Children's Mental Health Care Following Hurricane Katrina: A Field Trial of Trauma-Focused Psychotherapies

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New Orleans school children participated in an assessment and field trial of two interventions 15 months after Hurricane Katrina. Children (N = 195) reported on hurricane exposure, lifetime trauma exposure, peer and parent support, posttraumatic stress disorder (PTSD), and depressive symptoms. Teachers reported on behavior. At baseline, 60.5% screened positive for PTSD symptoms and were offered a group intervention at school or individual treatment at a mental health clinic. Uptake of the mental health care was uneven across intervention groups, with 98% beginning the school intervention, compared to 37% beginning at the clinic. Both treatments led to significant symptom reduction of PTSD symptoms, but many still had elevated PTSD symptoms at posttreatment. Implications for future postdisaster mental health work are discussed.

A significant proportion of children develop posttraumatic stress disorder (PTSD) symptoms related to natural disasters (Bokszczanin, 2007; Hoven et al., 2005; LaGreca, Silverman, Vernberg, & Prinstein, 1996; Thienkrua et al., 2006). It is therefore of critical importance to identify affected children early and provide them with effective treatment for PTSD to prevent these negative outcomes.

Communities affected by disasters often face multiple challenges and child mental health treatment resources may be particularly limited. Typically, affected communities do not have enough therapists trained in evidence-based treatments to be able to provide every child with individual therapy. Thus, it is usually necessary to triage children according to severity of need, with the most intensive services being provided to the most severely affected children and less-impaired children receiving less-intensive

services (e.g., group therapy). Although some efforts have been made along these lines in postdisaster settings to demonstrate feasibility of the approach (e.g., The CATS Consortium, 2009), there remain little data to guide the decisions about who should be offered which types of services. In addition, there are no data to inform intervention providers about what services are desired, feasible, or acceptable to those affected by disaster.

The current project attempted to gather additional information to inform postdisaster mental health efforts for children. Specifically, we aimed to identify students with elevated symptoms of distress in the form of PTSD symptoms. We conducted a field trial to observe the impact of two trauma-specific interventions as delivered under real-world conditions, with the goal of examining predictors of how students fared in each intervention to inform future efforts at allocation of resources following disaster. The project was conducted within Project Fleur-de-lis (Cohen et al., 2009), a program run by Mercy Family Center to provide a tiered system of trauma intervention including two evidence-based interventions: Cognitive-Behavioral Intervention for Trauma in Schools (CBITS; Jaycox, 2003) and Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT; Cohen, Mannarino, & Deblinger, 2006).

Specifically, the project aimed to identify students with elevated symptoms, offer them either TF-CBT or CBITS, and observe how students fared in each intervention according to their risk and resilience factors, including symptoms of PTSD and depression, social support from friends and family, and their exposures to the hurricanes and to other lifetime traumas. We included measures of social support due to their relationship with treatment outcome in earlier studies of TF-CBT (Cohen & Mannarino, 1998, 2000), and measures of trauma exposure due to their hypothesized salience in recovery from PTSD following disaster. To have roughly comparable groups in each of the two intervention arms, we randomized students to be offered one of the two interventions, and monitored their use of services and how they fared during the field trial. We expected that students who took part in each intervention would improve in symptoms, based on earlier demonstration of effects of the interventions (e.g., Cohen, Deblinger, Mannarino, & Steer, 2004; Stein et al., 2003), that students with additional trauma exposure would show more modest improvement, and that those with social support would show more robust improvement.

METHOD

Participants

Three schools participating in the study were selected to represent schools participating in Project Fleur-de-Lis (e.g., diverse size, racial and socioeconomic makeup, and diversity of hurricane, evacuation and posthurricane experiences), and based on their willingness to participate (see Table 1).

We sent home an introductory letter and consent forms during the fall term of the 2006–2007 school year to parents of 609 fourth to eighth graders at the three schools. We received 438 consent forms (72%), and 202 (33%) gave permission for participation. At the time of the baseline assessment, child assent was requested: six students declined and one student had moved. Thus, 195 students (32%) participated (see Figure 1). This rate of consent varied by school: in School 1, 41% consented to participate; in School 2, 27% consented, and in School 3, 46% consented.

Table 1. Description of School Sites

|	School 1	School 2	School 3
Size	158 students (85 4th–8th grade)	796 students (397 4th–8th grade)	261 students (127 4th–8th grade)
Location	New Orleans, LA	Metairie, LA	New Orleans, LA
Hurricane damage	Moderate damage to roof and part of the school could not be used during the 2005–2006 school year.	No damage to school, but surrounding neighborhood damaged by wind.	Four to six feet of flooding, water damage to first floor, replaced furniture and books.
Race and ethnicity	Predominately African American (74%)	Predominately Caucasian (90%)	Predominately African American (97%)
Participation in free/reduced lunch program	75%	11%	80%
Student living situations	Many students did not evacuate and lived in trailers, hotels, and cruise ships immediately after the hurricane.	Many students lived in FEMA trailers for months after returning to school.	Many students travel nearly an hour to get to school, having relocated to other towns outside New Orleans after the storm.

Note. FEMA = Federal Emergency Management Agency.
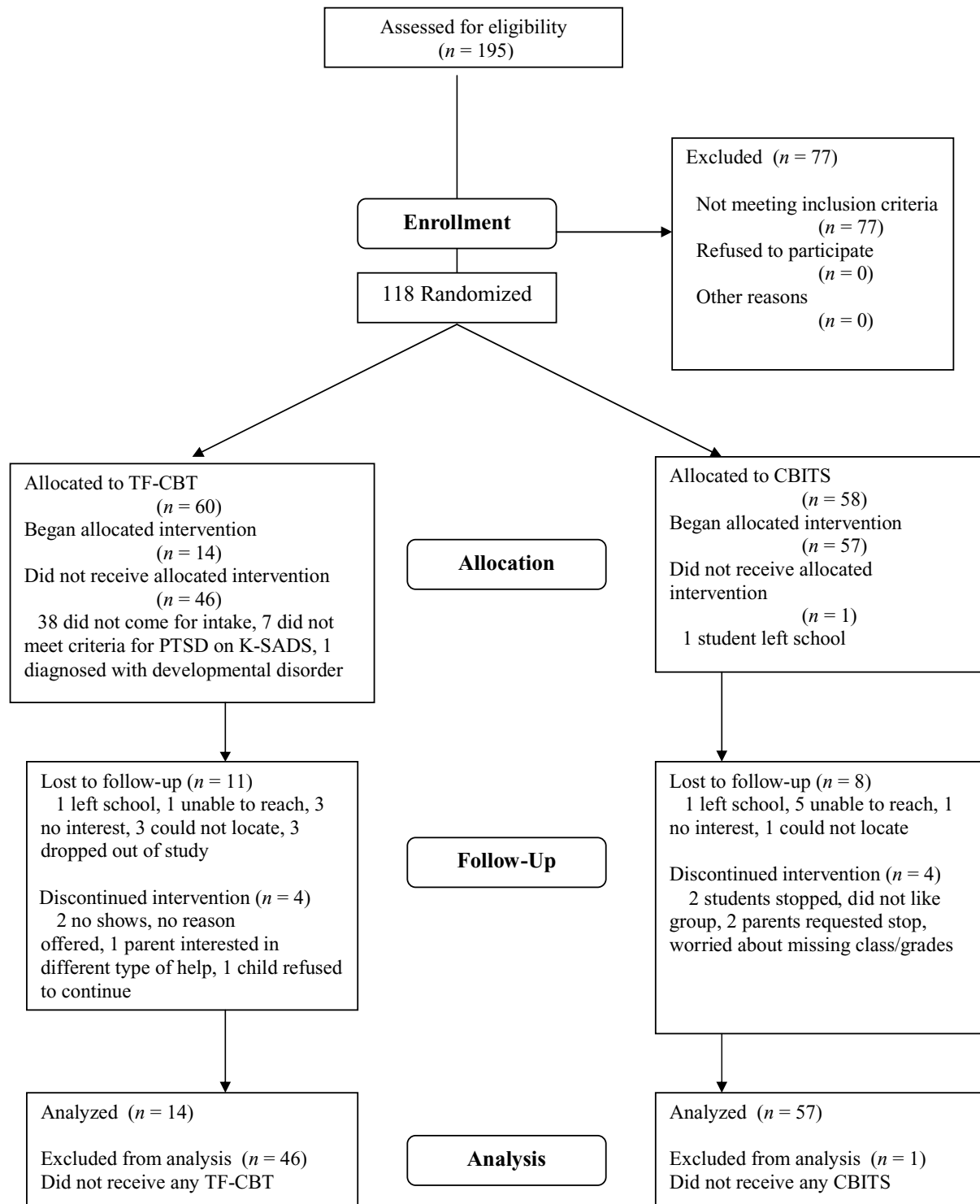
Figure 1. Flow of study participants. PTSD = posttraumatic stress disorder; CBITS = Cognitive-Behavioral Intervention for Trauma in Schools; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy; K-SADS = Schedule for Affective Disorders and Schizophrenia for School Age Children-Present and Lifetime Version.

Of the 195 children who agreed to participate, 118 (61%) screened positive for elevated PTSD symptoms. To obtain representative groups within each intervention arm, these children were randomized within strata to receive each intervention, resulting in 58 students offered CBITS and 60 students offered TF-CBT. These numbers also varied by school: 16 were eligible and randomized in School 1, 57 in School 2, and 45 in School 3.

Measures

Students were assessed at baseline (December 2006–January 2007), at 5 months (April–May 2007) and at 10 months (September–October 2007). The CBITS groups ran March to May 2007 and TF-CBT was implemented February to September, 2007. This study only reports on the 10-month follow-up assessment results.

Demographic information about the sample was obtained via parent report for 90 children or via school records with parents' permission. We also calculated the distance between each child's home and the Mercy Family Center's Metairie clinic.

We adapted the Disaster Experiences Questionnaire (Scheeringa, 2005) for use with students via self-report. For an overall exposure to hurricane experiences measure, we tallied experiences listed in the top panel of Table 2, for a total number of experiences per student.

The UCLA PTSD Reaction Index for DSM-IV (Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998) contains a 12-item trauma exposure questionnaire used in this study (Table 2), which asks the child to identify types of trauma experienced. Reliability (.90) and validity (.87) of this instrument are high (Pynoos et al., 1998). At baseline, participants were asked about lifetime experiences; at follow-up they were asked about experiences since the prior assessment. Due to school concerns, we modified one item about experience of sexual abuse.

Posttraumatic stress disorder symptoms in the past month were assessed using the Child PTSD Symptom Scale (Foa, Johnson, Feeny, & Treadwell, 2001). This measure has good convergent ($r = .80$) and discriminant validity and high reliability ($\alpha = .89$; Foa et al., 2001). Children who met a score of > 11, indicating elevated symptoms, were randomly assigned to receive one of the two treatments. We used a score of 15 as a clinical cutoff for this instrument (E. Foa, personal communication, February 3, 2009).

The Children's Depression Inventory (Kovacs, 1981) was used to assess depressive symptoms. This 27-item measure assesses children's cognitive, affective, and behavioral depressive symptoms and has high internal consistency ($\alpha = .94$), moderate test-retest reliability, and correlates in the expected direction with measures of related constructs (e.g., self-esteem, negative attributions, and hopelessness; Kendall, Cantwell, & Kazdin, 1989). A score of 12 or less on the Children's Depression Inventory is considered normal.

We included the Social Support Scale for Children (Harter, 1985) subscales for support from friends (four items, $\alpha = .68$) and

Table 2. Exposure to Hurricanes and Other Traumas Among At Risk Students ($N = 118$)

Hurricane experiences	%
Trapped in a flooded house	6.0
Walked or swam through floodwater to escape	7.6
Got out by boat	4.2
Got out by helicopter	3.4
Stayed in the Superdome or Convention Center	3.4
Slept overnight on a street (including the I-10 highway)	5.1
Saw something really upsetting, like dead bodies	74.6
Separated from parents or usual adult caretakers	28.8

Other traumatic experiences (lifetime)	%
Natural disaster (fire, tornado, flood or hurricane)	53.4
Bad accident	31.6
Been in a war zone	5.9
Victim of violence at home	26.7
Witness to family violence	29.3
Victim of community violence	26.7
Witness to community violence	53.0
Seen a dead body	42.6
Adult touch or treatment that made you feel uncomfortable	14.9
Learned about death or serious injury of a loved one	71.2
Painful and scary medical treatment	41.9

from family (four items, $\alpha = .80$). This scale has demonstrated construct validity, ranging from .28 to .49 (Harter, 1985).

Teacher-reported behavior problems were assessed using the Strengths and Difficulties Questionnaire (Goodman, 1997; Goodman, Meltzer, & Bailey, 1998). This questionnaire contains 20 items assessing problem areas (emotional symptoms, conduct problems, hyperactivity/inattention, and peer-relationship problems; Goodman, 1999). The scale compares favorably to other behavior scales (Goodman, 1997; Goodman & Scott, 1999), distinguishing well between clinical and nonclinical samples.

As part of the normal TF-CBT protocol, children assigned to TF-CBT were scheduled for a clinic intake consisting of the PTSD section of a diagnostic interview (the Schedule for Affective Disorders and Schizophrenia for School Age Children-Present and Lifetime Version; K-SADS-PL-PTSD; Kaufman et al., 1996) to determine whether they met PTSD criteria. Children whose responses did not indicate PTSD were not included in TF-CBT treatment.

Procedure

Cognitive-Behavioral Intervention for Trauma in Schools is a 10-group session and 1–3 individual session intervention designed

specifically for use in schools. It has demonstrated effectiveness in two controlled trials (Kataoka et al., 2003; Stein et al., 2003) and has been successfully implemented with children of many different cultural groups who have suffered multiple forms of trauma.

Trauma-Focused Cognitive-Behavioral Therapy is a 12-session individual or conjoint intervention that includes child and parent and typically is delivered in clinics. In multiple randomized trials (e.g., Cohen, Deblinger, Mannarino, & Steer, 2004), TF-CBT has demonstrated effectiveness in improving PTSD and other symptoms in children experiencing sexual abuse, multiple trauma, and disaster.

Both CBITS and TF-CBT incorporate cognitive-behavioral skills, including psychoeducation, relaxation skills, affective modulation skills, cognitive coping skills, trauma narrative, in vivo mastery of trauma reminders, and enhancing safety. However, there are also significant differences between these two models. Trauma-Focused Cognitive-Behavioral Therapy is provided in conjoint sessions (with parent and child), whereas CBITS is provided in a group format (children only). Trauma-Focused Cognitive-Behavioral Therapy may be optimal for developing a multiple-trauma narrative and for addressing avoidance symptoms because the therapist can tailor the intervention to each child, whereas CBITS may offer a more acceptable and feasible approach by overcoming some logistical barriers and stigma.

Treatment was provided free of charge to participants. Therapists received training from the developers of the CBITS and TF-CBT models and participated in a regional Learning Collaborative conducted in Mississippi for TF-CBT, and ongoing phone consultation for both CBITS and TF-CBT. Therapists, assessors, and intake workers were trained in family engagement strategies (McKay & Bannon, 2004) to enhance their ability to draw children at risk and their parents into services.

After randomization, parents and students assigned to be offered CBITS were informed about when and where the group meetings would take place, and given an opportunity to opt-out. The CBITS groups started in schools about 2 weeks later, and were provided at students' home schools during their regularly scheduled school days, with students pulled from class to attend the groups. Three of the usual components of CBITS were not delivered in this study due to resource and timeline constraints: individual interviews with students prior to beginning the groups, teacher inservice meetings, and parent meetings in two of the three schools.

Calls to parents to schedule intakes for TF-CBT began immediately after randomization and continued until all parents were reached or deemed unreachable. As per usual clinical practice, the intake procedure included a diagnostic interview to confirm a diagnosis of PTSD, TF-CBT was provided at Mercy Family Center's Metairie, Louisiana clinic. Round-trip taxi fare and free babysitting for siblings were also offered.

Data Analysis

We imputed missing items 5 times separately for each treatment group and time point using Proc MI in SAS (Version 9.2; SAS Institute, 2002–2008). We conducted descriptive statistics at baseline, and compared groups who were randomly assigned to CBITS or to TF-CBT. We present differences in PTSD and depressive symptoms over time within each group (adjusting for clustering within CBITS intervention groups for those in the CBITS arm. As will be discussed below, our plan to examine predictors of improvement within each group was not possible due to limited numbers of children who participated in TF-CBT. Thus, we examined predictors of improvement within the CBITS group only, via regressions controlling for baseline PTSD levels and adjusting for clustering within CBITS intervention groups. In the TF-CBT group, we examined predictors of uptake of TF-CBT via logistic regressions predicting intake attendance. Analyses without clustering were conducted in SAS and those requiring clustering were conducted in R (Version 2.9.1; R Development Core Team, 2005).

RESULTS

Students who participated in the assessments consisted of slightly more girls than boys (girls 55.9%; boys 44.1%), with average age 11.6 years old ($SD = 1.4$). Forty-eight percent of children were non-Hispanic White, 46% were African American, 5% were Hispanic, and 2% were from other racial/ethnic backgrounds. Of those determined to be at risk based on PTSD symptoms scores, there were more girls (63%) than boys (37%), with an average age of 11.5 ($SD = 1.5$; median = 11.3; range = 9.0–15.5). Fifty-two percent of students were African American, 42% were non-Hispanic White, 4% were Hispanic, and 2% were from other racial/ethnic backgrounds.

Students in the study reported a median of one type of hurricane exposure (range = 0–7). As seen in Table 2, the most common experiences were having seen something very upsetting or being separated from parent or caregiver. Rates of being trapped, rescued, or stranded in New Orleans were much lower, around 5%.

Lifetime trauma exposure was common, with students reporting a median of four traumatic events (range = 0–10) at the baseline assessment. As seen in Table 2, the most common traumatic events reported were vicarious traumas (learning about the death or injury of a loved one, witnessing violence), but personal exposures to trauma (car accident, victim of violence, medical procedure) were also common. At the 10-month assessment, students reported on exposure to traumatic events since the last assessment. During this time, students reported a median of three additional recent traumatic exposures (range = 0–8; $M = 3.3$, $SD = 2.1$).

Mean scores for PTSD, depression, and behavior problems are shown in Table 3. With regard to PTSD symptoms, all had scores of 12 or higher by definition, with 82.2% in the clinically significant range (scores of 15 or higher). For depression, 52.5% of students

Table 3. Exposures and Symptoms Among At Risk Students at Baseline (15 Months Post-Katrina)

	Overall (N = 118)		CBITS (n = 58)		TF-CBT (n = 60)		
	M	*SD*	*M*	*SD*	*M*	*SD*	*t*
Exposure to hurricane-related trauma	1.3	1.1	1.2	1.1	1.4	1.2	<1
Exposure to lifetime traumatic events	4.0	2.1	3.8	2.1	4.2	2.2	−1.0
Self-reported PTSD symptoms	22.3	8.0	21.9	7.9	22.6	8.2	<1
Reexperiencing symptoms	6.6	3.1	6.9	2.7	6.4	3.4	<1
Avoidance symptoms	7.0	3.7	6.7	3.9	7.2	3.5	<1
Arousal symptoms	8.7	3.5	8.4	3.5	9.0	3.6	−1.0
Self-reported depressive symptoms	13.4	7.9	13.5	8.4	13.3	7.5	<1
Teacher-reported behavior problems	8.0	7.3	9.0	7.8	6.9	6.7	1.3

Note. PTSD = posttraumatic stress disorder; CBITS = Cognitive-Behavioral Intervention for Trauma in Schools; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy. *T* tests showed no significant differences between the CBITS group and the TF-CBT group.

reported clinically significant symptoms (scores of 13 or more on the Children's Depression Inventory). Teachers reported behavior problems indicative of the borderline range (a score of 12–15) for 11.9% of students and problems in the abnormal range (a score of 16 or above) for 15.3% of students. The two groups of children were comparable to one another, as shown in Table 3, as intended following the randomization procedure.

Of children randomized to be offered CBITS in schools, 57 of 58 (98%) began treatment, and 53 (91%) children completed treatment. For children randomized to be offered TF-CBT at Mercy Family Center, therapists began calling parents immediately after randomization to schedule the intake, including confirming PTSD. Twenty-two of the 60 children (37%) attended the initial assessment, which occurred weeks to months after the baseline assessment. Of this number, seven (32%) did not meet PTSD criteria on the K-SADS and were not provided with TF-CBT treatment, most commonly because distress was not linked to a specific traumatic event. Instead, these children were offered

a different form of therapy within Mercy Family Center. Another child had a pervasive developmental disorder that precluded inclusion in the study. Thus, 14 (23%) began TF-CBT, and 9 (15%) completed treatment by the time of the 10-month follow up (4 dropped out of treatment, and 1 began late and had not completed treatment; see Figure 1). These rates of uptake varied by school: in School 1, 9 of 9 students began CBITS and 2 of 7 attended the TF-CBT intake appointment, in School 2, 28 of 28 began CBITS and 17 of 29 attended the TF-CBT intake, and in School 3, 20 of 21 began CBITS and 3 of 24 attended the TF-CBT intake.

As seen in Table 4, PTSD scores at 10 months improved in both interventions including all students who began treatment, as compared to baseline scores. Mean PTSD scores for the TF-CBT group had moved to the normal range whereas mean scores in the CBITS group were in the low clinical range. Thirty-seven of the 57 children (65%) in the CBITS group remained in the at risk range (≥12) on the Child PTSD Symptom Scale at the 10-month follow-up, whereas 6 of the 14 children (43%) who

Table 4. Changes Observed Among Intervention Starters

	Baseline		10 Months		
	M	*SD*	*M*	*SD*	Difference (*t*)
CBITS starters[a] (n = 57)					
PTSD score	22.0	7.9	15.8	9.3	−4.85***
Depression score	13.4	8.5	9.7	9.0	−4.30***
TF-CBT Starters (n = 14)					
PTSD score	22.9	8.3	12.0	10.4	−3.07**
Depression score	15.4	7.6	11.1	10.5	−1.37

Note. CBITS = Cognitive-Behavioral Intervention for Trauma in Schools Program; PTSD = posttraumatic stress disorder; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy.
[a]Changes within the CBITS group control for clustering within the CBITS intervention groups.
** $p < .01$. *** $p < .001$.

received TF-CBT remained at risk. A Fisher's Exact test revealed these two rates of clinical change were comparable across the two groups (two-tailed, $p = 0.22$). According to the KSADS, only 1 of 9 (11%) children completing TF-CBT treatment met criteria for PTSD at the end of treatment. Changes in depressive symptoms also improved for both groups, but this improvement was only statistically significant for the CBITS group. Mean depression scores moved to the normal range for both groups. Thus, both statistically and clinically significant gains were achieved by students in both interventions.

Because few children took part in TF-CBT, we could not evaluate predictors of treatment response. Instead, we examined predictors of attending the intake for TF-CBT (see Table 5). Baseline trauma exposure, severity of symptoms, and social support were not predictive of attending the intake. Boys and younger children had higher odds of attending the intake appointment. African American students had lower odds than Caucasian students, as also reflected in the higher odds of students in School 2 (with a largely Caucasian student body) attending the appointment. Rates of attendance also differed by distance between home and clinic. School, race/ethnicity, and distance were confounded (with students at School 3 living the shortest distances and students at School 1 the longest), but school and race were too highly confounded in the TF-CBT group to examine separately. When school as well as distance were used in the same regression, school remained a significant predictor of attendance,

Table 5. Odds of Attendance at TF-CBT Intake ($N = 60$)

Variables	OR	95% CI
School		
School 3	1.00	
School 1	2.80	0.37–21.49
School 2	9.92	2.40–40.93
Male	3.55	1.18–10.67
Race/ethnicity		
Caucasian (non-Hispanic)	1.00	
African American (non-Hispanic)	0.10	0.03–0.36
Hispanic	0.65	0.04–11.45
Age	0.59	0.38–0.91
Exposure to hurricane-related trauma	1.34	0.84–2.14
Exposure to lifetime traumatic events	1.11	0.87–1.42
Self-reported PTSD symptoms	1.00	0.94–1.07
Self-reported depressive symptoms	1.00	0.93–1.07
Teacher-reported behavior problems	1.01	0.93–1.09
Social support–family	1.06	0.89–1.27
Social support–friends	0.92	0.79–1.07
Distance home–clinic	0.81	0.68–0.97

Note. TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy; PTSD = posttraumatic stress disorder.

Table 6. Predictors of 10-Month Follow-Up PTSD Symptoms Within the CBITS Group[a] ($N = 57$)

	B	SE B
Baseline PTSD symptoms	4.18***	0.15
Baseline PTSD symptoms	4.31***	0.14
Female gender	1.60	2.62
Baseline PTSD symptoms	4.24***	0.15
School 1 vs. 3	0.58	3.87
School 2 vs. 3	−1.77	2.67
Baseline PTSD symptoms	2.23	0.19
Baseline depression symptoms	3.01*	0.17
Baseline PTSD symptoms	4.32***	0.15
Hurricane exposures	−0.82	1.52
Baseline PTSD symptoms	3.25**	0.15
Social support from family	−2.82*	0.34
Baseline PTSD symptoms	3.46**	0.16
Social support from friends	−1.83	0.33
Baseline PTSD symptoms	4.32***	0.15
Teacher report of behavior problems	−0.59	0.17
Baseline PTSD symptoms	4.77***	0.16
Lifetime trauma exposures at baseline	−1.32	0.63
Baseline PTSD symptoms	3.34***	0.15
Trauma exposures (baseline to 10-month follow-up)	2.57*	0.62

Note. PTSD = Posttraumatic stress disorder; CBITS = Cognitive-Behavioral Intervention for Trauma in Schools.
[a]Regressions adjust for clustering within the CBITS intervention group.
*$p < .05$. **$p < .01$. ***$p < .001$.

Wald's χ^2 (2) = 7.38, $p < .05$, whereas distance did not, Wald's $\chi^2(1) = 2.22$, *ns*.

Predictors of treatment outcome for the CBITS group were examined, predicting PTSD symptoms at 10 months while controlling for baseline PTSD. Baseline PTSD was a strong predictor of PTSD at 10 months (See Table 6). Support from family predicted lower PTSD scores, whereas higher baseline depressive symptoms and additional exposures to traumatic events as reported at follow-up predicted higher PTSD scores. Gender, school, teacher reported behavior problems at baseline, hurricane exposures, and social support from friends were unrelated to PTSD at follow-up.

DISCUSSION

This study evaluated the prevalence and correlates of PTSD and depressive symptoms in students in three New Orleans schools 15 months after Hurricane Katrina. Students reported significant levels of mental health symptoms. More than 60% of children screened positive for elevated PTSD symptoms and were

included in the intervention field trial. These results highlight the importance of long-term support for mental health needs of children following disaster.

Of note were the high rates of previous lifetime trauma exposure, in addition to hurricane exposure, that were present among these students with elevated PTSD symptoms. This finding has both clinical and policy implications. Clinically, therapists who serve children affected by disasters should be aware of the impact of previous trauma on children's mental health functioning. Disaster exposure can trigger past trauma memories, which for individual children may have been much more traumatic than the disaster itself. Alternatively, earlier trauma may increase vulnerability to a new traumatic event such as a disaster. This was reported by children after the September 11th terrorist attacks (Mullett-Hume, Anshel, Guevera, & Cloitre, 2008) and was again seen after Hurricane Katrina (Salloum, Carter, Burch, Garfinkel, & Overstreet, in press). Thus, assessment of previous traumas as well as the specific disaster exposure is needed to fully evaluate PTSD and other mental health impact of trauma in children's lives.

Results indicate that both treatments led to significant improvement in PTSD symptoms, but CBITS was far more accessible to families who may not have been willing or able to participate in individual, clinic-based treatment that required parental participation and initiative to attend appointments outside of the child's regular school attendance. It is notable that despite starting with significant adversity, including exposure to traumatic events during the intervention period, these nontreatment-seeking children experienced significant gains. Because there was no control group, however, it is difficult to gauge whether students symptoms' may have improved without treatment. We expect that symptoms would be relatively stable during the period of 15 months to 24 months postdisaster, but there are no empirical data to guide this conjecture.

This project found that most families did not access therapy at community clinic settings, but did access similar services through their children's schools. In fact, some families asked whether they could receive the TF-CBT at school instead of the clinic, suggesting that colocating all mental health treatment services in or adjacent to children's schools is desirable postdisaster. Families who attended the clinic intake were not reporting more severe problems, in contrast to other community-based findings (e.g., Leaf, Alegria, Cohen, & Goodman, 1996). Rather, demographics (age, race, and gender) as well as school and distance to the clinic predicted attendance. Families with younger, male, Caucasian students at certain schools were more likely to be able to access care. Because school and race/ethnicity were so highly confounded in this study, it was not possible to tease apart the contributions of school culture and community from race/ethnicity of the student, and this remains an important question for future research.

We encountered two important measurement issues in this project. If the results of the K-SADS-PL are representative, approximately one third of these children who were identified as at risk may have been reporting general distress symptoms or another mental health problem rather than specific PTSD symptoms because the most common reason for not meeting criteria for PTSD was that their distress symptoms were not linked to a specific traumatic event. Thus, the measures used for screening may be overly general for a trauma-focused intervention. Importantly, teachers reported lower rates of child problems than did the children themselves, as often observed in studies of anxiety (e.g., Collishaw, Goodman, Ford, Rabe-Hesketh, & Pickles, 2009). Although schools can be an ideal setting for meeting the mental health needs of children after disasters, teachers may not be ideally positioned to judge which children need these services.

There were several important limitations to note in this study, as seems to be the rule rather than an exception in postdisaster research. First, recruitment proved more difficult than anticipated, resulting in a smaller field trial and limited ability to utilize complex regression models. Although these types of consent rates are common in other school-based studies in inner city settings (e.g., Stein et al., 2003), we had expected recruitment at these smaller parochial schools, all attuned to the recent hurricane exposures, would be more productive. Thus, we conducted several different analyses to explore relationships, inflating the possibility of Type 1 error. Second, the results reported here on access to care were unanticipated; thus, the analysis had to shift from the original aims of examining predictors of intervention response to predictors of uptake of the therapy for TF-CBT. As an unexpected finding, we had not measured the full array of factors that would be desired for this analysis. Our choice to randomize children to one of the two intervention arms proved to be fortuitous, however, because it allowed a fair examination of access and uptake of intervention services across equivalent groups. In addition, we maintained the two interventions as they are normally delivered, rather than trying to make them more equivalent to one another, including the extra intake assessment in the group assigned to TF-CBT. Thus, the validity of the results was not threatened and the study can provide valuable information for future mental health efforts following disaster.

In conclusion, this field trial indicated an ongoing need for intervention in a sample of school children who were not seeking mental health treatment more than a year following the hurricanes of 2005 in New Orleans. Not only were students experiencing symptoms related to the disaster, but many had experienced more devastating traumas and deaths prior to August 2005, and had diagnoses other than PTSD when evaluated. Future responses to natural disasters should include not only child-focused, long-term and traditional mental health services, but should take an even broader vision by taking into account previous trauma and preexisting mental health disorders. When interventions were offered to comparable groups, access to those interventions turned out to be extremely important. The difference in access between the otherwise similar treatments, offered free of charge, shows that treatment must be available in convenient locations and at convenient times. Although schools' mission is to educate, schools may offer

many children their only window of opportunity to recover from the negative effects of trauma on learning (Garbarino, Dubrow, Kostelny, & Pardo, 1992; Hurt, Malmud, Brodsky, & Giannetta, 2001; Saigh, Mroueh, & Bremner, 1997; Schwab-Stone et al., 1995).

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