



PTSD *Research Quarterly*

ADVANCING SCIENCE AND PROMOTING UNDERSTANDING OF TRAUMATIC STRESS

Published by:

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White River Junction
Vermont 05009-0001 USA

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All issues of the PTSD Research Quarterly are available online at: www.ptsd.va.gov

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New Research in Treating Child and Adolescent Trauma

Research into the effective treatment of child and adolescent PTSD continues to blossom. The expanding quality and scope of child PTSD randomized controlled trials (RCT) published or in press between January 2012 and June 2015 are the primary focuses of this commentary.

Increasingly, researchers are attempting to *prevent* the development of pediatric PTSD. The only existing such evidence-based intervention prevents the development of chronic PTSD (Berkowitz et al., 2011). In 2014, Kramer & Landolt compared an early, two session cognitive behavioral therapy (CBT) to treatment as usual (TAU) for two 16-year-old children at elevated risk for developing PTSD following road accidents or burns. Preschool children did not show significant benefit from the intervention, but school-aged children who received the intervention had significantly fewer internalizing symptoms and marginally lower PTSD intrusion symptoms at a 3-month follow-up compared to children in the TAU condition. This is the first study that provided *an entire intervention* within the first month after trauma exposure. The extreme brevity of the intervention and promising results suggest the potential for very early brief CBT interventions to prevent the development of PTSD in children and adolescents. More studies like this are needed; especially as new methods (e.g., biomarkers) become available to identify high-risk children. Kassam-Adams and colleagues (2013) provide an excellent overview of preventive intervention models including risk factors, likely effective components and the need for early identification and referral.

Since children are typically brought to treatment by caregivers who are seeking treatment for negative child behaviors rather than children's trauma experiences per se, engaging families in trauma treatment can be challenging. Two recent studies provide insight into successful strategies for retaining families in trauma treatment. In the

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first, Dorsey and colleagues (2014) randomized 47 children and adolescents in foster care with one of their foster parents to receive either standard Trauma-Focused Cognitive Behavioral Therapy (TF-CBT); or TF-CBT with enhanced evidence-based engagement strategies. Youth and foster parents who received the enhanced engagement strategies were significantly more likely to be retained in therapy through four sessions and were less likely to drop out of treatment prematurely. In a smaller study, Saxe and colleagues (2012) randomized 20 youth with prominent PTSD symptoms to Trauma Systems Therapy (TST) or care as usual (CAU). At three-month assessment, 90% of the youth in the TST condition were still in treatment while only 10% of the CAU youth remained in treatment, documenting the effectiveness of TST for retaining youth in treatment. Together these studies provide therapists with important information about how to successfully engage families in evidence-based trauma treatment.

Several international studies are evaluating evidence-based treatments across cultures, settings and trauma experiences. Jensen and colleagues (2014) randomized 156 Norwegian youth ages 10-18 years who had experienced diverse traumas, to TF-CBT or TAU in eight community treatment centers across Norway. Results indicated that youth receiving TF-CBT experienced significantly greater improvement in PTSD, depression and general mental health symptoms and significantly greater improvement in functional impairment compared to youth receiving TAU. Interestingly, the authors found that therapeutic alliance predicted positive child outcomes only in the TF-CBT condition (Ormhaug et al., 2014).

Murray and colleagues (2015) randomized 257 orphans and vulnerable Zambian children (OVC)

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ages 5-17 years to TF-CBT provided by trained lay counselors, or to TAU. The TF-CBT group experienced significantly greater improvement in PTSD and functional impairment than the TAU group. This study used gold standard mixed methodologies for developing locally validated assessment instruments.

In companion RCTs, O'Callaghan, McMullen, and colleagues culturally modified TF-CBT for group delivery to youth with complex trauma in the Democratic Republic of Congo. Sexually exploited girls ages 12-17 were randomized to group TF-CBT provided in thrice weekly sessions over 5 weeks by trained lay counselors, or a wait list control group (WL; O'Callaghan et al., 2013). The TF-CBT group experienced significantly greater improvement in PTSD, depression, anxiety, conduct problems, psychosocial distress, and pro-social behaviors. Former boy soldiers and other war-affected boys ages 13-17 years were randomized to receive group TF-CBT provided by lay counselors or a WL control (McMullen et al., 2013). Youth receiving TF-CBT experienced significantly greater improvement in PTSD, depression, anxiety, conduct problems, psychosocial distress and pro-social behaviors compared to the WL group. In both studies treatment effects for the TF-CBT groups were maintained over a 3-month follow-up period. The cultural modifications to the TF-CBT model in the Congolese and Zambian studies were modest (e.g., using local folktales as metaphors during psychoeducation; incorporating the importance of witchcraft during cognitive processing; addressing cultural reluctance to discuss sexuality as prelude to education about healthy sexuality and developing trauma narration).

Two quasi-randomized controlled trials conducted in schools evaluated interventions for children impacted by the conflict in the Middle East. Barron and colleagues (2013) randomized children in Nablus, Palestine ages 11-14 by classroom to receive Teaching Recovery Techniques (TRT), a CBT school-based group intervention, or a WL control condition. Children did not differ significantly on demographic or mental health variables at pre-treatment; Analysis of Covariance (ANCOVA) indicated significant group X time differences in favor of the TRT group with regard to PTSD, grief and depression, supporting the efficacy of the TRT model for children exposed to ongoing violence. In the second study, Berger and colleagues (2012) used a quasi-randomized controlled design to assign 154 7th and 8th graders in Sderot, Israel to receive Extended Enhancing Resiliency Amongst Students Experiencing Stress (ERASE-Stress), a manualized, universal teacher-delivered skills-based program that does not target traumatic memories, or a WL control group. At baseline, 43.5% of students had a likely diagnosis of PTSD. One month after the intervention, students in ERASE-Stress had statistically significantly greater reduction in PTSD, anxiety, somatic complaints, and functional impairment scores compared to the WL group.

Finally, a Dutch team conducted a RCT to directly compare outcomes of Eye Movement Desensitization and Reprocessing (EMDR) and TF-CBT. This study also has relevance to complex trauma, which is discussed in more detail below. EMDR is widely used in many European countries and there is a strong belief that it is more efficient than other treatments for resolving PTSD symptoms. Diehle and colleagues (2015) randomized 40 traumatized Dutch children ages 8-19 years to TF-CBT or EMDR. Both treatments were highly effective for improving PTSD symptoms. However, contrary to the researchers' hypothesis, there was no

significant difference in efficiency between the treatments. As predicted, children receiving TF-CBT experienced significantly greater improvement in comorbid problems common in complex trauma than children receiving EMDR, including depressive and hyperactive symptoms.

Back in the United States (US), lively discussion continues regarding the Diagnostic and Statistical Manual of Mental Disorders (DSM) PTSD diagnostic criteria for children and adolescents, and its impact on treatment outcome research. Specifically, since no single diagnosis or assessment instrument fully describes youth with complicated trauma presentations, researchers are using creative strategies to design treatment outcome studies for this population. Ford and colleagues (2012) evaluated Trauma Affect Regulation: Guide for Education and Therapy (TARGET), an emotion regulation therapy for complex trauma. This team randomized 59 delinquent girls ages 13-17 years who met full or partial PTSD diagnostic criteria to receive TARGET or enhanced TAU (ETAU), a relational supportive therapy. Almost half of these girls were in residential treatment during treatment, making this a very challenging study to conduct, since residential treatment facilities for adjudicated youth exist to address severe behavioral problems and typically are not focused on providing trauma services. Multiple instruments were used to assess diverse outcomes. Group X Time analyses showed significantly greater improvement in youth receiving TARGET for changes in PTSD, emotion regulation, anxiety and posttraumatic cognitions, but there was also improvement in the ETAU cohort with respect to hope and anger management. This study documented the promise of using evidence-based trauma treatments for traumatized youth within the juvenile justice system, and highlighted the importance of carefully evaluating how trauma impacts these youth's complex clinical presentations. Studies like this and a previous TF-CBT deconstructive study (Deblinger et al., 2011) suggest the possibility of matching treatments to individual children's presenting problems.

It is difficult to untangle the question of how to treat complicated PTSD from the issue of how to address co-occurring psychiatric conditions such as substance abuse, violence and risk behaviors. Two important studies address these questions. The first study evaluated the efficacy of Risk Reduction through Family Therapy (RRTF), a modification of TF-CBT for youth with substance abuse. Danielson and colleagues randomized 30 adolescents with comorbid sexual assault history and substance abuse history to RRTF or TAU (Danielson et al., 2012). Multiple instruments assessed substance abuse, family and mental health outcomes in addition to PTSD. Mixed effects regressions showed that the RRTF group experienced significantly greater improvement in PTSD, depression, substance use, and internalizing symptoms than the WL group, but because of baseline differences in symptom severity we need to be cautious before drawing conclusions about effectiveness from this pilot study.

The second study evaluated a collaborative care model targeting violence risk behaviors, substance abuse, PTSD and depression in youth who were hospitalized after acute physical injuries (Zatzick et al., 2014). The intervention included motivational interviewing targeting risk behaviors and substance use as well as medication and CBT targeting PTSD and depression. At a level 1 trauma center, 120, 12 to 18-year-olds were randomized

to the collaborative care intervention or a no-treatment control. Follow-ups at 2, 5, and 12 months used standard instruments for violence risk behaviors, substance use, PTSD and depression. At baseline, a third of the youth endorsed carrying a weapon. The intervention group experienced significantly greater reductions in weapon carrying compared to controls during the year after injury. Other outcomes were not significantly different. The lack of significant differences on other outcomes may have been due to the fact that reported baseline symptoms were low relative to weapon carrying.

Since most children and adolescents attend school, providing trauma screening and treatment in these settings offers an important opportunity for meeting the needs of children who otherwise would not receive services (Kataoka et al., 2012). A study by Foa et al. (2013) highlights the value of embedding existing evidence based treatments in usual community provider organizations and shows the effectiveness of one such treatment, Prolonged Exposure, for adolescents.

Empirical evidence from the few well controlled, scientifically rigorous studies conducted to date has failed to support the efficacy of any pharmacologic agent in improving PTSD symptoms in children an excellent review is provided in Wilkinson & Carrion (2012). Despite this, psychotropic medications are often used to treat traumatized children; particularly those involved in the child welfare and juvenile justice systems. The following study is important because it offers potentially promising data. Scheeringa & Weems (2014) provided children ages 7-18 with PTSD with a 12 session CBT manualized treatment. Those remaining in treatment at session 5 ($N = 57$) were randomized to CBT + D-Cycloserine (DSC) or CBT+ Placebo. DSC may enhance exposure-based therapies for anxiety as a partial NDMA agonist. Results showed no significant differences between the two groups, however, there was a trend toward DSC speeding recovery during the exposure sessions of CBT and evidence that the CBT+DSC group sustained greater improvement in inattention than the CBT + Placebo group at 3-month follow-up. This finding is of potential significance for children with comorbid PTSD and Attention Deficit Hyperactivity Disorder, or for those with PTSD-related inattention. More research into the use of DSC for augmenting CBT treatment in children and adolescents is warranted.

Finally, therapists can only provide face-to-face treatment for a small fraction of the traumatized children around the world. Web-based treatment offers the possibility of greatly magnifying the reach of therapist-delivered evidence-based treatment. Marsac and colleagues (2013) describe an ongoing RCT to test a game for preventive intervention following acute injury. No doubt more tablet, smart phone, and computer-assisted options are coming for children to access trauma treatment. For example, the TF-CBT Triangle of Life, for implementing TF-CBT cognitive processing, is now available from Google+ and Apple stores. From promising new preventive interventions for acute trauma to the growing number of evidence-based treatments for complex trauma presentations across the developmental spectrum, to technological applications to assist in treatment implementation, the future of child trauma treatment looks bright.

Barron, I. G., Abdallah, G., & Smith, P.A. (2013). **Randomized control trial of a CBT trauma recovery program in Palestinian schools.** *Journal of Loss and Trauma, 18*, 306-321. doi:10.1080/15325024.2012.688712 The current study aimed to assess the TRT trauma recovery program within the context of ongoing violence. Utilizing a randomized controlled trial, 11-14-year-old students in Nablus, Palestine, were allocated by class to intervention or wait-list control conditions. Standardized measures assessed trauma exposure, PTSD, grief, and depression. Program fidelity and participant experiences were measured by adherence questionnaires and focus groups. Analyses involved paired t-tests, ANCOVAs, and thematic analysis. Intervention students reported significant decreases in PTSD, grief, and depression. Findings indicate that the TRT program has the potential to ameliorate children's trauma symptoms during situations of ongoing violence.

Berger, R., Gelkopf, M., & Heineberg, Y. (2012). **A teacher-delivered intervention for adolescents exposed to ongoing and intense traumatic war-related stress: A quasi-randomized controlled study.** *Journal of Adolescent Health, 51*, 453-461. doi:10.1016/j.jadohealth.2012.02.011 *Purpose:* For the past 8 years, the residents of Sderot — a town in southern Israel — have been exposed to ongoing and intense war-related threat due to daily rocket attacks and mortar shelling from the adjacent Gaza region. This study first evaluates the prevalence of posttraumatic symptomatology in a sample of seventh- and eighth-grade students, and then assesses the efficacy of a universal teacher-delivered skill-oriented and present-focused intervention in preventing and reducing adolescents' posttraumatic stress-related symptoms. *Method:* In a quasi-randomized controlled trial, 154 seventh- and eighth-grade students with significant levels of war-related exposure were assigned to participate in either a manualized active 16-session intervention (ERASE-Stress) or a waiting-list control group. They were assessed using self-report measures before and after the intervention on posttraumatic stress-related symptoms, somatic complaints, functional impairment, and anxiety. *Results:* At baseline, 43.5% were found to have a likely diagnosis of PTSD. A month after the intervention ended, students in the active intervention showed statistically significant reduction on all outcome measures compared with those in the waiting-list control group. *Conclusions:* Extended ERASE-Stress — a universal teacher-delivered skill-oriented program not targeting traumatic memories and involving trained and supervised homeroom teachers — may help students suffering from significant war-related posttraumatic symptoms reduce their level of symptomatology and can serve as an important and effective component of a community mental health policy for communities affected by chronic trauma, such as war and terrorism.

Danielson, C.K., McCart, M.R., Walsh, K., de Arellano, M.A., White, D., & Resnick, H.S. (2012). **Reducing substance use risk and mental health problems among sexually assaulted adolescents: A pilot randomized controlled trial.** *Journal of Family Psychology, 26*, 628-635. doi:10.1037/a0028862 The current study reports results from a pilot randomized controlled trial evaluating the feasibility and

efficacy of Risk Reduction through Family Therapy (RRFT) for reducing substance use risk and trauma-related mental health problems among sexually assaulted adolescents. Thirty adolescents (aged 13–17 years; $M = 14.80$; $SD = 1.51$) who had experienced at least one sexual assault and their caregivers were randomized to RRFT or TAU conditions. Participants completed measures of substance use, substance use risk factors (e.g., family functioning), mental health problems (i.e., PTSD, depression, and general internalizing/externalizing symptoms) and risky sexual behavior at four time points (baseline, post treatment, and 3- and 6-month follow-up). Mixed-effects regression models yielded significantly greater reductions in substance use, specific substance use risk factors, and (parent-reported) PTSD, depression, and general internalizing symptoms among youth in the RRFT condition relative to youth in the TAU condition. However, significant baseline differences in functioning between the two conditions warrant caution in interpreting between-groups findings. Instead, emphasis is placed on replication of feasibility findings and within-group improvements over time among the RRFT youth.

Diehle, J., Opmeer, B. C., Boer, F., Mannarino, A. P., & Lindauer, R. J. L. (2015). **Trauma-focused cognitive behavioral therapy or eye movement desensitization and reprocessing: What works in children with posttraumatic stress symptoms? A randomized controlled trial.** *European Child & Adolescent Psychiatry, 24*, 227-236. doi:10.1007/s00787-014-0572-5 To prevent adverse long-term effects, children who suffer from posttraumatic stress symptoms (PTSS) need treatment. Trauma-focused cognitive behavioral therapy (TF-CBT) is an established treatment for children with PTSS. However, alternatives are important for non-responders or if TF-CBT trained therapists are unavailable. Eye movement desensitization and reprocessing (EMDR) is a promising treatment for which sound comparative evidence is lacking. The current randomized controlled trial investigates the effectiveness and efficiency of both treatments. Forty-eight children (8–18 years) were randomly assigned to eight sessions of TF-CBT or EMDR. The primary outcome was PTSS as measured with the Clinician-Administered PTSD Scale for Children and Adolescents (CAPS-CA). Secondary outcomes included parental report of child PTSD diagnosis status and questionnaires on comorbid problems. The Children's Revised Impact of Event Scale was administered during the course of treatment. TF-CBT and EMDR showed large reductions from pre- to post-treatment on the CAPS-CA (-20.2 ; 95 % CI -12.2 to -28.1 and -20.9 ; 95 % CI -32.7 to -9.1). The difference in reduction was small and not statistically significant (mean difference of 0.69, 95 % CI -13.4 to 14.8). Treatment duration was not significantly shorter for EMDR ($p = 0.09$). Mixed model analysis of monitored PTSS during treatment showed a significant effect for time ($p < 0.001$) but not for treatment ($p = 0.44$) or the interaction of time by treatment ($p = 0.74$). Parents of children treated with TF-CBT reported a significant reduction of comorbid depressive and hyperactive symptoms. TF-CBT and EMDR are effective and efficient in reducing PTSS in children.

Dorsey, S., Pullmann, M. D., Berliner, L., Koschmann, E., McKay, M. M., & Deblinger, E. (2014). **Engaging foster parents in treatment: A randomized trial of supplementing trauma-focused cognitive behavioral therapy with evidence-based engagement strategies.**

Child Abuse and Neglect, 38, 1508-1520. doi:10.1016/j.chiabu.2014.03.020 The goal of this study was to examine the impact of supplementing TF-CBT (Cohen et al., 2006) with evidence-based engagement strategies on foster parent and foster youth engagement in treatment, given challenges engaging foster parents in treatment. A randomized controlled trial of TF-CBT standard delivery compared to TF-CBT plus evidence-based engagement strategies was conducted with 47 children and adolescents in foster care and one of their foster parents. Attendance, engagement, and clinical outcomes were assessed 1 month into treatment, end of treatment, and 3 months post-treatment. Youth and foster parents who received TF-CBT plus evidence-based engagement strategies were more likely to be retained in treatment through four sessions and were less likely to drop out of treatment prematurely. The engagement strategies did not appear to have an effect on the number of canceled or no-show sessions or on treatment satisfaction. Clinical outcomes did not differ by study condition, but exploratory analyses suggest that youth had significant improvements with treatment. Strategies that specifically target engagement may hold promise for increasing access to evidence-based treatments and for increasing likelihood of treatment completion.

Ford, J.D., Steinberg, K.L., Hawke, J.M., Levine, J., & Zhang, W. (2012). **Randomized comparison of emotion regulation and relational psychotherapies for PTSD with girls involved in delinquency.** *Journal of Clinical Child and Adolescent Psychology, 41*, 27-37. doi:10.1080/15374416.2012.632343 PTSD is prevalent in youth involved in delinquency, but it is often not effectively treated. A randomized clinical trial was conducted comparing the outcomes of an emotion regulation therapy (TARGET) with a relational supportive therapy (ETAU) with 59 delinquent girls (age 13-17 years) who met criteria for full or partial PTSD. Mixed model regression analyses demonstrated generally large effects for pre-post change in PTSD symptoms for both therapies but not in emotion regulation. Both therapies had small to medium effect size changes in anxiety, anger, depression, and posttraumatic cognitions. Treatment x Time interactions showed small to medium effects favoring TARGET for change in PTSD (intrusive reexperiencing and avoidance) and anxiety symptoms, posttraumatic cognitions, and emotion regulation, and favoring ETAU for change in hope and anger. Results provide preliminary support for TARGET as a potentially efficacious therapy for PTSD with delinquent girls. Relational therapies such as ETAU also may be beneficial for delinquent girls with PTSD, particularly to enhance optimism and self-efficacy and reduce anger.

Jensen, T.K., Holt, T., Ormhaug, S. M., Egeland, K., Granly, L., Hoaas, L.C., & Wentzel-Larsen, T. (2014). **A randomized effectiveness study comparing trauma-focused cognitive behavioral therapy with therapy as usual for youth.** *Journal of Clinical Child and Adolescent Psychology, 43*, 356-369. doi:10.1080/15374416.2013.822307 The efficacy of TF-CBT has been shown in several randomized controlled trials. However, few trials have been conducted in community clinics, few have used TAU as a comparison group, and none have been conducted outside of the US. The objective of this study was to evaluate the effectiveness of TF-CBT in regular community settings compared with TAU. One hundred fifty-six traumatized youth (M age = 15.1 years, range = 10-18; 79.5% girls) were randomly assigned to TF-CBT or TAU.

Intent-to-treat analysis using mixed effects models showed that youth receiving TF-CBT reported significantly lower levels of posttraumatic stress symptoms (est. = 5.78, $d = 0.51$), 95% CI [2.32, 9.23]; depression (est. = 7.00, $d = 0.54$), 95% CI [2.04, 11.96]; and general mental health symptoms (est. = 2.54, $d = 0.45$), 95% CI [0.50, 4.58], compared with youth in the TAU group. Youth assigned to TF-CBT showed significantly greater improvements in functional impairment (est. = -1.05, $d = -0.55$), 95% CI [-1.67, -0.42]. Although the same trend was found for anxiety reduction, this difference was not statistically significant (est. = 4.34, $d = 0.30$), 95% CI [-1.50, 10.19]. Significantly fewer youths in the TF-CBT condition were diagnosed with PTSD compared to youths in the TAU condition, chi-square(1, $N = 116$) = 4.61, $p = .031$, $\Phi = .20$). Findings indicate that TF-CBT is effective in treating traumatized youth in community mental health clinics and that the program may also be successfully implemented in countries outside the US.

Kramer, D.N., & Landolt, M.A. (2014). **Early psychological intervention in accidentally injured children ages 2-16: A randomized controlled trial.** *European Journal of Psychotraumatology*, 5. doi:10.3402/ejpt.v5.24402 Background: Road traffic accidents (RTA) and burns are frequent events in children. Although many children recover spontaneously, a considerable number develop long-term psychological sequelae. Evidence on early psychological interventions to prevent such long-term problems is still scarce for school-age children and completely lacking for pre-school children. *Objectives:* To evaluate the efficacy of an early two-session cognitive-behavioral intervention in 108 children ages 2-16 after RTAs and burns. *Methods:* Children assessed at risk for the development of PTSD were randomly assigned to either a control group offered treatment as usual or an intervention group. Primary outcomes were PTSD, behavioral problems, and depression symptoms. Baseline and blinded 3- and 6-month follow-up assessments were conducted. *Results:* In pre-school children, no intervention effects were found. School-age children in the intervention group exhibited significantly fewer internalizing problems at 3-month follow-up relative to controls and a borderline significant time-by-group effect for PTSD intrusion symptoms was found ($p = 0.06$). *Conclusions:* This is the first study examining the efficacy of an indicated, early psychological intervention among both school-age and pre-school-age children. Because the intervention was ineffective for young children, no evidence-based practice can currently be suggested. Given that parents of pre-school children perceived the intervention as helpful, brief counseling of parents in terms of psychoeducation and training in coping skills still should be provided by clinicians, despite the current lack of evidence. To prevent trauma-related disorders in school-age children, the intervention might be used in a step-wise manner, where only children at risk for long-term psychological maladjustment are provided with psychological support.

Marsac, M.L., Kohser, K.L., Winston, F.K., Kenardy, J.A., March, S., & Kassam-Adams, N. (2013). **Using a web-based game to prevent posttraumatic stress in children following medical events: Design of a randomized controlled trial.** *European Journal of Psychotraumatology*, 4, doi:10.3402/ejpt.v4i0.21311 Background: Medical events including acute illness and injury are among the most common potentially traumatic experiences for children.

Despite the scope of the problem, only limited resources are available for prevention of posttraumatic stress symptoms (PTSS) after pediatric medical events. Web-based programs provide a low-cost, accessible means to reach a wide range of families and show promise in related areas of child mental health. *Objectives:* To describe the design of a randomized controlled trial that will evaluate feasibility and estimate preliminary efficacy of Coping Coach, a web-based preventive intervention to prevent or reduce PTSS after acute pediatric medical events. *Method:* Seventy children and their parents will be randomly assigned to either an intervention or a waitlist control condition. Inclusion criteria require that children are aged 8-12 years, have experienced a medical event, have access to Internet and telephone, and have sufficient competency in the English language to complete measures and understand the intervention. Participants will complete baseline measures and will then be randomized to the intervention or waitlist control condition. Children in the intervention condition will complete module 1 (Feelings Identification) in the hospital and will be instructed on how to complete modules 2 (Appraisals) and 3 (Avoidance) online. Follow-up assessments will be conducted via telephone at 6, 12, and 18 weeks after the baseline assessment. Following the 12-week assessment, children in the waitlist control condition will receive instructions for completing the intervention. *Results:* Primary study outcomes include data on intervention feasibility and outcomes (child appraisals, coping, PTSS and health-related quality of life). *Discussion:* Results will provide data on the feasibility of the implementation of the Coping Coach intervention and study procedures as well as estimations of efficacy to determine sample size for a larger study. Potential strengths and limitations of this design are discussed.

McMullen, J., O'Callaghan, P., Shannon, C., Black, A., & Eakin, J. (2013). **Group trauma-focused cognitive-behavioural therapy with former child soldiers and other war-affected boys in the DR Congo: A randomised controlled trial.** *Journal of Child Psychology and Psychiatry*, 54, 1231-1241. doi:10.1111/jcpp.12094 Background: The Democratic Republic of Congo (DRC) has been home to the world's deadliest conflict since World War II and is reported to have the largest number of child soldiers in the world. Despite evidence of the debilitating impact of war, no group-based mental health or psychosocial intervention has been evaluated in a randomised controlled trial for psychologically distressed former child soldiers. *Method:* A randomised controlled trial involving 50 boys, aged 13-17, including former child soldiers ($n = 39$) and other war-affected boys ($n = 11$). They were randomly assigned to an intervention group, or wait-list control group. The intervention group received a 15-session, group-based, culturally adapted TF-CBT intervention. Assessment interviews were completed at baseline, postintervention, and 3-month follow-up (intervention group). *Results:* ANCOVA demonstrated that, in comparison to the wait-list control group, the TF-CBT intervention group had highly significant reductions in posttraumatic stress symptoms, overall psychosocial distress, depression or anxiety-like symptoms, conduct problems, and a significant increase in prosocial behaviour ($p < .001$ for all). Effect sizes were higher when former child soldier scores were separated for sub-analysis. Three-month follow-up of the intervention group found that treatment gains were maintained.

Conclusions: A culturally modified, group-based TF-CBT intervention was effective in reducing posttraumatic stress and psychosocial distress in former child soldiers and other war-affected boys.

Murray, L.K., Skavenski, S., Kane, J.C., Mayeya, J., Dorsey, S., Cohen, J.A., & Bolton, P.A. (2015). **Effectiveness of trauma-focused cognitive behavioral therapy among trauma-affected children in Lusaka, Zambia: A randomized controlled trial.** *JAMA Pediatrics*. doi:10.1001/jamapediatrics.2015.0580 **Importance:** Orphans and vulnerable children (OVC) are at high risk for experiencing trauma and related psychosocial problems. Despite this, no randomized clinical trials have studied evidence-based treatments for OVC in low-resource settings. **Objective:** To evaluate the effectiveness of lay counselor-provided TF-CBT to address trauma and stress-related symptoms among OVC in Lusaka, Zambia. **Design, Setting, and Participants:** This randomized clinical trial compared TF-CBT and treatment as usual (TAU) (varying by site) for children recruited from August 1, 2012, through July 31, 2013, and treated until December 31, 2013, for trauma-related symptoms from 5 community sites within Lusaka, Zambia. Children were aged 5 through 18 years and had experienced at least one traumatic event and reported significant trauma-related symptoms. Analysis was with intent to treat. **Interventions:** The intervention group received 10 to 16 sessions of TF-CBT ($n = 131$). The TAU group ($n = 126$) received usual community services offered to OVC. **Main Outcomes and Measures:** The primary outcome was mean item change in trauma and stress-related symptoms using a locally validated version of the UCLA Posttraumatic Stress Disorder Reaction Index (range, 0-4) and functional impairment using a locally developed measure (range, 0-4). Outcomes were measured at baseline and within 1 month after treatment completion or after a waiting period of approximately 4.5 months after baseline for TAU. **Results:** At follow-up, the mean item change in trauma symptom score was -1.54 (95% CI, -1.81 to -1.27), a reduction of 81.9%, for the TF-CBT group and -0.37 (95% CI, -0.57 to -0.17), a reduction of 21.1%, for the TAU group. The mean item change for functioning was -0.76 (95% CI, -0.98 to -0.54), a reduction of 89.4%, and -0.54 (95% CI, -0.80 to -0.29), a reduction of 68.3%, for the TF-CBT and TAU groups, respectively. The difference in change between groups was statistically significant for both outcomes ($P < .001$). The effect size (Cohen d) was 2.39 for trauma symptoms and 0.34 for functioning. Lay counselors participated in supervision and assessed whether the intervention was provided with fidelity in all 5 community settings. **Conclusions and Relevance:** The TF-CBT adapted for Zambia substantially decreased trauma and stress-related symptoms and produced a smaller improvement in functional impairment among OVC having experienced high levels of trauma. **Trial Registration:** clinicaltrials.gov Identifier: NCT01624298.

O'Callaghan, P., McMullen, J., Shannon, C., Rafferty, H., & Black, A. (2013). **A randomized controlled trial of trauma-focused cognitive behavioral therapy for sexually exploited, war-affected Congolese girls.** *Journal of the American Academy of Child and Adolescent Psychiatry*, 52, 359-369. doi:10.1016/j.jaac.2013.01.013 **Objective:** To assess the efficacy of TF-CBT delivered by nonclinical facilitators in reducing posttraumatic stress, depression, and anxiety and conduct problems and increasing prosocial behavior

in a group of war-affected, sexually exploited girls in a single-blind, parallel-design, randomized + controlled trial. **Method:** Fifty-two 12- to 17-year-old, war-affected girls exposed to rape and inappropriate sexual touch in the Democratic Republic of Congo were screened for trauma, depression and anxiety, conduct problems, and prosocial behavior. They were then randomized to a 15 session, group-based, culturally modified TF-CBT ($n = 24$) group or a wait-list control group ($n = 28$). Primary analysis, by intention-to-treat, involving all randomly assigned participants occurred at pre- and postintervention and at 3-month follow-up (intervention group only). **Results:** Compared to the wait list control, the TF-CBT group experienced significantly greater reductions in trauma symptoms ($F(1,49) = 52.708$, $p < 0.001$, $\chi^2(p) = 0.518$). In addition, the TF-CBT group showed a highly significant improvement in symptoms of depression and anxiety, conduct problems, and prosocial behavior. At 3-months follow-up the effect size (Cohen's d) for the TF-CBT group was 2.04 (trauma symptoms), 2.45 (depression and anxiety), 0.95 (conduct problems), and -1.57 (prosocial behavior). **Conclusions:** A group-based, culturally modified, TF-CBT intervention delivered by nonclinically trained Congolese facilitators resulted in a large, statistically significant reduction in posttraumatic stress symptoms and psychosocial difficulties among war-affected girls exposed to rape or sexual violence. Clinical trial registration information—An RCT of TF-CBT with sexually-exploited, war-affected girls in the DRC; <http://clinicaltrials.gov/>; NCT01483261.

Saxe, G.N., Ellis, B.H., Fogler, J., & Navalta, C.P. (2012). **Innovations in practice: Preliminary evidence for effective family engagement in treatment for child traumatic stress—trauma systems therapy approach to preventing dropout.** *Child and Adolescent Mental Health*, 17, 58-61. doi:10.1111/j.1475-3588.2011.00626.x **Background:** This study aimed to obtain preliminary evidence for the extent to which a novel intervention embedded within a systems-oriented treatment model (trauma systems therapy [TST]) engages and retains traumatized children and their families in treatment. **Method:** Twenty youth who had prominent symptoms of posttraumatic stress were randomly assigned to receive TST or CAU. **Results:** At the 3-month assessment, 90% of TST participants were still in treatment, whereas only 10% of CAU participants remained. Within-group analyses of TST participants demonstrated significant reductions in posttraumatic stress and aggression as well as a slight improvement in home safety. **Conclusions:** These preliminary findings point to the need to utilize effective engagement approaches to retain traumatized children and their families in treatment.

Scheeringa, M.S. & Weems, C.F. (2014). **Randomized placebo-controlled D-cycloserine with cognitive behavior therapy for pediatric posttraumatic stress.** *Journal of Child and Adolescent Psychopharmacology*, 24, 69-77. doi:10.1089/cap.2013.0106 **Objective:** Research on D-cycloserine (DCS), a partial N -methyl-D-aspartic acid (NMDA) agonist, has suggested that it may enhance exposure-based therapies for anxiety disorders. Results with DCS in adult PTSD have been conflicting; however, no data have been reported on children with PTSD. Although many individuals with PTSD respond to exposure-based CBT, there are subgroups of individuals who are nonresponders, and many responders still have substantial residual symptoms.

This randomized, triple-blind, placebo-controlled study tested DCS as an adjunct to CBT to improve and speed treatment response for PTSD in youth. *Methods:* Seven to 18 year-old youth with exposure to trauma and PTSD were offered a 12-session, manualized CBT treatment. Those who remained in treatment at the fifth session were randomly allocated ($n = 57$) to either CBT and DCS or CBT and placebo. *Results:* Youth in the CBT and DCS group had significant reductions in symptoms, but these reductions were not greater than those in the CBT and placebo group. There was a trend toward DCS speeding PTSD symptom recovery during the exposure-based sessions, and evidence that the CBT and DCS group better maintained stability of gains on inattention ratings from posttreatment to the 3-month follow-up. *Conclusions:* This initial study of CBT and DCS to treat pediatric PTSD provided suggestive and preliminary evidence for more rapid symptom recovery and beneficial effects on attention, but did not show an overall greater effect for reducing PTSD symptoms. It appears that augmentation with DCS represents unique challenges in PTSD. Because PTSD involves complex, life-threatening trauma memories, as opposed to the imagined dreadful outcomes of other anxiety disorders, the use of DCS may require greater attention to how its use is coupled with exposure-based techniques. DCS may have inadvertently enhanced reconsolidation of trauma memories rather than more positive and adaptive memories. In addition, the results suggest that future research could focus on the longer-term benefits of DCS on attention and ways to capitalize on attention-enhancing therapies. *ClinicalTrials.gov registry:* Effect of D-cycloserine on Treatment of PTSD in Youth, NCT01157416, <http://clinicaltrials.gov/ct2/results?term=NCT01157416&Search=Search>, and D-cycloserine Adjunctive Treatment for PTSD in Adolescents, NCT01157429, <http://clinicaltrials.gov/ct2/results?term=NCT01157429&Search=Search>.

Zatzick, D., Russo, J., Lord, S.P., Varley, C., Wang, J., Berliner, L., & Rivara, F. P. (2014). **Collaborative care intervention targeting violence risk behaviors, substance use, and posttraumatic stress and depressive symptoms in injured adolescents: a randomized clinical trial.** *JAMA Pediatrics*, 168, 532-539. [doi:10.1001/jamapediatrics.2013.4784](https://doi.org/10.1001/jamapediatrics.2013.4784) *Importance:* Violence and injury risk behaviors, alcohol and drug use problems, and PTSD and depressive symptoms occur frequently among adolescents presenting to acute care medical settings after traumatic physical injury. *Objective:* To test the effectiveness of a stepped collaborative care intervention targeting this constellation of risk behaviors and symptoms in randomly sampled hospitalized adolescents with and without traumatic brain injury. *Design, Setting, and Participants:* A pragmatic randomized clinical trial was conducted at a single US level I trauma center. Participants included 120 adolescents aged 12 to 18 years randomized to intervention ($n = 59$) and control ($n = 61$) conditions. *Interventions:* Stepped collaborative care intervention included motivational interviewing elements targeting risk behaviors and substance use as well as medication and cognitive behavioral therapy elements targeting PTSD and depressive symptoms. *Main Outcomes and Measures:* Adolescents were assessed at baseline before randomization and 2, 5, and 12 months after injury hospitalization. Standardized instruments were used to assess violence risk behaviors, alcohol and drug use, and PTSD and depressive symptoms.

Results: The investigation attained more than 95% adolescent follow-up at each assessment point. At baseline, approximately one-third of the participants endorsed the violence risk behavior of carrying a weapon. Regression analyses demonstrated that intervention patients experienced significant reductions in weapon carrying compared with controls during the year after injury (group \times time effect, $F_{3,344} = 3.0$; $P = .03$). At 12 months after the injury, 4 (7.3%) intervention patients vs 13 (21.3%) control patients reported currently carrying a weapon (relative risk, 0.31; 95% CI, 0.11-0.90). The intervention was equally effective in reducing the risk of weapon carrying among injured adolescents with and without traumatic brain injury. Other treatment targets, including alcohol and drug use problems and high levels of PTSD and depressive symptoms, occurred less frequently in the cohort relative to weapon carrying and were not significantly affected by the intervention. *Conclusions and Relevance:* Collaborative care intervention reduced the risk of adolescent weapon carrying during the year after the injury hospitalization. Future investigation should replicate this preliminary observation. If the finding is replicated, orchestrated investigative and policy efforts could systematically implement and evaluate screening and intervention procedures targeting youth violence prevention at US trauma centers. *Trial Registration:* Clinicaltrials.gov identifier: NCT00619255.

ADDITIONAL CITATIONS

Berkowitz, S.J., Stover, C.S., & Marans, S.R. (2011). **The child and family traumatic stress intervention: Secondary prevention for youth at risk of developing PTSD.** *Journal of Child Psychology and Psychiatry*, 52, 676-685. [doi:10.1111/j.1469-7610.2010.02321.x](https://doi.org/10.1111/j.1469-7610.2010.02321.x) This article describes the randomized controlled trial of a 4-session child and caregiver preventive intervention for 106, 7 to 17-year-olds begun within 30 days of exposure to a potentially traumatic event. The Child and Family Traumatic Stress Intervention was significantly superior to a supportive comparison condition in preventing the development of full or partial chronic PTSD at 3-month follow-up.

Deblinger, E., Mannarino, A.P., Cohen, J.A., Runyon, M.K. & Steer, R.A. (2011). **Trauma-focused cognitive behavioral therapy for children: Impact of trauma narrative and treatment length.** *Depression and Anxiety*, 28, 67-75. [doi:10.1002/da.20744](https://doi.org/10.1002/da.20744) This randomized controlled TF-CBT study used a 2X2 design to evaluate the impact of including vs. not including the TF-CBT trauma narrative (TN) phase, and of providing TF-CBT in 8 vs. 16 sessions for 210, 4- to 11-year-old children after sexual abuse. Findings indicated that 1) all conditions effectively improved PTSD; 2) 8 sessions with the TN phase was most effective and efficient for improving child fear and anxiety symptoms and parental abuse-specific distress; and 3) 16 sessions without TN led to greater improvement in parenting skills and children's externalizing behavior symptoms.

Foa, E.B., McLean, C.P., Capaldi, S., & Rosenfield, D. (2013). **Prolonged exposure vs supportive counseling for sexual abuse-related PTSD in adolescent girls: A randomized clinical trial.** *JAMA*, 310, 2650-2657. [doi:10.1001/jama.2013.282829](https://doi.org/10.1001/jama.2013.282829) This study compared

ADDITIONAL CITATIONS *continued*

Prolonged Exposure (PE) to supportive counseling (SC) in 61 adolescent females with sexual abuse-related PTSD. No information about participants' sexual abuse or other trauma experiences was included; and it appeared that caregivers were not involved in treatment. Adolescents receiving PE experienced significantly greater improvement in PTSD and depressive symptoms than those receiving SC.

Kassam-Adams, N.L., Marsac, L.M., Hildenbrand, A. & Winston, F.K. (2013). **Posttraumatic stress following pediatric injury: update on diagnosis, risk factors, and intervention.** *JAMA Pediatrics*, 167, 1158-1165. doi:[10.1001/jamapediatrics.2013.2741](https://doi.org/10.1001/jamapediatrics.2013.2741) This review provides an excellent update on risk factors for developing PTSD following pediatric injury and intervention strategies including web-based models.

Kataoka, S.H., Langley, A.K., Wong, M., Baweja, S., & Stein, B.D. (2012). **Responding to students with posttraumatic stress disorder in schools.** *Child and Adolescent Psychiatric Clinics of North America*, 21, 119-133. doi:[10.1016/j.chc.2011.08.009](https://doi.org/10.1016/j.chc.2011.08.009) This paper reviews risks for students to develop PTSD and the role that schools and mental health consultants can play in addressing unmet needs.

Ormhaug, S.M., Jensen, T.K., Wentzel-Larsen, T., & Shirk, S.R. (2014). **The therapeutic alliance in treatment of traumatized youth: relation to outcome in a randomized clinical trial.** *Journal of Consulting and Clinical Psychology*, 82, 52-64. doi:[10.1037/a0033884](https://doi.org/10.1037/a0033884) This study evaluated the impact of the therapeutic alliance in the context of a randomized controlled treatment trial of TF-CBT versus TAU in 8 usual care clinics in Norway. Therapeutic alliance was comparable across the treatment conditions, but positive treatment alliance only significantly predicted better treatment outcome in the TF-CBT condition.

Wilkinson, J.M. & Carrion, V.G. (2012). **Pharmacotherapy in Pediatric PTSD: A developmentally focused review of the evidence.** *Current Psychopharmacology*, 1, 252-270. doi:[10.2174/2211556011201030252](https://doi.org/10.2174/2211556011201030252) This article provides an excellent review of the evidence for efficacy of treating PTSD symptoms. The review is divided by both medication class and developmental level.