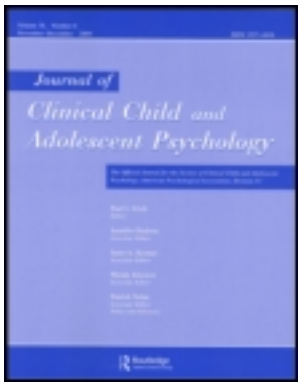

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Randomized Trial Comparison of Emotion Regulation and Relational Psychotherapies for PTSD with Girls Involved in Delinquency

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Randomized Trial Comparison of Emotion Regulation and Relational Psychotherapies for PTSD with Girls Involved in Delinquency

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Posttraumatic stress disorder (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 (Trauma Affect Regulation: Guide for Education and Therapy, or TARGET) with a relational supportive therapy (Enhanced Treatment as Usual, or 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 × 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.

Each year, more than 2 million youth in the United States come into contact with the juvenile justice system, increasingly including many girls (Chamberlain & Leve, 2004). As many as 75 to 90% of these youth are found to have histories of exposure to traumatic stressors when systematically assessed (Abram et al., 2004; Ford, Hartman, Hawke, & Chapman, 2008). Prevalence estimates of being threatened with a weapon (58%; Abram et al., 2004), traumatic loss (48%; Ford, Hartman, et al., 2008), and physical assault (35%; Abram et al., 2004; Ford, Hartman, et al., 2008) are higher in juvenile detention than in community samples (Copeland, Keeler, Angold, & Costello, 2007). Between 10 to 27% of justice-involved youth in Russia (Ruchkin, Schwab-Stone, Koposov, Vermeiren, & Steiner, 2002), Switzerland (Urbaniok, Endrass, Noll, Vetter, & Rossegger, 2007), and the United States (Abram et al., 2004; Cauffman, Feldman, Waterman, & Steiner, 1998; Ford, Hartman, et al., 2008; Steiner, Garcia, & Matthews, 1997) meet criteria for posttraumatic stress disorder (PTSD). Similar prevalence estimates of PTSD have been reported in psychiatrically impaired children (Urbaniok et al., 2007) and incarcerated women (Jordan, Schlenger, Fairbank, & Cadell, 1996; Teplin, Abram, & McClelland, 1996). These prevalence estimates are as much as 8 times higher than in community samples of youth (Saigh, Yasik, Sack, & Koplewicz, 1999). When youth involved in the juvenile justice system suffer from PTSD, this typically involves substantial psychosocial impairment and psychiatric comorbidity (Abram et al., 2007).

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Girls involved in the juvenile justice system are at particular risk because of their greater likelihood of exposure to victimization (Bright & Jonson-Reid, 2008; Cauffman et al., 1998; Steiner et al., 1997). In studies with samples of consecutively detained girls, sexual abuse was the most frequently reported traumatic event (55–70%). Physical assault (46%), physical abuse (33%), traumatic loss, and kidnapping (30%) also were frequently reported by the justice-involved girls (Ariga et al., 2008; Dixon, Howie, & Starling, 2005). A study of American juvenile detainees found that girls and boys were comparable in the prevalence of PTSD (Abram et al., 2004). However, studies with juvenile offender samples of girls from Australia (Dixon et al., 2005) and Japan (Ariga et al., 2008) reported substantially higher prevalence estimates for PTSD (37% and 33%, respectively) than those reported for male juvenile offenders.

Girls involved in delinquency also are at risk for long-term interpersonal and economic problems and incarceration (Kerr, Leve, & Chamberlain, 2009; D. K. Smith, Leve, & Chamberlain, 2006). Justice involvement can be very dangerous for girls: Once incarcerated, girls are 11 times more likely than boys to die (Teplin, Abram, McClelland, Washburn, & Pikus, 2005). Prevention or rehabilitation programs for delinquent and justice-involved girls were mandated almost 20 years ago in the United States by the 1992 Reauthorization of the Juvenile Justice Delinquency Prevention Act. Yet only one evidence-based intervention has been designed specifically to address the needs of delinquent girls: Multidimensional Treatment Foster Care (Chamberlain, Leve, & Degarmo, 2007). Evidence-based in-home interventions also have been successful with girls (e.g., Multisystemic Therapy; Henggeler, Clingempeel, Brondino, & Pickrel, 2002). Although the Multidimensional Treatment Foster Care model is designed to address the relational and psychological impairments that occur in the wake of traumatic victimization (D. K. Smith et al., 2006), no intervention has been designed specifically to address PTSD among girls who are involved in delinquency.

Several cognitive-behavioral therapies (CBTs) have shown promise for children and youth with PTSD. These include Trauma-Focused CBT (TF-CBT; Cohen, Deblinger, Mannarino & Steer, 2004), Eye Movement Desensitization and Reprocessing (EMDR; Ahmad, Larsson, & Sundelin-Wahlsten, 2007), Stress Inoculation Training (Vickerman & Margolin, 2009), and cognitive therapy (P. Smith et al., 2007). TF-CBT has the strongest evidence base for the treatment of pediatric PTSD (Silverman et al., 2008). However, TF-CBT has been tested primarily with sexual abuse victims in the preschool through early adolescence age range (see Lang, Ford, & Fitzgerald, 2011, for exceptions). No CBT program for PTSD has been tested systematically with delinquent youths, and there is some evidence that high levels of externalizing behavior problems associated with delinquency may be a negative prognostic factor for TF-CBT (Cohen, Berliner, & Mannarino, 2010). Adaptations of CBT to address traumatic stress and behavior problems have been proposed (Cohen, Berliner, & Mannarino, 2010), but no intervention has demonstrated efficacy for PTSD with delinquent youth (Ford, Chapman, Mack, & Pearson, 2006).

The combination of internalizing (e.g., anxiety, depression, shame) and externalizing (e.g., aggression, impulsivity, substance abuse) problems experienced by traumatized delinquent girls can create a state of emotional "chaos" (Chamberlain & Moore, 2002). This is consistent with Dalgleish's (2004) integrative theory, which views emotions in PTSD as an "organizing force" that "can hijack the [physiological and cognitive stress response] system" (pp. 248–249). Although memory-based therapies such as TF-CBT and EMDR are predicted to be effective, "emotions such as anger, shame, and guilt [that] are . . . about something negative that has already happened" are predicted to worsen rather than improve if "repeated exposure to a traumatic memory involving these emotions . . . merely . . . accentuates what was guilt-, shame- or anger-inducing about the original experience" (Dalgleish, 2004, p. 251). Consistent with this view, TF-CBT contraindicates trauma memory narrative work if the youth is continuing to experience actual or threatened traumatic events, in order to not inadvertently increase the distress associated with trauma memories (Cohen et al., 2004). Because girls involved in delinquency are at risk for recurrent ongoing traumatic events (Abram et al., 2004; Abram et al., 2007; Chamberlain & Moore, 2002), PTSD therapy for them may need to address emotion regulation without including the intensive trauma memory work done in TF-CBT or EMDR.

CBTs for PTSD have addressed emotion regulation in several ways. Stress Inoculation Training, EMDR, and TF-CBT teach arousal reduction skills (e.g., breathing, relaxation). Cognitive therapy, EMDR, and TF-CBT teach cognitive restructuring skills to modify distress-related beliefs. TF-CBT also teaches emotion identification skills, both for daily life coping and as a preparation for constructing a trauma memory narrative. However, emotion regulation involves more than recognizing emotions and reducing arousal and thoughts associated with anxiety and dysphoria. Emotion regulation also includes modulating and recovering from a wide range of negative emotion states (Kessler & Staudinger, 2009), and accessing and sustaining positive emotion states (Eisner, Johnson, & Carver, 2009). The therapy to be tested in the present study, Trauma Affect Regulation: Guide for Education and Therapy

(TARGET), was designed to teach a sequential skill set that begins with but goes beyond the emotion regulation interventions in other CBTs for pediatric PTSD.

TARGET has been found to be efficacious with women and men in substance abuse treatment groups (Frisman, Ford, Linn, Mallon, & Chang, 2008) and has been field tested with youth in juvenile detention facilities (Ford & Hawke, 2012). However, TARGET has not been evaluated specifically with delinquent girls in the community. Therefore, the present study was designed as an initial test of the efficacy of TARGET with girls living in the community who were involved in delinquency, in a one-to-one therapy format that did not require the simultaneous attendance of several girls (as is necessary when conducting a treatment group). A comparison condition—Enhanced Treatment as Usual (ETAU)—was designed to provide relational support in dealing with current life problems. This was done based on clinical observations suggesting that girls who are involved in delinquency and have been victimized may need, and also may benefit particularly from, therapy that helps them build a sense of emotional connection in healthy relationships (Chamberlain & Moore, 2002). The primary study hypothesis was that TARGET would achieve greater reductions in the severity of PTSD and greater enhancement in emotion regulation skills than ETAU. A secondary hypothesis was that TARGET would be superior to ETAU in reducing associated symptoms and cognitions, and in increasing optimism and self-efficacy.

METHOD

Participants

Fifty-nine girls (ages 13–17; $M = 14.7$, $SD = 1.2$) were randomized to TARGET ($N = 33$) or ETAU ($N = 26$) and completed the baseline assessment (see Figure 1). Participant ethnocultural backgrounds included 16% Black (African/Caribbean American), 59% Latina or Mixed Race, 25% White (European American). Almost half (45%) were living in residential treatment facilities due to severe behavioral problems. More than one third were in Department of Children and Families guardianship (37.5%), and 37.5% had prior arrests for violent crimes. About one in three (34%) met research diagnostic criteria for major depressive disorder, 26% for oppositional defiant disorder, 23% for conduct disorder, and 13% for attention deficit hyperactivity disorder, on the Diagnostic Interview Schedule for Children (Shaffer, 2000). Trauma exposure was extensive (see next for assessment), including 100% to a traumatic separation or loss of caregiver(s); 97% to a traumatic accident, disaster, or illness; 88% to physical assault or abuse; 81% to traumatic community violence; 78% to traumatic family violence; 44% to sexual assault or abuse; 41% to traumatic emotional abuse; and 29% to traumatic bullying. All participants met criteria for either full or partial current PTSD (i.e., in the past month, see next for criteria).

Procedure

Participants were recruited between November 2006 to April 2008 by announcements and presentations in schools, health clinics, protective services offices, juvenile justice community programs, and residential treatment centers in the Hartford, Connecticut, metropolitan area (see Figure 1). According to the 1990 Census, 26% of families live below the poverty level and 75% of households living in poverty are headed by female individuals with children. Almost half (41%) of adults older than 25 have not completed high school. Hartford's neighborhoods have poverty rates between 28% and 54%. The Hartford area also has high rates arrest records, drug arrests, violent crime, firearm injuries and fatalities, family violence, and HIV rates. Hartford ranked among the most unsafe and unhealthy communities in the nation based on arrest records, drug arrests, violent crime, firearm injuries and fatalities, family violence, and HIV rates. In Connecticut in 2004, according to the State Court Support Services Division, 16,459 referrals and 10,992 unique juveniles were involved in the juvenile justice system. One in three justice-involved youth were girls. Almost 40% were Black (African or Caribbean American) and 20% were Latino.

Applicants were screened for eligibility and assessed at baseline and posttherapy by an experienced female research interviewer according to a protocol approved by the Institutional Review Boards of the University of Connecticut Health Center and the Connecticut Department of Children and Families. Following that protocol, consent to participate was obtained in writing from a parent or legal guardian, and assent was obtained privately and in writing from each participating girl. Random assignment to treatment condition was conducted by an administrative staff person who had no other role in the study, using the SPSS 15.0 random number generator. Participants were assigned to a therapist based by selecting the therapist who had had the fewest cases in that modality and whose appointment times matched the prospective participant's availability. This was done to equate the number of cases in each modality seen by each therapist (Resick, Nishith, Weaver, Astin, & Feuer, 2002). Assignments were made immediately after the baseline assessment interview, and the assigned therapist then contacted the participant and scheduled a first session approximately 14 to 21 days

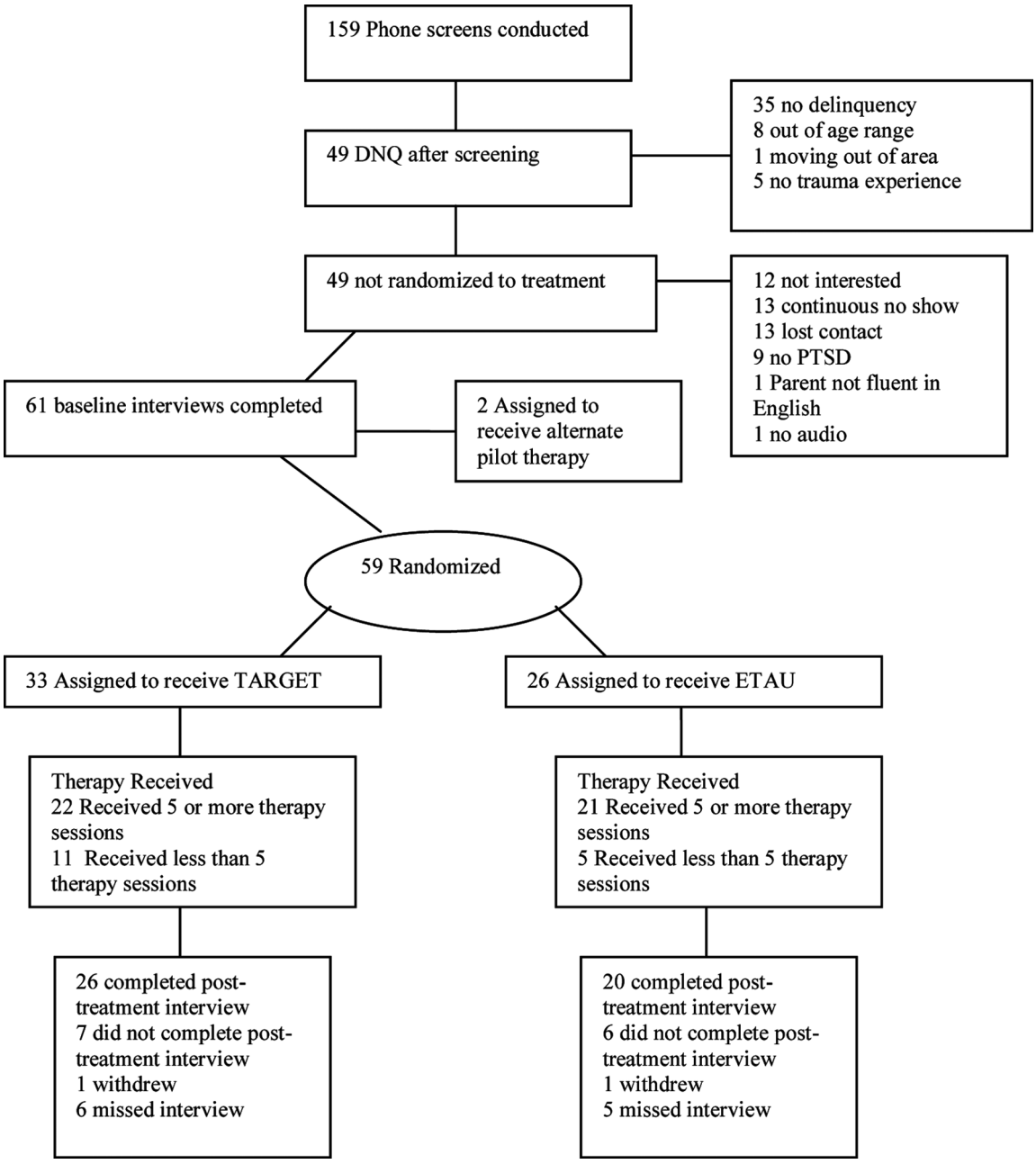

FIGURE 1 Flow chart depicting total sample sizes for study recruitment, randomization, and participation.

after the baseline interview ($M = 15.6$, $SD = 6.8$, range = 3–30 days in TARGET; $M = 15.9$, $SD = 7.7$, range = 4–40 days in ETAU). The study interviewer was unaware of participant treatment assignment while conducting the baseline interview but was not blinded at the posttherapy time-point.

Inclusion criteria were (a) self-reported delinquency (based on National Delinquency Study criteria; see next) and (b) full or partial PTSD (Clinician Administered PTSD Scale for Children/Adolescents [CAPS-CA] structured diagnostic interview; see next). Exclusion criteria were designed to achieve a representative sample of girls involved in delinquency: (a) substantial cognitive impairment (i.e., score <16 on Orientation, Attention, and Recall sections of the Mini Mental State Exam; Folstein, Folstein, & McHugh, 1975), (b) on one-to-one suicide watch (although suicidal ideation was not an exclusion, and most participants reported current or previous suicidal ideation); (3) age younger than 13 or older than 18.

A posttest interview was conducted by the same assesor at completion of treatment or, for treatment

noncompleters, approximately 4 months after the baseline interview. Posttreatment interviews were conducted on average 4 months after the baseline interview ($M = 129.1$, $SD = 29.9$, range = 53–210 days in TARGET; $M = 131.6$, $SD = 16.6$, range = 107–155 days in ETAU).

Measures

Trauma History

Traumatic Events Screening Inventory–Child/Self-Report (TESI-C/SR). Lifetime history of exposure to trauma was assessed at baseline with the TESI-C/SR, which provides behaviorally specific questions about the type, number of episodes, and developmental/chronological index (i.e., before age 6, before age 18, age 18 or later, in the past year) of experiences fulfilling the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision [*DSM-IV-TR*]; American Psychiatric Association, 2000) criteria for Criterion A1 (life threat, severe injury, or violation of personal integrity, witnessed or directly experienced) and Criterion A2 (fear, helplessness, horror). Twenty-five questions inquire at a fifth-grade reading level about direct exposure to and witnessing of potentially traumatic events, yielding dichotomous scores for the presence or absence of lifetime exposure to accidents/illnesses, separation/loss, family violence, community violence, physical assault, emotional abuse, bullying, and sexual assault/molestation. TESI items were shown to have interrater reliability when the interview was conducted with children and adolescents or their parents in a child psychiatry clinic population (Ford et al., 2000) and a pediatric emergency medical hospital population (Daviss et al., 2000). TESI dichotomous scores were shown to have construct validity in relation to self-reported PTSD symptom severity with juvenile justice-involved adolescent boys and girls (Ford et al., 2008).

Primary Outcome

CAPS-CA (Newman, 2002). This structured interview assesses *DSM–IV–TR* categorical diagnoses for PTSD and partial PTSD (i.e., Criterion B and one but not both of Criteria C and D; Schnurr et al., 2000). The items assess the intensity (0 [*none*] to 4 [*extreme distress*]) and frequency (0 [*never*] to 4 [*daily*] or almost every day) of each PTSD symptom. Ordinal symptom severity scores are calculated for PTSD overall and for Criteria B, C, and D. In a juvenile justice sample, the CAPS-CA was shown to have convergent and criterion validity in relation to self-report measures of PTSD, depression, anxiety, externalizing behavior problems, aggression, neuroticism and psychoticism, as well as of discriminant validity related to measures of introversion and constraint (Harrington, 2008). The total score and Criteria B (intrusion), C (avoidance), and D (hyperarousal) subscales were internally consistent in the current sample (Cronbach's αs = .90, .86, .74, .77, respectively).

Generalized expectancies for negative mood regulation (Catanzaro, Wasch, Kirsch, & Mearns, 2000). This is a 30-item scale (range = 30–150) that reliably and validly assesses self-perceived ability to identify, manage, and utilize adaptively a variety of negative emotion states using a 1-to-5 scale (from *strongly agree* to *strongly disagree*) for items phrased as "When I feel upset, I . . . ." In samples of adolescents and young adults, the measure's psychometric properties included temporal stability over a 4- to 6-week period, convergent validity versus dispositional and situational coping and depression symptoms, predictive validity for depression symptoms, and discriminant validity versus measures of coping and optimism. Internal consistency reliability was acceptable in the current sample (Cronbach's $\alpha = .85$).

Secondary Outcome

Post-traumatic cognitions inventory (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). The Post-Traumatic Cognitions Inventory is a 36-item questionnaire for self-reported posttraumatic beliefs related to the world, self, and self-blame. The total score has been shown to be temporally stable over 1- and 3-week intervals and to have convergent validity related to two other measures of posttraumatic beliefs, and criterion and predictive validity for identifying persons with a PTSD diagnosis, with female and mixed gender samples. In a mixed gender sample of accident victims, evidence was found of convergent, discriminant, and criterion validity (Beck et al., 2004). Internal consistency reliability was acceptable in the current sample (Cronbach's $\alpha = .93$).

Trauma Symptom Checklist for Children (TSCC; Briere, 1996). The TSCC is a 54-item questionnaire with items rated from 0 (*never*) to 3 (*almost all the time*). TSCC Anxiety, Depression, and Anger subscales were used. Evidence of convergent and discriminant validity in relation to Child Behavior Checklist subscales, and of sensitivity to treatment changes, has been provided in psychiatric samples of children. Criterion validity has been demonstrated in case-control study of maltreated and nonabused children. Based on standardization norms for girls ages 13 and 16 years old (derived from community samples of more than 3,000 children and adolescents; Briere, 1996), raw data were transformed to T scores ($M = 50$, $SD = 10$). The Anxiety,

Depression, and Anger subscales were internally consistent in the current sample (Cronbach's αs = .82, .91, .81, respectively).

Hope scale (Snyder et al., 1996). This six-item questionnaire (score range = 6–36) assesses dispositional hope (self-efficacy and optimism). In two mixed-gender community samples and a mixed-gender cancer sample of 9- to 17-year-olds, the measure's psychometric properties included reliability (i.e., temporal stability over a 1-week and 1-month period), convergent validity with both parent ratings and self-ratings on the Self-Perception Profile for Children and the Attributional Styles Questionnaire, and predictive validity with the Iowa Test of Basic Skills. Internal consistency reliability was acceptable in the current sample (Cronbach's $\alpha = .83$).

Therapy Interventions

TARGET (Ford & Russo, 2006) was delivered in twelve 50-min sessions of individual therapy. TARGET provides education that explains PTSD symptoms as the result when the brain's "alarm center" overwhelms the brain's information retrieval ("filing") and executive functions ("thinking center") systems (Ford, 2005). This provides a rationale for overcoming PTSD by learning skills to strengthen the "filing and thinking centers" to not just turn down but reset the brain's "alarm." The skills are summarized in an easily learned and recalled seven-step sequence using the acronym FREEDOM: **F**ocusing the mind on one thought at a time; **R**ecognizing current triggers for "alarm" reactions; distinguishing alarm-driven ("reactive") versus adaptive ("main") **E**motions, thoughts (**E**valuations), goal **D**efinitions, and behavioral **O**ptions; and dedicating oneself to **M**ake a positive contribution to the world by gaining control of "alarm reactions." In the first eight sessions, the FREEDOM steps are learned and practiced incrementally. The final four sessions are devoted to rehearsing and applying the full skill to anticipate and prevent or manage PTSD symptoms in current life events. TARGET also has a creative arts activity designed to enhance positive and negative emotion recognition skills by having participants create personalized "lifelines" via collage, drawing, poetry, and writing. The lifeline provides a way to apply the FREEDOM steps to constructing a life narrative that includes traumatic and stressful events but does not involve repeated retelling of them.

ETAU is a manualized relational therapy in which therapists do not teach specific emotion regulation skills or provide detailed PTSD psychoeducation but instead assist participants to develop their own definition of and solutions to goals or problems of greatest importance to them. ETAU also was delivered in twelve 50-min sessions. ETAU provides client-centered therapy's core conditions (nonjudgmental acceptance, empathy, interpersonal warmth) while facilitating self-directed, strengths-based, solution-focused reflection on how to adapt past successes to manage stressors, handle problems, achieve personal goals, and develop healthy relationships with peers, family, and other community members. ETAU therapists also were trained to use problem-solving skills in helping girls to carefully define and develop potential solutions to their high-priority problems, although these skills were not formally taught.

Therapists and Fidelity Monitoring

Six experienced female therapists (two Spanish fluent) with doctoral degrees in clinical psychology ($n = 2$) or master's degrees in social work, counseling, or marriage and family therapy ($n = 4$) served as study therapists. Each therapist conducted both TARGET and ETAU. Therapists received 2 days of training and 25 hr of case supervision by the first and second authors on, respectively, TARGET and ETAU. Therapists rated the credibility of TARGET and ETAU for this population as comparably high to very high.

To document fidelity to each treatment model and clinical competence, all therapy sessions were audio-taped and a 20% sample was rated by two independent, clinically trained raters using fidelity (dichotomous present/absent ratings) and competence (7-point scales ranging from *poor* to *satisfactory* to *excellent*) checklists developed for TARGET and ETAU, which define unique essential items for each session of each treatment. Fidelity to TARGET was greater than 95% and to ETAU was 100%, with no evidence of use of TARGET in ETAU sessions. Competence ratings were consistently at or higher than 5 (*high satisfactory* to *excellent*), and never less than satisfactory (4).

Treatment Credibility and Therapeutic Alliance

Following Sessions 1, 4, and 10 and in the posttest, participants completed the Expectancy of Therapeutic Outcome scale (Resick et al., 2002) and the Working Alliance Inventory (Cunningham, Calsyn, Burger, Morse, & Klinkenberg, 2007). The Expectancy of Therapeutic Outcome scale is a four-item scale with 9-point ratings for credibility, confidence in outcome, and willingness to recommend the treatment. The Working Alliance Inventory a seven-item scale assessing beliefs concerning the importance of therapy and the participant's appraisal of the therapist's ability to understand and help, and form a collaborative partnership, with her.

TABLE 1
Raw Scores and Effect Size Estimates (*d*) Comparing Pre–Post Therapy Change (δ) Within and Between Treatment Conditions

	TARGET[a]					*ETAU*[b]					*TARGET vs. ETAU*		
Measure	*Baseline*	*Posttest*	δ	SD_δ	*d*	*Baseline*	*Posttest*	δ	*SD*	*d*	δ	SD_δ	*d*
CAPS B													
Symptoms	19.4_a (9.2)	10.8 (7.9)	8.7	8.6	**1.01**	13.3_b (3.8)	8.8 (5.6)	4.6	4.8	**0.95**	4.1	6.4	***0.64***
CAPS C Symptoms	22.5 (8.0)	14.0 (8.5)	8.5	8.2	**1.04**	18.8 (5.9)	13.8 (7.3)	4.9	6.6	***0.75***	3.5	8.4	***0.42***
CAPS D Symptoms	17.4 (8.2)	10.0 (6.6)	7.4	7.4	**0.99**	15.4 (6.3)	8.0 (5.8)	7.4	6.1	**1.23**	–.02	7.5	0.00
CAPS Total Score	58.9 (20.7)	34.5 (18.1)	24.4	19.5	**1.26**	47.5 (10.6)	30.5 (14.4)	17	12.6	**1.35**	7.4	14.1	***0.53***
TSCC Anxiety	7.2 (3.6)	4.8 (4.2)	2.4	3.9	***0.61***	6.8 (4.5)	5.6 (4.8)	1.3	4.7	0.27	1.2	3.6	0.32
TSCC Depression	7.4 (3.7)	5.1 (3.4)	2.3	3.6	***0.65***	6.9 (4.1)	4.3 (3.9)	2.6	4	***0.65***	–0.3	3.6	–0.10
TSCC Anger	8.8 (7.1)	7.8 (7.6)	1	7.4	0.13	8.3 (6.0)	5.8 (4.7)	2.5	5.4	***0.46***	–1.5	4.9	–0.30
PTCI	108.2 (32)	90.3 (35)	17.9	33.6	***0.53***	104.6 (33)	93.9 (34)	10.6	33.4	0.32	7.2	34.3	0.21
Hope Scale	24.3 (5.7)	26.3 (6.1)	2	5.9	–0.34	22.7 (6.3)	28.1 (6.2)	5.3	6.3	**–0.85**	3.3	5.2	***0.64***
NMR	105.2 (12)	109.7 (14)	4.5	12.8	–0.35	108.8 (16)	108.5 (22)	–0.3	19.2	0.02	–4.8	17.8	–0.27

Note: Means and standard deviations reported as raw scores. Medium effect sizes ($.80 > d > .40$, $<.80$) are in ***bold italic*** font. Large effect sizes ($>.80$) are in **bold** font. Means with different subscripts differed $p < .05$ at baseline. For TARGET: PCTI and TSCC, $N = 25$; For ETAU: TSCC $N = 19$; due to one case missing data. TARGET = Trauma Affect Regulation: Guide for Education and Therapy; ETAU = Enhanced Treatment as Usual; CAPS = Clinician Administered PTSD Scale; TSCC = Trauma Symptom Checklist; PTCI = Posttraumatic Cognitions Inventory; NMR = Generalized Expectancies for Negative Mood Regulation Scale.

[a] $N = 26$.

[b] $N = 20$.

Data Analyses

Prior to hypothesis testing, data screening revealed no multivariate outliers or departures from statistical normality and linearity. The S-Plus missing data library verified no nonrandom pattern. Study groups were compared on baseline demographics and outcome measures, using chi-square (categorical data) or *t* tests (ordinal data). Only one difference was found: TARGET>ETAU on PTSD Criterion B symptoms, $t(57) = 3.1$, $p < .01$ (Table 1). Intent-to-treat analyses were done with all participants regardless of missing data, using mixed model regression (Bryk & Raudenbush, 1992; Singer, 1998; Zorn, 2001). Cell sample sizes were sufficient to detect large ($>.80$) effect sizes with power at .80 (Cohen, 1988, p. 54). Effect size estimates (Cohen's *d*) were calculated.

RESULTS

The dropout rate for both TARGET and ETAU was less than 10%: $N = 1$ in each condition. A TARGET participant withdrew from therapy due to moving away from the local area, and an ETAU participant withdrew without providing a reason. Many girls did not attend all 12 sessions, primarily due to school or residential program schedule conflicts or not having safe transportation (which was necessary in their typically dangerous neighborhoods). However, most girls who received ETAU (80%) or TARGET (67%) completed at least five sessions. ETAU participants on average attended more sessions (9.0, $SD = 4.0$) than TARGET participants (7.0, $SD = 4.2$). However, this difference was not statistically significant, $t(57) = 1.81$, $p = .075$.

Both TARGET and ETAU received uniformly high ratings for therapy credibility on the Expectancy of Therapeutic Outcome scale, with no significant differences between the conditions at any of the four assessment time points. Ratings for TARGET and ETAU, respectively, were as follows: Session 1, M (SD) = 39.1 (12.0) and 39.8 (10.7); Session 4, 39.0 (12.1) and 38.7 (12.1); Session 10, 45.3 (9.2) and 38.4 (6.5); and posttest, 43.0 (9.9) and 40.0 (10.5). Therapeutic alliance also was rated consistently positively for both TARGET and ETAU at all time points, with no between-group differences. Ratings for TARGET and ETAU, respectively, were as follows: Sessions 1, M (SD) = 3.2 (0.8) and 3.1 (0.8); Session 4, 3.4 (0.5) and 3.5 (0.4); Session 10, 3.5 (0.6) and 3.5 (0.5); and posttest, 3.5 (0.5) and 3.4 (0.8).

At baseline, 21 TARGET (64%) and 16 ETAU (61%) recipients met criteria for full PTSD. The other 12 TARGET (36%) and 10 ETAU (39%) recipients met criteria for partial PTSD. The groups did not differ on PTSD status at baseline. At posttreatment, 9 TARGET recipients (35%) and 10 in ETAU (50%) met criteria for full PTSD. Another 7 TARGET recipients (27%) and 3 ETAU recipients (15%) met criteria for partial PTSD. The full remission rate (no full or partial PTSD) at posttreatment was comparable at posttest for TARGET (38%) and ETAU (35%). However, more TARGET

(35%) than ETAU (20%) participants showed clinically significant change (i.e., full remission and >50% reduction in PTSD). However, this difference was not statistically significant, $\chi^2(1) = 1.2$, $p = .27$. On average, PTSD symptom severity (CAPS total score) was reduced by 62% for TARGET recipients and 35% for ETAU recipients.

Analyses examining change from baseline to posttherapy (see Table 1) showed evidence of generally large effect size improvements by both therapies on PTSD Criteria B, C, D, and total symptoms, $F(1, 57) = 31.9 - 55.7$, $p < .001$. Contrary to hypotheses, the other primary outcome variable, affect regulation, showed no change in ETAU, and only a small effect size improvement in TARGET. TARGET had medium effect size gains on the secondary outcomes of depression, anxiety, and posttraumatic cognitions, and ETAU had medium to large effect size gains on depression, anger, and hope, $F(1, 57) = 11.4 - 25.9$, $p < .001$. Small effect size gains were found for each condition on the other secondary outcome variables, $F(1, 57) = 6.2 - 9.3$, $p < .05$.

Significant Group × Time interactions, indicating differential change by treatment modality, were found for PTSD Criterion B symptoms, favoring TARGET, and for hope, favoring ETAU, both $F(1, 56) = 4.5$, $p < .05$. The Group × Time interactions also favored TARGET with medium effect size differences versus ETAU on PTSD Criterion C and total symptoms (see Table 1). Given the finding of frequent missed sessions, outcome analyses were conducted controlling for the number of sessions attended as a covariate. The pattern of results (not reported here but available from the first author) was unchanged compared to the results with no covariate.

DISCUSSION

Time-limited individual psychotherapy for girls involved in delinquency who had full/partial PTSD was associated with reduced severity of PTSD and associated symptoms and beliefs, and increased optimism/self-efficacy. As hypothesized, TARGET was more efficacious than ETAU in reducing PTSD Criteria B (intrusive reexperiencing) and C (avoidance and emotional numbing) symptoms. TARGET was associated with almost twice as much (a) reduction in PTSD symptom severity, and (b) clinically significant change in PTSD, as ETAU. On the other primary outcome, affect regulation, TARGET was associated with a small effect size improvement, whereas ETAU showed no evidence of change. TARGET also was associated with medium effect size reductions in anxiety and posttraumatic cognitions, whereas ETAU achieved only small effect size changes. However, ETAU was superior to TARGET on gains in optimism/self-efficacy and reduced anger.

Despite the evidence for efficacy of TARGET, there was limited evidence of improved affect regulation in TARGET. This may be due in part to underreporting, a bias noted in other samples of delinquent girls (Chamberlain & Moore, 2002). Two findings offer very preliminary evidence that TARGET may enhance affect regulation: (a) TARGET recipients reported some gains in affect regulation and ETAU recipients did not, and (b) TARGET recipients reported reductions in emotional numbing, anxiety, depression, and affectively charged posttraumatic beliefs. On the other hand, ETAU was associated with greater reductions in self-reported anger than TARGET. A study of CBT with children diagnosed with generalized, separation, and phobic anxiety disorders found that anxiety-focused CBT reduced worry but not anger or sadness (Suveg, Sood, Comer, & Kendall, 2009). Thus, TARGET's FREEDOM skill set may reduce emotion dysregulation related to internalizing (e.g., anxiety, dysphoria) but not externalizing (e.g., anger) problems. A specific focus on anger and aggression may be needed in addition to emotion regulation generally for delinquent youth with PTSD (Cohen et al., 2010). A better test of affect regulation as a change mechanism in TARGET also may require use of collateral (e.g., parent, teacher, or peer reports) or behavioral measures of affect regulation as well as self-report. In addition, a fuller "dose" of therapy than that received in TARGET (i.e., on average just over half [7] of the model's 12 sessions), may be needed to achieve measurable and clinically significant gains in affect regulation.

The small sample size and attrition limited the study's ability to detect statistically significant differences between the therapy interventions. However, it was possible to utilize the full sample in intent-to-treat analyses with mixed model regression techniques and to use effect size estimates to identify potentially meaningful differences between the treatments on outcome measures. All measures were self-report, thus subject to possible expectancy or other biases for which other data sources could offer a valuable counterpoint (e.g., parents' or teachers' symptom or functioning ratings; observational assessments of affect regulation in actual or simulated stressful situations).

One female assessor conducted all pre- and posttherapy assessments and therefore could not be blind to treatment type or phase, which, although unlikely to bias between-group differences (the study was described to the assessor and participants as testing two comparable but different therapies), may have inflated the estimates of pre–post change. The absolute magnitude of change for PTSD and related symptoms was comparable to that reported in other studies of manualized PTSD psychotherapies for children and adolescents (Silverman et al., 2008). However, there was no direct comparison to a well-validated PTSD treatment. Therefore

TARGET's efficacy can be considered to be only preliminarily supported. In addition, TARGET's larger reductions in PTSD severity may be in part an artifact of regression to the mean, or of range restriction in ETAU, due to the higher initial levels of PTSD Criterion B symptoms in TARGET than in ETAU.

The study also was not able to maintain contact with a sufficient number of participants after the 4-month treatment period (due largely to unavailability and family moves after the end of the school year) to obtain the long-term follow-up assessment needed to assess the stability of changes. A final key limitation was that only girls were included: Replication with boys is needed.

Implications for Research, Policy and Practice

Trauma memory narrative work as done in TF-CBT or EMDR was not formally included in TARGET. Thus, PTSD symptoms may be amenable to therapeutic change with delinquent girls without intensive trauma memory processing. TARGET could provide a therapeutic alternative to memory-focused therapy for PTSD with youth who are unwilling or emotionally unready to talk intensively about their traumatic experiences and memories. This is consistent with observations by CBT experts that a great deal of work tends to be needed on self-regulation skills in order to engage youth with behavior problems in trauma-focused therapy (Cohen et al., 2010). TARGET also could potentially be deployed as a first-phase intervention prior to TF-CBT or EMDR, providing additional affect regulation and information-processing skills. Research and clinical field testing of TARGET and TF-CBT or EMDR separately and in combination with each other is needed to enhance treatment options for delinquent girls with PTSD. A recent study with women with childhood abuse-related PTSD found that combining an affect regulation therapy and prolonged exposure therapy achieved optimal benefits (Cloitre et al., 2010).

The largely ethnic minority sample (i.e., 75% Black, Latina, or multiethnic), and the high level of credibility, satisfaction, and therapeutic alliance reported for both therapies, suggests that affect regulation and relational therapies can be delivered successfully to delinquent girls of these ethnic backgrounds. This is important given the overrepresentation of ethnic minority groups in the juvenile justice system (Colman, Kim do, Mitchell-Herzfeld, & Shady, 2009).

Chamberlain and Moore (2002) noted that stress-related impairment and developmental lags place girls at risk for "intra and inter-relational chaos," which can in turn result in involvement in ongoing relational and social aggression as victim and perpetrator. For delinquent girls, chronic victimization is a form of betrayal trauma (Freyd, Klest, & Allard, 2005) that may place them on a trajectory toward problems with the law; in work, school, and relationships; and with psychiatric and physical illness (Ford, Albert, & Hawke, 2008). The adverse effects of exposure to traumatic victimization have been demonstrated to be severe and costly for adolescents (Croysdale, Drerup, Bewsey, & Hoffmann, 2008; Erwin, Newman, McMackin, Morrissey, & Kaloupek, 2000; Mazza & Reynolds, 1999). Childhood adversity may have debilitating effects across the lifespan into adulthood (Anda et al., 2006; McCauley et al., 1997; McGloin & Widom, 2001). PTSD therapy thus may serve a crucial preventive function for many otherwise undetected trauma survivors.

Participants anecdotally reported a myriad of practical barriers to attending sessions, including having no transportation to sessions or to safely get home after sessions. Sessions were scheduled at school or residential centers where they spent most of their days, but classes or other activities often interrupted or prevented sessions. To maximize regular attendance, other formats such as group or family therapy (Ford & Saltzman, 2009) or home-based intervention (Ford & Cloitre, 2009) for the delivery of TARGET also warrant empirical testing.

In conclusion, study findings suggest that TARGET may provide a viable alternative to, or complement for, other CBTs for PTSD with delinquent girls. TARGET has been disseminated widely in juvenile justice systems (Ford et al., 2006; Ford & Hawke, 2012), but this is the first controlled study demonstrating its efficacy with youth involved in delinquency. The benefits associated with ETAU further suggest that adding strategies for enhancing relational synchrony may enhance TARGET's efficacy with delinquent girls, particularly to enhance self-efficacy and optimism. For example, motivational enhancement may be maximized if therapy focuses on the girl's definition of high-priority goals and problems, with affect regulation skills woven in to the sessions as a way to support her sense of agency and self-efficacy rather than as didactic lessons. This may be particularly important for girls who have experienced invalidating environments in which chaos and coercion have undermined their sense of efficacy and trust (Chamberlain & Moore, 2002). It is an empirical question whether this blended focus can be accomplished while still attaining the reductions in PTSD symptoms demonstrated by TARGET in the present study.

REFERENCES

Abram, K. M., Teplin, L. A., Charles, D. R., Longworth, S. L., McClelland, G. M., & Dulcan, M. K. (2004). Posttraumatic stress disorder and trauma in youth in juvenile detention. *Archives of General Psychiatry*, *61*, 403–410.

Abram, K. M., Washburn, J. J., Teplin, L. A., Emanuel, K. M., Romero, E. G., & McClelland, G. M. (2007). Posttraumatic stress disorder and psychiatric comorbidity among detained youths. *Psychiatric Services*, *58*, 1311–1316.

Ahmad, A., Larsson, B., & Sundelin-Wahlsten, V. (2007). EMDR treatment for children with PTSD: results of a randomized controlled trial. *Nordic Journal of Psychiatry*, *61*, 349–354.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington DC: Author.

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., et al. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, *256*, 174–186.

Ariga, M., Uehara, T., Takeuchi, K., Ishige, Y., Nakano, R., & Mikuni, M. (2008). Trauma exposure and posttraumatic stress disorder in delinquent female adolescents. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *49*(1), 79–87.

Beck, J. G., Coffey, S. F., Palyo, S. A., Gudmundsdottir, B., Miller, L. M., & Colder, C. R. (2004). Psychometric properties of the Posttraumatic Cognitions Inventory (PTCI): A replication with motor vehicle accident survivors. *Psychological Assessment*, *16*, 289–298.

Briere, J. (1996). *Trauma Symptom Checklist for Children (TSCC). Professional manual*. Odessa, FL: Psychological Assessment Resources.

Bright, C. L., & Jonson-Reid, M. (2008). Onset of juvenile court involvement: Exploring gender-specific associations with maltreatment and poverty. *Child Youth and Services Review*, *8*, 914–927.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage.

Catanzaro, S. J., Wasch, H. H., Kirsch, I., & Mearns, J. (2000). Coping-related expectancies and dispositions as prospective predictors of coping responses and symptoms. *Journal of Personality*, *68*, 757–788.

Cauffman, E., Feldman, S., Waterman, J., & Steiner, H. (1998). Posttraumatic stress disorder among female juvenile offenders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *37*, 1209–1216.

Chamberlain, P., & Leve, L. D. (2004). Female juvenile offenders: Defining an early-onset pathway for delinquency. *Journal of Child & Family Studies*, *13*, 439–452.

Chamberlain, P., Leve, L. D., & Degarmo, D. S. (2007). Multidimensional treatment foster care for girls in the juvenile justice system: 2-year follow-up of a randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *75*, 187–193.

Chamberlain, P., & Moore, K. (2002). Chaos and trauma in the lives of adolescent females with antisocial behavior and delinquency. *Journal of Aggression, Maltreatment and Trauma*, *6*(1), 79–108.

Cloitre, M., Stovall-McClough, K. C., Nooner, K., Zorbas, P., Cherry, S., Jackson, C. L., et al. (2010). Treatment for PTSD related to childhood abuse: A randomized controlled trial. *American Journal of Psychiatry*, *167*, 915–924.

Cohen, J. (1988). *Statistical power for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Cohen, J. Berliner, L., & Mannarino, A. (2010). Trauma focused CBT for children with co-occurring trauma and behavior problems. *Child Abuse & Neglect*, *34*, 215–224.

Cohen, J. A., Deblinger, E., Mannarino, A. P., & Steer, R. (2004). A multisite, randomized controlled trial for children with sexual abuse-related PTSD symptoms. *Journal of the American Academy of Child and Adolescent Psychiatry*, *43*, 393–402.

Colman, R. A., Kim do, H., Mitchell-Herzfeld, S., & Shady, T. A. (2009). Delinquent girls grown up: Young adult offending patterns and their relation to early legal, individual, and family risk. *Journal of Youth and Adolescence*, *38*, 355–366.

Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry*, *64*, 577–584.

Croysdale, A., Drerup, L., Bewsey, K., & Hoffmann, N. (2008). Correlates of victimization in a juvenile justice population. *Journal of Aggression, Maltreatment, & Trauma*, *17*(1), 103–117.

Cunningham, J., Calsyn, R. J., Burger, G. K., Morse, G. A., & Klinkenberg, W. D. (2007). Client outcomes and the working alliance in the client-case manager relationship: A causal analysis. *Care Management Journal*, *8*, 106–112.

Dalgleish, T. (2004). Cognitive approaches to posttraumatic stress disorder: The evolution of multirepresentational theorizing. *Psychological Bulletin*, *130*, 228–260.

Daviss, W. B., Mooney, D., Racusin, R., Ford, J. D., Fleischer, A., & McHugo, G. J. (2000). Predicting posttraumatic stress after hospitalization for pediatric injury. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*, 576–583.

Dixon, A., Howie, P., & Starling, J. (2005). Trauma exposure, posttraumatic stress, and psychiatric comorbidity in female juvenile offenders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *44*, 798–806.

Eisner, L. R., Johnson, S. L., & Carver, C. S. (2009). Positive affect regulation in anxiety disorders. *Journal of Anxiety Disorders*, *23*, 645–649.

Erwin, B. A., Newman, E., McMackin, R. A., Morrissey, C., & Kaloupek, D. G. (2000). Malevolent environmental factors, traumatic life events, and PTSD among criminally involved adolescents. *Criminal Justice and Behavior*, *27*, 196–215.

Foa, E. B., Ehlers, A., Clark, D. M., Tolin, D. F., & Orsillo, S. (1999). Posttraumatic Cognitions Inventory (PTCI): Development and validation. *Psychological Assessment*, *11*, 303–314.

Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, *12*, 189–198.

Ford, J. D. (2005). Implications for psychiatric treatment of altered neurobiology, affect regulation and information processing after child maltreatment:. *Psychiatric Annals*, *35*, 410–419.

Ford, J. D., Albert, D., Hawke, J. (2008). Translating risk, protective, and resistance/resiliency factors into prevention and treatment interventions for traumatized children. In D. Brom, R. Pat-Horenczyk, & J. D. Ford (Eds.), *Treating traumatized children: Risk, resilience and recovery* (pp. 195–209). London: Routledge.

Ford, J. D., Chapman, J., Mack, M., & Pearson, G. (2006). Pathway from traumatic child victimization to delinquency: Implications for juvenile and permanency court proceedings and decisions. *Juvenile and Family Court Journal*, *57*(1), 13–26.

Ford, J. D., & Cloitre, M. (2009). Best practices in psychotherapy for children and adolescents. In C. Courtois & J. D. Ford (Eds.), *Treating complex traumatic stress disorders* (pp. 59–81). New York: Guilford.

Ford, J. D., Hartman, J. K., Hawke, J., & Chapman, J. (2008). Traumatic victimization, posttraumatic stress disorder, suicidal ideation, and substance abuse risk among juvenile justice-involved youths. *Journal of Child and Adolescent Trauma*, *1*, 75–92.

Ford, J. D., & Hawke, J. (2012). Trauma affect regulation psychoeducation group attendance is associated with reduced disciplinary incidents and punitive sanctions in juvenile detention facilities. *Journal of Agression, Maltreatment & Trauma*, *21*.

Ford, J. D., Racusin, R., Ellis, C. G., Daviss, W. B., Reiser, J., Fleischer, A., et al. (2000). Child maltreatment, other trauma exposure, and posttraumatic symptomatology among children with oppositional defiant and attention deficit hyperactivity disorders. *Child Maltreatment*, *5*, 205–217.

Ford, J. D., & Russo, E. (2006). A trauma-focused, present-centered, emotion self-regulation approach to integrated treatment for post-traumatic stress and addiction: Trauma Adaptive Recovery Group Education and Therapy (TARGET). *American Journal of Psychotherapy*, *60*, 335–355.

Ford, J. D., & Saltzman, W. (2009). Family therapy. In C. Courtois & J. D. Ford (Eds.), *Treating complex traumatic stress disorders* (pp. 391–414). New York: Guilford.

Freyd, J. J., Klest, B., & Allard, C. B. (2005). Betrayal trauma: Relationship to physical health, psychological distress, and a written disclosure intervention. *Journal of Trauma & Dissociation*, *6*(3), 83–104.

Frisman, L. K., Ford, J. D., Lin, H., Mallon, S., & Chang, R. (2008). Outcomes of trauma treat-ment using the TARGET model. *Journal of Groups in Addiction and Recovery*, *3*, 285–303.

Harrington, T. L. (2008). *The Clinician Administered PTSD Scale for Children and Adolescents: Validation study* (Unpublished doctoral dissertation). University of Tulsa, Tulsa, OK.

Henggeler, S., Clingempeel, W. G., Brondino, M. J., & Pickrel, S. G. (2002). Four-year follow-up of multisystemic therapy with substance-abusing and substance-dependent juvenile offenders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *41*, 868–874.

Jordan, B., Schlenger, W., Fairbank, J., & Cadell, J. (1996). Prevalence of psychiatric disorders among incarcerated women, II.. *Archives of General Psychiatry*, *53*, 513–519.

Kerr, D. C., Leve, L. D., & Chamberlain, P. (2009). Pregnancy rates among juvenile justice girls in two randomized controlled trials of multidimensional treatment foster care. *Journal of Consulting and Clinical Psychology*, *77*, 588–593.

Kessler, E. M., & Staudinger, U. M. (2009). Affective experience in adulthood and old age: The role of affective arousal and perceived affect regulation. *Psychology of Aging*, *24*, 349–362.

Lang, J. M., Ford, J. D., & Fitzgerald, M. M. (2011). An algorithm for determining use of Trauma-Focused Cognitive-Behavioral Therapy. *Psychotherapy*, *47*, 554–569.

Mazza, J., & Reynolds, W. (1999). Exposure to violence in young inner-city adolescents. *Journal of Abnormal Child Psychology*, *27*, 203–213.

McCauley, J., Kern, D., Kolodner, K., Dill, L., Schroeder, A., DeChant, H., et al. (1997). Clinical characteristics of women with a history of childhood abuse: unhealed wounds. *Journal of the American Medical Association*, *277*, 1362–1368.

McGloin, J., & Widom, C. (2001). Resilience among abused and neglected children grown up. *Development and Psychopathology*, *13*, 1021–1038.

Newman, E. (2002). Assessment of PTSD and trauma exposure in adolescents. *Journal of Aggression, Maltreatment & Trauma*, *6*, 59–77.

Resick, P., Nishith, P., Weaver, T., Astin, M., & Feuer, C. (2002). A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic PTSD in female rape victims. *Journal of Consulting and Clinical Psychology*, *15*, 321–330.

Ruchkin, W., Schwab-Stone, M., Koposov, R., Vermeiren, R., & Steiner, H. (2002). Violence exposure, posttraumatic stress, and personality in juvenile delinquents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *41*, 322–329.

Saigh, P. A., Yasik, A., Sack, W., & Koplewicz, H. (1999). Child–adolescent posttraumatic stress disorder: prevalence, risk factors, and comorbidity. In P. A. Saigh & J. D. Bremner (Eds.), *Posttraumatic stress disorder: A comprehensive text* (pp. 18–43). Boston: Allyn & Bacon.

Schnurr, P. P., Ford, J. D., Friedman, M., Green, B., Dain, B., & Sengupta, A. (2000). Predictors and outcomes of PTSD in World War II veterans exposed to Mustard Gas. *Journal of Consulting and Clinical Psychology*, *68*, 258–268.

Shaffer, D. (2000). NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC–IV): Description, differences from previous versions and reliability of some common diagnoses. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*, 28–38.

Silverman, W. K., Ortiz, C. D., Viswesvaran, C., Burns, B. J., Kolko, D. J., Putnam, F. W., et al. (2008). Evidence-based psychosocial treatments for children and adolescents exposed to traumatic events. *Journal of Clinical Child and Adolescent Psychology*, *37*, 156–183.

Singer, D. J. (1998). Using SAS PROC MIXED to fit multilevel models, hierarchical models, and individual growth models. *Journal of Educational and Behavioral Statistics*, *24*, 323–355.

Smith, D. K., Leve, L. D., & Chamberlain, P. (2006). Adolescent girls' offending and health-risking sexual behavior: The predictive role of trauma. *Child Maltreatment*, *11*, 346–353.

Smith, P., Yule, W., Perrin, S., Tranah, T., Dalgleish, T., & Clark, D. M. (2007). Cognitive-behavioral therapy for PTSD in children and adolescents: a preliminary randomized controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry*, *46*, 1051–1061.

Snyder, C. R., Sympson, S., Ybasco, F., Borders, T., Babyak, M., & Higgins, R. (1996). Development and validation of the State Hope Scale. *Journal of Personality and Social Psychology*, *70*, 321–335.

Steiner, H., Garcia, I. G., & Matthews, Z. (1997). Posttraumatic stress disorder in incarcerated juvenile delinquents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *36*, 357–365.

Suveg, C., Sood, E., Comer, J. S., & Kendall, P. C. (2009). Changes in emotion regulation following cognitive-behavioral therapy for anxious youth. *Journal of Clinical Child and Adolescent Psychology*, *38*, 390–401.

Teplin, L. A., Abram, K. M., & McClelland, G. M. (1996). Prevalence of psychiatric disorders among incarcerated women. I. Pretrial detainees. *Archives of General Psychiatry*, *53*, 505–512.

Teplin, L. A., Abram, K. M., McClelland, G. M., Washburn, J. J., & Pikus, A. K. (2005). Detecting mental disorder in juvenile detainees: who receives services?. *American Journal of Public Health*, *95*, 1773–1780.

Urbaniok, F., Endrass, J., Noll, T., Vetter, S., & Rossegger, A. (2007). Posttraumatic stress disorder in a Swiss offender population. *Swiss Medical Weekly*, *137*(9–10), 151–156.

Vickerman, K. S., & Margolin, G. (2009). Rape treatment outcome research: empirical findings and state of the literature. *Clinical Psychological Review*, *5*, 431–448.

Zorn, C. J. W. (2001). Generalized Estimating Equation models for correlated data: A review with applications. *American Journal of Political Science*, *45*, 470–490.