Journal of Traumatic Stress
xxxx 2021, *0,* 1–7

ISTSS International Society for Traumatic Stress Studies

Treatment Outcomes for Adolescents Versus Adults Receiving Cognitive Processing Therapy for Posttraumatic Stress Disorder During Community Training

Stefanie T. LoSavio,[1] Robert A. Murphy,[1,2] and Patricia A. Resick[1]
[1]Duke University Medical Center, Durham, North Carolina, USA
[2]Center for Child and Family Health, Durham, North Carolina, USA

Cognitive processing therapy (CPT) is a gold-standard treatment for adults with posttraumatic stress disorder (PTSD). However, adolescents may also benefit from CPT, particularly when existing evidence-based treatments for adolescents are unavailable or not a good fit. In this program evaluation study, a modular version of CPT was delivered by community-based therapists-in-training to 32 adolescents (age range: 14–17 years) and 174 adults recruited at their sites (overall sample: 81.1% female, 59.7% White, 31.6% Black, 21.6% Hispanic, 2.9% American Indian/Alaskan Native, 1.9% Asian, and 9.7% other race). The same protocol was used for adolescents as adults. Treatment outcomes, including treatment completion status, number of sessions needed, and PTSD and depression symptom change, were compared between groups. In total, 47.1% of adults versus 71.9% of adolescents completed treatment. Among completers, there was no between-group difference in the number of attended sessions, $RR = 1.04$, 95% *CI* [0.88, 1.23], $p = .576$. Overall, in the full intent-to-treat sample (i.e., completers and noncompleters), large symptom reductions were observed for PTSD, $b = -3.27$, $SE = 0.17$, $p < .001$, $d = 1.22$; and depression, $b = -0.82$, $SE = 0.07$, $p < .001$, $d = 0.84$. There were no differences in the rate of change for adolescents versus adults regarding PTSD, $b = -0.15$, $SE = 0.48$, $p = .759$; or depression, $b = -0.20$, $SE = 0.14$, $p = .181$. These findings suggest that CPT is a viable treatment option for adolescents, who benefited from treatment and completed treatment at a high rate.

Cognitive processing therapy (CPT; Resick, Monson, et al., 2017) is an evidence-based treatment for posttraumatic stress disorder (PTSD) that has been shown to be efficacious and effective across a range of adult populations including civilians, veterans, and active duty military personnel (e.g., Monson et al., 2006; Resick et al., 2002; Resick, Wachen, et al., 2017). In contrast to the large literature supporting CPT as a gold-standard treatment for adults with PTSD, there has been limited research on CPT with adolescents. It is likely that this well-established treatment may also be beneficial to the adolescent population.

Although other evidence-based PTSD treatments, such as trauma-focused cognitive behavioral therapy (TF-CBT; Cohen et al., 2017) exist and are recommended for use with adolescents, there are several reasons why it may be beneficial to examine the application of CPT to adolescents. First, trauma-focused treatments for adolescents, such as TF-CBT, typically require the involvement of a caregiver in treatment. However, in many cases, trauma-exposed adolescents do not have an available or appropriate caregiver who can be involved in treatment. Sometimes the participating caregiver is not supportive or does not serve a therapeutic role during treatment. For example, caregiver avoidance and blaming of the child have been shown to predict poorer treatment outcomes in TF-CBT (Yasinski et al., 2016). In addition, some adolescents with available caregivers may prefer CPT due to a developmentally appropriate desire for more independence (Matulis et al., 2014). Although practitioners of TF-CBT and CPT both aim to help clients process their traumatic experiences, they achieve this through different approaches. In TF-CBT, there is a range of interventions the therapist may employ, including a trauma narrative, relaxation training, in vivo exposures, and cognitive coping. By contrast, CPT is more specifically focused on cognitive therapy approaches and teaches patients to evaluate their cognitions using Socratic questioning and a series of progressive worksheets. Beginning in Session 2, these cognitive skills are practiced throughout the course of CPT to build mastery. In addition, not all clients benefit from a given treatment. For example, randomized controlled trials have demonstrated that around 21%–25% of children who receive TF-CBT still have PTSD posttreatment (Cohen et al.,

This work was supported by grants from the Welcome Back Veterans Initiative of the Robert R. McCormick Foundation and the Family Coping and Resilience project, supported by the North Carolina GlaxoSmithKline Foundation. The funders had no involvement in the collection, analysis, or interpretation of the data or in the preparation of this report.

Correspondence concerning this article should be addressed to Stefanie T. LoSavio, 1121 W. Chapel Hill St., Ste. 201, Durham, NC 27701. E-mail: Stefanie.LoSavio@duke.edu

DOI: 10.1002/jts.22668

2004, 2011; Jensen et al., 2014). If a client does not do well in one treatment, they may benefit from a different evidence-based treatment. Therefore, adolescents who are unresponsive to TF-CBT may benefit from CPT. Finally, providers who are already trained in CPT but not TF-CBT could expand PTSD services to adolescents without training in a new treatment modality. This is advantageous because provider time and resources for training are limited (e.g., Addis et al., 1999), which makes attending training and building mastery in multiple therapies difficult.

To date, few studies have examined CPT in adolescent samples. In one study, Ahrens and Rexford (2002) assigned 38 male, incarcerated adolescents with PTSD to either eight sessions of group-based CPT or a waitlist control condition. Adolescents who received CPT demonstrated significant decreases in symptoms of PTSD and depression, whereas those in the control group did not. In an uncontrolled trial in Germany, Vogel and Rosner (2020) delivered CPT, with age-adapted modifications, to 17 adolescents and young adults with full or subthreshold PTSD. Modifications were made to the worksheets (i.e., giving more detailed instructions, providing more examples, simplifying content) and to the number of sessions (i.e., adding sessions for building motivation, optional conjoint meetings with significant others, and other issues). There was a large effect of treatment on PTSD symptoms, depression, and symptoms of borderline personality disorder, and medium effects for behavior and internalizing problems (Vogel & Rosner, 2020). Researchers in Germany have also evaluated a significantly longer, phase-based, 30-session, modified version of CPT (i.e., developmentally adapted CPT; D-CPT), which was developed to address abuse-related PTSD in adolescents (Matulis et al., 2014; Rosner et al., 2019). The D-CPT intervention includes additional modules focused on planning and preparation to increase motivation, emotion regulation training, and adolescent-related developmental tasks (Matulis et al., 2014). The traditional CPT treatment components are also modified to be less complex and delivered more frequently over 15 sessions as part of the larger protocol. In an uncontrolled pilot, 12 adolescents aged 14–21 years began D-CPT, and 10 completed treatment (Matulis et al., 2014). These participants exhibited significant reductions in PTSD, depression, dissociative symptoms, and deficits in emotion regulation. Although the modified version of CPT was effective, the authors noted that it was not possible to say whether the additional treatment modules contributed to the treatment outcomes over and above the traditional CPT components or if similar results would have been found using the CPT phase only. In a subsequent randomized controlled trial, 88 adolescents were assigned to either D-CPT or a waitlist control condition with treatment advice (Rosner et al., 2019). Participants who received D-CPT showed more symptom improvement relative to those in the control condition, particularly after the midpoint of treatment when the CPT phase began; in contrast, improvements during the pre-CPT phases of treatment (i.e., commitment and emotion regulation) did not differ between individuals in the D-CPT or waitlist conditions.

Taken together, the aforementioned studies indicate that CPT can be effective with adolescents. Although these studies have shown promising outcomes in samples of adolescents, to our knowledge, no previous studies have directly compared adolescent and adult CPT outcomes. Therefore, the aim of the present study was to examine adolescent and adult outcomes within the same sample and using the same version of CPT for adolescents and adults. We focused on adolescents younger than 18 years old (i.e., aged 14–17 years in the present sample), as individuals over 18 years of age have been eligible for most previous CPT studies, whereas younger adolescents have typically been excluded. A key question was how adolescents at this developmental stage would fare in CPT. We hypothesized that adolescents would evidence significant reductions in symptoms of PTSD and depression. We also examined dropout rates and compared adolescent and adult symptom outcomes. Because this study was exploratory, we made no hypotheses about treatment completion or rate of symptom change for adolescents versus adults.

Method

Participants and Procedure

Deidentified patient data were collected as part of a training program to disseminate CPT to community-based mental health providers. The Duke University Health System Institutional Review Board reviewed the project and deemed it exempt because the data collected were program evaluation data collected over the course of the training program. Participants included 206 patients ($n = 32$ under age 18 years, hereafter referred to as "adolescents," and $n = 174$ age 18 or older, hereafter referred to as "adults"). Adolescents consisted of 17 participants who were 17 years of age, 11 participants who were 16 years old, three who were 15 years old, and one who was 14 years old. Participants were seen by 44 mental health providers from 12 agencies, who were receiving training in CPT as part of a statewide learning collaborative. Clinicians screened, enrolled, and treated patients at their individual sites while receiving clinical consultation. Clinicians were asked to complete two cases to be rostered as approved CPT providers, but they were encouraged to enroll more in case of dropout. Sample demographic characteristics, including index traumatic events, are listed in Table 1. Adolescents were more likely than adults to be Hispanic, but no other differences in demographic variables or index traumatic eventswere observed between adolescent and adult participants.

In CPT providers teach patients skills to identify and challenge inaccurate beliefs related to their traumatic experiences (Resick, Monson, et al., 2017). Clinicians were trained to deliver a modular version of CPT that is similar to the standard CPT protocol in content but allows for flexibility in selecting and dosing CPT treatment elements according to patient need (LoSavio et al., 2018). For example, clinicians can spend more time targeting erroneous beliefs about the cause of the traumatic

Table 1
Sample Demographic Characteristics

	Total sample ($N = 206$)		Adults ($n = 174$)		Adolescents ($n = 32$)		Difference			
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*t*(179)	*p*	*df*	
Age (years)	34.20	14.12	37.49	12.90	16.38	0.79	21.32	< .001	179	
	n	%	*n*	%	*n*	%	χ^2	*p*	*df*	*N*
Gender							0.91	.340	1	206
Female	167	81.1	143	82.2	24	75.0				
Male	39	8.9	31	17.8	8	25.0				
Race[a]										
White	123	59.7	101	58.0	22	68.8	1.29	.257	1	206
Black/African American	65	31.6	55	31.6	10	31.3	0.00	.968	1	206
American Indian/Alaskan Native	6	2.9	6	3.4	0	0.0	1.14	.286	1	206
Asian	4	1.9	4	2.3	0	0.0	0.75	.386	1	206
Other	20	9.7	17	9.8	3	9.4	0.01	.945	1	206
Hispanic/Latinx	44	21.6	30	17.4	14	43.8	11.04	.001	1	204
Index traumatic event							5.78	.217	4	206
Sexual trauma	85	41.3	66	37.9	19	59.4				
Violence/abuse	64	31.1	56	32.2	8	25.0				
Accident	14	6.8	13	7.4	1	3.1				
Military trauma	4	1.9	4	2.2	0	0.0				
Other	39	18.9	35	20.1	4	12.5				

[a] Participants were permitted to select multiple races.

Journal of Traumatic Stress DOI 10.1002/jts. Published on behalf of the International Society for Traumatic Stress Studies.

event (e.g., "It's my fault the trauma happened because I trusted the perpetrator") before moving on to overgeneralized beliefs about the consequences of the trauma ("I can't trust anyone"), if indicated. In this protocol, patients could receive a maximum of 24 sessions. Both adolescents and adults received this same treatment protocol, and clinicians were not directed to deliver any specific protocol modifications for adolescents.

Measures

PTSD symptoms

Symptoms of PTSD, assessed per the criteria given in the *Diagnostic and Statistical Manual of Mental Disorders* (fifth ed.; *DSM-5*), were evaluated using the PTSD Checklist for *DSM-5* (PCL-5; Weathers et al., 2013). The PCL-5 is a 20-item, self-report measure that asks respondents to rate how much they have been bothered by PTSD symptoms, with items scored on a scale of 0 (*not at* all) to 4 (*extremely*). Scores range from 0 to 80, with higher scores reflecting higher levels of PTSD symptom severity. Cutoff scores of 31–33 have been shown to be efficient in predicting a PTSD diagnosis (Bovin et al., 2016). Patients completed the past-month version of the PCL-5 at pretreatment and the past-week version weekly during treatment. Only total scores were collected; thus, internal consistency could not be computed for the present sample. However, the PCL-5 is widely used and has previously demonstrated good internal consistency, test–retest reliability, and convergent and discriminant validity (Bovin et al., 2016).

Depressive Symptoms

The nine-item Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001) is a self-report measure used to assess depressive symptoms, with items rated on a scale from 0 (*not at all*) to 3 (*nearly every day*). Scores range from 0 to 27, with higher scores reflecting higher levels of depressive symptoms. Total scores of 5, 10, 15, and 20 correspond to cut-points representing mild, moderate, moderately severe, and severe depression symptomatology, respectively (Kroenke & Spitzer, 2002). Patients completed the PHQ-9 weekly during treatment. Only total scores were collected; thus, internal consistency could not be computed for the present sample. However, the PHQ-9 is widely used and has previously demonstrated good internal consistency, test–retest reliability, and construct validity (Kroenke et al., 2001).

Data Analysis

Descriptive statistics were calculated using IBM SPSS (Version 27). A participant was considered a treatment completer if they engaged in a planned final session after the patient and therapist agreed that the patient had made sufficient progress regarding their trauma-related beliefs and PTSD symptoms. Inferential statistics were completed using hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002), which employs maximum likelihood estimation, accommodates missing dataand is useful for analyzing data with a nested structure. We first ran a four-level unconditional model with patient symptoms (Level 1) nested within patients (Level 2), nested within therapists (Level 3), nested within clinics (Level 4) to examine intraclass correlation coefficients (ICCs). Between-therapist differences contributed little variability in symptom outcomes (0.23–0.34% for depression and PTSD symptoms, respectively), so "therapist" was not included as a nesting variable in subsequent models. Thus, the final HLM models accounted for patients nested within sites. In two-level models with patients (Level 1) nested within sites (Level 2), age group (adolescent vs. adult, coded 0 for adults and 1 for adolescents) was analyzed as a Level 1 predictor of (a) treatment completion among all treatment initiators and (b) the number of sessions attended among completers. When examining the effect of age group on the likelihood of treatment completion—a categorical outcome—the Bernoulli link function in HLM was used. When analyzing the effect of age group on the number of sessions completed—a count outcome—the Poisson link function in HLM was used. In three-level models with repeated symptom assessments (Level 1) nested within patients (Level 2) nested within sites (Level 3), we evaluated changes in PTSD and depression symptoms (Level 1 outcome) as a function of time in treatment (i.e., session number; Level 1) and age group (Level 2). Both slopes and intercepts were allowed to randomly vary.

Results

Overall, 50.7% of patients completed treatment. The mean number of sessions for completers was 11.4, and the mean number of sessions for noncompleters was 4.1. Completion rates varied by age group: 47.1% of adults completed treatment, whereas 71.9% of adolescents completed treatment. This difference was statistically significant such that adolescents were 2.91 times more likely to complete treatment relative to adults, 95% CI [1.51, 5.60], $p = .004$. Among completed cases, there was no difference in the number of attended sessions for adolescents versus adults ($M = 11.7$ sessions for adolescents vs. $M = 11.3$ sessions for adults), rate ratio (RR) = 1.04, 95% CI [0.88, 1.23], $p = .576$.

Next, we examined PTSD symptom change. As a conservative test of adolescent versus adult outcomes, we ran our three-level model, including data from the full intent-to-treat sample (i.e., treatment completers and noncompleters). The intercept was 50.38, which represents the model-derived average pretreatment PCL-5 score for adults. There was no effect of age group on pretreatment PCL-5 score, indicating no significant difference in starting PTSD symptom levels for adults versus adolescents, $b = -3.94$, $SE = 3.17$, $p = .239$. There was a significant effect of time, with PTSD symptoms decreasing by an average of 3.27 points per session for adults, $b = -3.27$, $SE = 0.17$, $p < .001$, with an approximate Cohen's d effect size of 1.22. The interaction between age group and session number was not significant, indicating no difference in the rate of change for

Table 2
Mean Assessment Scores at Baseline and Last Session, By Group

	Adolescents ($n = 32$)			Adults ($n = 174$)		
Variable	*M*	*SD*	Range	*M*	*SD*	Range
PTSD symptoms at baseline	46.87	11.11	26–73	51.58	13.97	12–80
PTSD symptoms at last session	16.44	16.90	1–58	27.51	23.51	0–80
Depression symptoms at baseline	14.50	5.43	4–27	15.71	6.32	0–27
Depression symptoms at last session[a]	6.00	5.92	0–21	9.00	7.80	0–27

Note. Data are presented from all treatment initiators (i.e., full intent-to-treat sample).
[a] Scores obtained at the last session the patient attended for both completers and noncompleters.

adolescents versus adults, $b = -0.15$, $SE = 0.48$, $p = .759$. We also analyzed both this model and the analogous model predicting change in depression with the inclusion of a quadratic effect of time. The quadratic effect of time was also significant, but the same pattern of results emerged, with no significant interaction of time and age group. In addition, because adolescents were more likely than adults to be Hispanic, we analyzed both this model and the analogous model predicting change in depression with the inclusion of Hispanic ethnicity in the model. Hispanic ethnicity was not a significant predictor of symptom change, and its inclusion in the models did not change any of the substantive conclusions.

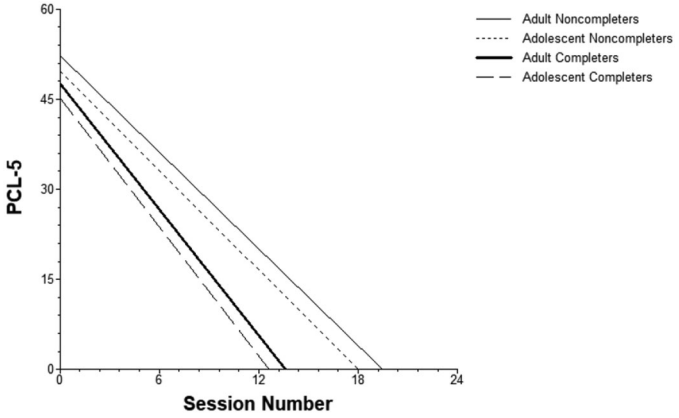
For both adolescents and adults, average pre–post scores fell from above to below the cutoff for probable PTSD (Bovin et al., 2016; see Table 2). For exploratory purposes, we also added completer status to the model. On average, baseline PCL-5 scores were 4.61 points lower for completers compared with noncompleters, $b = -4.61$, $SE = 2.04$, $p = .045$; however, completers' slopes did not differ from noncompleters, $b = -0.82$, $SE = 0.54$, $p = .162$. The results of this model's PTSD symptom outcomes for adolescents versus adults as well as completers versus noncompleters are presented in Figure 1.

Analogous models were run for depression symptoms. The intercept was 15.20, which represents the model-derived average pretreatment PHQ-9 score for adults. There was no effect of age group on pretreatment PHQ-9 score, indicating no significant difference between adults and adolescents at the start of treatment with regard to depressive symptoms, $b = -0.81$, $SE = 1.15$, $p = .497$. There was a significant effect of time such that symptoms decreased by an average of 0.82 points per session for adults, $b = -0.82$, $SE = 0.07$, $p < .001$, with an approximate Cohen's *d* effect size of 0.84. Again, the interaction between age group and session number was not significant, indicating no difference in the rate of change for adolescents versus adults during treatment, $b = -0.20$, $SE = 0.14$, $p = .181$. For both adolescents and adults, average pre–post PHQ-9 scores fell from the moderately severe range to the mild range (see Table 2). For exploratory purposes, we also added completer status to the model. On average, completers started treatment with an average PHQ-9 score 2.03 points lower than noncompleters, $b = -2.03$, $SE = 1.16$, $p = .033$; however, completers' slopes did not differ from noncompleters, $b = -0.19$, $SE = 0.18$, $p = .315$. The results of this model's depression symptom outcomes by both age group and completer status are presented in Figure 2.

Discussion

The results revealed that adolescent clients were significantly more likely to complete CPT than adults. Both adolescents and adults exhibited significant reductions in PTSD and depression symptoms during treatment, with large effect sizes. In addition, adolescents' reductions in PTSD and depression symptoms during treatment did not differ from those observed in adults. Although the lack of a significant Age Group x Time interaction does not prove equivalence, the overall pattern of results suggests that both adults and adolescents benefitted from treatment. Finally, adolescents required no more sessions than adults to complete treatment. Taken together, these findings suggest that

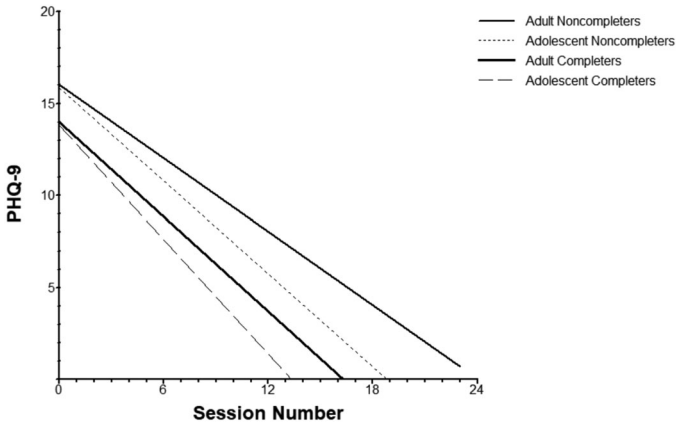
Figure 1
PTSD Checklist for DSM-5 (PCL-5) Scores Over the Course of Treatment for Adults Versus Adolescents and Treatment Completers Versus Noncompleters



Note. DSM-5 = Diagnostic and Statistical Manual of Mental Disorders (5th ed.).

Figure 2

Patient Health Questionnaire (PHQ-9) Scores Over the Course of Treatment for Adults Versus Adolescents and Treatment Completers Versus Noncompleters



CPT is a viable treatment option for adolescents, who were between 14 and 17 years of age in the present sample.

The present study used a modular version of CPT in which treatment length can vary by the individual patient depending on the number of modules needed. Even with a flexible treatment length, adolescent and adult treatment completers did not differ in the number of sessions, indicating that adolescents did not need a longer course of treatment than adults. Therefore, existing evidence-based PTSD treatments, such as CPT, may be appropriate for adolescents without significant protocol modification. Although there may be unique clinical considerations when working with adolescents versus adults, adolescents in the present sample appeared to benefit to a similar degree as adults from the same CPT protocol. These findings are promising because they suggest that providers who know how to deliver CPT can apply this treatment to adolescents, which may expand the number of adolescents who can benefit from evidence-based PTSD treatment. In addition, even providers who are versed in both CPT and TF-CBT might be able to employ CPT to clients who are logistically or clinically not a good fit for TF-CBT.

Although the present findings are promising, some limitations should be noted. These data reflect the effectiveness of CPT delivered in community clinics rather than collected from a controlled trial. Fidelity to the CPT protocol was not formally assessed using session recordings. However, clinicians were actively participating in weekly clinical consultation calls with CPT experts throughout the course of treatment, and adherence to the CPT protocol was emphasized. In the present study, we used a conservative definition of adolescents, including those younger than 18 years of age. Although adolescent development continues after age 18, 18-year-olds are legally considered adults in the United States, and treatment studies on adults typically include participants who are 18 years of age or older. Therefore, we chose to focus our comparisons on adults versus nonadults given a lack of data on the comparative effectiveness of CPT among individuals younger versus older than 18 years of age. It should be noted, however, that adolescent clients in the present sample were mostly 16–17 years of age. Therefore, the findings may not generalize as much to younger adolescents.

The sample size for adolescents was also relatively small. Therefore, future research should attempt to replicate these findings in a larger sample that also includes a larger number of younger adolescents. Younger adolescents may be at different cognitive and developmental levels and may, for example, have more difficulty using worksheets. However, this remains to be tested, and individual differences in cognitive ability rather than age alone are likely. Full-scale randomized controlled trials of unmodified CPT in adolescent samples are warranted. Future research should also compare CPT to established adolescent treatments, such as TF-CBT, to determine if they are equally effective. In addition, future research might explore which treatments work best for whom and under what conditions. For example, TF-CBT might be a better fit for younger adolescents, or CPT might be a better fit for adolescents without an appropriate caregiver able to participate in treatment. Client preference may also be an important factor in such comparative effectiveness research.

Open Practices Statement

The data reported in this article are not from a formally preregistered study. Neither the data nor the materials have been made available on a permanent third-party archive; requests for the data or materials should be sent via email to the lead author at Stefanie.Losavio@duke.edu.

References

Addis, M. E., Wade, W. A., & Hatgis, C. (1999). Barriers to dissemination of evidence-based practices: Addressing practitioners' concerns about manual-based psychotherapies. *Clinical Psychology: Science and Practice*, *6*(4), 430–441. https://doi.org/10.1093/clipsy.6.4.430

Ahrens, J., & Rexford, L. (2002). Cognitive processing therapy for incarcerated adolescents with PTSD. *Journal of Aggression, Maltreatment, & Trauma*, *6*(1), 201–216. https://doi.org/10.1300/J146v06n01_10

Bovin, M. J., Marx, B. P., Weathers, F. W., Gallagher, M. W., Rodriguez, P., Schnurr, P. P., & Keane, T. M. (2016). Psychometric properties of the PTSD Checklist for the *Diagnostic and Statistical Manual of Mental Disorders*–Fifth Edition (PCL-5) in veterans. *Psychological Assessment*, *28*(11), 1379–1391. http://doi.org/10.1037/pas0000254

Cohen, J. A., Deblinger, E., Mannarino, A. P., & Steer, R. A. (2004). A multisite, randomized controlled trial for children with sexual abuse-related PTSD symptoms. *Journal of the American Academy of Child & Adolescent Psychiatry*, *43*(4), 393–402. https://doi.org/10.1097/00004583-200404000-00005

Cohen, J. A., Mannarino, A. P., & Deblinger, E. (2017). *Treating trauma and traumatic grief in children and adolescent* (2nd ed.). Guildford Press.

Cohen, J. A., Mannarino, A. P., & Iyengar, S. (2011). Community treatment of posttraumatic stress disorder for children exposed to intimate partner violence: A randomized controlled trial. *Archives of Pediatrics & Adolescent Medicine*, *165*(1), 16–21. https://doi.org/10.1001/archpediatrics.2010.247

Jensen, T. K., Holt, T., Ormhaug, S. M., Egeland, K., Granly, L., Hoaas, L. C., Hukkelberg, S. S., Indregard, T., Stormyren, S. D., & Wentzel-Larsen,

T. (2014). A randomized effectiveness study comparing trauma-focused cognitive behavioral therapy with therapy as usual for youth. *Journal of Clinical Child & Adolescent Psychology*, *43*(3), 356–369. https://doi.org/10.1080/15374416.2013.822307

Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals*, *32*(9), 509–515. https://doi.org/10.3928/0048-5713-20020901-06

Kroenke, K., Spitzer, R., & Williams, J. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

LoSavio, S. T., Dillon, K. H., Murphy, R. A., & Resick, P. A. (2018, November 8–10). *Making evidence-based treatment more compatible with provider needs: Acceptability and outcomes of a modular version of cognitive processing therapy* [Poster presentation]. Poster presented at the International Society for Traumatic Stress Studies, 34th Annual Meeting, Washington, DC, USA.

Matulis, S., Resick, P. A., Rosner, R., & Steil, R. (2014). Developmentally adapted cognitive processing therapy for adolescents suffering from posttraumatic stress disorder after childhood sexual or physical abuse: A pilot study. *Clinical Child and Family Psychology Review*, *17*(2), 173–190. https://doi.org/10.1007/s10567-013-0156-9

Monson, C. M., Schnurr, P. P., Resick, P. A., Friedman, M. J., Young-Xu, Y., & Stevens, S. P. (2006). Cognitive processing therapy for veterans with military-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, *74*(5), 898–907. https://doi.org/10.1037/0022-006X.74.5.898

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Sage.

Resick, P. A., Monson, C. M., & Chard, K. M. (2017). *Cognitive processing therapy for PTSD: A comprehensive manual*. Guilford Press.

Resick, P. A., Nishith, P., Weaver, T. L., Astin, M. C., & Feuer, C. A. (2002). A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. *Journal of Consulting and Clinical Psychology*, *70*(4), 867–879. https://doi.org/10.1037/0022-006x.70.4.867

Resick, P. A., Wachen, J. S., Dondanville, K. A., Pruiksma, K. E., Yarvis, J. S., Peterson, A. L., Mintz, J., & the STRONG STAR Consortium (2017). Effect of group vs individual cognitive processing therapy in active-duty military seeking treatment for posttraumatic stress disorder: A randomized clinical trial. *JAMA Psychiatry*, *74*(1), 28–36. https://doi.org/10.1001/jamapsychiatry.2016.2729

Rosner, R., Rimane, E., Frick, U., Gutermann, J., Hagl, M., Renneberg, B., Schreiber, F., Vogel, A., & Steil, R. (2019). Effect of developmentally adapted cognitive processing therapy for youth with symptoms of posttraumatic stress disorder after childhood sexual and physical abuse: A randomized clinical trial. *JAMA Psychiatry*, *76*(5), 484–491. https://doi.org/10.1001/jamapsychiatry.2018.4349

Vogel, A., & Rosner, R. (2020). Lost in transition? Evidence-based treatments for adolescents and young adults with posttraumatic stress disorder and results of an uncontrolled feasibility trial evaluating cognitive processing therapy. *Clinical Child and Family Psychology Review*, *23*(1), 122–152. https://doi.org/10.1007/s10567-019-00305-0

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P., Marx, B., & Schnurr, P. (2013). *The PTSD checklist for DSM-5 (PCL-5)*. https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp

Yasinski, C., Hayes, A. M., Ready, C. B., Cummings, J. A., Berman, I. S., McCauley, T., Webb, C., & Deblinger, E. (2016). In-session caregiver behavior predicts symptom change in youth receiving trauma-focused cognitive behavioral therapy (TF-CBT). *Journal of Consulting and Clinical Psychology*, *84*(12), 1066–1077. https://doi.org/10.1037/ccp0000147