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Evidence-based treatments for trauma among culturally diverse foster care youth: Treatment retention and outcomes

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ABSTRACT

This study describes the implementation of three evidence-based treatments addressing traumatic stress symptoms within a wraparound foster care program in Illinois. Child–Parent Psychotherapy (CPP), Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), and Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS) were implemented with a racially diverse sample of youth ages 3–18 at six agencies. Culturally sensitive adaptations were made to treatment approaches to improve client retention and outcomes. Data analyses revealed no racial differences in retention in the program and no differences in outcomes between minority youth exposed to the intervention and other participants. All three evidence-based treatments were effective in reducing symptoms and improving functioning among minority youth. Implementation issues, including challenges and culturally competent accommodations, are discussed.

1. Introduction

Exposure to traumatic experiences and consequent complex and varied mental health needs are among the most challenging problems facing foster care youth today (McKay, Lynn & Bannon, 2005). Several promising treatments have emerged over the last decade to address the sequelae of trauma among exposed youth. A number of these have been empirically validated with both controlled trials and quasi-experiments (Cohen, Deblinger, Mannarino & Steer, 2004; DeRosa & Pelcovitz, 2006; Lieberman, Van Horn & Ghosh Ippen, 2005). Few have been developed specifically with minority clients in mind (Katoaka, Stein, Jaycox, Wong, Escudero, Tu, et al., 2003). Most are evaluated using homogenous samples or do not report outcomes by racial/ethnic subgroups, which makes drawing conclusions about the appropriateness of treatments across cultures difficult.

The Working Group on Evidence-Based Practice in Child Welfare in the Context of Cultural Competence defined *cultural competence* as "the ability to work with people in the context of their own specific history, culture, and environment to deliver services that are meaningful and responsive to their lived experience" (Wells, 2007). The Working Group stressed that cultural competence is based on rejecting generalizations about members of any group and relying on flexibility and openness to see each individual in context.

Flexibility and openness are the hallmarks of the philosophy of "wraparound" programs in foster care. These programs are rooted in the Child and Adolescent Service System Program (CASSP) and principles designed to provide treatment in the "least restrictive" environment and to optimize the ability of community-based providers to stabilize foster care youth and meet varied needs. Wraparound programs encourage case workers to think flexibly about how to meet the needs of youth, outside the constraints of traditional counseling approaches (Stroul & Friedman, 1988). It is within the context of the System of Care wraparound program that the Illinois Department of Children and Family Services (IDCFS) implemented a pilot study to test the feasibility of delivering three evidence-based treatments (EBTs) for trauma to youth in foster care as part of a broader effort to improve the treatment of wards exposed to trauma.

The System of Care (SOC) program aims to stabilize foster care placements among youth with emotional and behavioral problems. Using a wraparound philosophy, the program encourages workers to provide a broad array of services to meet the needs of children and families and to be flexible in delivering these services. The SOC program is implemented by 28 contracted agencies across the state. Much of the work done by SOC workers is accomplished off-site, at home, in schools, or in the community. Agencies have the flexibility to provide services outside the scope of traditional mental health interventions including, but not limited to, recreational activities, music lessons, providing professional clothing for job interviews, home furnishings, tutoring, and others. The philosophy of meeting a broad array of clients' needs, along with the flexibility to deliver nontraditional services, makes this program an ideal context in which to implement culturally competent evidence-based treatment.

The agencies that provide SOC services are also involved in ongoing data-driven continuous quality improvement (CQI), which provides an

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empirical baseline for understanding the impact of implementing new practices. Because this program has actively participated in outcomes management activities since its inception, a substantial amount of information was available at the outset of the study to provide baseline and comparison data for the EBT pilot implementation.

In 2006, IDCFS selected three trauma-specific treatments to implement within six SOC agencies. Due to the dramatic developmental considerations in treating traumatic stress symptoms among children and adolescents, three different evidence-based treatments were selected; each one incorporated the developmental needs of a different age group. These treatments were: Child Parent Psychotherapy (CPP) for the youngest children (0–6 year olds), Trauma-Focused Cognitive Behavioral Treatment (TF-CBT) for school-aged children (6–12 year olds) and Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS; youth 13 and older). Though not developed only for minority youth, these treatments were all tested among diverse populations of children (Cohen et al., 2004; DeRosa and Pelcovitz, 2006; Habib, Labruna, DeRosa, Sunday, Pelcovitz, & Kaplan, 2008; Lieberman et al., 2005). At least one of these treatments was developed with cultural considerations in mind, and all of the developers expressed willingness for flexibility in implementation to accommodate cultural differences among participants.

While it may be difficult to develop EBTs for different cultures, it is important to study the effectiveness of EBTs cross-culturally. This paper reviews an implementation of three EBTs with a culturally diverse sample and presents findings from data analyses by racial subgroups. In addition to the central evaluation question, "Does the implementation of EBTs within a wraparound foster care program improve child outcomes?" this study uses data for racial subgroups to examine differences and similarities in retention and outcomes and explores the factors that contributed to the cultural competence of the implementation.

2. Methods

2.1. Setting

IDCFS identified six agencies to participate; two delivered each EBT. Three of these agencies did not offer mental health services and, thus, partnered with community mental health agencies to deliver the intervention. Each EBT was delivered by multiple agencies in different regions of the state, allowing investigators to parse agency and regional effects of treatment and to observe barriers to implementation that were regionally specific.

2.2. Measures

The primary assessment tool used in this study is the Child and Adolescent Needs and Strengths (CANS; Lyons, 2004). The CANS tool is a measure of psychological well-being, need for services and intervention, and strengths. The CANS has multiple applications, including (a) decision support, (b) treatment planning, and (c) outcomes management (Lyons, 2004). The CANS is used universally across IDCFS to document treatment needs and track progress and outcomes. It is desirable for these functions because of its ease of use and high inter-rater reliability when completed by trained professionals through chart review or through direct contact with the child being assessed (.81; Anderson, 2003). CANS data have been used to document improvement among children in child welfare in residential treatment and in other IDCFS programs. All SOC providers, regardless of agency or treatment provided, regularly submit CANS assessment data, which is used to report on agency performance as well as to support treatment planning and clinical decision-making.

The CANS assessment used by IDCFS has eight domains: "Behavioral/Emotional Needs,
" "Risk Behaviors," "Functioning," "Trauma Experiences," "Traumatic Stress Symptoms," "Care Intensity and Organization," "Family/Caregiver Needs and Strengths," and "Strengths." For all CANS domains, numerically increasing scores refer to greater severity in the problem area. The CANS is administered to children at the time of referral and every 6 months thereafter to track their progress in SOC.

Treatment-specific outcome measures were selected by the developer of each treatment. These included the Brief Infant Toddler Social Emotional Assessment (BITSEA; Briggs-Gowan, Carter, Irwin, Wachtel & Cicchetti, 2004), the Youth Outcomes Questionnaire, (YOQ; Burlingame, Wells, Cox, Lambert, Latkowski & Justice, 2005), the Devereux Early Childhood Assessment Clinical Form (DECA-C; LeBuffe & Naglieri, 2003), and the UCLA-PTSD (Pynoos, Rodriguez, Steinberg, Stuber & Frederick, 1998.) Outcomes for these measures are reported elsewhere (MHSPP & IDCFS, 2007).

2.3. Participants

Eligibility criteria for participation in the intervention were determined by the evaluation team in conjunction with the EBT developers. These criteria varied slightly by intervention and participant age. Table 1 summarizes key components of the three treatment approaches, as well as inclusion criteria established for each.

Eligibility for participation in the pilot implementation was based on an initial CANS assessment. To be eligible, children had to have experienced a moderate or severe traumatic experience (signified by a CANS rating of 2 or a 3 on at least one traumatic experience), as well as a 2 or a 3 on the "Adjustment to Trauma" item on the CANS. Each of the three EBTs had unique age and clinical requirements. CPP required that children be under age 6 and that a parent or caregiver be available and willing to participate in the treatment with the child. TF-CBT

Table 1
Description of evidence-based practices.

	CPP	Trauma-focused CBT	SPARCS
Population	0–6 year olds	3–16 year olds	13–21 year olds
Developer(s)	Patricia Van Horn & Alicia Lieberman	Judith Cohen, Tony Mannarino, & Esther Deblinger	Ruth DeRosa, Mandy Habib, & Victor Lebruna
Modality	Individual play therapy sessions with the parent–child dyad	Individual sessions with caregiver (psycho-educational focused on parenting skills) and individual sessions with the child (focused on relaxation, affect modulation, cognitions)	Adolescent groups using DBT techniques
Indications (traumatic stress symptoms plus:)	Exposure to domestic violence	Discrete traumatic event, significant emotional/behavioral problems, functional impairment	Chronic stress, functional impairment
Frequency/Duration	Weekly sessions for one year	Weekly sessions for 12–20 weeks	Weekly sessions for 16 weeks
Target outcomes (decrease traumatic stress symptoms and:)	Improve parent child relationship (attachment)	Decrease physiological symptoms and improve well-being;	Improve coping skills
	Prevent/halt developmental delay	Improve identification and management of feelings	Improve interpersonal skills
		Improve parent child communication	Improve problem-solving
		Enhance social skills	Improve well-being

required that the traumatic experiences endorsed on the CANS were discrete traumatic events, such as physical or sexual abuse, as the treatment centers on building a narrative of the traumatic event. Children participating were rated at least a 2 or 3 on the "Adjustment to Trauma" item along with any of the trauma items in the "Trauma Experiences" or "Traumatic Stress Symptoms" section of the CANS, excluding "Traumatic Grief and Separation," "Emotional Abuse," and "Neglect". Clinical eligibility criteria for participation in the SPARCS groups were the same as that for TF-CBT, and children had to be over the age of 12.

There were 2434 youth enrolled in SOC services during the 18-month evaluation period. Of the subset of children enrolled at the six participating agencies, 133 were enrolled in one of the EBTs and had received multiple assessments. Existing cases were screened by SOC workers, and each case meeting eligibility criteria was referred for participation in the agency's EBT. For CPP and TF-CBT, treatment began immediately; for SPARCS, treatment began when at least six children were enrolled (a size sufficient to begin a group).

2.4. Evidence-based treatments

2.4.1. Child–Parent Psychotherapy (CPP)

CPP is designed for children ages birth to 6. The treatment focuses on decreasing traumatic stress responses, learning difficulties, and relationship problems in infants and young children exposed to violence by improving the quality of parent–child relationships. Because it is also focused on improving parent–child attachment, the participation of a parent figure or caregiver is essential. CPP employs play therapy techniques as well as psychodynamic theory and parent education to implement the treatment with the parent–child dyad. The evidence base suggests that a 1-year course of treatment is effective.

2.4.2. Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)

This treatment is ideal for school-aged children who have experienced a discrete traumatic experience or series of experiences. A discrete trauma is necessary because the treatment is centered on the construction of a "trauma narrative" that allows the child to build a narrative around the traumatic event. The treatment employs parental education to normalize the child's and caregiver's reactions to severe stress, to provide information about psychological and physiological reactions to stress, and to educate family about the benefits and need for early treatment. The treatment attempts to reduce physiologic manifestations of stress and PTSD by explaining the body's response to stress and teaching relaxation techniques such as focused breathing, mindfulness, meditation, and physical activity. To accomplish affect modulation, clients work on feelings identification to accurately identify and express a range of feelings through board games and other activities rather than being questioned directly about feelings experienced during a traumatic event. TF-CBT also utilizes desensitization, cognitive strategies, and safety planning.

2.4.3. Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS)

SPARCS targets adolescents who have been exposed to traumatic stressors, such as interpersonal violence, community violence, life-threatening illness, etc., and are having difficulty with affect regulation and impulsivity, dissociation, self-perception, relations with others, somatization, and loss of systems of meaning. The treatment is flexible and designed to be used in a variety of settings, including schools, agencies, or residential treatment centers. It is conducted in groups of 6 to 10 adolescents, and usually takes 5–6 months to complete. For this implementation, designers and providers agreed that condensing the period of treatment for SPARCS to 16 weeks would increase the likelihood that participants would be retained in treatment until completion.

SPARCS aims to enhance adolescents' abilities to cope more effectively in the moment, to cultivate consciousness, and to create connections and meaning. It draws upon mindfulness and interpersonal skills from Dialectical Behavior Therapy for Adolescents, problem-solving skills, and enhancing social support and planning for the future. *Mindfulness* is explained to group members as "paying attention in a particular way, on purpose, and non-judgmentally." SPARCS's focus on mindfulness, coping, and interpersonal skills makes it an ideal treatment for adolescents transitioning to independence.

2.5. Study protocol

Forty-nine therapists at six agencies (and 3 mental health partner agencies) were trained by the developers to deliver the three interventions. Training was provided by CPP developers to 11 therapists at two agencies, by TF-CBT developers to 19 therapists at two agencies, and by SPARCS developers to five therapists at two agencies. This includes therapists who were trained later to replace those who left their agencies before the completion of the study.

The general protocol for SOC providers consisted of the following elements:

- A CANS administered within 30 days of receiving a case, 6 months later, and at closing;
- EBT clinicians' counts of the number of sessions each child/youth participated in and a record of whether they completed the treatment;
- EBT clinicians' fidelity checklists, tailored to each of the treatments, so that fidelity to the original treatment models could be monitored.

2.6. Data analysis

Descriptive statistics were used to describe the sample in terms of relevant demographic characteristics. Differences between rates of attendance in treatment by race/ethnicity, age, and gender were examined using chi-square and significance tests. Analysis of covariance was used to determine whether there were racial differences in the magnitude of change experienced by the different racial subgroups, first using all of the participants with multiple assessments and then with an intent-to-treat sample. Finally, univariate analysis of variance was used with the completer sample to model the contribution of multiple factors (race/ethnicity, pre-treatment traumatic stress symptoms, number of sessions attended, and pre-treatment emotional/behavioral needs) to changes in traumatic stress symptoms.

3. Results

3.1. Sample characteristics

During the study period there were 2434 clients enrolled in the SOC program at 28 agencies. Approximately 46% of these clients had experienced complex trauma.[1] At least 37% were suffering from trauma-related symptoms. Because of the stigma associated with revealing some types of trauma, and the likelihood that other symptoms not directly attributed to trauma may mask traumatic stress symptoms, subsequent measures suggest that baseline data on prevalence of traumatic experiences are underestimates.

Results reported previously suggest that the children and youth referred to the EBTs had significantly more "Traumatic Experiences" and "Trauma Stress Symptoms" than youth in SOC (MHSPP & IDCFS, 2007). "Strengths" and "Life Domain Functioning" were comparable across groups. Children referred for participation in the EBTs had a

[1] Complex trauma was defined as at least two actionable CANS items (2 or 3) from sexual abuse, physical abuse, emotional abuse, neglect, or family violence.

significantly higher level of "Behavioral/Emotional Needs" but were comparable on "Risk Behaviors" to those youth in the SOC program (MHSPP & IDCFS, 2007).

Two hundred and sixteen participants received treatment in one of the three EBTs. One hundred and thirty three of these had multiple assessments that could be used for data analysis. Table 2 displays basic demographic characteristics of these participants. For CPP participants, the average age was 3.7 years (SD = 1.6), roughly half of the participants were male, and 75% were minority youth, including African American, biracial, and Hispanic participants. Among TF-CBT participants, the average age was 8.4 (SD = 3.3), roughly half were male, and 43% were members of minority groups. Among SPARCS clients, the average age was 13.8 years (SD = 1.6), almost two-thirds of participants were female, and 79% were minorities.

3.2. Participation

Chi-square tests conducted on demographic variables and treatment completion status indicated that, overall, there were no significant racial/ethnic differences among those continuing in treatment and those who discontinued treatment prior to completion of the EBT protocol ($\chi^2 = 3.416$, $p = .332$) or gender ($\chi^2 = 1.412$, $p = .168$). *T*-tests for significant differences in mean age between treatment completers and non-completers were also not significant ($t = .993$, $p = .328$). Table 3 displays the rates of treatment attrition overall and for each treatment by age, race/ethnicity, and gender. Although in some cases the cell counts were too small for these tests to be valid, the only statistically significant result was the greater proportion of African-American participants to complete SPARCS treatment.

3.3. Treatment fidelity

Approaches to fidelity measurement varied among the EBTs. CPP therapists measured fidelity with a single list of items that were evaluated for their occurrence in *every* session. TF-CBT therapists measured fidelity with a checklist of items that were required to be addressed over the course of treatment; SPARCS therapists used a separate checklist of items to be addressed for each session. Whereas fidelity checklists were developed specifically for use with TF-CBT and SPARCS, the checklist that was selected for CPP was somewhat general and not easily applied as a session-by-session inventory. Consequently, the fidelity data for CPP do not provide as reliable an assessment of how closely the CPP curriculum was followed.

In fairness, CPP is a less regimented treatment implemented with very young children, so while certain components are necessarily included—and these are documented in the checklist—it may not be feasible to document specific elements of each interaction. Nonetheless, without benchmarks to quantify the designer's expectations for the frequency of these elements' occurrence in treatment, it is difficult to interpret the results of the CPP fidelity analyses.

Table 2
Demographic characteristics.

Variable	CPP ($n = 65$)	TF-CBT ($n = 35$)	SPARCS ($n = 33$)
Age (years)	3.7 (SD = 1.6)	8.4 (SD = 3.3)	13.8 (SD = 1.6)
Gender			
Female	49% (32)	48.5% (17)	63.6% (21)
Male	51% (33)	51.5% (18)	36.4% (12)
Race/Ethnicity			
African American	43% (28)	34% (12)	67% (22)
Biracial	14% (9)	9% (3)	0
Hispanic	18% (12)	0	12% (4)
White	25% (16)	57% (20)	21% (7)

CPP = Child Parent Psychotherapy; TF-CBT = Trauma Focused Cognitive Behavioral Therapy; SPARCS = Structured Psychotherapy for Adolescents Responding to Chronic Stress.

Table 3
Treatment retention/attrition overall and for each treatment by age, race/ethnicity, and gender.

Variable	Completed 82% ($n = 109$)	Dropped out 18% ($n = 24$)	Significance
Age (years)	7.25	8.42	$t = .993$; $p = .328$
Gender			$X^2 = 1.412$; $df = 1$; $p = .168$
Female	55% (60)	41.7% (10)	
Male	45% (49)	58.3% (14)	
Race/ Ethnicity			$X^2 = 3.416$; $df = 3$; $p = .332$
African American	48.6% (53)	37.5% (9)	
Biracial	10.1% (11)	4.2% (1)	
Hispanic	10.1% (11)	20.8% (5)	
White	31.2% (34)	37.5% (9)	
CPP			
Gender			$X^2 = .337$; $df = 1$; $p = .562$
Female	50.9% (27)	42% (5)	
Male	49.1% (26)	58% (7)	
Race/ Ethnicity			$X^2 = .672$; $df = 3$; $p = .880$
African American	43.4% (23)	41.7% (5)	
Biracial	15.1% (8)	8.3% (1)	
Hispanic	17.0% (9)	20.8% (5)	
White	24.5% (13)	25.0% (3)	
Gender			
TF-CBT			
Gender			$X^2 = 1.005$; $df = 1$; $p = .316$
Female	51.6% (16)	25.0% (1)	
Male	48.4% (15)	75% (3)	
Race/ Ethnicity			$X^2 = .753$; $df = 2$; $p = .686$
African American	32.3% (10)	50% (2)	
Biracial	9.7% (3)	0% (0)	
Hispanic	–	–	
White	58.1% (18)	50.0% (2)	
SPARCS			
Gender			$X^2 = .849$; $df = 1$; $p = .357$
Female	68% (7)	50% (4)	
Male	32% (8)	50% (4)	
Race/ Ethnicity			$X^2 = .8.321$; $df = 2$; $p = .016$**
African American	80% (20)	25.0% (2)	
Biracial	–	–	
Hispanic	8% (2)	25% (2)	
White	12.0% (3)	50% (4)	

**$p < .025$.

Clients completing SPARCS treatment attended at least five sessions and had an overall average of 98% fidelity. The majority of cases (77.4%) were treated with over 96% fidelity to the SPARCS model. For TF-CBT, completers attended at least 11 sessions. Of these 29 treatment completers, the majority of cases (79%) were treated with 89% fidelity. The overall fidelity rate for all completers was 87%. For CPP items, fidelity percentages ranged from 24% ("we talked about the danger in the current living situation") to 97% ("I provided my clients with support and felt I really understood what they were going through").

One way to understand this variation is in categories: interventions that provided emotional support, empathy, and facilitated the child–parent attachment occurred relatively frequently (87%, 80%, and 73%, respectively), whereas interventions that were focused on instrumental help, relaxation, and safety occurred less frequently (41%, 39%, and 43%, respectively). Given the young age of these children and the treatment's focus on parent–child attachment, this seems appropriate. Interventions focused on the child's behaviors and

the past trauma occurred about half the time (54% and 52%, respectively.)

3.4. Outcomes

Analysis of covariance was used to examine differences between the two assessment points in key CANS domains: "Traumatic Stress Symptoms," "Child Strengths," "Life Domain Functioning," "Behavioral/Emotional Needs," and "Risk Behaviors." Tables 4, 5, and 6 illustrate these findings for each of the three interventions in the sample of youth ($n = 133$) with multiple assessments. For CPP, African American youth experienced improvement in *every* CANS domain. Biracial youth experienced significant improvements in "Traumatic Stress Symptoms," "Strengths, Behavioral/Emotional Needs," and "Risk Behaviors." Hispanic youth experienced significant improvement in "Traumatic Stress Symptoms," "Life Domain Functioning," and "Behavioral Emotional Needs." White youth improved significantly in "Life Domain Functioning." For TF-CBT, African American youth and White youth experienced significant reductions in "Traumatic Stress Symptoms" and "Behavioral/Emotional Needs" and significant increases in "Strengths." White youth experienced significant reductions in risk behaviors and problems with functioning. For SPARCS, African American youth improved significantly in "Traumatic Stress Symptoms," "Life Domain Functioning," and "Risk Behaviors." Analysis of Covariance revealed no significance between group differences on the magnitude of changes for any of the CANS domains for any of the treatments.

An intent-to-treat analysis was conducted imputing baseline values in place of missing follow-up assessments for the sample of 216 youth who were enrolled in the EBTs. These findings are illustrated in Tables 7, 8, and 9. Intent-to-treat analyses revealed significant improvements in Traumatic Stress Symptoms for African American youth participating in all three EBTs and no significant differences between groups for change in symptoms. The only significant difference for race/ethnicity that emerged in the intent-to-treat analysis was a significantly greater improvement in strengths among bi-racial youth participating in CPP.

Table 4
Outcome measures at baseline and follow-up by race/ethnicity and for CPP.

Measure and race/ethnicity	*n*	Baseline *M* (and SD)	Follow-up *M* (and SD)	Follow-up Adjusted *M*	ANCOVA *F* (sig)
Traumatic stress symptoms					2.38 (.079)
African American	28	8.8 (5.1)	6.1 (3.1)**	6.1	
Biracial	9	9.6 (3.6)	4.6 (6.3)*	4.5	
Hispanic	12	7.3 (2.9)	4.5 (2.6)*	5.3	
White	16	9.9 (4.9)	8.5 (5.2)	8.0	
Child strengths					2.15 (.104)
African American	28	17.9 (4.8)	15.2 (4.5)**	15.2	
Biracial	9	22.7 (4.5)	16.3 (4.1)*	13.5	
Hispanic	11	13.2 (4.6)	12.7 (3.4)	15.5	
White	16	18.1 (4.8)	17.2 (4.9)	17.1	
Life domain functioning					0.08 (.969)
African American	28	7.8 (3.3)	5.3 (3.6)***	4.5	
Biracial	9	7.7 (3.1)	5.3 (4.0)	4.5	
Hispanic	9	4.5 (2.9)	2.6 (2.1)*	4.0	
White	15	6.1 (3.6)	4.2 (3.8)**	4.5	
Behavioral/Emotional needs					0.70 (.556)
African American	28	6.5 (2.9)	4.5 (2.6)***	4.3	
Biracial	9	8.3 (3.6)	4.9 (4.0)*	3.5	
Hispanic	12	4.2 (2.8)	2.5 (2.1)*	3.8	
White	16	5.6 (4.3)	4.5 (4.7)	4.8	
Risk behaviors					0.95 (.421)
African American	28	3.8 (3.2)	2.4 (2.4)**	2.2	
Biracial	8	7.2 (2.6)	3.5 (1.9)**	1.4	
Hispanic	12	0.9 (1.0)	0.6 (1.1)	2.1	
White	15	2.1 (3.4)	1.9 (3.2)	2.7	

Between group differences for Race/Ethnicity at follow-up evaluation are adjusted for baseline. Within each Race/Ethnicity comparison, significant differences between baseline and follow-up are indicated by * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5
Outcome measures at baseline and follow-up by race/ethnicity and for TF-CBT.

Measure and Race/Ethnicity	*n*	Baseline *M* (and SD)	Follow-up *M* (and SD)	Follow-up Adjusted *M*	ANCOVA *F* (sig)
Traumatic stress symptoms					0.45 (.643)
African American	12	8.5 (4.1)	4.5 (5.0)**	4.2	
Biracial	3	8.0 (2.0)	5.3 (3.1)	5.4	
White	20	7.6 (2.6)	5.1 (3.1)**	5.4	
Child strengths					0.25 (.777)
African American	12	16.3 (3.9)	12.5 (3.0)*	12.9	
Biracial	2	18.8 (5.3)	15.0 (7.1)	13.9	
White	20	15.8 (4.2)	13.1 (4.9)**	13.9	
Life domain functioning					0.80 (.459)
African American	12	6.2 (2.8)	4.0 (2.9)	3.3	
Biracial	3	3.9 (1.0)	3.5 (0.9)	4.7	
White	20	6.1 (4.1)	4.9 (4.1)**	4.3	
Behavioral/Emotional needs					0.34 (.714)
African American	12	6.1 (2.5)	3.8 (3.3)*	3.6	
Biracial	3	5.1 (2.1)	3.9 (2.7)	4.4	
White	20	6.4 (2.4)	4.6 (2.6)**	4.2	
Risk behaviors					0.48 (.623)
African American	12	3.4 (2.7)	3.0 (3.6)	3.0	
Biracial	3	1.9 (1.7)	1.7 (1.4)	3.0	
White	20	4.9 (3.5)	3.6 (4.0)*	2.2	

Between group differences for Race/Ethnicity at follow-up evaluation are adjusted for baseline. Within each Race/Ethnicity comparison, significant differences between baseline and follow-up are indicated by * $p < .05$, ** $p < .01$.

Univariate Analysis of Variance was used to model the change in traumatic stress symptoms using the contributors: "Trauma Experiences," "Baseline Traumatic Stress," number of sessions in treatment, baseline symptoms, and race/ethnicity. For CPP, the only significant predictors of change in traumatic stress symptoms were baseline traumatic stress symptoms ($\beta = .475$, $p = .000$) and number of sessions ($\beta = -.108$,[2] $p = .027$). The coefficients of other factors are displayed in Table 10. For TF-CBT and SPARCS, the only significant predictor of change in trauma stress symptoms was baseline trauma stress symptoms.

4. Discussion

The results of the present study suggested that the three evidence-based practices to address trauma (i.e., Child–Parent Psychotherapy (CPP), Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), and Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS)) were equally effective across racial groups. This finding is documented through observation of significant improvements among African American youth across domains of functioning as well as similarities among outcomes of all racial/ethnic subgroups. We found no significant differences between racial subgroups on outcomes; data suggest that the EBTs were equally effective for all of the subgroups in our sample.

ANCOVA results suggested that SPARCS was effective in reducing problems as rated by the CANS only for African American participants. However, small sample sizes of other racial/ethnic groups for both SPARCS and TFCBT may have caused the failure to find significant differences in the magnitude of changes between racial groups despite differences in effect sizes between groups for the different CANS domains. CPP seems to have been more universally effective across racial/ethnic subgroups, and TF-CBT had the most comparable impact on White and African American participants. More detailed

[2] CANS domains are scored so that reductions are reflected by decreasing scores. Hence, the negative coefficient in this analysis signifies a positive relationship between the number of sessions and the improvement in CANS-measured traumatic stress symptoms.

Table 6
Outcome measures at baseline and follow-up by race/ethnicity and for SPARCS.

Measure and Race/ Ethnicity	n	Baseline M (and SD)	Follow-up M (and SD)	Follow-up Adjusted M	ANCOVA F (sig)
Traumatic stress symptoms					0.42 (.659)
African American	22	6.5 (3.4)	5.1 (2.9)*	5.6	
Hispanic	4	5.5 (1.9)	5.5 (1.0)	6.7	
White	7	9.7 (5.1)	7.7 (5.3)	6.1	
Child strengths					0.72 (.498)
African American	19	13.7 (4.6)	12.1 (4.1)	11.7	
Hispanic	4	11.3 (3.2)	11.9 (2.4)	12.7	
White	7	13.9 (3.5)	13.9 (3.8)	13.4	
Life domain functioning					0.49 (.615)
African American	22	6.9 (3.7)	5.1 (2.3)*	4.8	
Hispanic	4	5.0 (2.6)	5.5 (1.8)	6.1	
White	7	6.8 (3.8)	5.6 (4.9)	5.4	
Behavioral/Emotional needs					0.12 (.886)
African American	22	4.6 (2.6)	3.6 (2.4)	3.6	
Hispanic	4	3.6 (1.9)	3.5 (1.3)	4.0	
White	7	5.5 (0.8)	4.4 (2.8)	3.9	
Risk behaviors					0.37 (.693)
African American	22	3.5 (3.2)	2.5 (2.3)*	2.6	
Hispanic	4	2.3 (1.3)	2.7 (2.2)	3.6	
White	7	5.4 (3.5)	3.8 (4.1)	2.8	

Between group differences for race/ethnicity at follow-up evaluation are adjusted for baseline. Within each Race/Ethnicity comparison, significant differences between baseline and follow-up are indicated by *$p<.05$.

analyses using additional treatment-specific measures might identify unique elements of the three EBTs that differentially impacted participants of different racial/ethnic subgroups. However, the results of the present study suggest that these interventions are effective regardless of race.

As evidence-based treatments are implemented more widely and with different populations, it is important to continue to study their impact by evaluating both the effectiveness *and* the feasibility of these practices within various cultural contexts. Research findings will gain validity from larger and more diverse samples; they can also inform policy makers about the resources required for training and what models are effective for developing and maintaining competence in delivering the treatment with fidelity to the tested models.

Table 7
Outcome measures at baseline and follow-up by race/ethnicity for CPP (intent-to-treat).

Measure and Race/ Ethnicity	n	Baseline M (and SD)	Follow-up M (and SD)	Follow-up Adjusted M	ANCOVA F (sig)
Traumatic stress symptoms					2.64 (.055)
African American	35	8.3 (5.0)	6.1 (3.3)**	6.4	
Biracial	9	9.6 (3.6)	4.9 (6.3)*	4.5	
Hispanic	19	7.7 (2.8)	5.9 (3.2)*	6.5	
White	19	9.8 (4.6)	8.6 (4.8)	8.1	
Child strengths					2.89 (.041)
African American	35	17.1 (4.7)	15.0 (4.2)**	15.6	
Biracial	9	22.7 (4.5)	16.3 (4.1)*	13.4	
Hispanic	17	14.7 (4.3)	11.4 (3.7)	16.5	
White	19	17.6 (4.7)	16.8 (4.8)	17.1	
Life domain functioning					0.07 (.974)
African American	33	7.4 (3.4)	5.2 (3.6)***	4.7	
Biracial	9	7.7 (3.1)	5.3 (4.0)	4.5	
Hispanic	14	5.4 (2.8)	4.2 (2.9)*	5.1	
White	17	6.0 (3.5)	4.3 (3.6)**	4.8	
Behavioral/Emotional needs					0.94 (.424)
African American	35	6.1 (2.8)	4.5 (2.4)***	4.6	
Biracial	9	8.3 (3.6)	4.9 (4.0)*	3.4	
Hispanic	19	4.7 (2.6)	3.6 (2.5)*	4.6	
White	19	5.7 (4.0)	4.8 (4.4)	5.1	
Risk behaviors					1.34 (.267)
African American	35	3.5 (3.1)	2.4 (2.3)**	2.4	
Biracial	8	7.2 (2.6)	3.5 (1.9)**	1.3	
Hispanic	18	1.4 (1.3)	1.2 (1.4)	2.5	
White	18	2.0 (3.1)	1.9 (2.9)	2.8	

Between group differences for Race/Ethnicity at follow-up evaluation are adjusted for baseline. Within each Race/Ethnicity comparison, significant differences between baseline and follow-up are indicated by * $p<.05$, ** $p<.01$, *** $p<.001$.

Table 8
Outcome measures at baseline and follow-up by race/ethnicity for TF-CBT (intent-to-treat).

Measure and Race/ Ethnicity	n	Baseline M (and SD)	Follow-up M (and SD)	Follow-up Adjusted M	ANCOVA F (sig)
Traumatic stress symptoms					0.29 (.832)
African American	33	9.6 (3.9)	8.1 (5.0)*	6.7	
Biracial	4	8.0 (1.6)	6.0 (2.8)	6.1	
Hispanic	2	6.0 (0.0)	6.0 (0.0)	8.0	
White	27	8.7 (3.2)	6.8 (4.2)**	6.2	
Child strengths					0.00 (.999)
African American	33	14.3 (4.0)	13.0 (3.4)*	14.4	
Biracial	3	18.3 (3.8)	15.8 (5.2)	14.4	
Hispanic	–	–	–	–	
White	27	16.4 (4.1)	14.4 (5.1)**	14.4	
Life domain functioning					0.22 (.879)
African American	33	6.7 (3.1)	5.9 (3.5)	5.2	
Biracial	4	5.0 (2.4)	4.7 (2.5)	5.5	
Hispanic	2	5.8 (0.0)	5.8 (0.0)	5.9	
White	27	6.1 (3.8)	5.2 (3.9)**	5.0	
Behavioral/Emotional needs					0.29 (.836)
African American	33	5.5 (2.5)	4.7 (2.9)*	4.8	
Biracial	4	5.3 (1.8)	4.4 (2.4)	4.7	
Hispanic	2	5.4 (0.6)	5.4 (0.6)	5.6	
White	27	6.5 (2.3)	5.2 (2.6)**	4.5	
Risk behaviors					1.01 (.395)
African American	33	3.6 (2.6)	3.4 (3.0)	3.6	
Biracial	4	2.9 (2.4)	2.7 (2.4)	3.5	
Hispanic	2	3.8 (1.8)	3.8 (1.8)	3.7	
White	27	4.6 (3.2)	3.7 (3.6)*	2.8	

Between group differences for Race/Ethnicity at follow-up evaluation are adjusted for baseline. Within each Race/Ethnicity comparison, significant differences between baseline and follow-up are indicated by * $p<.05$, ** $p<.01$.

As providers learned in this pilot implementation, cultural competence in delivering EBTs involves not only enhancing treatment effectiveness, but also addressing the barriers that can disrupt or prematurely terminate treatment. Among all youth referred for services, treatment attrition is common (Kazdin, 1996). Especially among minority youth, transportation, language barriers, or lack of rapport can jeopardize the effectiveness of EBTs by threatening the therapeutic alliance, calling into question the relevance of treatment for the individual, or making continuation of treatment difficult or impossible. With some types of EBTs (e.g. CPP, where the number of sessions attended was a significant predictor of outcomes), early termination can undermine the effects of the treatment. Within the context of the foster care stabilization program, these barriers were addressed creatively to maximize the opportunity for treatment gains. Examples of flexible adaptations included:

- When parents were not available for involvement, therapists included a substitute caregiver or other willing family member in the treatment.
- For clients who had a reunification goal, the therapist worked with both the foster parent and the birth parent.
- Therapists provided transportation to treatment sessions and groups if no transportation was available.
- Therapists provided treatment at off-site locations that were convenient to the child/family, including in-home treatment.
- TF-CBT therapists allowed children to use alternate forms of narration for the trauma narrative. For example, one child preferred to complete her trauma narrative using dance and movement rather than words.
- Therapists provided treatment in Spanish and conducted assessments in Spanish.

Table 9
Outcome measures at baseline and follow-up by race/ethnicity for SPARCS (intent-to-treat).

		Baseline	Follow-up		ANCOVA
Measure and Race/ Ethnicity	*n*	*M* (and SD)	*M* (and SD)	Adjusted *M*	*F* (sig)
Traumatic stress symptoms					0.61 (.549)
African American	48	7.0 (3.9)	6.3 (3.9)*	6.2	
Hispanic	8	5.0 (1.5)	5.0 (1.0)	6.6	
White	9	8.7 (4.9)	7.1 (4.8)	5.6	
Child strengths					0.51 (.605)
African American	38	13.3 (3.8)	12.5 (3.5)	12.2	
Hispanic	6	11.7 (3.0)	12.1 (2.5)	12.8	
White	9	13.6 (4.0)	13.6 (4.2)	13.1	
Life domain functioning					0.59 (.558)
African American	48	6.3 (3.4)	5.5 (2.7)*	5.4	
Hispanic	8	5.6 (2.3)	5.9 (1.9)	6.2	
White	9	6.5 (3.5)	5.6 (4.4)	5.4	
Behavioral/Emotional needs					0.32 (.729)
African American	48	4.2 (2.7)	3.7 (2.6)	4.0	
Hispanic	8	4.3 (2.1)	4.3 (1.9)	4.5	
White	9	5.3 (1.3)	4.4 (2.6)	3.9	
Risk behaviors					0.33 (.723)
African American	48	3.3 (2.6)	2.8 (2.2)*	2.9	
Hispanic	8	2.1 (1.8)	2.3 (2.2)	3.3	
White	9	4.9 (3.2)	3.7 (3.6)	2.6	

ANCOVA = analysis of covariance. Between differences for Race/Ethnicity at follow-up evaluation are adjusted for baseline. Within each Race/Ethnicity comparison, significant differences between baseline and follow-up are indicated by * $p < .05$.

- The original SPARCS model was for a 22-week session group intervention but it was condensed to 16 weeks after several agencies reported that 22 weeks was longer than most adolescent clients could be retained in treatment.

These examples illustrate the importance of flexibility to the construct of cultural competence. This cultural competence extends beyond racial/ethnic differences to include regional factors as well; providing group treatment in rural areas required that providers offer additional transportation or flexibility in planning treatment locations. Providers delivering EBTs to diverse populations should ascertain barriers to treatment and develop strategies to overcome them. In addition, they should remain open to the many ways that culturally diverse youth in foster care make meaning of their experiences in order to provide the most culturally relevant evidence-based treatment.

Table 10
Univariate ANOVA coefficients for baseline characteristics, number of sessions, and race/ethnicity predicting traumatic stress symptoms.

Variable	β	*t*(sig)
CPP		
Baseline trauma experiences	.150	1.501(.139)
Baseline trauma stress symptoms	.475	4.318 (.000)***
Baseline behavioral health	.077	.531, (.597)
Number of sessions	−.108	−2.273(.027)*
African-American	−1.374	−1.233(.223)
Biracial	−2.606	−1.717(.092)
Hispanic	−.682	−.435(.665)
TF-CBT		
Baseline trauma experiences	.326	1.788(.086)
Baseline trauma stress symptoms	.55	2.92(.007)**
Baseline behavioral health	.139	.599(.555)
Number of sessions	.070	.575(.570)
African-American	−1.476	−1.44 (.163)
Biracial	1.034	.634(.532)
SPARCS		
Baseline trauma experiences	.077	.381(.707)
Baseline trauma stress symptoms	.631	c3.729(.001)**
Baseline behavioral health	−.226	−.990(.333)
Number of sessions	−.083	−.509(.616)
African-American	.264	.206 (.839)
Hispanic	2.350	1.080(.292)

*$p < .05$; **$p < .01$; ***$p < .001$.

The findings of this study beg the question, "Do the racial/ethnic groups from which these data were collected constitute culturally different, distinct groups?" There are ways in which children served by the child welfare system, and particularly those served within the foster care stabilization program, are a homogeneous group. Clinically, they are not as severely in need of treatment and supervision as youth residing in residential treatment centers. In this context, and without any measure of culture, it is difficult to assign youth who differ in race to different "cultures." Future research should address this question by adding cultural assessment to evaluation protocols. For children of all ethnicities who are involved in the child welfare system, the prevailing culture may be that of child welfare: a system bound by the commonalities of traumatic histories and separation from biological parents. This context calls for treatment that responds to the needs and strengths of individual children while focusing on building the capacity of families and communities to nurture and support them.

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