

Implementing CBT for Traumatized Children and Adolescents After September 11: Lessons Learned from the Child and Adolescent Trauma Treatments and Services (CATS) Project

CATS Consortium

The Child and Adolescent Trauma Treatments and Services Consortium (CATS) was the largest youth trauma project associated with the September 11 World Trade Center disaster. CATS was created as a collaborative project involving New York State policymakers; academic scientists; clinical treatment developers; and routine practicing clinicians, supervisors, and administrators. The CATS project was established to deliver evidence-based cognitive-behavioral trauma treatments for children and adolescents affected by the September 11 terrorist attack in New York City and to examine implementation processes and outcomes associated with delivery of these treatments. Referrals were obtained on 1,764 children and adolescents; of these, 1,387 were subsequently assessed with a standardized clinical battery and 704 found to be eligible for services. Ultimately 700 youth participated in the project. Treatments were delivered in either school or clinic settings by clinicians employed in 9 provider organizations in New York City. All participating clinicians were trained on the cognitive behavioral therapy models by the treatment developers and received case consultation for 18 months by expert clinician consultants and the treatment developers. The challenges of mounting a large trauma treatment project within routine clinical practices in the aftermath of a disaster and simultaneously evaluating the project have been significant. We outline the major challenges, describe strategies we employed to address them, and make recommendations based on critical lessons learned.

Scientifically validated or “evidence-based” practices (EBPs) for youth with mental health problems are being widely promulgated at federal, state, and local levels. A range of treatments, services, and preventive interventions have been

identified as meeting scientific criteria and being efficacious or effective with children who have mental health problems, including conduct disorders, oppositional disorders, depression, anxiety, and ADHD, to name but a few (Burns & Hoagwood,

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2004; Burns, Hoagwood, & Mrazek, 2000; Chambless & Hollon, 1998; Hoagwood & Burns, 2005; Kazdin, 2003; U.S. Department of Health and Human Services, 1999; Weisz, 2004). As the corpus of scientific work on EBPs has increased, however, the focus of new studies is shifting toward examination of barriers to and strategies for deploying empirically validated clinical services into routine practice. Despite this shift, however, the actual science base on effective implementation strategies does not yet exist (Schoenwald & Hoagwood, 2001).

Coupled with this dearth of knowledge is a limited knowledge base on efficacious treatments for children with particular disorders and combinations of disorders. For example, the *optimal* treatments for children and adolescents exposed to the kinds of trauma and traumatic bereavement engendered by the terrorist attacks of September 11 are virtually unknown. No clinical trials on either the efficacy or effectiveness of trauma treatments for youth who have experienced terrorist attacks exist.

Epidemiological studies clearly indicate, however, that a significant proportion of the population affected by a terrorist event, particularly children and adolescents, suffer distress and impairment unlikely to be mitigated by a crisis intervention approach alone (Almqvist & Brandell-Forsberg, 1999; Trappler & Friedman, 1996). Children and adolescents who have been exposed to traumatic events and to traumatic bereavement, such as the September 11 attack, can develop a range of symptoms that, if left untreated, can lead to longer term problems.

Studies have suggested that among the long-term effects of child and adolescent exposure to terrorism are high rates of childhood posttraumatic stress disorder (PTSD; Almqvist & Brandell-Forsberg, 1999; Desivilya, Gal, & Ayalon, 1996; Elbedour, Bensel, & Bastien, 1993; Gurwitsch et al., 2002; Trappler & Friedman, 1996). Even children who do not develop PTSD may be at significant risk for experiencing other behavioral, emotional, or developmental problems (Ayalon, 1982; Cohen, Mannarino, Berliner, & Deblinger, 2000; Macksoud & Aber, 1996; March, Amaya-Jackson, Murray, & Schulte, 1998). In addition, trauma-exposed children and adolescents have been observed to display a wide range of distress symptoms, including nightmares, somatic complaints, concentration difficulties, and anger or aggression, among others (Silva, 2004). Furthermore, preexisting psychiatric problems, including mood and anxiety disorders, attention-deficit hyperactivity disorder and other disruptive behavior problems can be exacerbated in the aftermath

of trauma and derail children from their normal developmental pathways (Cohen & Mannarino, 1997; Fergusson, Lynskey, & Horwood, 1996; Goenjian et al., 1995; Peters & Range, 1995; Schwab-Stone et al., 1995; Shahinfar, Fox, & Leavitt, 2000; Singer, Anglin, Song, & Lunghofer, 1995). Children and adolescents who have experienced trauma may display only partial symptoms of a given disorder, including PTSD (Giaconia et al., 1995; Vernberg & Vogel, 1993) or may present with multiple disorders such as depression, anxiety, substance abuse, or behavioral problems (e.g., Breslau, Davis, Andreski, & Peterson, 1991; Goenjian et al., 1995). This diversity of clinical presentation makes it extremely difficult to recognize and diagnose, much less treat the sequelae of trauma and traumatic bereavement in children and adolescents.

In the 6 months following the World Trade Center (WTC) terrorist attack, schoolwide screening in New York City using the Diagnostic Interview Schedule for Children Predictive Scales (Lucas et al., 2001) indicated that as many as 75,000 children in New York City schools had symptoms of PTSD (Hoven, Duarte, & Mandell, 2003). In addition, high percentages of children presented with other psychiatric symptoms including depression (8.4%), anxiety (12.3%), agoraphobia (15.0%), separation anxiety (12.3%), and conduct disorder (10.9%). Even more troubling was the fact that 6 months from the September 11 attack, two thirds of children with elevated PTSD symptoms had not received *any* mental health services from either a school counselor or an outside mental health provider (Hoven et al., 2003).

The Child and Adolescent Trauma Treatments and Services (CATS) Consortium was created in the aftermath of the WTC attack by the New York State Office of Mental Health (OMH) to address the need for treatment among the most highly affected children and adolescents post-9/11. This project has become the largest youth mental health treatment and evaluation study in New York associated with the WTC attack. CATS was established to deliver evidence-based and scientifically validated trauma treatments and services to youth and their families seeking mental health services in schools and clinics throughout New York City. The absence of empirically examined implementation strategies for delivery of EBPs in routine service settings made this project especially challenging. In addition, because the science on implementation is practically nonexistent, the CATS project was also designed to examine implementation processes and outcomes associated with delivery of evidence-based trauma treatments.

The challenges of launching this project in the aftermath of a major disaster among routine practicing outpatient clinics and schools have been considerable. In this article we outline some of the major challenges and our strategies for handling them, and then we provide a summary of lessons learned that we hope will be helpful to others facing similar clinical service emergencies.

Background

Immediately after September 11th, the Federal Emergency Management Agency, with support from the Center for Mental Health Services, provided funds to New York State to provide professional mental health counseling to victims of the disaster. Federal and state support was also used to finance Project Liberty Crisis Counseling services, a large public health initiative to provide outreach and crisis counseling to individuals regardless of age affected by the WTC disaster. Although the services provided by Project Liberty appeared to be sufficient to enable the majority of affected youth to resume their predisaster level of functioning, the services were not designed to meet the needs of more severely impacted children and adolescents, whose trauma-related exposures and associated distress placed them in need of more extensive and specialized mental health services. Therefore, in 2001 the Substance Abuse and Mental Health Services Administration (SAMHSA) provided \$3 million in funding to OMH to support delivery of treatments for more highly exposed school-age children and adolescents and to evaluate delivery of these services. The OMH decided to establish a collaborative project among community provider agencies and their academic partners, with oversight and project leadership provided by OMH. The CATS project was launched through a competitive Request for Proposals grant process. Applications were invited from OMH-licensed clinics and medical-academic centers in New York City and surrounding areas. Twenty applications were submitted, and eight provider organizations were selected to participate. Six months later, a ninth organization (St. Vincent Medical Center) was added. The directors of these nine organizations and their clinical staff, along with project staff from OMH, formed the CATS Consortium.

In keeping with the directive from Commissioner Carpinello of OMH to offer evidence-based and scientifically validated services wherever feasible, the CATS Consortium immediately developed a set of goals and protocols for launching the project. The goals were the following:

1. To use evidence-based assessments to identify children and adolescents affected by September 11 or other traumas.
2. To provide, through training and consultation, age-appropriate evidence-based CBT for trauma to children and youth with moderate to severe traumatic symptoms.
3. To examine, using a standard cross-site evaluation protocol, clinical outcomes for children and youth including trauma, depression, anxiety, and behavior problems associated with receipt of the CBTs that were implemented.
4. To examine the potential influence of key contextual factors (e.g., organizational culture, climate, clinician work attitudes, treatment fidelity, and therapeutic alliance) on delivery of these services.

Launching the CATS Project

We first established an organizational hierarchy with project leadership provided by the OMH Bureau Director of Youth Services Research (see the title page footnote for a complete list of all participants.) Directors and codirectors of each of the nine provider organizations were identified for the steering committee. The steering committee held weekly conference calls during the 1st year of the project and biweekly thereafter. Four subcommittees were created: an assessment subcommittee to select an appropriate measurement battery, a treatment subcommittee to conduct a literature search and identify a set of research-based treatments for delivery in either schools or clinics for children spanning the age range of 5 to 21 years, a clinical operations subcommittee to schedule trainings and work with the treatment developers to coordinate planning, and a scientific advisory board, to provide consultation and guidance on the evaluation of the project.

The next step was to organize and initiate clinical training on the assessment and treatment protocols. A total of 173 clinicians, supervisors, and other staff across the nine provider organizations and OMH were trained during the entire 2-year period of the project. In all, 45 separate clinic or school sites participated in the project, managed by the nine provider organizations. The assessment subcommittee selected a uniform battery of measures to assess trauma symptoms as well as symptoms of depression, other anxiety issues, and behavioral problems, including substance abuse. Appropriateness of measures for diverse populations, including Spanish-speaking participants, was a criterion for selection. A WTC exposure instrument was created for the project

to assess degrees and types of exposure, both direct and indirect, to the attack. The UCLA PTSD Reaction Index (PTSD-RI; Steinberg, Brymer, Decker, & Pynoos, 2004) was selected as the core clinical instrument for assessing eligibility for services. Clinical cutoffs were identified in consultation with the developers of the instrument (see Design Issues section for further discussion.) The Trauma Event Inventory of the PTSD-RI was used to assess other types of traumatic events to which the children or adolescents had been exposed, including community and domestic violence, bad accidents, sexual abuse or exploitation, and intrusive medical procedures. In addition, standardized measures of other clinically relevant mental health issues, including depression, anxiety, and behavior problems, were assessed with the Beck Depression Inventory for adolescents or Children's Depression Inventory for younger children, the Multidimensional Scale for Children, and the Behavioral Assessment Schedule for Children (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Kovacs, 1992; March, Parker, Sullivan, Stallings, & Conners, 1997; Merenda, 1996). Measures were chosen in part to be appropriate for a range of backgrounds and to include availability of Spanish versions.

Within 9 months, training on the assessment protocol had been completed across all sites. The training consisted of a half-day overview of administration and scoring of the elements of the assessment battery for all clinicians and supervisors, followed by on-site, small-group, hands-on scoring exercises. In addition, because the PTSD-RI was a critical component in assessing children entering the program, a half-day video conference was set up specifically on this instrument to allow the developers of the measure (Steinberg and Pynoos) to provide consultation on administration techniques. Issues such as how to address trauma during a first visit, dealing with avoidant children, and assessing young children were discussed. There was further discussion of assessment issues during the regular site visits by OMH staff.

Selection of the specific clinical treatments followed an extensive literature review. This review indicated that although manualized CBTs have received extensive empirical support, with at least 550 documented therapies available for use (Kazdin, 2003), there had been only limited experimental testing of CBT approaches to disaster related trauma (Chemtob, Nakashima, & Hamada, 2002). CBT trauma treatments, however, had been experimentally tested with sexual abuse populations (e.g., Cohen & Mannarino, 1996, 1998; Deblinger, Lippman, & Steer, 1996; Deblinger, McLeer, & Henry, 1990; Stauffer & Deblinger, 1996) and

shown to reduce trauma reactivity and depressive symptoms. Studies of the effectiveness of trauma treatments for single-incident trauma had also been conducted (e.g., Goenjian et al., 1997; March et al., 1998; Saltzman, Pynoos, Layne, Steinberg, & Aisenberg, 2001; Stubenbort, Donnelly, & Cohen, 2001) and reductions noted for anxiety and PTSD symptoms.

After the literature review, two specific treatment manuals were chosen for the CATS project. These met criteria for being developmentally appropriate for the age range of the population of children to be served (ages 6–21), clinically indicated for children and youth exposed to trauma and disaster, manually driven, and found to lead to clinical and functional improvements. For children ages 6 to 12, the *Child and Parent Trauma-Focused Cognitive Behavioral Therapy Treatment Manual* (Cohen, Mannarino, & Deblinger, 2002) was adopted. Minor adaptations to make it appropriate for this study were made by the treatment developers (Cohen & Mannarino, 1996; Cohen et al., 2000; Stauffer & Deblinger, 1996). For adolescents (ages 13–21) the Component Therapy for Trauma and Grief (Saltzman, Layne, Steinberg, & Pynoos, 2006) was selected. This intervention was developed by members of the UCLA Trauma Psychiatry Service and examined in Armenia following the 1988 earthquake (Goenjian et al., 1997), in Southern California with adolescents exposed to community violence (Layne et al., 2001; Saltzman et al., 2001), and in postwar Bosnia with severely war-exposed secondary school students (Layne et al., 2001). Results from these studies demonstrated significant reductions in posttraumatic and complicated grief symptoms (Saltzman et al., 2001). These two CBT treatments included a variety of common components, including psychoeducational exercises, emotional regulation skills (e.g., breathing relaxation, replacing inaccurate or unhelpful thoughts with helpful thoughts), positive coping skills (e.g., seeking social support), cognitive restructuring of distressing beliefs, gradual exposure to distressing mental images and thoughts, grieving and mourning in constructive ways, practice exercises, and parental involvement.

By the end of the project, 173 clinical staff had been trained on one or both of these CBT models and on the assessment protocols. Eighty-one clinicians were the primary deliverers of the CBT therapies. Fifty-nine (or 73%) remained with the project until the end, yielding a staff turnover rate across the project of 27%. Clinical consultation was provided through biweekly to monthly consultation calls coordinated and led by clinical doctoral-level psychologists in consultation with

the treatment developers. These consultation calls were maintained for 18 months and are described more fully next.

A total of 1764 children and youth were referred to the project. Of these, 1,387 were assessed and 700 consented to participate in the evaluation arm of the project. Details of the evaluation design are provided next. Results of the evaluation itself are available (SAMHSA Report, August 2006).

Of note is the fact that two thirds of the children and families in the project were of Latino/Hispanic descent. In addition, 46% of the youth were from very low-income families, with family incomes below \$15,000 per year. Sixty-six percent of the children came from families with annual incomes below \$30,000. Baseline data indicate that the children in this project had very high levels of posttraumatic symptoms, anxiety, and depression. Thus this was a highly stressed, low-income, urban, Latino population of youth and families, with children experiencing moderate to severe levels of PTSD and other psychiatric symptoms.

Given its scale and scope, it is not surprising that we faced numerous challenges in launching this project. These challenges are outlined next, accompanied by discussion of our strategies for handling them.

Challenge 1: Recruitment and Engagement

Despite the fact that the trauma services were provided free of charge to youth and families, recruitment and engagement into treatment was initially slow. Therefore we focused our early efforts on providing extensive outreach activities to increase the visibility of the treatment services. These activities included presentations to victim's services organizations, to schools, and to children's services staff in child welfare, and mass distribution of brochures. In addition, a broad outreach program was linked to the Mental Health Association's LifeNet hotline that provided mental health information, referral, and crisis counseling services by phone to the general public. Through these efforts, 1,764 children and adolescents were referred to the project. Once a new referral was received, project staff at each of the CATS sites implemented an engagement strategy (discussed next) to increase the likelihood that parents and children would arrive for the initial assessment. For all families and youth who wished to participate in the evaluation, informed consent was obtained.

Second, we found that even with these efforts, participation in treatment was slow. Therefore, we decided to systematically incorporate an

empirically validated and manualized engagement protocol into the project. The formal protocol for engagement was developed by McKay, Pennington, Lynn, and McCadam (2001) to improve outreach, initial contact, and retention of families and youth in clinical services. All key intake staff at each of the nine provider sites were trained on this protocol by McKay and the CATS staff over a period of 6 months. Key personnel included receptionists, administrative assistants, and intake workers as well as clinical staff who were involved in the initial contact and triage process. In addition, each site had "booster sessions" with McKay and CATS staff during which site-specific difficulties with engagement were discussed and solutions developed. The model of providing didactic training to staff, followed by ongoing and sustained consultation over the period of the project, tailored for site specific issues, has been a core component of the CATS project.

The engagement protocol focused on clarifying the roles of key staff and of the intake process and creating a foundation for collaborative working relationships. The engagement strategies were specifically targeted to (a) inform families and youth about what to expect at their initial visits, (b) identify possible barriers to service utilization, (c) problem solve around those barriers, and (d) inform families and youth that they would be invited to participate in an evaluation of the program.

Incorporation of this strategy was successful. Of the 445 youth eligible for CATS CBT treatment, 385 (86%) of them received some treatment with a range from 1 to 36 sessions. Across the nine CATS sites, rates of engagement ranged from 67% to 95% (Rodriguez et al., under review). These engagement rates are considerably higher than what is found in community-based services where no show rates over 50% are common (McKay, McCadam, & Gonzales, 1996; McKay, Stoewe, McCadam, & Gonzales, 1998). Among the treatment engagers, 65% of youth attended at least eight sessions or more (Rodriguez et al., under review). Given the low income and stressful lives of the children and families the project served, these engagement rates are quite high.

Challenge 2: Clinical Workforce Skills and Capacity

A second challenge was ensuring appropriate skill levels in providing CBT among the heterogeneous group of clinicians and supervisors from the sites. The clinical staff had varying levels of experience and expertise in CBT. The majority were either social workers (39%) or master's-level

psychologists (56%), with 5% other status. Across disciplines, the clinical staff had varying levels of experience and expertise in CBT. We decided that we needed to establish support for at least a full year for clinicians who participated in the initial CBT training to ensure that use of the new skills would be maintained. Therefore, we established a training protocol based on a three-tier system.

Tier One Direct Training was provided by the manual developers themselves. In January 2003, the first cohort of therapists was trained in each of the EBPs selected. The manual developers each provided training for 2 full days on their respective trauma treatment manuals. The training included a review of literature on the efficacy and/or effectiveness of the specific model, didactic training on the manual, extensive role-plays of the techniques, case conceptualization and treatment planning exercises, and question/answer periods. As the project progressed, the manual developers returned to provide “booster training” sessions for the sites. This direct booster session training consisted of 1 full day wherein each site had 2 hr to discuss the challenges specific to their setting and patient population. For example, one of the sites was located in an area adjacent to Ground Zero with easy visual exposure to the WTC and with high rates of community and domestic violence. Two other sites were greatly impacted by the crash of Flight 587, which occurred 2 months after 9/11. A second round of this first tier of training was arranged because of new hires and staff turnover. Eighty-one clinicians in all were trained in this model. All site supervisors were strongly encouraged to attend to gain further mastery of skills specific to these EBPs.

Tier Two Telephone Consultation consisted of biweekly to monthly clinical consultation calls performed by the manual developers for the supervisors and clinicians at each site. The calls consisted of case presentations with feedback on issues ranging from how to specifically apply the interventions specified in the manuals to how to modify the interventions for specific cases, problems, or populations to broader issues concerning how to adapt the manuals for specific settings (e.g., conducting trauma- or grief-focused interventions in school settings). “Specialty” consultation calls included additional didactic training on topics like bereavement, sexual abuse, and supervision of clinicians.

Tier Three On-Site Consultation consisted of local site-specific consultation. Each site had its own supervisory process. In addition, however, the clinical training director on the project consulted regularly with the supervisors regarding clinical issues and was available at any time for

case-specific questions. Much of this work focused on fidelity to the treatment models and troubleshooting the service-specific issues versus the evaluation issues. We thus created a flexible eligibility system to enable children who did not meet the study’s designated clinical cutoff scores but who were nevertheless (based on clinical judgment) deemed to be in need of specialized trauma/grief-focused treatment to be “conferenced in” and thereby allowed access to treatment services. (See design details next for further information.) Clinical case consultation was provided by the treatment developers to further assess the appropriateness of this inclusion process.

Challenge 3: Adaptations and Tailoring

Another immediate challenge was that the processes currently used to appropriately fit, sequence, and structure research-based practices into routine practice have almost no scientific underpinning (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Schoenwald & Hoagwood, 2001). Therefore there were no empirical guidelines for determining how much adaptation would be possible, given the diversity of the settings in which the project was housed. To handle this issue, we used our regular consultation calls with the treatment developers to discuss adaptation issues. The on-site training and follow-up booster sessions explicitly addressed adaptation of the manual for samples.

In discussions with the treatment developers, we decided to include in our training and consultations more examples that reflected the cultural diversity of our population. In fact, the extraordinary cultural diversity of New York City necessitated adaptation and flexibility in the treatment model, and the treatment developers responded in several ways. First, they emphasized how the CBT model was a *Components Based Therapy*, to emphasize the need to fit the model to the family and not the family to the clinical model. They also emphasized flexibility in introducing different components, ordering of components, reviewing previously mastered components, and the possible lack of synchrony between child and parent components at different points in therapy. In addition, they emphasized commonalities and overlaps between the components-based trauma therapies of the CBT models and the models to which many therapists had prior allegiances.

For example, in one Consortium site that served an especially homogenous population of Latino and immigrant families, the site director, clinicians, and supervisors decided to develop, in consultation with the treatment developers, a *Secrets*

Module (adapted from Crisci, Lay, & Lowenstein, 1998). Because the issue of privacy and secrecy was crucial among this cultural group, this module was designed to help the child learn to differentiate between “safe” and “unsafe” secrets (i.e., a safe secret is a secret that is fun and won’t bring harm to anyone; whereas an unsafe secret makes you feel scared, hurt, or confused). Incorporation of this module into the treatment protocol at this one site enabled children and families to progress into the later phases of the treatment model.

In collaboration with the treatment developers, our consultation calls and site visits emphasized flexibility in introducing the various therapeutic components and the sequence in which they were implemented. We discussed the likelihood of a lack of synchrony between child and parent components at some point in therapy, and the need to adapt those components to individual family’s needs.

We also decided that the site differences and heterogeneity across work environments presented a valuable opportunity to study the influences of structural and process-level organizational factors on delivery of services; therefore we included more targeted assessments of organizational processes into our project and augmented our core assessment battery with structured organizational culture and climate measures (Glisson, 2000, 2002), which were administered at pre- and posttreatment assessment points. We also conducted 19 focus groups throughout the project with directors, clinicians, supervisors, and families. Findings from our focus group were fed back to the steering committee during our regularly scheduled weekly or biweekly calls, and during our biennial data meetings with the steering committee and scientific advisory board. The constant flow of information among treatment developers, CATS staff, and the steering committee, and the structured communication process (via conference calls, group e-mail lists, and site visits by project staff) enabled us to remain flexible and responsive to site-specific needs while adhering to the core components of the two clinical treatment models.

Challenge 4: Responding to Clinical and Organizational Demands

Several issues were raised early in the project by clinicians who participated in the training. The first was the need to manage and balance the demands associated with implementing the clinical components of the project, with the demands associated with carrying out its evaluation components. Specifically, participating clinicians were responsible for integrating the assessment battery into their ongoing practice. Consequently, steps were

needed to ensure that sufficient supervisory and director support was available to enable clinical staff to take on this additional burden. The fact that the project was formally connected to OMH helped to ensure higher management support at the sites. To minimize the paperwork burden, data collection itself was handled by CATS project staff.

Another concern voiced by clinicians was that the manualized treatments specifically targeted acute traumas (such as the 9/11 attack), rather than multiple traumas, which are common in New York City. This topic consequently became a focus of many of the consultation calls and booster sessions, in which special consultation from the treatment developers was enlisted to address specific cases involving multiple trauma exposures. In addition, we created a new position within the project—a clinical project director, in addition to the administrative project director—for the purpose of fielding clinical inquiries and providing consultation on a regular basis to all clinicians in the project. It is important to note that many participating clinicians, in implementing the manuals in reference to an initial focal trauma or traumatic circumstance, reported observing substantial therapeutic improvements in their child and adolescent cases. These direct “firsthand” observations appeared to dissipate many of their initial concerns.

Clinician feedback from the focus groups and during the ongoing consultations also identified several organizational issues that interfered with their ability to deliver the treatments well. The flexibility of their agency’s culture and the structure and support of leadership were identified as key to successful implementation. A clear sense of direction, well-delineated roles and responsibilities, and fair reward and performance standards were all identified as affecting the quality of treatment delivery. Finally, funding pressures, created by the uneven and irregular flow of funds for the project to the sites, affected clinical staff, leading to job uncertainties and turnover. These issues were discussed extensively on the steering committee calls, and OMH fiscal and budgetary staff were asked to participate in many of the calls to field funding questions. In addition, these issues were the focus of much of the on-site consultation visits.

The third issue involved prior experience with CBT. Clinicians reported familiarity with psychodynamic, cognitive, and family therapy techniques more than behavioral techniques. Family therapy in particular was a preferred modality. Because of this, discussion of family dynamics occupied a large percentage of time in the initial clinical consultation calls as a kind of clinical bridge into more discussion about the cognitive behavioral components and skills.

In general, clinician indicated at the onset of the program that they deemphasized the value of manualized treatments and were generally ambivalent about the degree to which manual guided treatments would enhance outcomes for children. They openly stated that they perceived evidence-based manualized treatments as valuable only insofar as they could be used as practical tools in their clinical practice. Thus a major focus of our consultation calls became emphasizing the value of the skills and techniques as clinical tools.

Challenge 5: Institutional Review Board Issues

Institutional Review Board (IRB) approval for the CATS evaluation was required from each of the nine individual sites, from OMH's IRB, from the Psychiatric Institute's IRB, and from the New York City Board of Education. This process was extremely complicated, laborious, time-consuming, and inefficient. Minor changes at one site in the language of the consent forms had a ripple effect on all of the sites, causing multiple iterations, requests for clarifications, submissions, and resubmissions. Inconsistencies in protocol requirements across the various IRBs also required enormous amounts of staff time. There existed neither a clear set of rules as to the sequence of approvals that were required nor any arrangements for recognition or acceptance of IRB approvals across the various governing bodies. This led to inefficiencies, lost data, considerable expenses in staff time, and enormous site frustration. The process for obtaining these multiple IRB approvals took more than 12 months to complete and required assigning a Ph.D. to provide 50% effort simply to this task. Because of the time required to obtain all of the approvals, collection of data from the first cohort of clinicians who were trained in the project were lost. In addition, the project was required to obtain a Certificate of Confidentiality from SAMHSA, and this, too, added to the time and labor expenses of the project. The project implementation also coincided with the increased enforcement of the Health Insurance Portability and Accountability Act, which further complicated the IRB approval process. We could find no satisfactory solution to these issues other than to expeditiously and responsibly make the required revisions and to muddle through the process.

Challenge 6: Selecting an Appropriate Evaluation Design

The steering committee for the CATS project engaged in numerous discussions with the scientific advisory board (see the title page footnote)

to identify an evaluation design that would be ethical, practical, and robust. After considerable deliberation, we selected a cutoff-based randomization procedure or regression discontinuity design (RD) for the project. This design enabled comparisons of outcomes to be made across two groups: youth receiving the CBT evidence-based trauma treatments (the experimental group) and youth receiving treatment as usual (TAU or the comparison group). Regression discontinuity was selected because it was a quasi-experimental alternative to the traditional randomized clinical trial and the RD design can balance ethical and scientific concerns (Cappelleri & Trochim, 1995). The RD design has been used most often when traditional randomization is not a viable option. The primary ethical concern among Consortium members pertained to the prospect of randomly assigning traumatized children to no treatment or to non-trauma focused treatments, especially in a postdisaster environment in which the majority of eligible youth would need services. In our evaluation, participants were assigned to either the manualized CBT trauma-focused treatment or to TAU based on a predetermined cutoff score on the UCLA PTSD-RI measure, with the most severe cases receiving the experimental treatment. Although it may seem counterintuitive, the RD design can result in unbiased estimates of treatment effects because the assignment of cases is known and controlled for in the analysis (Cappelleri & Trochim, 1995). The RD gets its name from the change in the regression line from baseline to follow-up that occurs around the cutoff point when there is a treatment effect. In other words, a treatment effect is manifest by a significant difference (i.e., discontinuity) in the slopes of the regression lines where the *Y* slope is regressed onto the *X* slope within each of the two treatment conditions (Cappelleri & Trochim, 1995).

Assignments to the experimental CBT trauma treatments or TAU were based on a specified clinical cutoff score on the UCLA PTSD-RI, in consultation with the developers of the measure (Steinberg et al., 2004). Youth with a score of 25 or greater on the PTSD-RI (classified as experiencing "moderate to severe PTSD symptoms") were assigned to one of two trauma treatments according to their age at intake (Cohen/Mannarino for children 6–12; Saltzman/Layne/Steinberg/Pynoos for adolescents 13–21). Children and adolescents with scores in the 17 to 24 range of the PTSD-RI were assigned to the nonequivalent (TAU) comparison group.

However, a challenge to the methodological clarity of our design occurred midway through the project. Because of OMH's responsiveness

to federal requirements, the clinical staff at our sites received additional training on briefer CBT treatments through the Project Liberty program. These briefer interventions emphasized development of cognitive coping skills but did not include specific processing of the children's trauma exposure. These briefer CBT treatments—that subsequently constituted the majority of the interventions implemented in the TAU condition—were actually taken from the full CBT interventions by removing the trauma processing and grief modules/components. This made the briefer CBT treatments essentially brief versions of the full-treatment interventions. As a result, what had originally been treatment as usual (TAU; i.e., eclectic “talking” therapies) was largely replaced with these briefer CBT treatments. This resulted in our evaluation design having four rather than two arms: (a) the CBT experimental arm, using the EBP trauma treatments ($n = 445$); (b) the Project Liberty briefer CBT ($n = 112$); (c) TAU ($n = 32$); and (d) children who were “conferenced in” and who received the CBT evidence-based trauma treatments but who could not be included in our analyses because of the requirements of the design ($n = 111$), for a total sample of 700.

The use of this design created an uneven sampling distribution across the four arms, and this has necessitated adoption of a different data analytic strategy than originally planned. Thus, although this design was flexible enough to be applied in a postdisaster study, the need to use one clinical cutoff score for assigning cases to the treatment arms, coupled with the pressure on the sites to use Project Liberty therapies that were similar to the CATS EBP treatments, rather than their “indigenous” TAUs, created a new layer of complexity that slowed down the project and complicated interpretation of study findings.

Generalizing from CATS to Other Postdisaster Contexts

The CATS project was a major cooperative venture involving state policymakers, academic scientists, clinical administrators, and frontline therapists and their supervisors in New York City. The CATS Consortium successfully created an infrastructure among nine large community-based clinics, schools, and academic-medical centers, which notably has been sustained to the present despite the cessation of funding. Through this infrastructure, a group of clinicians working in schools and mental health clinics were trained and provided ongoing consultation to deliver CBT trauma-focused treatments to 700 youth and families. The infrastructure created by the

CATS Consortium facilitated efficiencies of effort, supported uniform provision of standardized assessments and manualized treatments, and enabled a cross-site evaluation of implementation processes and outcomes to occur. To the best of our knowledge, this is the largest trauma-focused treatment and evaluation for children and adolescents that has been undertaken in this country.

Several lessons can be derived from this project that may be relevant for future postdisaster work.

1. Training on EBP trauma-focused CBT for practicing clinicians can be accomplished even in postdisaster situations, if ongoing and intensive case consultations are provided to reinforce new skills. We found that a consultation process focused on the application of techniques to specific cases was most helpful to the clinicians. Because levels of staff experience varied across sites and turnover was an issue, we provided two on-site booster sessions as well. As we also were collecting data to evaluate outcomes associated with the project, we budgeted for core staff support to enter assessment data from site files into a central database.

In addition, supervisors were included in the training and consultation, and this helped to ensure some degree of continuity of clinical care. Regular phone consultation occurred among the treatment developers, the clinical project staff, and the clinicians and supervisors at all of the sites. Because attendance at these sessions varied across sites, we also developed an adherence to treatment protocol tool, which will enable us to assess the extent to which adherence varied by clinician and the extent to which adherence affected clinical outcomes.

Finally the intensity of effort devoted to the project and the commitment by CATS clinical and management staff; by the treatment developers; and by the site's organizational leadership, supervisors, and especially clinicians and families was enormous. The extent to which this level of high commitment and dedication itself accounts for the project's outcomes cannot be ascertained, but most likely it also cannot be overestimated.

2. An infrastructure to support information sharing and ongoing communication (via e-mail, conference calls, site visits) is essential for efficient management of the project. All leadership teams, treatment experts, supervisory and clinical management, and core project staff were in close communication regularly to trouble shoot the host of

unforeseen problems that arose. Because the structure of clinical management at the sites will of necessity vary (e.g., part time vs. full time, caseload size, degree and level of supervisory support), it is important that all staff members have access to the same information about the project and that the flow of information be strategically managed for efficiency. A clear hierarchy of roles, structures, organizational affiliations, and communication flow should be created early in the project. Breakdown in communications can bring a project to a halt.

3. Strategic attention to engaging families and youth in services is likely to be needed. Even if treatments are offered free of charge, help-seeking will need to be actively facilitated. Some of the most significant challenges we faced included recruiting and engaging families to keep attrition low. We used the McKay and Bannon (2004) protocol-driven engagement strategies and were able to retain 86% of our population in treatment. This is a very promising finding, given the diversity, mobility, and heterogeneity of the population. However, had the project neglected to actively reach out to families, using an effective engagement strategy, the extensive training and consultation for clinical staff might have been a wasted effort.

4. Connecting to existing collaborative networks can facilitate project start-up. Existing consortia can often be mobilized in periods of postdisaster, and new structures can be more easily erected to facilitate collaborations for a common purpose. We were able to build on existing partnerships and consortia created by the National Child Traumatic Stress Network (R. Pynoos, director) and thus facilitate the start-up of the project in ways that might have been more cumbersome had these preexisting structures not been available.

5. Some degree of adaptation of the treatment or service model to local conditions is likely to be needed. Expect it. Responsiveness to the local conditions and respect for local variations is important in gaining traction. We were fortunate to be able to work with treatment developers who were experienced in applying their models to a wide variety of populations and settings. We found that the core techniques, components, principles, and even the protocols for the treatments remained relatively intact across the project and across the sites, despite the initial concerns about

adaptation. In the end, it was a stance of openness, flexibility, and a common goal that sustained the project.

6. Selecting a robust but flexible design to evaluate both implementation processes and outcomes is essential, given the limited knowledge base. The evaluation of CATS project was conceptualized as an implementation evaluation to examine process and outcomes associated with the deployment of trauma-focused CBT for trauma among community-based providers. As our experience and other studies are demonstrating, the differences between research and practice conditions are vast and the challenges numerous (Mufson, Dorta, Olfson, Weissman, & Hoagwood, 2004; Schoenwald, Halliday-Boykins, & Henggeler, 2003; Schoenwald & Hoagwood, 2001). The science on implementation is in a very early stage. Added to this is the fact that the knowledge bases pertaining to responsiveness to various treatment components, and to the effectiveness of different clinical treatment models for youth, are exceedingly thin.

Policymakers and practitioners attempting to incorporate EBPs in routine practice settings are faced with the irony of having to use non-evidence-based implementation strategies to assess implementation of EBPs. Until a corpus of scientific work on EBP dissemination and implementation exists, the grounded lessons learned from projects such as ours can, we hope, fill in the interstitial gaps between research and practice. The hard-earned lessons learned from this study will, provide at least a partial compass for future post-disaster research.

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