Brief Symptom Inventory from the Symptom Checklist-90 (BSI; Derogatis, 1993). The BSI has nine primary symptom dimensions with 4-7 items per dimension: Depression (6 items), Anxiety (6 items), Somatization (7 items), Obsessive-compulsive (6 items), Interpersonal Sensitivity (4 items), Hostility (5 items), Phobia (5 items), Paranoia (5 items) and Psychoticism (5 items). Items are reported on a scale of 0-4. Per the administration manual, *T*-scores are clinically significant when two or more dimensions are greater than .63 (Derogatis, 1993). Normed scores were developed from adult psychiatric outpatient, adult nonpatient, adult psychiatric inpatients, and adolescent nonpatient populations. Excellent test-retest reliability was established with this measure when 60 nonpatients were tested across a two-week interval (Derogatis, 1993), and construct validity was established against the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1942) as a screening tool to identify adult psychopathology (Conoley & Kramer, 1989). Convergent validity was demonstrated between an affective measure of pain, the McGill Patient Questionnaire (MPQ; Melzack, 1975), and the BSI among chronic pain patients (Kremer et al., 1982). The Depression and Anxiety subscales were used for the current study and demonstrated good internal consistency (Cronbach's alphas of .87 and .85, respectively).

***Caregiver demographics.*** Caregiver demographics included caregiver age (years), gender (male or female), race/ethnicity (Latino/a, Black/Non-Hispanic, Caucasian or

Other), marital status (Single, Divorced/Widowed/Separated), education level (No school/less than 7 years, Junior high school/some high school, High school graduate, Some college or technical school, College graduate, Graduate professional training), and employment status (Employed full-time for pay, Employed part-time for pay, Homemaker, Unemployed/not working, Other).

**Treatment**

TF-CBT is a conjoint model of treatment for children and caregivers that was designed to treat children and adolescents who have experienced one or more traumatic life events and have subsequent emotional and behavioral difficulties due to their experiences (Brown et al., 2020). TF-CBT has two phases: (1) Psychoeducation and Parenting, Relaxation, Affect modulation, and Cognitive processing (PRAC), and (2) Trauma narration, *In vivo* exposure, Conjoint work, and Enhancing safety (TICE). The therapy includes both traumatized children and their non-offending caregivers. There are several joint child-caregiver sessions during treatment, but typically the therapist splits the time in session each week between the child and caregiver, providing the same component of treatment to each member of the dyad individually. Any session in which a therapist met with a child or caregiver and conducted a TF-CBT component was coded as one session. Caregivers also have an additional component, Parenting Skills, and are instructed to support their children with coping skills and exposure exercises each week. TF-CBT has demonstrated efficacy in treating child PTSD depression, and behavior problems in over 20 randomized control trials (Brown et al., 2020; Cohen et al., 2015; Cohen et al. 2017).

***Training***. TF-CBT therapists had a Master’s degree in social work, mental health counseling, or clinical/school psychology, and at least one year of experience conducting therapy with children. Training includes: (1) completing an online course, TF-CBT Web 2.0 (Medical University of South Carolina, n.d.), (2) a 2-day learning session on TF-CBT on the process of delivering TF-CBT and the implementation of its components delivered by a certified trainer, and (3) weekly group supervision on implementation with children and their caregivers at a community-based clinic by certified supervisors. Treatment adherence is ensured by review of and feedback on audio/video recordings of sessions by TF-CBT supervisors. In addition, therapists complete Therapy Attendance Logs in which they note the components of treatment specific to TF-CBT were conducted during each session, along with time spent addressing life stressors and homework. These logs are reviewed by research staff to ensure that TF-CBT is completed with fidelity.

## Procedures

St. John’s University’s Institutional Review Board has approved all study methods. Referrals come from child protective services, preventive and foster care agencies, Legal Aid and other advocacy organizations, school personnel, and other clinicians. The Intake Coordinator conducts intake phone calls based on the contact information in the referral form and obtains demographic and trauma specific information about the referred child and participating family member. The Intake Coordinator also assesses and addresses potential concrete and perceptual barriers to increase probability of treatment attendance.

Informed consent is conducted with caregivers and assent is provided by the participating children. Assessment measures are delivered via interview separately to participating caregivers and their children by trained research assistants, all of whom are school psychology or clinical psychology doctoral students. Caregivers complete measures of their children's trauma history, emotional and behavioral functioning (Behavior Assessment System for Children, 3rd Edition; BASC III), and measures of their own psychopathology (Brief Symptom Inventory; BSI) and family demographics. Children complete measures of their own trauma history and emotional and behavioral functioning.

Families who meet inclusion and exclusion criteria are then assigned to a TF-CBT therapist. Caregivers and children complete the first phase of TF-CBT encompassing psychoeducation, relaxation, affect modulation and cognitive restructuring (PRAC), and are then assessed at mid-treatment (before the child starts their trauma narrative), and post-treatment. Caregivers are given $20 for completing the pre-treatment assessment, $15 for the mid-treatment assessment, $20 for the post-treatment assessment, and $20 for the 3-month follow-up assessment. Children receive a $10 Amazon gift card at each assessment.

## Statistical Analysis

Statistical analyses were conducted using SPSS version 26 (2019). Data from BSI Anxiety and BSI Depression subscales and demographic measures were compiled and cleaned. Data were missing in baseline, mid, and post assessments for the Depression and Anxiety subscales. The percentage of missing data were as follows: Depression at baseline (1.3%), Depression at mid (37.9%), Depression at post (53.6%), Anxiety at baseline (1.3%), Anxiety at mid (37.4%), and Anxiety at post (53.6%). Littles MCAR test was conducted and indicated that these data are missing at random, $\chi^2(2) = .493$, $p = .782$.

Data were run for intent-to-treat (ITT; *N* = 235) and completers (*n* = 104) to ensure that hypotheses were supported for caregivers who started treatment (i.e., completed baseline assessment) and those who completed all phases of TF-CBT (i.e., completed mid treatment and post treatment assessments). A combination of non-parametric testing and multilevel modeling were used to test hypotheses.

To test the hypothesis that caregivers in this sample have similar levels of anxiety and depression as clinical samples, the current completer and ITT samples were compared to published norms of female adult nonpatients and female adult outpatient samples (Derogatis, 1991). A one-sample Wilcoxon signed rank test was used as our data were positively skewed, and this assessment enables this comparison when data are not normally distributed. To test the hypothesis that caregivers significantly improve in their depression and anxiety symptoms over time, a multivariate multilevel model (MLM; Raudenbush, 1989)) was fit for Depression and Anxiety in the ITT sample, using an autoregressive heterogeneous covariance model type [i.e. AR(1)] to allow for heterogenous variances at different evaluation points using restricted maximum likelihood estimation (REML; Lindstrom & Bates, 1988; Snijders & Bosker, 2012) and random intercepts and slopes. To confirm that number of sessions attended does not impact the results, the multivariate model was run twice; once without controlling for session number, and a second time controlling for session number. Session number was calculated by counting the number of sessions the caregiver attended in total during their child's treatment (i.e., a time invariant covariate).

To calculate the average difference between mean levels of depression and anxiety between pre to mid assessment (PRAC), and mid to post assessment (TICE), two separate multilevel models were fit for Depression and Anxiety. Then, pairwise comparisons were conducted in each of the multilevel models for Depression and Anxiety in both the ITT and completer samples. An initial repeated model with a compound symmetric covariance structure was conducted under the assumption of a classic analysis of variance, such that evaluation time points have both an assumed homogenous variance and symmetry (the latter indicates that the variance between the evaluation time points is the same). Following, a second model reflecting first-order autoregressive structure with heterogenous variances [i.e., AR(1): Heterogenous]. Heterogeneous covariance model type was conducted to allow for heterogenous variances at different evaluation points. In the completer sample, the -2 Log Likelihood information criteria improvements from the compounded symmetry model to the AR(1) Heterogenous model for BSI-Depression, $\chi^2$ (2, $N = 104$) = 11.194, $p < .001$, and BSI-Anxiety, $\chi^2$ (2, $N = 104$) = 15.926, $p < .001$, indicate that the structure change of the covariance matrix in the AR(1) Heterogenous covariance model is a better reflection of these data. Similarly, in the ITT sample, the -2 Log Likelihood information criteria improvements from the compounded symmetry model to the AR(1) Heterogenous model for BSI-Depression, $\chi^2$ (2, $N = 234$) = 13.897, $p < .001$, and BSI-Anxiety, $\chi^2$ (2, $N = 234$) = 30.881, $p < .001$, indicate that the structure change of the covariance matrix in the AR(1) Heterogenous covariance model is a better reflection of these data. Thus, models were fit with restricted maximum likelihood estimation and an AR1 Heterogenous covariance structure. This model accounts for smaller sample size and produces less biased estimation when there is missingness in the data.

# RESULTS

## Comparison between TF-CBT Sample, Normative Samples and Clinical Samples on Depression and Anxiety Scores

A one-sample Wilcoxon signed rank test was conducted comparing the medians of caregivers involved in TF-CBT with an adult female clinical comparison group to account for the skewness in the TF-CBT sample baseline BSI-Depression and BSI-Anxiety scores (Table 2). The medians of the study samples (both completer and ITT depression ($Mdn_{Comp} = .644$, $M_{ITT} = .724$) and anxiety scores ($Mdn_{comp} = .649$, $M_{ITT} = .757$, respectively) were compared to standard values (i.e., means for adult female nonpatient and adult female outpatient norms for depression ($Mdn_{NonP} = .36$, $Mdn_{OutP} = .44$) and anxiety ($Mdn_{NonP} = 1.9$, $Mdn_{OutP} = 1.82$). For the completer sample, the null hypothesis was not retained as caregivers in TF-CBT had lower baseline BSI-Depression and BSI-Anxiety scores than a clinical female comparison group, $Z = -8.349$ $p \leq .001$, and $Z = -7.926$ $p \leq .001$, respectively. Furthermore, there was no significant difference in BSI-Depression and BSI-Anxiety scores for caregivers in TF-CBT at baseline versus nonclinical female comparison group, $Z = 1.106$ $p = .269$, and $Z = 1.916$ $p = .055$, respectively, but the BSI-Anxiety scores notably trend towards significance. For the ITT sample, the null hypothesis is not retained as caregivers in TF-CBT had lower baseline BSI-Depression and BSI-Anxiety scores than a clinical female comparison group, $Z = -11.854$ $p \leq .001$, and $Z = -11.531$ $p \leq .001$, respectively. Furthermore, the null hypothesis is also not retained when the BSI-Depression and BSI-Anxiety scores for caregivers in the ITT TF-CBT sample were compared to the nonclinical female comparison group, $Z = 4.895$ $p \leq .001$ and $Z = 2.986$ $p < .05$, respectively.

## Caregiver Improvement in Depression and Anxiety during Treatment

To consider individuals that are nested within time, ICC estimates were yielded from intercept-only multilevel models in the ITT sample. The intercept-only models of individual caregivers nested within time  yielded an intraclass correlation (ICC) estimate of .457 for BSI-Depression, and .419 for BSI-Anxiety. These scores delineate the association of observations occurring within the same individual over time, such that the proportion of variance due to caregivers is 45.7% and 41.9% for BSI-Depression and BSI-Anxiety, respectively.

Multivariate multilevel models using the ITT sample were conducted with evaluations as the predictor and BSI-Depression and Anxiety as the criterion variables. Caregivers showed statistically-significant improvement in depression (*b* = -.159, *SE* = .041, *p* = ≤ .001) and anxiety (*b* = -.178, *SE* = .040, *p* = ≤ .001) symptoms during treatment (Table 3). Furthermore, the assumption that number of sessions does not impact results was confirmed.  BSI-Depression and BSI-Anxiety symptoms decreased during treatment  even after controlling for number of sessions (Table 3).

## Caregiver Improvement in Depression and Anxiety by Phase

To compare the degree of change in PRAC versus TICE in the completer and ITT samples, linear mixed models with restricted maximum likelihood estimation (REML) were conducted with evaluation type as predictors and BSI-Depression and BSI-Anxiety as criterion variables in separate models. Consistent with findings from the multivariate multilevel models, depression and anxiety were lower at post than they were at pre in both the completer (BSI-Depression: t(df) = t score, *p* = X; BSI-Anxiety: t(df) = t score) and ITT samples [BSI-Depression: $t(284.302) = 4.477$, $p < .001$; BSI-Anxiety: $t(310.153) = 5.683$, $p < .001$].

In the completer sample, significant mean differences were observed during PRAC (pre to mid) for both BSI-Depression ($t(136.365) = 3.175$, $p < .05$) and BSI-Anxiety ($t(127.917) = 3.972$, $p < .001$), but not during TICE (from mid to post) for both BSI-Depression and BSI-Anxiety (Table 4).

In the ITT sample, significant mean differences were also observed during PRAC (pre to mid) for both BSI-Depression ($t(258.041) = 3.901$, $p < .001$) and BSI-Anxiety ($t(255.689) = 5.22$, $p <.05$), but not during TICE (from mid to post) for both BSI-Depression ($p = .251$) and BSI-Anxiety ($p = .096$), respectively (Table 5). Thus, for both ITT and completer samples, caregivers improve during the PRAC phase of treatment.

# Discussion

The goal of the present study was to understand changes in caregiver anxiety and depression symptoms throughout the course of TF-CBT. In our sample, we found that baseline scores of caregiver depression and anxiety more closely resembled depression and anxiety scores of a non-clinical population of adult females than a clinical population of adult females. Over the course of treatment, caregivers experienced a decrease in depression and anxiety symptoms, even when controlling for the number of sessions attended. Lastly, we found that on average, caregivers' depression and anxiety symptoms decreased during Phase I (i.e., PRAC) and not Phase II (i.e., TICE) of TF-CBT.

## Caregiver Symptomatology at Baseline and During TF-CBT

We hypothesized that the baseline depression and anxiety levels of caregivers involved in TF-CBT would be similar to baseline levels of depression and anxiety in a clinical sample of adult females. In contrast, we found depression and anxiety levels observed in our sample more closely resemble mean levels of symptoms in a non-clinical sample. Although previous research found that depression and anxiety of caregivers enrolled in TF-CBT are representative of non-clinical samples (Cohen et al., 2007; Nixon et al., 2012), a more recent study with a larger and more diverse sample has found higher levels of symptomatology in caregivers at baseline (e.g., Brown et al., 2020). Of note, the sample in the study by Brown and colleagues (2020) included caregivers who were themselves bereaved and traumatized for the same trauma as their child (i.e., bereavement of a loved one due to 9/11 terrorism). In contrast, the former two studies only included caregivers who likely did not experience the same referral trauma incident(s) as their children (e.g., child sexual abuse). Furthermore, because these caregivers may not have experienced sexual abuse or any other interpersonal trauma at all, many caregivers did not experience elevated levels of symptomatology like their children.

Our second hypothesis was that TF-CBT would be associated with clinically significant improvement in caregivers' depression and anxiety symptoms. We found statistically significant decreases in symptomatology, which is consistent with previous literature reporting caregiver symptom reductions in TF-CBT with small to moderate effect sizes (i.e., $d = 0.38$; Cohen et al., 2004a; Nixon et al., 2017), when compared to caregivers who received other interventions (Child Centered Therapy, and Cognitive Therapy without exposures, respectively). This suggests that TF-CBT is beneficial for caregivers without clinically elevated levels of symptomatology at baseline. TF-CBT is a demanding treatment for caregivers as they are asked to contribute both time and effort to their child's treatment (Cohen et al., 2017). As such, it is beneficial for caregivers to experience personal improvement by the end of treatment, even if they do not begin TF-CBT with elevated symptomatology.

Our exploratory hypothesis examined change in caregivers' anxiety and depression across treatment, specifically evaluating differences between Phase I (i.e., PRAC, pre- to mid-treatment) and Phase II (i.e., TICE, mid- to post-treatment). We found that on average, change in caregivers' anxiety and depression decreased significantly during Phase 1 and not Phase II. The present study is the first to compare differences in caregiver symptoms across the two phases of TF-CBT. Caregivers' involvement in psychoeducation, skill-building and learning how to coach their children likely contributes to their greatest decreases of symptomatology during Phase I.

Psychoeducation about trauma can help correct misconceptions about traumatic experiences and provide assurance that the caregivers' and children's reactions to their lived experiences are expected (Wessely et al., 2008). Skill-building, especially learning and practicing coping strategies, can directly impact both caregiver and children's well-being (Skinner et al., 2003). Learning to coach their children through relaxation and cognitive coping strategies may promote a caregiver's own sense of mastery with the material, as previous research suggests that teaching leads to a better understanding of and a more positive attitude toward the subject matter (Cohen et al., 1982). There is extensive literature demonstrating the efficacy of psychoeducation (Tursi et al., 2013) and cognitive therapy (DeRubeis et a., 2008) for reducing depression symptoms as well as psychoeducation, relaxation, and cognitive therapy for anxiety disorder symptoms (Bystritsky et al., 2013; Rollman et al., 2005). Caregivers also likely experience immediate benefit from the positive interactions engaging with their child's therapist (Brumley et al., 2021). These findings are consistent with previous research indicating that gains are reported early in treatment, particularly in the early weeks during which psychoeducation is emphasized as the main component of treatment (Hedeman et al., 2011).

In sum, these findings indicate that caregivers can still benefit from treatment even if they exhibit low levels of baseline symptomatology. These results also suggest that caregivers who drop out of treatment early may still benefit, as the largest treatment gains are incurred during Phase I. Lastly, because the skills caregivers learn during Phase I of treatment helps to prepare them to hear the narrative during Phase II, caregivers may use these skills to maintain low anxiety and depression levels throughout the end of treatment.

## Clinical Implications

These findings have important clinical implications for caregiver engagement and assessment throughout treatment. Communicating the finding that caregivers may still benefit from TF-CBT even if they are not exhibiting clinical symptoms may increase motivation for treatment. This is crucial to convey to caregivers, given the high level of involvement and the extended time frame caregivers are asked to help support their children in therapy (Sharma-Patel et al., 2016). In an effort to promote engagement, caregivers should be informed that early improvements in their own symptomatology may also benefit their child's symptoms during treatment. Although not explicitly assessed in this study, it is likely that reductions in caregivers' own anxiety and depression correlates with improvement in their own maladaptive cognitions (e.g., blaming themselves or their children for their child's trauma). With the decreased interference from their own maladaptive cognitions, caregivers may serve as stronger sources of support during their children's narrative work. Specifically, caregivers are more likely to cope effectively with their own anxiety regarding their child's narrative and help manage their child's symptoms as they conduct exposures later in treatment. The results suggest that caregivers should remain actively involved in treatment even after they experience the greatest benefits to their symptom reduction in Phase I primarily to support their children, who tend to show the greatest level of improvement upon completion of the trauma narrative component (Deblinger et al., 2011). The results also highlight that although caregiver assessment of their own symptomatology is not a requirement for participation in TF-CBT, clinicians should consider baseline symptomatology of caregivers when they deliver TF-CBT, as improvements are beneficial to caregivers and their child's success in treatment.

## Limitations

The current study has several limitations including the methodological design, the comparative samples used in the research design, the primary caregiver sample, measurement tool, and lack of clarity on the origin of caregiver's symptoms. First, the open trial design utilized in the current study does not include a comparison group. A comparison group would strengthen our conclusions regarding the impact of TF-CBT on caregiver depression and anxiety scores. Additionally, the norms from the comparative sample used to assess whether the caregivers in the present sample resembled a clinical or non-clinical population at baseline were collected more than 30 years ago. Thus, the scores may not accurately reflect the depression and anxiety symptoms in adult females today. Furthermore, the sample of caregivers in this study is more diverse (e.g., non-White majority) than most of the caregivers assessed in previous research. Although the same treatment benefit is expected for all individuals regardless of demographic background, this has not yet been ascertained due to a lack of diverse populations involved in randomized controlled trials. Thus, comparing a predominantly minority sample to previous research on predominantly White samples may be misleading. Furthermore, ten percent of our caregiver sample was comprised of male caregivers, who generally tend to exhibit lower levels of depression and anxiety than women (Smith et al., 2018). Unfortunately, the only comparative sample available was comprised of non-clinical females. Therefore, the mean levels of anxiety and depression found in this study may not be comparable to samples with a dissimilar representation of non-clinical males.

The primary measure assessing caregiver symptomatology, the Brief Symptom Inventory (BSI; Derogatis, 1993), has not been utilized in previous studies examining caregivers' responses to their children's TF-CBT treatment. Although the BSI is a reliable and valid measure (Peterson et al., 1989), the generalizability of the current findings should be considered with caution when compared with research using alternative symptom measures. The BSI has 6 items assessing caregivers' perceptions of anxiety and 6 items assessing caregivers' perceptions of depression, whereas alternative symptom measures used in previous research, such as the CESD or BDI, include a larger number of items (20 and 21 items, respectively) to capture the greater scope of potential symptoms a caregiver may experience related to a specific type of psychopathology. Furthermore, the BSI was completed as part of the caregiver assessment of their own symptoms and therefore may not be associated with the children's traumas. The current study lacks an assessment of caregiver PTSD symptomatology, limiting our ability to draw conclusions about the direct relation between caregivers' symptoms and children's trauma exposure.

## Recommended Research

Future research should address the limitations outlined above. We recommend that researchers conduct randomized controlled trials comparing weekly change in caregiver PTSD and depression during TF-CBT versus treatment-as-usual (TAU) with similarly large diverse samples of caregivers. To better understand caregiver symptom onset, assessments should be conducted at baseline to determine if caregivers' symptomatology is linked to their child's trauma, pre-dates their child's trauma experiences, or is a combination of both circumstances. Conceptualizing the root of the caregiver's own psychopathology is essential to understanding how treatment is directly or indirectly benefitting the caregivers. To better understand caregiver symptom maintenance, assessments should be more frequent during their child's treatment. More comprehensive psychopathology measures (e.g., CES-D, BDI-II) and assessment modalities (e.g., semi-structured interviews) should be included to assess caregiver symptomatology. To advance existing research and provide clarity on the components responsible for greatest changes in symptomatology, clinicians should report the components covered during each session.

We also recommend effectiveness studies be conducted in community clinics. Apart from the more recent effectiveness trials, most existing studies to date adhere to a specified number of TF-CBT sessions, which does not accurately reflect the number of sessions frequently conducted in outpatient community clinic settings. As such, investigators should also consider analyzing data utilizing growth linear models (i.e., considering linear or quadratic change during treatment) and should examine change over time by including the number of sessions attended by caregivers, rather than using evaluation timepoints only (e.g., baseline, mid-treatment, post-treatment, and follow-up). This analysis may provide a more accurate interpretation of caregiver improvement in treatment over time and may provide a greater understanding of caregiver's response to different phases of TF-CBT treatment in community clinics.

Table 1

*Demographic Characteristics of Caregivers Participants at Baseline*

| Baseline characteristic | Completers Only[a] | | ITT sample[b] | |
|---|---|---|---|---|
| | *n* | % | *n* | % |
| Age (years) | | | | |
| Caregiver: M = 41.24, SD = 10.46 | | | | |
| Child M= 11.47, SD= 3.68 | | | | |
| Gender | | | | |
| Female | 91 | 87.4 | 207 | 88.5 |
| Male | 13 | 12.5 | 27 | 11.5 |
| Transgender/Non-binary/Other | 0 | 0 | 0 | 0 |
| Total (N) | (104) | | (234) | |
| Marital status | | | | |
| Single | 30 | 28.8 | 70 | 39.9 |
| Divorced/widowed/separated | 33 | 31.7 | 80 | 34.2 |
| Married/partnered | 41 | 39.4 | 81 | 34.6 |
| Total (N) | (104) | | (231) | |
| Highest education level | | | | |
| No school/less than 7 years | 13 | 12.5 | 16 | 6.78 |
| Junior high school/some high school | 14 | 13.4 | 27 | 11.5 |
| High school graduate | 8 | 7.7 | 38 | 16.2 |
| Some college or technical school | 39 | 37.5 | 84 | 35.9 |
| College graduate | 18 | 17.3 | 40 | 17.1 |
| Graduate professional training | 10 | 9.6 | 24 | 10.3 |
| Total (N) | (102) | | (229) | |
| Caregiver work status | | | | |
| Employed full-time for pay | 53 | 51 | 121 | 51.7 |
| Employed part-time for pay | 14 | 13.5 | 31 | 13.2 |
| Homemaker | 11 | 10.6 | 16 | 6.8 |
| Unemployed/not working | 13 | 13.5 | 38 | 16.2 |

| | | | | |
|---|---|---|---|---|
| Other | 13 | 12.6 | 24 | 10.3 |
| Caregiver race | | | | |
| Latino/a | 46 | 44.2 | 95 | 40.6 |
| Black/Non-Hispanic | 30 | 28.8 | 67 | 28.6 |
| Caucasian | 13 | 12.5 | 30 | 12.8 |
| Other | 15 | 14.4 | 40 | 17.1 |
| Total (N) | (104) | | (232) | |

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[a] Completers Only sample reflects caregivers who completed Phase I and Phase II of treatment (i.e., completed their post-treatment assessment)

[b] ITT Sample (Intent-to-treat) sample includes any caregiver that attended pre-treatment assessment and at least one therapy session

Table 2

*One-sample Wilcoxon Signed Rank Test*

| | Depression | | Anxiety | |
|---|---|---|---|---|
| | Standardized Test Statistic | *p*-value | Standardized Test Statistic | *p*-value |
| Adult Female Nonpatient (Completer Sample) | 1.106 | .269 | 1.916 | .055 |
| Adult Female Nonpatient (ITT Sample) | 4.895 | .000 | 2.986 | .003 |
| Adult Female Outpatient (Completer Sample) | -8.349 | .000 | -7.926 | .000 |
| Adult Female Outpatient (ITT Sample) | -11.854 | .000 | -11.531 | .000 |

*Note.* Adult Female Nonpatient Sample Mean Depression = .36. Adult Female Nonpatient Sample Mean Anxiety= .44. Adult Female Outpatient Sample Mean Depression = 1.90. Adult Female Outpatient Sample Mean Anxiety = 1.90.

Table 3

*Growth model parameter Estimates for Depression and Anxiety (with and without Time)*

| Parameter | Estimate | SE | *df* | *t* | Sig | 95% CI | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound |
| Without controlling for session number | | | | | | | |
| Estimates of fixed effects | | | | | | | |
| *Intercept Depression* | .641** | .041 | 436.549 | 15.709 | <.001 | .560 | .721 |
| *Intercept Anxiety* | .744** | .040 | 445.785 | 18.425 | <.001 | .665 | .823 |
| *Time Depression* | -.159** | .041 | 446.276 | -3.934 | <.001 | -.239 | -.080 |
| *Time Anxiety* | -.178** | .040 | 423.585 | -4.442 | <.001 | -.257 | -.099 |
| *INTERCEPT+TIME* (subject = *ID)* | | | | | | | |
| UN (1,1) | .391 | .033 | | | | | |
| UN (2,1) | .295 | .030 | | | | | |
| UN (2,2) | .382 | .032 | | | | | |
| Controlling for session number (SN)[a] | | | | | | | |
| Estimates of fixed effects | | | | | | | |
| *Intercept Depression* | .634** | .041 | 421.589 | 15.360 | <.001 | .553 | .716 |
| *Intercept Anxiety* | .750** | .041 | 429.704 | 18.131 | <.001 | .669 | .832 |
| *Time x Depression* | -.168** | .047 | 344.499 | -3.551 | <.001 | -.260 | -.075 |
| *Time x Anxiety* | -.216** | .047 | 326.597 | -4.580 | <.001 | -.309 | -.123 |
| *SN Depression* | .001 | .004 | 399.388 | .279 | .781 | -.006 | .008 |
| *SN Anxiety* | .001 | .004 | 409.364 | .512 | .609 | -.005 | .009 |
| *SN Depression x Time* | 0.00 | .004 | 386.120 | -.035 | .972 | -.008 | -.008 |
| *SN Anxiety x Time* | .004 | .004 | 366.891 | .825 | .410 | -.005 | -.012 |

[a] SN = Session Number (abbreviation)

* $p \leq 0.05$

** $p \leq 0.001$

Table 4

*Results of Completer Multilevel Modeling Analyses: Bonferroni Comparison for Time of Depression and Anxiety Scores*

| Comparisons | Mean Score Difference | Std. Error | *t*-statistic | df | 95% CI Lower Bound | 95% CI Upper Bound |
|---|---|---|---|---|---|---|
| Depression | | | | | | |
| Pre vs. Mid | .225* | 0.071 | 3.175 | 136.365 | 0.053 | .396 |
| Pre vs. Post | .312** | 0.084 | 3.715 | 176.893 | 0.109 | .516 |
| Mid vs. Post | .088 | .057 | 1.549 | 147.633 | -.396 | -.053 |
| Anxiety | | | | | | |
| Pre vs. Mid | .249** | 0.063 | 3.972 | 127.917 | 0.097 | .401 |
| Pre vs. Post | .332** | 0.077 | 4.322 | 175.041 | 0.146 | .517 |
| Mid vs. Post | .083 | .048 | 1.709 | 155.760 | -.200 | .034 |

*Note.* Models were considered with the AR(1) Heterogeneous Repeated Covariance Type
Overall Model Depression: $F(2, 174.377) = 7.083, p < .001$
Overall Model Anxiety: $F(2, 187.383) = 9.817, p < .001$
* $p < 0.05$
**$p \leq 0.001$

Table 5

*Results of ITT Multilevel Modeling Analyses: Bonferroni Comparison for Time of Depression and Anxiety Scores*

| | | | | | 95% CI | |
|---|---|---|---|---|---|---|
| Comparisons | Mean Score Difference | Std. Error | *t*-statistic | df | Lower Bound | Upper Bound |
| Depression | | | | | | |
| Pre vs. Mid | .207** | 0.053 | 3.901 | 258.041 | 0.079 | .334 |
| Pre vs. Post | .299** | 0.067 | 4.477 | 284.302 | 0.138 | .460 |
| Mid vs. Post | .092 | .053 | 1.739 | 177.133 | -.334 | -.079 |
| Anxiety | | | | | | |
| Pre vs. Mid | .256* | 0.049 | 5.22 | 255.689 | 0.137 | .374 |
| Pre vs. Post | .356** | 0.063 | 5.683 | 310.153 | 0.205 | .507 |
| Mid vs. Post | .100 | .046 | 2.161 | 184.035 | -.212 | .012 |

*Note.* Models were considered with the AR(1) Heterogeneous Repeated Covariance Type
Overall Model Depression: $F(2, 216.352) = 11.08, p < .001$
Overall Model Anxiety: $F(2, 242.624) = 17.798, p < .001$
* $p < 0.05$
**$p \leq 0.001$

# Appendix A

## Brief Symptom Inventory (BSI-53)

Date: ___/___/___ Child I.D.#: _______ Family I.D.#: _______ Evaluator: _____

Assessment: Pre / Mid #1 / Mid #2 / Post / Follow-up

### BSI

Below is a list of problems and complaints that people sometimes have. Please read each one carefully. After you have done so, please completely fill in one of the bubbles to the right that best describes **HOW MUCH DISCOMFORT THAT PROBLEM HAS CAUSED YOU DURING THE PAST WEEK INCLUDING TODAY**. Mark only one answer for each problem and do not skip any items. If you change your mind, place an "X" through the first mark.

| **HOW MUCH WERE YOU DISTRESSED BY:** | Not at all | A little bit | Mod. | Quite a bit | Extrem. |
|---|---|---|---|---|---|
| 1. Nervousness or shakiness inside | ⓪ | ① | ② | ③ | ④ |
| 2. Faintness or dizziness | ⓪ | ① | ② | ③ | ④ |
| 3. The idea that someone else can control your thoughts | ⓪ | ① | ② | ③ | ④ |
| 4. Feeling others are to blame for most of your troubles | ⓪ | ① | ② | ③ | ④ |
| 5. Trouble remembering things | ⓪ | ① | ② | ③ | ④ |
| 6. Feeling easily annoyed or irritated | ⓪ | ① | ② | ③ | ④ |
| 7. Pains in heart or chest | ⓪ | ① | ② | ③ | ④ |
| 8. Feeling afraid in open spaces | ⓪ | ① | ② | ③ | ④ |
| 9. Thoughts of ending your life | ⓪ | ① | ② | ③ | ④ |
| 10. Feeling that most people cannot be trusted | ⓪ | ① | ② | ③ | ④ |
| 11. Poor appetite | ⓪ | ① | ② | ③ | ④ |
| 12. Suddenly scared for no reason | ⓪ | ① | ② | ③ | ④ |
| 13. Temper outbursts that you could not control | ⓪ | ① | ② | ③ | ④ |

| | | | | | |
|---|---|---|---|---|---|
| 14. Feeling lonely even when you are with people | ⓪ | ① | ② | ③ | ④ |
| 15. Feeling blocked in getting things done | ⓪ | ① | ② | ③ | ④ |
| 16. Feeling lonely | ⓪ | ① | ② | ③ | ④ |
| 17. Feeling blue | ⓪ | ① | ② | ③ | ④ |
| 18. Feeling no interest in things | ⓪ | ① | ② | ③ | ④ |
| 19. Feeling fearful | ⓪ | ① | ② | ③ | ④ |
| 20. Your feelings being easily hurt | ⓪ | ① | ② | ③ | ④ |
| 21. Feeling that people are unfriendly or dislike you | ⓪ | ① | ② | ③ | ④ |
| 22. Feeling inferior to others | ⓪ | ① | ② | ③ | ④ |
| 23. Nausea or upset stomach | ⓪ | ① | ② | ③ | ④ |
| 24. Feeling that you are watched or talked about by others | ⓪ | ① | ② | ③ | ④ |
| 25. Trouble falling asleep | ⓪ | ① | ② | ③ | ④ |
| 26. Having to check and double check what you do | ⓪ | ① | ② | ③ | ④ |
| 27. Difficulty making decisions | ⓪ | ① | ② | ③ | ④ |
| 28. Feeling afraid to travel on buses, subways, or trains | ⓪ | ① | ② | ③ | ④ |
| 29. Trouble getting your breath | ⓪ | ① | ② | ③ | ④ |
| 30. Hot or cold spells | ⓪ | ① | ② | ③ | ④ |
| 31. Having to avoid certain things, places, or activities because they frighten you | ⓪ | ① | ② | ③ | ④ |
| 32. Your mind going blank | ⓪ | ① | ② | ③ | ④ |
| 33. Numbness or tingling in parts of your body | ⓪ | ① | ② | ③ | ④ |
| 34. The idea that you should be punished for your sins | ⓪ | ① | ② | ③ | ④ |
| 35. Feeling hopeless about the future | ⓪ | ① | ② | ③ | ④ |
| 36. Trouble concentrating | ⓪ | ① | ② | ③ | ④ |
| 37. Feeling weak in parts of your body | ⓪ | ① | ② | ③ | ④ |
| 38. Feeling tense or keyed up | ⓪ | ① | ② | ③ | ④ |
| 39. Thoughts of death or dying | ⓪ | ① | ② | ③ | ④ |

| | | | | | |
|---|---|---|---|---|---|
| 40. Having urges to beat, injure or harm someone | ⓪ | ① | ② | ③ | ④ |
| 41. Having urges to break or smash things | ⓪ | ① | ② | ③ | ④ |
| 42. Feeling very self-conscious with others | ⓪ | ① | ② | ③ | ④ |
| 43. Feeling uneasy in crowds | ⓪ | ① | ② | ③ | ④ |
| 44. Never feeling close to another person | ⓪ | ① | ② | ③ | ④ |
| 45. Spells of terror or panic | ⓪ | ① | ② | ③ | ④ |
| 46. Getting into frequent arguments | ⓪ | ① | ② | ③ | ④ |
| 47. Feeling nervous when you are left alone | ⓪ | ① | ② | ③ | ④ |
| 48. Others not giving you proper credit for your achievements | ⓪ | ① | ② | ③ | ④ |
| 49. Feeling so restless you couldn't sit still | ⓪ | ① | ② | ③ | ④ |
| 50. Feelings of worthlessness | ⓪ | ① | ② | ③ | ④ |
| 51. Feeling that people will take advantage of you if you let them | ⓪ | ① | ② | ③ | ④ |
| 52. Feelings of guilt | ⓪ | ① | ② | ③ | ④ |
| 53. The idea that something is wrong with your mind | ⓪ | ① | ② | ③ | ④ |

# Appendix B

## Caregiver Demographic Questionnaire

Family ID number _______
Date of the Evaluation ______

FAMILY DEMOGRAPHIC FORM

Please respond as completely as possible to the following questions. Please follow italics when given.

*Interviewer: Please code 999 for all missing/non-applicable responses.*

The following information is to be completed on the child's primary caregiver.

1. Caregiver's Gender
    1. Female (1)
    2. Male (2)
    3. Trans Male/Trans man (3)
    4. Trans Female/ Trans Woman (4)
    5. Gender queer/ Gender non-conforming (5)
    6. Different Identity (specify) (6)
    7. Don't know/not sure (7)
    8. Prefer not to answer (8)

**Transgender / Trans**: Transgender describes individuals whose current gender identity is not fully congruent with their assigned sex at birth (USDHHS , 2011; Feinberg, 1996). Some individuals who fit this definition may identify with the term transgender while others, particularly some transsexual individuals, may not. Many use the shorthand "trans" in place of "transgender."

**Transgender Men / Trans Men**: These terms refer to persons who were assigned female at birth and identify as men, regardless of whether they have physically transitioned from female to male.

**Transgender Women / Trans Women**: These terms refer to persons who were assigned male at birth and identify as women, regardless of whether they have physically transitioned from male to female.

**Gender non-conforming / genderqueer**: The term gender non-conforming refers to individuals whose gender expression does not fully conform to sex-linked social expectations (e.g., masculine girls/women, feminine boys/men). Gender non-conforming people may identify with the term transgender, trans, transsexual or any number of related community created terms, or with an alternative, non binary identity (e.g., as genderqueer), or may have no self-concept related to their gender expression.

***Gender*** is a multidimensional construct that has psychological, social, and behavioral dimensions that include gender identity and gender expression.

***Gender identity*** refers to a person's internal sense of gender (e.g., being a man, a woman, or genderqueer) and potential affiliation with a gender community (e.g., women, trans

women, genderqueer).
***Gender expression*** is a behavioral dimension of gender, that is, how one expresses one's identity through appearance and behavior (Spence, 2011). Gender may be reported in terms of a person's felt, desired, or intended identity and expression, as well as how an individual believes that he or she is perceived by others.
**Sex:** The term sex refers to biological differences among male, female, and intersex people (hormones, secondary sex characteristics, reproductive anatomy) that can be altered over time through the use of hormones and surgical interventions (Krieger, 2003). The assignment of individuals to a sex category by medical practitioners at birth is typically based on the appearance of external genitalia. Assigned sex at birth is then recorded on the birth certificate as male or female. The sex marker can sometimes be changed on legal documents (i.e., driver's license, passport, birth certificate) through a complex set of legal procedures (Conron, Landers, Reisner, & Sell, in press).

If gender is identified as "Different Identity," please specify other gender: ___________

2. Caregiver's Age: _______
3. Race of Caregiver (check all that apply) ***For these and all other race questions, please ensure that individual's select the appropriate racial identities that best describe themselves, versus national identities***
    1. Hispanic or Latino/a (1)
    2. Black (2)
    3. African American (3)
    4. Caribbean American (4)
    5. Native American or Alaska Native (5)
    6. East Asian (e.g., Chinese, Korean, Japanese) (6)
    7. South Asian (e.g., Indian, Pakistani, Bangladeshi) (7)
    8. Southeast Asian (e.g., Filipino, Vietnamese, Cambodian) (8)
    9. African (9)
    10. Afro-Guyanese (10)
    11. Indo-Guyanese (11)
    12. Guyanese (other/not specified) (12)
    13. Afro-Trinidadian (17)
    14. Indo-Trinidadian (18)
    15. Trinidadian (other/not specified) (19)
    16. Caucasian or White (13)
    17. Middle Eastern (14)
    18. Native Hawaiian or Pacific Islander (15)
    19. Other (specify) (16)

    Please specify 'Other' race: ______

4. Caregiver's Place of Birth: *(If response is #D-L, please the specify name of country)*

  1. (A) USA (mainland) (1)
  2. (B) Puerto Rico (2)
  3. (C) Dominican Republic (3)
  4. (D) Spanish speaking Caribbean (other than Puerto Rico or the Dominican Republic) (4)
  5. (E) English speaking Caribbean (5)
  6. (F) French speaking Caribbean (6)
  7. (G) Mexico/Central America/South America (7)
  8. (H) Asia (8)
  9. (I) South Pacific (9)
  10. (J) Europe (10)
  11. (K) Canada (11)
  12. (L) Other (12)

Specify Name Country (if D-F was chosen above): __________________

5. In total, how many months has the caregiver lived in mainland U.S.? ________
6. Caregiver's Religion:
   1. (A) Catholic (1)
   2. (B) Protestant (2)
   3. (C) Pentecostal (3)
   4. (D) Jewish (4)
   5. (E) Muslim (5)
   6. (F) Buddhist (6)
   7. (G) Hindu (7)
   8. (H) Jehovah's Witness (8)
   9. (I) None (9)
   10. (J) Other (10)

   Specify Other Religion: ___________

7. Marital Status of Caregiver:
   1. (1) Married to or living with child's biological or legally adoptive father/parent *(includes common law marriage)* (1)
   2. (2) Married to or living with someone other than child's biological or legally adoptive father/parent (includes common law marriage 7 years or more) (2)
   3. (3) Single *(how long since the age of 18?)* (3)
   4. (4) Divorced (4)
   5. (5) Separated *(including from common law marriage)* (5)
   6. (6) Widowed (6)

   7a. How long? (record # of years since the age of 18)?: _________

8. Caregiver's Education Status:

   1. (A) No School (1)
   2. (B) Less than seven years of school (some school) (2)
   3. (C) Junior high school (7th, 8th, 9th) (3)
   4. (D) Some high school (10th, 11th, 12th but did not graduate) (4)
   5. (E) High school graduate (include equivalency exam) (5)
   6. (F) Some college or technical school (at least one year) (6)
   7. (G) College graduate (7)
   8. (H) Graduate professional training (8)

9. Caregiver's Work Status:
   1. (A) Employed full-time for pay (1)
   2. (B) Employed part-time for pay (2)
   3. (C) Homemaker (3)
   4. (D) Full-time student (4)
   5. (E) Leave of absence for medical reasons (holding job, plans to return to work) (5)
   6. (F) On disability with no plan to return to work (6)
   7. (G) Unemployed < 6 months, but expects to work (7)
   8. (H) Unemployed ≥ 6 months, but expects to work (8)
   9. (I) Unemployed < 6 months, does not expect to work (9)
   10. (J) Unemployed ≥ 6 months, does not expect to work (10)
   11. (K) Laid Off (11)
   12. (L) Retired (12)
   13. (M) Other (13)

   Specify 'Other' Work Status: ____________

10. Current Occupation: Please tell me what you do for a living: *Please give a full description of your current occupation. Include the name of the main occupation, and a brief description of duties, type of business, and environment. (If retired, describe job prior to retirement.)*

    ______________________________________________________________

    ______________________________________________________________

    ______________________________________________________________

    ______________________________________________________________

    ______________________________________________________________

*Interviewer: after asking for description of employment, please code based on the following categories:*

○ (A) Professional occupations requiring specialized training and credentials (e..g, physician, lawyer, architect). (1)

○ (B) Skilled-blue collar occupations that require licensing, including electricians, plumbers and masons. (2)

○ (C) Semi- and low- skilled blue-collar occupation which include other manual labor occupations such as machine operators, fabricators and laborers. (3)

○ (D) Executive, management, and administrative occupations (4)

○ (E) Technical occupations such as dental hygienist and radiological technician (5)

○ (F) Service occupations such as janitor, hairdresser, cook. (6)

○ (G) White-collar occupations including sales, secretarial work, clerical work. (7)

○ (H) Other (8)

Specify Other Work Category: _______

11. Currently receiving public assistance?
    1. No (0)
    2. Yes (1)

Family Structure

12. Who lives in the home with the child(ren) being evaluated (not including the child themselves) **Please answer related to the home where the child lives with cg1 (individual answering these questions**
    Write intiials or the person's title to the child (e.g. "LM" or "Brother")

12a. Person #1: Person Living in the home #1 ____________
12b. Person #1: Relationship of person #1 to child _________
12c. Person #2: Person Living in the home #2 ____________
12b. Person #2: Relationship of person #2 to child _________
12d. Person #3: Person Living in the home #3 ____________
12e. Person #3: Relationship of person #3 to child _________
12f. Person #4: Person Living in the home #4 ____________
12g. Person #4: Relationship of person #4 to child _________
12h. Person #5: Person Living in the home #5 ____________

12i. Person #5: Relationship of person #5 to child _________
12j. Person #6: Person Living in the home #6 ____________
12k. Person #6: Relationship of person #6 to child _________
12l. Person #7: Person Living in the home #7 ____________
12m. Person #7: Relationship of person #7 to child _________

13. Mother
    1. No (0)
    2. Yes (1)
14. Father
    1. No (0)
    2. Yes (1)
15. Stepmother
    1. No (0)
    2. Yes (1)
16. Stepfather
    1. No (0)
    2. Yes (1)
17. Common law or cohabitating male
    1. No (0)
    2. Yes (1)
18. Common law or cohabitating female
    1. No (0)
    2. Yes (1)
19. Foster mother
    1. No (0)
    2. Yes (1)
20. Foster father
    1. No (0)
    2. Yes (1)
21. Common law "spouse" of child
    1. No (0)
    2. Yes (1)
22. Biological grandmother
    1. No (0)
    2. Yes (1)
23. Biological grandfather
    1. No (0)
    2. Yes (1)
24. Aunt
    1. No (0)
    2. Yes (1)
25. Uncle
    1. No (0)
    2. Yes (1)
26. Child(ren)'s Biologicavl Siblings (includes half siblings)

    1. No (0)
    2. Yes (1)

27. If yes, how many? (Only include children not in the program, put 0 if no siblings)
28. Child(ren)'s Step-siblings
    1. No (0)
    2. Yes (1)

    28a. If yes, how many? (Only include children not in the program, put 0 if no siblings)
29. Total number of people in home (including children being evaluated): _______

    29a. How many people in the home are over the age of 18
30. Total number of rooms in home *living spaces ONLY (no bathrooms, garages, kitchens, or unfurnished basements/attics)
31. What is your household's total income before taxes (including all sources of income, including public assistance and social security benefits): _____________
32. Interviewer: Please categorize into the following:
    1. (1) Under $5,000 (1)
    2. (2) $5,000 - $9,999 (2)
    3. (3) $10,000 - $14,999 (3)
    4. (4) $15,000 - $24,999 (4)
    5. (5) $25,000 - $39,999 (5)
    6. (6) $40,000 - $59,999 (6)
    7. (7) over $60,000 (7)

# Appendix C

## Additional Tables

Table A1
*Descriptive Table for Depression, Anxiety, and Session Number Variables*

| Descriptive | Completers[a] (M) | ITT[b] (M) |
|---|---|---|
| Depression | | |
| Pre Score | .644 | .649 |
| Mid Score | .410 | .434 |
| Post Score | .332 | .347 |
| Anxiety | | |
| Pre Score | .724 | .757 |
| Mid Score | .483 | .515 |
| Post Score | .393 | .393 |
| Session Number | | |
| Average Number attended at Mid | 10.51 | 8.44 |
| Average Number attended at Post | 17.03 | 12.54 |

Table A2
*Means and SD for Depression and Anxiety Across Male and Female Caregivers*

| Descriptive | Males (M)<br>N[a] = 28 | Females (M)<br>N[b] = 207 |
|---|---|---|
| Depression | | |
| Pre Score | .369 | .687 |
| Mid Score | .333 | .446 |
| Post Score | .205 | .366 |
| Anxiety | | |
| Pre Score | .381 | .809 |
| Mid Score | .363 | .535 |
| Post Score | .218 | .417 |

[a] Based on the ITT sample.
[b] Based on the ITT sample.

Table A3

*Baseline Scores for Samples for Comparisons*

| | Adult Female Nonpatients (N = 358) | | Adult Female Outpatient (N=577) | | TF-CBT Caregiver Sample (Completers) (N= 104) | | TF-CBT Caregiver Sample (All) (N = 241) | |
|---|---|---|---|---|---|---|---|---|
| Symptom Dimension | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| BSI Depression | .36 | .56 | 1.90 | 1.05 | .644 | .733 | .649 | .803 |
| BSI Anxiety | .44 | .54 | 1.82 | 1.02 | .724 | .722 | .757 | .823 |

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