TRAINING THE PUERTO RICAN MENTAL HEALTH WORKFORCE IN EVIDENCE-BASED TRAUMA TREATMENT: IMPLEMENTATION OUTCOMES OF A TRAUMA-FOCUSED COGNITIVE BEHAVIORAL THERAPY (TF-CBT) INITIATIVE IN PARTNERSHIP WITH ASSMCA

CAPACITACIÓN DE LA FUERZA LABORAL PUERTORRIQUEÑA DE SALUD MENTAL EN UN TRATAMIENTO BASADO EN EVIDENCIA PARA TRAUMA: RESULTADOS DE LA IMPLEMENTACIÓN DE LA TERAPIA COGNITIVA-CONDUCTUAL ENFOCADA EN TRAUMA (TF-CBT) EN COLABORACIÓN CON ASSMCA

Recibido: 27 de enero de 2025 | Aceptado: 27 de junio de 2025
DOI: https://doi.org/10.55611/reps.3602.10

Rosaura **Orengo-Aguayo** [1], Inés **Cano-González** [1], Miriam K. **Avilés López** [1], Regan W. **Stewart** [1]

[1] Medical University of South Carolina, South Carolina, United States of America

ABSTRACT

The objective of this project was to train mental health providers at the Mental Health and Anti-Addiction Services Administration (ASSMCA) in trauma-focused cognitive behavioral therapy (TF-CBT) and to conduct program evaluation for quality improvement. We trained sixteen licensed mental health providers in TF-CBT utilizing a learning collaborative model. Clinicians implemented TF-CBT with 59 youth, ages 4-17 years, and their caregivers. All providers ($N = 16$; 100%) completed all TF-CBT learning collaborative certification requirements. Fifteen (93%) became nationally certified TF-CBT therapists. Forty-nine out of 59 youth (83.1%) completed all components of TF-CBT. Results demonstrated large effect sizes for the reduction in posttraumatic stress symptoms (PTSS) ($d = 1.70$, youth; $d = 1.10$, caregiver), depressive symptoms ($d = 1.14$, youth), and medium effects for anxiety symptoms ($d = 0.78$, youth; $d = 0.76$, caregiver). It was feasible to train providers in TF-CBT, but additional training, support, and time were necessary. TF-CBT was effective in treating trauma-exposed Puerto Rican youth. Still, flexibility in delivery was paramount (e.g., school-based, home-based, and telehealth modalities were essential to address barriers to accessing care).

KEYWORDS: trauma, PTSD, TF-CBT, Hispanic, Puerto Rico.

RESUMEN

El objetivo de este proyecto fue capacitar a profesionales proveedores de salud mental en la Administración de Servicios de Salud Mental y Contra la Adicción (ASSMCA) en la terapia cognitiva conductual enfocada en trauma (TF-CBT) y realizar una evaluación de programa. Dieciséis profesionales de la salud mental recibieron capacitación en TF-CBT utilizando un modelo de aprendizaje colaborativo. Las personas terapeutas implementaron TF-CBT con 59 jóvenes, de 4 a 17 años, y sus personas cuidadoras. Todas las personas proveedoras ($N = 16$; 100%) completaron los requisitos de la certificación. Quince (93%) obtuvieron una certificación nacional. Cuarenta y nueve de 59 jóvenes (83.1%) completaron todos los componentes de TF-CBT. Los resultados indican reducciones de gran magnitud en síntomas de estrés postraumático ($d = 1.70$, joven; $d = 1.10$, persona cuidadora), síntomas depresivos ($d = 1.14$, joven) y efectos medios para síntomas de ansiedad ($d = 0.78$, joven; $d = 0.76$, persona cuidadora). Fue posible capacitar a las personas proveedoras en TF-CBT, pero requirió capacitación, apoyo y tiempo adicional. TF-CBT fue eficaz en el tratamiento de TEPT en la juventud puertorriqueña, pero la flexibilidad en la implementación fue fundamental (p. ej., uso de telesalud y sesiones en las escuelas y el hogar fueron esenciales para abordar barreras de acceso).

PALABRAS CLAVE: trauma, TEPT, TF-CBT, población hispana, Puerto Rico.

Correspondencia de este artículo debe ser dirigida a Rosaura Orengo-Aguayo. E-mail: orengoaa@musc.edu

Approximately half of all youth (1 billion worldwide) will experience at least one traumatic event that can have lasting adverse effects on their well-being (Carlson et al., 2019; Hillis et al., 2016; Schincariol et al., 2024). Traumatic events have been associated with poor mental health outcomes (e.g., PTSD, depression, anxiety, substance use, suicidal ideation/self-harm), poor academic outcomes, and adverse physical health outcomes among youth (Carliner et al., 2016; Lai et al., 2017; Tamir et al., 2025).

In just the last eight years (2017-2025), youth living on the archipelago of Puerto Rico have been exposed to a significant number of potentially traumatic events related to climate change, including devastating hurricanes, earthquakes, and floods (Government Accountability Office, 2024). These disasters have resulted in additional exposure to adverse events, such as school closures, loss of electricity and water, difficulties accessing food and medical care, loss of social support networks due to forced migration, and an increase in child poverty rates (Instituto del Desarrollo de la Juventud, 2019; Orengo-Aguayo et al., 2019). Moreover, in fiscal year 2022-2023, there were 9,561 reported cases of child abuse, of which 45.9% were due to neglect, 16% emotional abuse, 9% physical abuse, and 4% sexual abuse (Departamento de Salud, 2023).

The compound effects of climate change-related disasters and a global health emergency (COVID-19 pandemic) have been layered on top of pre-existing vulnerabilities already faced by Puerto Ricans. These include widespread poverty, collapsing medical, educational, and electrical infrastructures, and increases in community and intrafamilial violence. Combined, these adversities have placed already vulnerable Puerto Rican youth at an increased risk of trauma-related mental health concerns. An island-wide representative survey of Puerto Rican public school students (grades 3-12) found that 7.2% of youth (n = 6,900) reported clinically significant symptoms of post-traumatic stress disorder 5-9 months after Hurricane Maria (Orengo-Aguayo et al., 2019). Training the Puerto Rican mental health workforce in evidence-based trauma treatments for youth, such as trauma-focused cognitive-behavioral therapy (TF-CBT; Cohen et al., 2017), is therefore imperative.

TF-CBT is a structured, short-term, evidence-based treatment model for trauma-exposed children and adolescents aged 3-18 years and their supportive and non-offending caregivers. It targets symptoms of post-traumatic stress and co-occurring depression, anxiety, and mild-to-moderate behavior problems. TF-CBT is comprised of nine components summarized by the acronym PRACTICE: (1) psychoeducation, (2) parenting skills, (3) relaxation skills, (4) affective modulation skills, (5) cognitive processing skills, (6) trauma narration and processing, (7) in-vivo mastery of trauma reminders, (8) conjoint child-parent sessions, and (9) enhancing future safety and development. TF-CBT is typically delivered in 12-25 weekly sessions, which include individual, caregiver, and conjoint sessions (www.tfcbt.org). It can be delivered in person (e.g., clinics, schools, homes) and via telehealth (Stewart et al., 2017; Stewart et al., 2020; Stewart et al., 2021). TF-CBT is one of the most researched and efficacious mental health treatments for trauma-exposed youth, with more than 28 randomized controlled trials and hundreds of non-randomized studies across the world documenting its effectiveness (Cohen et al., 2024; Orengo-Aguayo et al., 2022; Stewart et al., 2021; Thielemann et al., 2022).

More recently, Orengo-Aguayo and colleagues (2022) trained 15 psychologists working in one of the island's largest managed behavioral health organizations (MBHO; APS Healthcare) in TF-CBT through a learning collaborative model. Of the 56 youth (ages 5-18 years) enrolled in the project, thirty-six (64.3%) completed all components of TF-CBT (either in person or via telehealth). Youth patients reported experiencing statistically and clinically significant declines in posttraumatic stress, anxiety, and depressive

symptoms across the course of treatment, with large effect sizes ranging from Cohen's d = 1.18 - 1.32. These results suggest that it was feasible to train providers in TF-CBT, both in person and via telehealth, and that it was an effective treatment option to address trauma-related concerns for youth in Puerto Rico. However, results revealed how multiple disasters and recurring adverse events can negatively impact treatment completion. This project was an important first step in the dissemination and implementation of evidence-based trauma-focused treatment for Puerto Rican youth. Nonetheless, it remains to be seen if such outcomes can be replicated in collaboration with other youth-serving agencies in Puerto Rico that may have different infrastructures, patient populations, providers, and resources.

Our team was contacted by the Mental Health and Anti-addiction Services Administration (Administración de Servicios de Salud Mental y Contra la Adicción-ASSMCA) in Fall of 2022. The agency expressed interest in training a cohort of child-serving mental health professionals in TF-CBT as part of their commitment to offering evidence-based trauma-focused treatment to Puerto Rican youth. After conducting a brief needs assessment, our team established the following project goals: (a) provide TF-CBT training to a cohort of 16 mental health providers in ASSMCA and (b) conduct a program evaluation to determine the feasibility of training providers, implementation of the model within this agency, and effectiveness of TF-CBT with trauma-exposed youth and their supportive caregivers. The current project documents the implementation process, training outcomes, and effectiveness outcomes of TF-CBT within ASSMCA using a program evaluation methodology examining "real-world" implementation.

METHOD

Setting

We conducted this project in collaboration with ASSMCA. This agency was created by the Government of Puerto Rico in 1993 and is responsible for providing programming and services aimed at the prevention, care, mitigation, and solution of mental health and substance use problems in Puerto Rico. ASSMCA also manages the national mental health crisis hotline (Línea PAS) in Puerto Rico, which also supports the federal suicide crisis hotline (988). ASSMCA has over 30 centers located across the archipelago and serves over 20,000 children and adults every year. The current project focused on training mental health professionals located in the Child and Adolescent Mental Health Clinic in Río Piedras, Puerto Rico.

Ethics

The Medical University of South Carolina (MUSC) Institutional Review Board determined that this project did not qualify as human subjects research but rather as a quality improvement (QI) project. Our team provided training on an evidence-based practice that is standard-of-care, in which clinicians followed their usual HIPAA-compliant clinic protocols of obtaining informed consent and assent, clinical measures, and patient tracking. We did not participate in data collection, nor received identifiable patient information of any kind, nor interact with patients or caregivers during this project. Our team only provided training and consultation in TF-CBT and then conducted an ad-hoc pre-/post-analysis of clinic measures using a de-identified data set provided by ASSMCA. We presented results to clinicians and administrators at the end of the project for quality improvement purposes. Our team requested permission from ASSMCA leadership to publish the results of this program evaluation, and permission was granted.

Training, Supervision, and Consultation with Mental Health Providers

Sixteen licensed mental health providers (seven clinical social workers, six clinical psychologists, and three school psychologists) participated in a learning collaborative

model that combines training, consultation, and implementation support (Bunger et al., 2016). Providers first received an orientation explaining the TF-CBT learning collaborative model, and we informed them that we would analyze patient de-identified pre-/post-measures measures ad hoc to offer ASSMCA a final PowerPoint outlining the program evaluation results. Providers could opt out of participating in the training program procedures with no penalties. All providers opted into the TF-CBT training program.

Our team offered an initial one-day training on trauma-informed care (i.e., defining trauma, its impact, and trauma-informed principles) to providers and ASSMCA staff members referring patients to TF-CBT in March 2023. This was followed by a two-day TF-CBT training in March 2023. We held a follow-up, two-day "booster" training three months later in June 2023, as providers transitioned to implementing the second phase of TF-CBT (i.e., trauma narration and processing) with patients. All providers had prior experience treating children and adolescents.

We conducted TF-CBT trainings in-person, in Spanish, used interactive activities (e.g., role plays), small group practice, and rewarded participation with therapy resources (e.g., books, stickers, and games) as prizes. Providers received an implementation manual with session agendas, handouts, and additional resources in Spanish. They participated in 12 group consultation calls offered approximately twice per month (i.e., bi-weekly), via Zoom, from March 2023 to August 2023. Consultation calls involved case presentations, a review of treatment progress through the TF-CBT components, specific challenges/barriers to implementing TF-CBT, and self-care. ASSMCA leadership requested additional training (offered virtually over two half-days, a total of 8 hours in March 2024) to review the TF-CBT model and reinforce concepts to better prepare providers for taking the TF-CBT national certification exam.

Implementation Support for Mental Health Providers

We offered technical assistance and implementation support to providers throughout the 15 months of the project. This included "on-demand" support from our project coordinator, in which providers could text, email, or call to ask questions about metrics administration, scoring, and where to find specific worksheets or resources to aid TF-CBT implementation. Providers also had access to their TF-CBT trainer via text/email to ask questions or troubleshoot challenges related to TF-CBT implementation, in addition to their bi-weekly consultation calls.

Procedure

Referral and Assessment of Patients

Patients were referred to this specialized child and adolescent mental health clinic within ASSMCA with trauma exposure and elevated post-traumatic stress symptoms as assessed by the agency's screening measure (Child and Adolescent Trauma Screen, Spanish version-CATS v.1 in Spanish; Sachser et al., 2017). These patients were then assigned to mental health providers undergoing TF-CBT training. Providers themselves (not the authors) then conducted a pre-treatment assessment. If the patient was under the age of eight years, only the caregiver was administered the measures. Only one caregiver was interviewed using the Child PTSD Symptom Scale for DSM-5 (CPSS-5) and completed the self-report form of the Revised Children's Anxiety and Depression Scale-Short Version (RCADS-SV). These same measures were administered by the mental health provider at treatment termination (within two weeks of the last treatment session) following the same procedures. All patients and caregivers spoke Spanish.

Therapists enrolled youth in the current project if: 1) they were between 3 and 18 years old; 2) they had experienced at least one traumatic event (according to the CPSS-5); 3) they were experiencing significant

current posttraumatic stress symptoms, defined by (a) ≥ three current posttraumatic stress disorder (PTSD) congruent with the Diagnostic and Statistical Manual of Mental Health Disorders-5 (DSM-5) symptoms reported by child or caregiver during the CPSS-5, and (b) score of ≥ 20 on the CPSS-5 either by child or caregiver report; 4) the child provided assent and caregiver provided consent to participate in therapy at ASSMCA (using standard clinic procedures). Therapists excluded youth with current significant suicidal ideation (with intent and plan), a substance use disorder, active psychotic symptoms, pervasive developmental delays, or who were currently living with or in close contact with the perpetrator of their abuse from the project and referred them to more appropriate services and supports. To those patients and caregivers who qualified, providers offered TF-CBT either at the clinic (in person), via telehealth, or in schools or homes (in person) if caregivers had difficulties with transportation or schedules.

Patients and Context

A total of 59 Puerto Rican children and adolescents between the ages of 4 to 17 years, and their supportive caregivers, qualified and participated in this project. The sample had a mean age of 11.31 years (*SD* = 3.61). Over half of the patients identified as female (52.5%, *n* = 31), and 47.5% (*n* = 28) identified as male. The most common index traumas reported on the CPSS-5, by caregiver report, were traumatic loss (*n* = 22, 37.2%), severe bullying (*n* = 12, 20.3%), sexual abuse (*n* = 9, 15.2%), and domestic violence (n = 8, 13.5%). Table 1 includes complete information about index traumas.

TABLE 1.
Index Traumas Reported by Caregivers (*N*=59).

Trauma type	N (%)
Traumatic loss/grief	22 (37.2%)
Severe bullying	12 (20.3%)
Sexual abuse	9 (15.2%)
Domestic violence	8 (13.5%)
Physical abuse	7 (11.8%)
Community violence/Witnessing violence	5 (8.4%)
Traumatic separation	3 (5.1%)
Accident	2 (3.3%)
Natural disaster	1 (1.6%)
Verbal/Emotional abuse	1 (1.6%)

Note. The index trauma was inquired with an open-ended question on the CPSS-5 questionnaire. Results are based on the index trauma that the caregiver reported for the patient (*N* = 59). Eleven caregivers reported two index traumas. In these cases, both index traumas were counted. Because of this, the total percentage will add up to more than 100.

Patients in this sample reported experiencing an average of 4.21 traumatic events (*SD* = 2.21, range 1-10), with 97.8% (46 of 47 youth who completed the CPSS-5) reporting experiencing more than one traumatic event in their lifetime. Caregiver reports about youth exposure to traumatic events in their lifetime indicated that the mean was 3.90 traumatic events (*SD* = 1.88, range 1-10), with 94.9% (56 of 59 caregivers who completed the CPSS-5) reporting that the patient had experienced more than one traumatic event in their lifetime. Table 2 includes frequencies of exposure to traumatic events.

Of the 59 patients, 56 (94.9%) had at least one identified caregiver actively involved in treatment (i.e., participated in the TF-CBT components as the model recommends). Caregivers involved in treatment were primarily mothers (*n* = 34, 60.7%), followed by grandmothers (*n* = 8, 14.2%), both parents (n = 6, 10.7%), grandfather (*n* = 2, 3.6%) fathers (*n* =1, 1.8%), other (*n* = 4, 7.1%, i.e., social worker, caregivers), and both grandparents (*n* = 1, 1.8%).

TABLE 2.
Lifetime Traumatic Events Reported by Patients and Caregivers on the Child PTSD Symptom Scale for DSM-5 (CPSS-5).

	Patient report n (%)	Caregiver report n (%)
A severe natural disaster such as a flood, tornado, hurricane, earthquake, or fire	37 (78.7)	45 (76.3)
Serious accident or injury caused by a car or bike crash, being bitten by a dog, or caused by playing sports	14 (29.8)	16 (27.1)
Being robbed by threat, force, or weapon	4 (8.5)	3 (5.1)
Being slapped, punished, or beaten by a relative	12 (25.5)	13 (22.0)
Being slapped, knifed, or beaten by a stranger	7 (14.9)	9 (15.3)
Seeing a relative get slapped, punished, or beaten	17 (36.2)	17 (28.8)
Seeing somebody in your community being slapped, punished, or beaten	8 (17.0)	10 (16.9)
Being touched in your sexual/private parts by an adult/someone older who should not be touching you there	11 (23.4)	9 (15.3)
Being forced/pressured to have sex at a time when you could not say no	3 (6.4)	2 (3.4)
A family member or somebody close dying suddenly or in a violent way	29 (61.7)	32 (54.2)
Being attacked, shot, stabbed, or seriously injured	1 (2.1)	3 (5.1)
Seeing someone be attacked, shot, stabbed, or seriously injured or killed	7 (14.9)	8 (13.6)
Having a stressful or frightening medical procedure	11 (23.4)	14 (23.7)
Being in a war or severe gang related violence	14 (29.8)	3 (5.1)

Note. Results are based on 47 patients and 59 caregivers who answered the trauma exposure items on the CPSS-5.

Measures

The Child PTSD Symptom Scale for DSM-5 Self-Report (CPSS-5; Foa et al., 2018) is an updated, DSM-5 adaptation of the original CPSS (Foa et al., 2001; Kataoka et al., 2003) that contains 42 items. The first 15 items are a checklist (yes/no) of traumatic events. The next 20 items assess the frequency of posttraumatic stress symptoms experienced within the past month, with a Likert rating scale ranging from 0 (*Not at All*) to 4 (*Almost Always*). The final 7 items assess functional impairment across different domains (e.g., schoolwork, relationships with family), phrased as simple yes/no questions. The English version of the instrument has demonstrated strong psychometric properties, including high internal reliability for the total score (α = 0.92), convergent and divergent validity, and diagnostic sensitivity (0.93) and specificity (0.82) when evaluated using a clinical cutoff score of 31 (Foa et al., 2018).

The Spanish language version of the original CPSS (based on the Diagnostic and Statistical Manual for Mental Health Disorders-IV or DSM IV) has demonstrated strong psychometric properties with high reliability of the total score (α = 0.90) and moderate to good reliability for the subscales (α = 0.70 - 0.80; Serrano-Ibáñez et al., 2018). In a recent study by Hasson III and colleagues (2021), researchers administered the CPSS-5 Spanish language version to unaccompanied immigrant children in the United States and found the internal reliability of the scale to be excellent (α = 0.93). In a study in Puerto Rico that utilized the Spanish version of the CPSS-5 (Orengo-Aguayo et al., 2022), the internal consistency reliability of the overall posttraumatic stress scale (i.e., the 20 symptom rating items) was adequate (α = 0.80 for child report at pre-test, α = 0.81 for caregiver report at pre-test). In the current project, internal consistency reliability of the overall total posttraumatic stress scale (i.e., the 20 symptom rating items) was also adequate (α = 0.78 for child report at pre-test, α = 0.81 for caregiver report at pre-test). For this project, the child and caregiver versions administered via an interview format. The CPSS-5 was used to identify the index trauma for each patient.

The Revised Child Anxiety and Depression Scale-Short Version (RCADS-SV; Ebesutani et al., 2012) is a 25-item measure that assesses symptoms of anxiety and depression in children and adolescents. Patients are asked to rate the frequency of various symptoms on a Likert scale ranging from 0 (*Never*) to 3 (*Always*). The RCADS-25 produces raw and scaled scores (i.e., t-scores) for both depression (10 items) and

anxiety (15 items) and a combined score with all items from both subscales. The short version of the instrument has shown a good bifactor model and good internal consistency for both the Depression and Anxiety subscales across school-based (Cronbach's αs =.80–.86) and clinical (Cronbach's αs = .79–.91) samples (Ebesutani et al., 2012). Additionally, the English version of the RCADS-SV has shown good convergent validity when compared with other measures of anxiety and depression (Ebesutani et al., 2012).

The instrument's Spanish translation was based on items from the full-length parent-report examination conducted by Park and colleagues (2016), and was accessed from the original author's lab website, which also offers norm-based scoring spreadsheets (https://www.childfirst.ucla.edu/resources/). The Spanish language version of the RCADS-SV has been validated for use with youth in Spain (Sandin et al., 2010) and El Salvador (Young et al., 2020). In a study in Puerto Rico by Orengo-Aguayo et al., (2022) the Spanish version of the RCADS-SV had internal consistency reliability of the subscales similar to the original instrument development study (Anxiety: α = 0.80 for child report at pre-test, α = 0.86 for caregiver report at pre-test; Depression: α = 0.74 for child report at pre-test, α = 0.78 for caregiver report at pre-test.). Internal consistency reliability of the subscales in the current sample was in the acceptable range except for the caregiver anxiety subscale (Anxiety: α = 0.75 for child report at pre-test, α = 0.63 for caregiver report at pre-test; Depression: α = 0.77 for child report at pre-test, α = 0.77 for caregiver report at pre-test). For this project, providers administered the child and caregiver versions via self-report.

RESULTS

Data Analysis

Provider Outcomes

We generated descriptive statistics to describe how many providers participated and completed all required TF-CBT training components, completed their required TF-CBT cases, and passed the national TF-CBT certification process. We computed the total number of hours spent completing all the required training and implementation tasks during this project based on the authors' and providers' notes and recollection of the process.

Patient Outcomes

We generated descriptive statistics to detail patients' demographic characteristics, trauma exposure, and treatment completion status. Based on the Kolmogorov-Smirnov test, most dependent variables were normally distributed (D = .139 to 114, p =.200 to .067). The score of RCADS-SV depression caregiver report post-treatment was not normally distributed (D = .164, p < .05). We evaluated changes in CPSS-5 and RCADS-SV scores from pre- to post-treatment with paired sample t-tests. We used the non-parametric test Wilcoxon signed rank to compare the pre- and post-treatment scores of the caregiver report of depression. We calculated Cohen's d values as measures of effect size.

Provider Training & Implementation Outcomes

All providers (n = 16) actively participated and completed the required work before the time of the initial TF-CBT training. This involved completing the web course TF-CBT Web 2.0 Español, in-person and virtual training, biweekly consultation calls, as well as the additional 8-hour training to review concepts and prepare for the national certification exam. Providers completed three TF-CBT cases from start to finish between April 2023 and July 2024 (15 months). All providers submitted applications and were approved to take the TF-CBT Therapist Certification Program Knowledge-Based test. Fifteen (93%) passed the exam and are listed as Nationally Certified TF-CBT providers in Puerto Rico (www.tfcbt.org).

Providers spent an estimated total of 83 hours in training and/or performing adminis-

trative duties related to their TF-CBT cases (i.e., 11 hours completing TFCBT Web, 48 hours of in-person or virtual training, 12 hours of consultation calls, and approximately 20 hours of administrative tasks such as administering and scoring pre/post measures). They spent an estimated 3 hours per week for each TF-CBT case (approximately 9 hours per week total), completing various TF-CBT implementation tasks (i.e., preparing for sessions, seeing the child/adolescent for a minimum of 40 minutes, seeing the caregiver for a minimum of 20 minutes, and case management) over approximately 7-10 months (range of months clinicians spent completing all TF-CBT components with their three cases). Several providers saw their patients in their schools or their homes, which resulted in additional time spent driving to and from appointments.

Patient Treatment Completion and Number of Sessions Attended

A total of 49 out of 59 patients enrolled in the project (83.1%) completed all components of TF-CBT. Ten families (16.9%) who began TF-CBT were unable to complete treatment. Of these, two had scheduling issues, two were referred to other services, one was removed from their household by social services, three did not show up for appointments despite the therapist's attempts to contact them, and for two, our team was not able to identify the reason for dropout. Providers were unable to collect post-treatment assessments from patients and caregivers who dropped out of treatment prematurely. The average number of sessions attended by the youth who completed treatment was 16 (*SD* = 4, range 7-23), and caregivers attended an average of 7 sessions (*SD* = 5, range 1-20).

Patient Clinical Outcomes

In Table 3, we provide a summary of pre-post change on clinical outcomes of interest for patients who completed treatment and had post-treatment completion data available. Youth patients reported experiencing statistically and clinically significant declines in posttraumatic stress, anxiety, and depressive symptoms from pre- to post-treatment with large-to-medium effect sizes that ranged from Cohen's d = 1.707 to d = 0.787. Caregivers also reported statistically and clinically significant declines in posttraumatic stress and anxiety for their children, with large-to-medium effect sizes ranging from Cohen's d = 1.104 to d = .769. The effect size of symptoms of depression reported by caregivers was in the low-to-moderate range (d = .494). Average CPSS-5 scores (PTSD symptoms) at pre-treatment were above the clinical cutoff of 31 for the youth report (*M* = 35.13 for youth report, *M* = 30.74 for caregiver report), and final CPSS-5 scores were in the non-clinical range for youth and caregiver report (*M* = 13.11 for youth report, *M* = 12.63 for caregiver report).

TABLE 3.
Changes in Clinical Outcomes Reported by Youth and Caregivers.

Outcome	Pre *n*	Post *n*	Pre *M (SD)*	Post *M (SD)*	*t*	*df*	*p*	*d*
CPSS-5 (youth)	47	34	35.13 (11.87)	13.11 (9.92)	10.526	37	<.001	1.707
CPSS-5 (caregiver)	59	45	30.74 (12.92)	12.63 (9.90)	7.490	44	<.001	1.104
RCADS-SV depression subscale (youth)	47	36	11.46 (5.43)	5.27 (4.00)	6.939	36	<.001	1.141
RCADS-SV depression subscale (caregiver)	59	45	10.69 (5.87)	5.16 (3.65)	(Z)-.4.685*	44	<.001	.494
RCADS-SV anxiety subscale (youth)	47	36	16.32 (7.56)	9.54 (6.04)	4.788	36	<.001	.787
RCADS-SV subscale (caregiver)	59	45	12.29 (6.36)	7.51 (5.57)	5.160	44	<.001	.769

Note. CPSS-5 = The Child PTSD Symptoms Scale for DSM-5. RCADS-SV = The Revised Child Anxiety and Depression Scale Short Version. *Dependent variable was not normally distributed. Results represent the Wilcoxon Signed-Rank Test scores. Results are based on 47 patients and 59 caregivers who completed the pre-treatment assessment measures.

DISCUSSION

We formed a partnership with ASSMCA to train sixteen Puerto Rican licensed mental health providers in TF-CBT through a learning collaborative model that incorporates rigorous training, consultation, and implementation support. Results revealed that it was feasible to train a variety of licensed mental health providers in TF-CBT and achieve significant and large reductions in PTSD, anxiety, and depressive symptoms in trauma-exposed Puerto Rican youth. Providers acquired the necessary competencies to adequately deliver TF-CBT (as evidenced by 93% passing their national certification exam) with a patient profile that resembled what is typically reported in the TF-CBT literature (e.g., 98% reported more than one traumatic event in their lifetime and the average number of traumas was four, with the most common index traumas being traumatic loss, severe bullying, sexual abuse, and domestic violence; Thielemann et al., 2022).

However, this project incorporated significantly more training time and on-demand implementation support than what is typical. For instance, according to national TF-CBT certification guidelines (www.tfcbt.org), at a minimum, providers are expected to complete a live TF-CBT training (two days) and actively participate in 9 of 12 consultation calls over 6 months. Providers may also become certified by completing a learning collaborative model that may include an additional 2-day training covering advanced topics in TF-CBT (e.g., trauma narration and processing), offer additional consultation calls, and, in some cases, separate training/ implementation support offered to agency leaders, brokers, etc. (Deblinger et al., 2020; Hanson et al., 2019).

Based on prior experience implementing TF-CBT in Puerto Rico, our team built on and expanded the learning collaborative model to include an initial trauma-informed training (1 day), an initial two-day training, a follow-up two-day booster training to reinforce concepts, and, per the request of ASSMCA, an additional review/booster one year after the original training (two half-days). Furthermore, we offered "on-demand" consultation and implementation support throughout 15 months (via text, email, or video calls) to provide ample time for clinicians to be able to see their three patients from start to finish and receive adequate implementation support. Additionally, the director of the clinic (at the time of the project) also went through the training process and became certified, while dedicating time and resources to this initiative (i.e., "championing" the process). We believe these additional trainings, implementation supports, time (15 months vs 6 months), and "champion leader" were necessary and crucial in the success of this project. This success was evidenced by: 1) 100% of clinicians completing all their certification requirements; 2) 93% passing their national certification exam; 3) and 83% patient treatment completion rate; 4) 95% of patients having at least one caregiver actively participate in treatment; and 5) large-to-medium pre-to-post effect sizes in youth and caregiver reported symptoms of PTSD, depression, and anxiety.

Our results were comparable to those of Orengo-Aguayo and colleagues (2022), who trained Puerto Rican psychologists working in one of the archipelago's largest managed behavioral health organizations (APS Healthcare) via a similar TF-CBT learning collaborative model. However, several notable differences emerged. In the previous project, providers received less training than in the current project (four days versus 6 days), and two significant events impacted implementation (i.e., earthquakes and the COVID-19 pandemic). These resulted in a mandatory switch to telehealth delivery of TF-CBT, a practice which, at the time (March of 2020), was unfamiliar to most providers. These differences could explain why Orengo-Aguayo and colleagues (2022) reported a 64% treatment completion rate (compared to 83% in the current project) and why only two providers applied for and passed their national certification exam. Nonetheless, both studies found that TF-CBT was effective at reducing

PTSD, depression, and anxiety symptoms with comparable large effect sizes, both by youth and caregiver report, which is also consistent with studies conducted in the United States (Rubin et al., 2017; Thielemann et al., 2022) and other low- and middle-income countries, including El Salvador (O'Callaghan et al., 2013; Stewart et al., 2021). The patient completion rate of 83% in the current project is particularly noteworthy as it is higher than other known completion rates for standard TF-CBT training programs in the US, which have ranged from 34% to 71% (Barnett et al., 2019; Deblinger et al., 2020; Sigel et al., 2013).

This quality improvement project provides further evidence that TF-CBT is an effective treatment for trauma-exposed Puerto Rican youth and can be successfully delivered in a community mental health agency by different types of licensed mental health providers. Although our project revealed it was feasible to train providers in TF-CBT and get them to a level of proficiency where they could be nationally certified, additional training, support, implementation time, and agency leadership support were more necessary than is typically reported in US-based implementation projects. Furthermore, the fact that ASSMCA allowed providers to see children in their homes, schools, and via telehealth to minimize barriers to access to care is possibly another reason why they were successful in achieving such a high treatment completion rate. This project adds to the literature on the dissemination and implementation of evidence-based trauma-focused treatment and assessment for Puerto Rican youth.

Limitations and Strengths

The absence of a control group limits the attribution of changes in mental health scores to the effects of TF-CBT components. The treating therapists collected the pre and post-treatment outcome measures as part of their training in TF-CBT, which may have introduced a potential source of bias. The small sample size and inclusion of only Puerto Rican children residing in Puerto Rico limit the generalizability of these findings to other populations. It is also important to recognize that the caregiver report alpha at pre-treatment for our depression and anxiety measure was <0.70. This brings into question whether the RCADS-SV was adequately measuring these symptoms or potentially needs additional validity studies with Puerto Rican youth and caregivers. Several strengths also warrant discussion. This project was implemented within a real-world community mental health agency that plays a vital role in the prevention and treatment of mental health and substance use-related disorders in Puerto Rico. Patients were children and adolescents seeking treatment due to significant trauma exposure and associated symptoms. Furthermore, our project may have potentially helped expand local capacity within Puerto Rico to provide evidence-based trauma-focused treatment for youth.

Implications

Training teams would benefit from meeting with agency leadership and conducting a needs assessment to better understand their goals, strengths, challenges, and existing infrastructure and resources before starting a TF-CBT training initiative. Agency leadership and providers would benefit from information about the significant time and effort required to successfully become trained and certified in an evidence-based practice such as TF-CBT before embarking on this effort (akin to an informed-consent procedure). For instance, our project revealed the importance of providing not just training and consultation, but also on-demand implementation support. This allowed for additional time to complete treatment (approximately 13-15 months based on prior work and this project), and provided additional training (e.g., introduction to trauma; booster training one year after the initial 2-day training). Furthermore, training teams would benefit from thinking about sustainability from the outset. That is, how can they ensure that providers continue to sustain this evidence-based trauma-focused practice within their agencies after the implementation

support ends? This may require ongoing meetings with leadership, identifying champion providers and staff (i.e., those that have embraced the TF-CBT model and can promote and support it within their agencies) (Powell et al., 2015; Shea, 2021) to come up with creative ways in which to embed a trauma-informed lens into the daily operations.

Conclusions and Future Directions

This program evaluation project provides evidence of the feasibility of training licensed mental health providers in TF-CBT within a community mental health agency in Puerto Rico, using a learning collaborative model that incorporated significant training, consultation, and ongoing implementation support. This training approach resulted in clinically meaningful PTSD, depression, and anxiety symptom change pre-to-post-treatment based on patient and caregiver reports. Future TF-CBT training programs would benefit from incorporating a multi-pronged approach to training as outlined in this paper (i.e., additional training days, on-demand implementation support, and an extended implementation period of at least one year). Studies should evaluate which training components are necessary and sufficient to achieve similar outcomes (i.e., dismantling the learning collaborative model study). Finally, future studies should examine the sustainability of TF-CBT after a learning collaborative ends, especially since there tends to be substantial turnover of staff in community mental health agencies (sometimes as high as 50%; Woltmann et al. 2008). It will also be important to continue to build the local workforce capacity by continuing to offer TF-CBT training to clinicians and graduate psychology students in Puerto Rico. Some of these efforts have already begun or are currently underway.

Research Ethics Standards

Funding: The first author was brought on by ASSMCA as a short-term independent contractor to provide training and consultation for this specific project. No other funding sources to report.

Conflict of Interest: As stated previously, the first author was brought on by ASSMCA as a short-term independent contractor to provide training and consultation for this specific project. ASSMCA did not play a role in this manuscript's conceptualization, analysis, or writing. ASSMCA reviewed and approved the final draft of this manuscript. The authors accept full responsibility for the manuscript content, and findings do not necessarily represent the official position or viewpoint of ASSMCA.

Institutional Review Board Approval for the Protection of Human Subjects in Research: The Medical University of South Carolina Institutional Review Board determined that this project did not qualify as human subjects research but rather as a quality improvement (QI) project.

Informed Consent: Our team provided training on an evidence-based practice that is standard-of-care in which clinicians followed their usual HIPAA-compliant clinic protocols of obtaining informed consent and assent, clinical measures, and patient tracking. We did not participate in data collection, nor received identifiable patient information of any kind, nor interact with patients or caregivers during this project

REFERENCES

Barnett, E. R., Jankowski, M. K., & Trepman, A. Z. (2019). State-wide implementation and clinical outcomes associated with evidence-based psychotherapies for traumatized youth. Psychological Trauma: *Theory, Research, Practice, and Policy, 11*(7), 775–783. https://doi.org/10.1037/tra0000444

Bunger, A. C., Hanson, R. F., Doogan, N. J., Powell, B. J., Cao, Y., & Dunn, J. (2016). Can learning collaboratives support implementation by rewiring professional networks? *Administration and Policy in Mental Health and Mental Health*

Services Research, 43, 79–92. https://doi.org/10.1007/s10488-014-0621-x

Carliner, H., Keyes, K. M., McLaughlin, K. A., Meyers, J. L., Dunn, E. C., & Martins, S. S. (2016). Childhood trauma and illicit drug use in adolescence: A population-based national comorbidity survey replication–adolescent supplement study. *Journal of the American Academy of Child & Adolescent Psychiatry, 55*(8), 701-708. https://doi.org/10.1016/j.jaac.2016.05.010

Carlson, J. S., Yohannan, J., Darr, C. L., Turley, M. R., Larez, N. A., & Perfect, M. M. (2019). Prevalence of adverse childhood experiences in school-aged youth: A systematic review (1990–2015). *International Journal of School & Educational Psychology, 8*(1), 2–23. https://doi.org/10.1080/21683603.2018.1548397

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

Cohen, J. A., Mannarino, A. P., & Deblinger, E. (2024). *The trauma-focused cognitive behavioral therapy (TF-CBT): At-A-Glance* [Fact sheet]. National Center for Child Traumatic Stress. https://www.nctsn.org/sites/default/files/interventions/trauma-focused-cognitive-behavioral-therapy-2024.pdf

Deblinger, E., Pollio, E., Cooper, B., & Steer, R. A. (2020). Disseminating trauma-focused cognitive behavioral therapy with a systematic self-care approach to addressing secondary traumatic stress: PRACTICE What You Preach. *Community Mental Health Journal, 56,* 1531–1543. https://doi.org/10.1007/s10597-020-00602-x

Departamento de Salud (2023). *Boletín estadístico de violencia sexual, año 2023.* https://observatoriopvg.salud.pr.gov/Principal/Download/14186#:~:text=Seg%C3%BAn%20datos%20reportados%20por%20el,4.0%25)%20(Gr%C3%A1fica%2010).&text=Fuente%3A%20Departamento%20de%20la%20Familia%2C%202024.

Ebesutani, C., Reise, S. P., Chorpita, B. F., Ale, C., Regan, J., Young, J., Higa-McMillan, C., & Weisz, J. R. (2012). The Revised Child Anxiety and Depression Scale-short version: Scale reduction via exploratory bifactor modeling of the broad anxiety factor. *Psychological Assessment, 24*(4), 833–845. https://doi.org/10.1037/a0027283

Foa, E. B., Asnaani, A., Zang, Y., Capaldi, S., & Yeh, R. (2018). Psychometrics of the child PTSD symptom scale for DSM-5 for trauma-exposed children and adolescents. *Journal of Clinical Child & Adolescent Psychology, 47*(1), 38–46. https://doi.org/10.1080/15374416.2017.1350962

Foa, E. B., Johnson, K. M., Feeny, N. C., & Treadwell, K. R. (2001). The child PTSD symptom scale: A preliminary examination of its psychometric properties. *Journal of Clinical Child Psychology, 30*(3), 376–384. https://doi.org/10.1207/S15374424JCCP3003_9

Government Accountability Office (2024). *Puerto Rico disasters: Progress made, but the recovery continues to face challenges.* https://www.gao.gov/assets/gao-24-105557.pdf

Hanson, R. F., Saunders, B. E., Ralston, E., Moreland, A. D., Peer, S. O., & Fitzgerald, M. M. (2019). Statewide implementation of child trauma-focused practices using the community-based learning collaborative model. *Psychological Services, 16*(1), 170–181. https://doi.org/10.1037/ser0000319

Hasson, R. G. III, Easton, S. D., Díaz-Vald´es Iriarte, A., O'Dwyer, L. M., Underwood, D., & Crea, T. M. (2021). Examining the psychometric properties of the child PTSD symptom scale within a sample of unaccompanied immigrant children in the

United States. *Journal of Loss and Trauma, 26*(4), 323–335. https://doi.org/10.1080/15325024.2020.1777760

Hillis, S., Mercy, J., Amobi, A., & Kress, H. (2016). Global prevalence of past-year violence against children: A systematic review and minimum estimates. *Pediatrics, 137*(3), e20154079. https://doi.org/10.1542/peds.2015-4079

Instituto del Desarrollo de la Juventud (2019, January 31). *A future of child poverty in Puerto Rico: how much it costs us and what we can do about it.* https://www.juventudpr.org/publicaciones/un-futuro-de-pobreza-infantil-en-puerto-rico-cuanto-nos-cuesta-y-que-podemos-hacer

Kataoka, S. H., Stein, B. D., Jaycox, L. H., Wong, M., Escudero, P., Tu, W., Zaragoza, C., & Fink, A. (2003). A school-based mental health program for traumatized Latino immigrant children. Journal of the American *Academy of Child & Adolescent Psychiatry, 42*(3), 311–318. https://doi.org/10.1097/00004583-200303000-00011

Lai, B. S., Lewis, R., Livings, M. S., La Greca, A. M., & Esnard, A-M. (2017). Posttraumatic stress symptom trajectories among children after disaster exposure: A review. *Journal of Traumatic Stress, 30*(6), 571–582. https://doi.org/10.1002/jts.22242

O'Callaghan, P., McMullen, J., Shannon, C., Rafferty, H., & Black, A. (2013). A randomized controlled trial of trauma-focused cognitive behavioral therapy for sexually exploited war affected Congolese girls. Journal of the American *Academy of Child & Adolescent Psychiatry, 52*(4), 359–369. https://doi.org/10.1016/j.jaac.2013.01.013

Orengo-Aguayo, R., Dueweke, A. R., Nicasio, A., de Arellano, M. A., Rivera, S., Cohen, J. A., Mannarino, A. P., & Stewart, R. W. (2022). Trauma-focused cognitive behavioral therapy with Puerto Rican youth in a post-disaster context: Tailoring, implementation, and program evaluation outcomes. *Child Abuse & Neglect, 129*, 105671. https://doi.org/10.1016/j.chiabu.2022.105671

Orengo-Aguayo, R., Stewart, R. W., de Arellano, M. A., Suárez-Kindy, J. L., & Young, J. (2019). Disaster exposure and mental health among Puerto Rican youths after hurricane Maria. *JAMA Network Open, 2*(4), e192619. https://doi.org/10.1001/jamanetworkopen.2019.2619

Park, A. L., Ebesutani, C. K., Bose, D., & Chorpita, B. F. (2016). Psychometric properties of a Spanish translation of the Revised Child Anxiety and Depression Scale-parent version. *Journal of Psychopathology and Behavioral Assessment, 38*, 307–319. https://doi.org/10.1007/s10862-015-9517-7

Powell, B. J., Waltz, T. J., Chinman, M. J., Damschroder, L. J., Smith, J. L., Matthieu, M. M., Proctor, E. K., & Kirchner, J. E. (2015). A refined compilation of implementation strategies: Results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Science*, 10(1), Article 21. https://doi.org/10.1186/s13012-015-0209-1

Rubin, A., Washburn, M., & Schieszler, C. (2017). Within-group effect size benchmarks for trauma-focused cognitive behavioral therapy with children and adolescents. *Research on Social Work Practice, 27*(7), 789–801. https://doi.org/10.1177/1049731515620016

Sachser, C., Berliner, L., Holt, T., Jensen, T. K., Jungbluth, N., Risch, E., Rosner, E., & Goldbeck, L. (2017). International development and psychometric properties of the Child and Adolescent Trauma Screen (CATS). *Journal of Affective Disorders, 210*, 189-195. https://doi.org/10.1016/j.jad.2016.12.040

Sandin, B., Chorot, P., Valiente, R. M., & Chorpita, B. F. (2010). Development of a 30-item version of the Revised Child Anxiety and Depression Scale. *Revista de Psicopatología y Psicología Clínica, 15*(3), 165–178. https://doi.org/10.5944/rppc.vol.15.num.3.2010.4095

Schincariol, A., Orrù, G., Otgaar, H., Sartori, G., & Scarpazza, C. (2024). Posttraumatic stress disorder (PTSD) prevalence: An umbrella review. *Psychological Medicine, 54*(15), 4021–4034. https://doi.org/10.1017/S0033291724002319

Serrano-Ibáñez, E. R., Ruiz-Parraga, G. T., Esteve, R., Ramírez-Maestre, C., & López-Martínez, A. E. (2018). Validation of the child PTSD symptom scale (CPSS) in Spanish adolescents. *Psicothema, 30*(1), 130–135. https://doi.org/10.7334/psicothema2017.144

Shea, C. M. (2021). A conceptual model to guide research on the activities and effects of innovation champions. *Implementation Research & Practice, 2*, 1-13. https://doi.org/10.1177/2633489521990443

Sigel, B. A., Kramer, T. L., Conners-Burrow, N. A., Church, J. K., Worley, K. B., & Mitrani, N. A. (2013). Statewide dissemination of trauma-focused cognitive-behavioral therapy (TF-CBT). *Children and Youth Services Review, 35*(6), 1023–1029. https://doi.org/10.1016/j.childyouth.2013.03.012

Stewart, R. W., Orengo-Aguayo, R. E., Gilmore, A. K., & de Arellano, M. (2017). Addressing barriers to care among Hispanic youth: Telehealth delivery of trauma-focused cognitive behavioral therapy. *The Behavior Therapist, 40*(3), 112.

Stewart, R. W., Orengo-Aguayo, R., Young, J., Wallace, M. M., Cohen, J. A., Mannarino, A. P., & de Arellano, M. A. (2020). Feasibility and effectiveness of a telehealth service delivery model for treating childhood posttraumatic stress: A community-based, open pilot trial of trauma-focused cognitive–behavioral therapy. *Journal of Psychotherapy Integration, 30*(2), 274-289. https://doi.org/10.1037/int0000225

Stewart, R. W., Orengo-Aguayo, R., Villalobos, B. T., Nicasio, A. V., Dueweke, A., Alto, M., Cohen, J. A., Mannarino, A. P., & de Arellano, M. A. (2021). Implementation of an evidence-based psychotherapy for trauma-exposed children in a lower-middle income country: The use of trauma-focused cognitive behavioral therapy in El Salvador. *Journal of Child & Adolescent Trauma, 14*, 433-441. https://doi.org/10.1007/s40653-020-00327-9

Tamir, T. T., Tekeba, B., Mekonen, E. G., Deresse, A. G., & Alabachew, F. Z. (2025). Shadows of trauma: An umbrella review of the prevalence and risk factors of post-traumatic stress disorder in children and adolescents. *Child and Adolescent Psychiatry and Mental Health, 19*, 48. https://doi.org/10.1186/s13034-025-00879-4

Thielemann, J. F. B., Kasparik, B., König, J., Unterhitzenberger, J., & Rosner, R. (2022). A systematic review and meta-analysis of trauma-focused cognitive behavioral therapy for children and adolescents. *Child abuse & neglect, 134*, 105899. https://doi.org/10.1016/j.chiabu.2022.105899

Woltmann, E. M., Whitley, R., McHugo, G. J., Brunette, M., Torrey, W. C., Coots, L., Lynde, D., & Drake, R. E. (2008). The role of staff turnover in the implementation of evidence-based practices in mental health care. *Psychiatric Services, 59*(7), 732–737. https://doi.org/10.1176/ps.2008.59.7.732

Young, J., Ramachandran, S., Stewart, R. W., Orengo-Aguayo, R., & Chorpita, B. F.

(2020). Psychometric properties of the Spanish Revised Child Anxiety and Depression Scale short version in El Salvador. *Journal of Psychopathology and Behavioral Assessment, 38*(2), 307–319. https://doi.org/10.1007/s10862-020-09843-2