



# Improvements in personal resiliency among youth who have completed trauma-focused cognitive behavioral therapy: A preliminary examination

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## ABSTRACT

This preliminary investigation assessed whether different aspects of personal resiliency improved for youth (7–17 years old) impacted by child sexual abuse (CSA) after completing trauma-focused cognitive behavioral therapy (TF-CBT). The Resiliency Scales for Children and Adolescents (RSCA; Prince-Embury, 2007) were administered to 157 youth before and after participating in TF-CBT with their nonoffending caregivers. Hierarchical regression analyses were performed to ascertain whether pretest RSCA resiliency scores moderated decreases in the posttraumatic stress and self-reported depressive symptoms at posttreatment. The RSCA scales did not moderate any of the improvements on the PTSD and depression outcome measures. Paired *t*-tests between the mean pre- and posttest RSCA Sense of Mastery (MAS), Sense of Relatedness (REL), and Emotional Reactivity (REA) scores demonstrated significant ( $ps < 0.001$ ) improvements on these measures over time. Using residualized posttest scores for the three RSCA scales to assess improvement, significant correlations were found between changes in resiliency and various residualized outcome scores for posttraumatic stress disorder (PTSD) and depression measures. Decreases in the REA scores and increases in the MAS and REL scores were related to fewer symptoms of hypervigilance and less self-reported depression after completing TF-CBT. Only improvements in the REL scores were associated with fewer symptoms of re-experiencing after treatment. The results were discussed as indicating that significant improvements in personal resiliency had occurred over time with effect sizes less than those found for posttraumatic stress symptoms, but comparable to those found for self-reported depression reductions. Limitations and future research recommendations are discussed.

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Research has repeatedly documented the devastating impact of child sexual abuse (CSA) on psychosocial development and long-term functioning. In fact, a history of CSA has been associated with significantly increased risks of suicide attempts, substance abuse problems, posttraumatic stress disorder (PTSD), and depression as well as other psychiatric problems (Hoertel et al., 2015; Perez-Fuentes et al., 2013; Trickett, Noll, & Putnam, 2011). Early effective intervention in the aftermath of CSA may contribute to forestalling such negative life trajectories. Trauma-focused cognitive behavioral therapy (TF-CBT; Cohen, Mannarino, & Deblinger, 2017; Deblinger, Mannarino, Cohen, Runyon, & Heflin, 2015) is a well-established, evidence-

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based treatment for addressing the negative sequelae associated with CSA and other traumas. This model has extensive empirical support having demonstrated its efficacy in 20 randomized controlled trials to date (Cohen et al., 2017; Deblinger et al., 2015). In response to TF-CBT, significant improvements have been documented in children's levels of posttraumatic stress, depression, shame, and behavioral problems as well as parental distress and parenting practices that have maintained over follow-up periods (Cohen, Deblinger, Mannarino, & Steer, 2004; Deblinger, Mannarino, Cohen, & Steer, 2006). In addition to the symptom reductions that have been replicated across numerous studies, clinicians and their clients frequently describe other positive changes in response to treatment. More specifically, children and their caregivers often subjectively report growing personally stronger and closer in their relationship with one another following their participation in TF-CBT. The current study is a preliminary examination of these hypothesized positive changes following TF-CBT in terms of children's feelings of mastery, their feelings of emotional relatedness, and their emotional reactivity to stressors. In addition, this study examines the relationships between changes in these resiliency characteristics and changes in levels of PTSD and depression among youth who have completed TF-CBT.

Personal resiliency is an important multidimensional construct that describes the extent to which an individual possesses resources to manage adversity and recover emotionally, socially, and physiologically in the aftermath of trauma or stress. Prince-Embury (2007) has identified three factors that comprise personal resiliency: sense of mastery (MAS), sense of relatedness (REL), and emotional reactivity (REA). Sense of mastery is comprised of optimism about life and one's competence, self-efficacy as related to problem-solving attitudes and strategies, and adaptability, including the ability to receive criticism and learn from mistakes. Sense of relatedness involves trust of others, comfort with others, experience of support from others, and tolerance of differences in a relationship. Emotional reactivity, conversely, is the inability to manage and tolerate emotional stimulation and reflects how easily emotions are triggered and the intensity of those emotions, as well as how readily emotional equilibrium can be maintained when emotions are triggered.

Children who have experienced maltreatment have demonstrated greater emotional reactivity and difficulties with peers and a decreased sense of mastery (Kelly et al., 2015). Among children exposed to physical violence, Laye and Mykota (2014) found that lower levels of mastery were associated with depression and PTSD symptoms, lower scores on relatedness were associated with disruptive behaviors, and higher scores on emotional reactivity were associated with disruptive behavior, depression, and PTSD symptoms. These findings suggest that a treatment that increases a child's sense of mastery and relatedness and decreases emotional reactivity may lead to better emotional and behavioral outcomes for children who have experienced abuse or other traumas (Prince-Embury, 2007).

With respect to the use of the RSCA with youth, the MAS, REL, and REA scales (Prince-Embury, 2007), have been previously utilized by Deblinger, Runyon, and Steer (2014) to assess personal resiliency in youth who had primarily experienced sexual abuse. The results of their cluster analysis of the MAS, REL, and REA *t* scores of youth impacted by sexual abuse identified four distinct profiles of personal resiliency representing high (20%), average (28%), and slightly below-average (30%) resiliency, as well as high vulnerability (22%). These profiles were found to be similar to those previously reported for both non-clinical youth samples and youth with psychiatric problems (Kumar, Steer, & Gulab, 2010; Prince-Embury & Steer, 2010). The profiles suggest that youth impacted by CSA present for treatment with varied levels of overall personal resiliency. Such variability in personal resiliency may not only alter their responses to CSA, but may also alter their response to TF-CBT or other psychosocial treatments. However, no study of TF-CBT to date has assessed the moderating effects of pretreatment resiliency on treatment outcome and/or whether there were improvements in children's personal resiliency following treatment.

The purpose of the present study was to determine (1) whether pretreatment personal resiliency subscale scores on mastery, relatedness, or reactivity as measured by the RSCA (Prince-Embury, 2007) moderated children's responses to TF-CBT with respect to PTSD and depression, (2) whether improvements in personal resiliency subscale scores in the above domains would occur after completing TF-CBT, (3) whether the effect sizes for any significant improvements found on the resiliency subscales would be comparable to those for posttraumatic stress and depressive symptoms that have been previously reported for TF-CBT (Deblinger et al., 2015), and (4) whether changes in the distinct resiliency subscales would be associated with differential changes in PTSD and depression following TF-CBT.

## 1. Method

### 1.1. Sample

The sample was composed of 157 youth (7–17 years old) who experienced sexual abuse, and completed the RSCA and a diagnostic interview for posttraumatic stress symptoms before and after being treated with TF-CBT with a nonoffending caregiver. The youth were treated at a medical school-based clinic specializing in the assessment and treatment of child abuse. The clinic is located in a suburban community, but also serves youth living in rural and inner city areas. All participants were referred by child protection, law enforcement, and/or other child abuse professionals for the treatment of CSA that had been documented as substantiated/established or deemed credible by child protective services, law enforcement, or an independent evaluation. This convenience sample was composed of 115 (73%) girls and 42 (27%) boys whose mean age was 11.65 ( $SD = 3.03$ ) years old. The caregivers identified the children as being from diverse backgrounds including Caucasian (46%), Latino (24%), African American (18%), and other ethnic descriptions (11%), such as biracial (9%). There were 9 (6%) siblings included in the sample. Thus, there were only 148 caregivers (parents) accompanying the youth for treatment. The majority of youth were accompanied to treatment by their biological mother ( $n = 105, 67%$ ); other female relatives ( $n = 21,$

13%) comprised the next largest group of caregivers, followed by biological fathers ( $n = 15$ , 10%). The remaining caregivers reflected other types of relationships with the youth, such as grandparents, male relatives, caseworkers, etc. None of the accompanying caregivers were perpetrators of the sexual abuse.

Data were collected with regard to characteristics of the sexual abuse. Of note, however, many of the caregivers were unsure about specific aspects of the abuse and could not provide such information at the start of treatment. Regarding relationship to the abuser, according to the referring agency, the abuser had been a prior adult caregiver for 46 (29%) youth, a non-caregiver adult for 66 (42%) youth, and another child for 45 (29%) youth. Regarding frequency and duration of the abuse, 93 caregivers reported that the mean number of CSA incidents was 10 ( $SD = 25$ ), and 104 reported that the sexual abuse had occurred over the course of an average of 348 ( $SD = 687$ ) days. Most children had experienced several different types of age inappropriate, abusive sexual interactions. Based on information from caregivers who were able to provide information about the types of abuse, 31 (28%) of 110 caregivers reported that penile penetration had occurred; 48 (48%) of 101 caregivers reported that oral sexual contact had occurred; and 68 (64%) of 106 caregivers reported that direct digital touching had occurred. The youth reported that the mean number of traumas that they had experienced was 3 ( $SD = 1$ ). Using the *Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version PTSD Module* (K-SADS-PTSD; Kaufman et al., 1997), 79 (50%) youth met full DSM-IV-TR symptom criteria for a PTSD diagnosis.

## 1.2. Measures

**1.2.1. Resiliency Scales for Children and Adolescents (RSCA).** The RSCA (Prince-Embury, 2007) is a self-report instrument that measures different aspects of personal resiliency. It is composed of a 20-item Sense of Mastery (MAS) scale, a 24-item Sense of Relatedness (REL) scale, and a 20-item Emotional Reactivity (REA) scale. The items are rated on a 5-point Likert scale ranging from 0 (never) to 4 (almost always). Detailed information about the reliabilities and validities of the RSCA scales are described by Prince-Embury (2007). For example, in the standardization sample, the coefficient  $\alpha$ s for the MAS, REL, and REA total scores were all  $\geq 0.85$ . The test-retest reliabilities for these scales were  $\geq 0.70$ , and criterion validity of these scales was supported by differentiating normal and clinical youth with the mean differences representing large ( $> 0.80$ ) effect sizes.

The following outcome instruments were chosen for comparative purposes to determine whether the magnitudes of the mean differences in the RSCA scores before and after TF-CBT would be comparable to those routinely found after TF-CBT (Deblinger et al., 2015). These comparisons were important because the present study did not include a control group and we wanted to assure that any improvements in resiliency identified were accompanied by the usual changes in these measures after completing TF-CBT.

**1.2.2. Beck Depression Inventory-II. (BDI-II).** The BDI-II (Beck, Steer, & Brown, 1996) is a 21-item self-report instrument used to measure the severity of depression in adolescents and adults and has generally been found to have high internal consistency (coefficient  $\alpha$ s  $> 0.90$ ) and moderate to high convergent validities ( $r$ s  $> 0.50$ ) with other self-report and clinical rating scales of depression (Steer & Beck, 2000). The BDI-II was only administered to adolescents ( $> 12$  years old).

**1.2.3. Children's Depression Inventory (CDI).** The CDI (Kovacs, 1992) is a well-validated and reliable 27-item self-report instrument that measures the severity of depression in children (Seligman, Ollendick, Langley, & Baldacci, 2004). The CDI was only administered to children ( $< 13$  years old).

**1.2.4. Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version-PTSD Module (K-SADS-PTSD).** The K-SADS-PTSD (Kaufman et al., 1997) is a semi-structured interview and was administered to the youth and the caregiver by an evaluating clinician to assess the presence of DSM-IV-TR PTSD symptoms. The clinicians had been extensively trained in its administration. The youth and his or her caregiver were independently administered the K-SADS-PTSD, and the clinician used the data gathered from both perspectives to judge whether a symptom was present. There are 5-item Re-experiencing, 7-item Avoidance, and 5-item Hyperarousal scales that are calculated by summing the number of symptoms rated in each scale. The symptoms correspond to the 17 DSM-IV-TR criteria for PTSD. If the clinician judged that the youth had 1 or more Re-experiencing, 3 or more Avoidance, and 2 or more Hyperarousal symptoms, then the clinician described the youth as having met DSM-IV-TR symptom criteria for PTSD. Deblinger, Mannarino, Cohen, Runyon, and Steer (2011) reported that the intraclass correlations between raters for the Re-experiencing, Avoidant, and Hyperarousal scores were, respectively, 0.92, 0.85, and 0.84, and there was 100% agreement with respect to whether a child met DSM-IV-TR criteria for PTSD. The reliability and validity of the K-SADS have also been supported across a variety of different clinical populations (Ambrosini, 2000).

## 1.3. Procedures

Prior to initiating pretreatment assessments, caregivers and youth referred to the child abuse clinic for treatment were invited to participate in research. All potential participants were reminded that their participation would be voluntary and declining to participate would not impact the services provided. After the caregiver (parent) accompanying the child or adolescent for the assessment gave written consent and the child or adolescent had also assented or consented to the assessment, the caregiver and youth were administered the instruments described above as part of a standard assessment

**Table 1**  
Correlations of Resiliency Scales for Children and Adolescents Pretest Total Scores with Sex, Age, and Being Caucasian.

Characteristic	Sense of Mastery	Sense of Relatedness	Emotional Reactivity
	<i>r</i>	<i>r</i>	<i>r</i>
Sex (0 = Male, 1 = Female)	0.06	0.02	−0.16
Age (Years)	−0.01	−0.02	0.11
Caucasian (0 = No, 1 = Yes)	0.14	0.26**	−0.07

*N* = 157 Bonferroni adjusted (0.01/3).

\*\*  $p < 0.01$ .

**Table 2**  
Correlations of Pretest Sense of Mastery, Sense of Relatedness, and Emotional Reactivity Total Scores with Posttest Total Scores for Other Outcome Measures and Hierarchical (Moderation) Regression Analyses for Significant Correlations.

Pretest	Posttest			
	<i>N</i>	Sense of Mastery <i>r</i>	Sense of Relatedness <i>r</i>	Emotional Reactivity <i>r</i>
K-SADS-PTSD Re-experiencing	157	−0.13	−0.24	0.18
K-SADS-PTSD Avoidance	157	−0.07	−0.10	0.07
K-SADS-PTSD Hypervigilance	157	−0.09	−0.02	0.15
BDI-II	54	−0.46***	−0.38*	0.47**
CDI	89	−0.27	−0.40***	0.23
Interactions	$\beta$	$\Delta R^2$	<i>F</i> for increased variance	( <i>df</i> 1/ <i>df</i> 2)
Sense of Mastery X BDI-II	−0.51	0.04	3.63	(1,50)
Sense of Relatedness X BDI-II	−0.15	0.01	0.12	(1,50)
Emotional Reactivity X BDI-II	0.52	0.02	1.99	(1,50)
Sense of Relatedness X CDI	−0.18	0.002	0.21	(1, 85)

BDI-II = Beck Depression Inventory-II, CDI = Children's Depression Inventory, K-SADS-PTSD = Schedule for Affective Disorders and Schizophrenia or School-Age Children-PTSD Module.

battery. The clinician was available to answer any questions that might arise while the youth were completing the self-report instruments and measures were read aloud to youth with difficulty reading the instruments. Post-treatment measures were administered by a research assistant approximately 1–2 weeks prior to graduation from therapy. Only those caregivers and children who had consented for their responses to be used for research purposes were included in the sample; their data was de-identified and stored in a computer database. This project was conducted with the approval of the medical school's Institutional Review Board.

## 2. Results

Because the study focused on comparing pre- and posttest mean differences in personal resiliency in the same youth over time, the total scores for the outcome measures were used, instead of converting the total scores into T scores which were available for the RSCA and CDI. However, before comparing the pre- and posttest mean scores of the RSCA scales and other measures, we first determined whether the youths' MAS, REL, and REA pretest scores were significantly correlated with the youths' sex (0 = Male, 1 = Female), age (years), and being Caucasian (0 = No, 1 = Yes). If these demographic characteristics were significantly correlated with the RSCA scores, then these variables might need to be controlled for in subsequent analyses if the magnitudes of the correlations were moderate to large. The significance level, two-tailed test, was set by using a Bonferroni adjustment of 0.05/3 to control for the familywise error rate for these demographic characteristics. As Table 1 shows, only the point-biserial correlation of the pretest REL scores with being Caucasian ( $r = 0.26$ ,  $p < 0.01$ ) was significant. The Caucasian youth described themselves as having greater feelings of emotional relatedness. However, the magnitude of this correlation was less than |.30| and indicated that being Caucasian would not be a meaningful covariate in the subsequent statistical analyses according to Cox and McCullagh (1982), and thus being Caucasian was not controlled for.

To determine whether any of three pre-treatment RSCA scales moderated the relationships of the pretest K-SADS-PTSD, BDI-II, and CDI scores with their respective posttest scores, a series of hierarchical regression analyses was conducted for the variables with significant correlations that are shown in Table 2, i.e., the K-SADS-PTSD's, BDI-II's, and CDI's respective posttest scores. Only the BDI-II posttest scores were significantly correlated with the three RSCA pretest scores, and the posttest CDI scores were also negatively correlated with the pretest REL scores. The interaction (product variable) representing the possible moderation effect of an RSCA pretest score with either the BDI-II or CDI scores was next calculated by multiplying the RSCA pretest by the appropriate BDI-II or CDI pretest score. The BDI-II or CDI pretest scores were then entered first into the hierarchical regression analysis, followed by both the pretest score for either the BDI-II or CDI and the RSCA scale scores that had been found to be significantly correlated with the BDI-II or CDI posttest score. The product variable was entered last into the hierarchical regression. As Table 2 shows none of the interactions was significant, and the incremental variance contributed by the entry of any of the product variables into the regression models was trivial, i.e.,  $\leq 4\%$ .

**Table 3**Means Standard Deviations, Pre- and Posttest Correlations, and Correlated *t* Statistics for Outcome Measures.

Scale	N	Pretest		Posttest		<i>r</i>	<i>t</i>	95% Confidence Interval		
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			Cohen's <i>d</i>	<i>lc</i>	<i>uc</i>
Sense of Mastery	157	54.40	12.78	58.99	12.81	0.49	4.46	0.36	0.20	0.52
Sense of Relatedness	157	70.01	15.75	74.37	14.93	0.61	4.03	0.28	0.15	0.42
Emotional Reactivity	157	23.16	13.74	18.76	12.82	0.48	4.09	0.33	0.17	0.49
K-SADS-PTSD Re-experiencing	157	2.64	1.52	0.94	1.18	0.35	13.73	1.25	1.06	1.44
K-SADS-PTSD Avoidance	157	3.05	1.59	1.21	1.20	0.33	14.04	1.30	1.11	1.49
K-SADS-PTSD Hypervigilance	157	2.36	1.64	0.76	0.96	0.27	11.96	1.15	0.96	1.35
BDI-II	54	12.20	11.29	5.63	8.23	0.69	5.87	0.63	0.41	0.85
CDI	89	8.79	6.28	6.04	4.86	0.39	4.13	0.48	0.25	0.72

Note. K-SADS-PTSD = Schedule for Affective Disorders and Schizophrenia or School-Age Children – PTSD Module, BDI-II = Beck Depression Inventory-II, CDI = Children's Depression Inventory, *lc* = lower limit of confidence interval, *uc* = upper limit of confidence level All of the *t* statistics are significant beyond the Bonferroni adjusted (.001/8) 0.001 level, two tailed test.

**Table 4**

Correlations of Residualized Posttest Sense of Mastery, Sense of Relatedness, and Emotional Reactivity Total Scores with Residualized Posttest Total Scores for Other Outcome Measures.

Residualized Posttest Scores	N	Sense of Mastery	Sense of Relatedness	Emotional Reactivity
		<i>r</i>	<i>r</i>	<i>r</i>
K-SADS-PTSD Re-experiencing	157	−0.12	−0.24*	0.19
K-SADS-PTSD Avoidance	157	−0.05	−0.20	0.14
K-SADS-PTSD Hypervigilance	157	−0.24**	−0.22**	0.28***
BDI-II	54	−0.63***	−0.33*	0.61***
CDI	89	−0.41***	−0.36***	0.34***

Note. BDI-II = Beck Depression Inventory-II, CDI = Children's Depression Inventory, K-SADS-PTSD = Schedule for Affective Disorders and Schizophrenia for School-Age Children PTSD Module. Bonferroni adjusted ( $\alpha/5$ ).

\*  $p < 0.05$ .\*\*  $p < 0.01$ .\*\*\*  $p < 0.001$ .

Table 3 lists the means, standard deviations, pre- and posttest correlations, and correlated *t* statistics for RSCA scales, K-SADS-PTSD, BDI-II, and CDI scales for the youth who had completed TF-CBT (mean number of sessions = 20, *SD* = 6). Based on a Bonferroni adjustment of  $\alpha/8$ , the mean RSCA, K-SADS-PTSD, BDI-II, and CDI scores had all significantly improved by the end of therapy beyond the 0.001 level, two-tailed test. The magnitudes of the effect sizes (Cohen's (1992) *d* statistics) for these outcome measures are also shown in Table 3 along with the 95% confidence levels (CI) for the effect sizes. As found in prior TF-CBT investigations (Deblinger et al., 2015), the effect sizes for the K-SADS-PTSD Re-experiencing, Avoidance, and Hypervigilance mean differences represented large (>.80) effect sizes according to Cohen's (1992) interpretative guidelines. The three RSCA scales yielded small effect sizes, but their 95% CIs overlapped the 95% CIs for the BDI-II and CDI effect sizes.

To ascertain whether the improvements in the three RSCA scores were correlated with the improvements in the other outcome measures, the posttest scores for each outcome measure were regressed on its pretest scores. Before calculating the correlations of the three residualized RSCA scores with the other residualized outcome scores, we first determined whether the number of treatment sessions might need to be controlled for. The correlations of the residualized MAS, REL, and REA posttest scores with number of sessions were, respectively, 0.01, −0.03, and −0.03. None of the correlations was significant, thus number of sessions was not controlled for. As Table 4 indicates, improvements in the REL scores were correlated with fewer symptoms of re-experiencing symptoms at post-treatment. In addition, improvements in MAS, REL, and REA were all associated with lower levels of self-reported hypervigilance as well as depression scores as measured by both the BDI-II for adolescents and the CDI for children after completing their participation in TF-CBT.

### 3. Discussion

The present findings support previous research documenting the efficacy of TF-CBT with children and adolescents. Replicating the findings of prior randomized trials (Deblinger et al., 2015), TF-CBT completion in the current study was associated with significant pre- to post-treatment improvements with respect to PTSD and depressive symptoms for youth. With respect to personal resiliency, the current investigation did not find that pretreatment scores on MAS, REL, and REA scales moderated the decreases in PTSD symptoms and self-reported depression reported at post-treatment. However, the present study is the first to report results suggesting that TF-CBT not only reduces symptom distress (i.e., PTSD and depression), but also seems to lead to significant improvements among youth in terms of personal resiliency. More specifically, youth reported significantly greater feelings of mastery and emotional relatedness, and reduced emotional reactivity to stressors after completing TF-CBT. Given the focus of TF-CBT on building coping skills to manage stress as well as mastering traumatic memories with the help of a supportive caregiver, these results are not surprising. Despite the significant changes found in resiliency scores

over time, the lack of a control or comparison condition makes it impossible to definitively attribute the positive changes in resiliency to youth participation in TF-CBT. However, it is worth noting that the improvements found for resilience are important because individuals with a history of childhood trauma are likely to exhibit lower levels of resilience rather than increases in resilience following trauma (Whitelock, Lamb, & Rentfrow, 2013). In addition, children who experience maltreatment have been found to be at greater risk for exposure to future victimization and adversity (Finkelhor, Ormrod, & Turner, 2007). Improvements in children's resilience may help youth face future stressors with greater skills and confidence or possibly avert some stressors altogether. Thus, they may be less vulnerable to the likelihood of repeated victimization and symptom relapse over time. Moreover, greater resilience has been shown to be predictive of positive adaptation in the face of general stressors (Seligman, 2011; Tugade & Fredrickson, 2004).

Significant correlations between improvements in the children's personal resiliency following TF-CBT and other youth outcomes were also found. Importantly, improved mastery, relatedness, and emotional reactivity were all correlated with having fewer DSM-IV-TR PTSD symptoms of hypervigilance and less self-reported depression in both younger and older youth who had completed treatment. Improved relatedness was also associated with reporting fewer re-experiencing symptoms after treatment.

In future research, the potential mediating effects of changes in resiliency with respect to PTSD and depressive symptom outcomes may be more effectively examined if the RSCA is administered prior to the final outcome measures at post-treatment. Furthermore, an investigation examining the potential role of resilience in reducing children's risk of ongoing or reoccurrence of depression may be valuable. This is important because recent research suggests that childhood traumas are associated with longer periods of depression in adulthood prior to remission (Fuller-Thomson, Battiston, Gadalla, & Brennenstuhl, 2014). The significant associations found between resiliency and depression outcomes suggest that continued focus on enhancing feelings of mastery, relatedness, and improved emotional regulation among youth impacted by sexual abuse may be important in combating depression.

Interestingly, the improvements in children's resiliency scores found in this investigation may help to explain recent TF-CBT research findings with respect to foster children, who have particularly high rates of childhood traumas. Youth in foster care who participated in TF-CBT outcome research not only reported reduced mental health difficulties, but they also exhibited less treatment drop out and reduced rates of running away and placement disruptions respectively (Dorsey et al., 2014; Lyons, Weiner, & Scheider, 2006). Though resilience was not specifically measured in those studies, it is possible that improved coping and feelings of mastery as well as enhanced relatedness in response to TF-CBT participation may have helped these youth to have greater success in coping with foster placements and interacting and relating to their foster parents.

The current study's major limitation is its lack of a control group to determine whether the resultant improvements in resiliency might simply be attributable to the passage of time. In addition, given the simultaneous measurement of resiliency as well as depression and PTSD symptoms, it is not possible to ascertain whether improved resiliency produced changes in PTSD and depressive symptoms or vice versa. Future research may ascertain whether different aspects of personal resiliency mediate different symptom outcomes by assessing resiliency before and after completing specific treatment components (e.g., narrative and processing) prior to assessing for final symptom levels. In addition, randomized trials including control conditions and long-term follow-up assessments of resilience are critical to confirm whether the impact and potential benefits of TF-CBT on resiliency are maintained when additional stressors are faced by youth in the future. Though we did not find age to have moderating effects in this investigation, examining the impact of developmental level on response to treatment as well as resiliency may also be a promising area for future research.

In summary, the present results seem to reinforce the value of targeting youth competencies in treatment with respect to stress management, feelings of mastery, and emotional relatedness. The TF-CBT skills components may assist youth in managing stress, the narrative and processing component seems to enhance feelings of mastery particularly with respect to trauma memories, and conjoint TF-CBT sessions may encourage emotional closeness with the participating caregivers. The current findings suggest that enhancing personal resiliency may be especially important for youth presenting with depression in the aftermath of trauma as these youth have been found to be less responsive to various treatment approaches (Deblinger et al., 2006; Mannarino, Cohen, Deblinger, Runyon, & Steer, 2012; Shamseddeen et al., 2011). From a clinical perspective, an increased focus on building personal competencies may not only serve to improve depression and other symptom outcomes, but may also be associated with greater long-term resilience and potentially reduced vulnerability to depressive reactions encountered through adolescence and adulthood. Examining resiliency among youth who have faced adversity appears to be a fruitful area for continued research in terms of identifying factors that may optimize children's responses to sexual abuse and other traumas, while furthering the development of effective interventions. The current findings highlight the value of not only focusing treatment outcome research on symptom reductions, but also measuring indicators of recovery and resilience. As demonstrated in this investigation, areas of positive change that may be measured may include the development of (1) feelings of personal efficacy and optimistic attitudes about the future (i.e., mastery), (2) feelings of comfort when interacting with others and skills for tolerating relationship differences (i.e., relatedness), and (3) skills for coping with stress and maintaining emotional equilibrium (i.e., emotional reactivity) in the face of adverse events. Ultimately, examining these and other strength-based characteristics in future randomized clinical trials may help to further elucidate therapy mechanisms of change across a variety of treatment approaches.

## Conflict of interest

The authors declared the following potential conflicts of interest with respect to research, authorship, and/or publication of this article: The first author is a developer of TF-CBT and receives royalties and honoraria for TF-CBT related activities. The second author receives honoraria for TF-CBT related activities. The third author receives royalties and honoraria for TF-CBT related activities.

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