A Mental Health Intervention for Schoolchildren Exposed to Violence
A Randomized Controlled Trial

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I N THE LAST DECADE, THERE HAS BEEN heightened awareness of the extent to which children personally witness or experience violence.[1-3] Public health officials have responded by identifying violence as one of the most significant US public health issues.[4-6] Large numbers of US children experience such violence, and an even greater number may experience symptoms of distress after personally witnessing violence directed at others.[2,7-9] For many children, personally experiencing or directly witnessing multiple incidents of violence is the norm.[3,10,11] Violence affects all racial, ethnic, and socioeconomic groups, but its burden falls disproportionately on urban,[5,12] poor, and minority populations.[13,14]

Several studies have found that the majority of children exposed to violence, defined as personally witnessing or directly experiencing a violent event, display symptoms of posttraumatic stress disorder (PTSD),[15,16] and a substantial minority develop clinically significant PTSD.[17-19] However, the harmful effects of violence extend beyond symptoms of PTSD. Exposure to violence is associated with depression[20] and behav-

Context No randomized controlled studies have been conducted to date on the effectiveness of psychological interventions for children with symptoms of posttraumatic stress disorder (PTSD) that has resulted from personally witnessing or being personally exposed to violence.

Objective To evaluate the effectiveness of a collaboratively designed school-based intervention for reducing children's symptoms of PTSD and depression that has resulted from exposure to violence.

Design A randomized controlled trial conducted during the 2001-2002 academic year.

Setting and Participants Sixth-grade students at 2 large middle schools in Los Angeles who reported exposure to violence and had clinical levels of symptoms of PTSD.

Intervention Students were randomly assigned to a 10-session standardized cognitive-behavioral therapy (the Cognitive-Behavioral Intervention for Trauma in Schools) early intervention group (n=61) or to a wait-list delayed intervention comparison group (n=65) conducted by trained school mental health clinicians.

Main Outcome Measures Students were assessed before the intervention and 3 months after the intervention on measures assessing child-reported symptoms of PTSD (Child PTSD Symptom Scale; range, 0-51 points) and depression (Child Depression Inventory; range, 0-52 points), parent-reported psychosocial dysfunction (Pediatric Symptom Checklist; range, 0-70 points), and teacher-reported classroom problems using the Teacher-Child Rating Scale (acting out, shyness/anxiousness, and learning problems; range of subscales, 6-30 points).

Results Compared with the wait-list delayed intervention group (no intervention), after 3 months of intervention students who were randomly assigned to the early intervention group had significantly lower scores on symptoms of PTSD (8.9 vs 15.5, adjusted mean difference, −7.0; 95% confidence interval [CI], −10.8 to −3.2), depression (9.4 vs 12.7, adjusted mean difference, −3.4; 95% CI, −6.5 to −0.4), and psychosocial dysfunction (12.5 vs 16.5, adjusted mean difference, −6.4; 95% CI, −10.4 to −2.3). Adjusted mean differences between the 2 groups at 3 months did not show significant differences for teacher-reported classroom problems in acting out (−1.0; 95% CI, −2.5 to 0.5), shyness/anxiousness (0.1; 95% CI, −1.5 to 1.7), and learning (−1.1, 95% CI, −2.9 to 0.8). At 6 months, after both groups had received the intervention, the differences between the 2 groups were not significantly different for symptoms of PTSD and depression; showed similar ratings for psychosocial function; and teachers did not report significant differences in classroom behaviors.

Conclusion A standardized 10-session cognitive-behavioral group intervention can significantly decrease symptoms of PTSD and depression in students who are exposed to violence and can be effectively delivered on school campuses by trained school-based mental health clinicians.

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ioral problems.[2,9,21] In addition, children exposed to violence are more likely to have poorer school performance,[22-24] decreased IQ and reading ability,[25] lower grade-point average, and more days of school absence,[22] even if they do not develop PTSD. Exposure to violence also may interfere with the important developmental milestones of childhood and adolescence.[26]

These wide-ranging negative sequelae of violence have stimulated calls for interventions that address the needs of children who are experiencing a range of symptoms after witnessing or experiencing violence.[27] Yet despite the enormous public health significance of this violence, no randomized controlled trials have been conducted to date of interventions for these children who have been exposed to violence and have experienced symptoms.

For several years, Los Angeles Unified School District (LAUSD) school mental health clinicians and clinician-researchers from local research institutions have collaborated to document the magnitude of exposure to violence among LAUSD students[10] and to develop, implement, and evaluate a standardized intervention for students experiencing symptoms after exposure to violence.[28,29] Based on our previous research, we conducted a randomized controlled trial to test the effectiveness of a cognitive-behavioral therapy (CBT) group intervention to reduce symptoms of PTSD and depression and to improve psychosocial functioning and classroom behavior in students in the general school population of 2 large urban middle schools.

METHODS
Participants

The evaluation was conducted during the 2001-2002 academic year at 2 middle schools in East Los Angeles, a socioeconomically disadvantaged, primarily Latino area of Los Angeles. After parents agreed to have their children participate and children agreed to be screened, trained LAUSD school mental health clinicians administered a self-report questionnaire regarding exposure to violence and symptoms of PTSD to 769 English-speaking sixth-grade students during class time, in groups of 25 to 30 students. Clinicians read the questions aloud to the students, who sat apart from one another to ensure privacy. Students were screened for exposure to violence using a modified version of the 34-item Life Events Scale.[1] They were asked about multiple types of violence (slapping, hitting, punching; beatings; knife attacks; and shootings) and reported separately how frequently they had experienced directly or had witnessed personally each type of violence. Several questions that asked specifically about violence at home were removed at the request of school personnel. Students were instructed not to include media violence and violence that they had only heard about.

Students were eligible to participate in the program if they (1) had substantial exposure to violence, defined as being the victim or witness of violence involving a knife or gun or having a Life Events Scale summed score greater than 6, consistent with exposure to 3 or more violent events; (2) had symptoms of PTSD in the clinical range, assessed using the 17-item Child PTSD Symptom Scale (CPSS)[30]; (3) had symptoms of PTSD related to exposure to violence that they were willing to discuss in a group as determined by their school-based mental health clinician; and (4) did not appear too disruptive to participate in a group therapy intervention session in the opin-

Figure 1. Student Flow Through the Mental Health Intervention Protocol
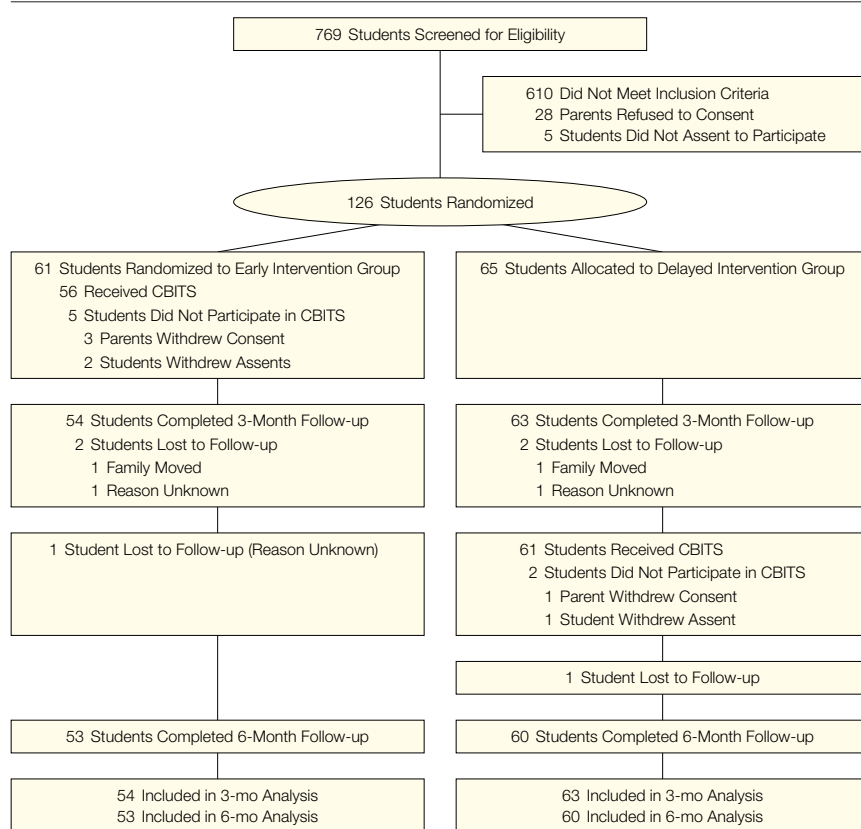
The 3-month follow-up assessment for the early intervention group followed the completion of the 10-week session of CBITS intervention, and for the delayed intervention group it was without the CBITS intervention. The 6-month follow-up assessment for the early intervention group was approximately 3 months following the completion of the CBITS intervention, and for the delayed intervention group it occurred immediately following the completion of the 10-week session CBITS intervention. CBITS indicates Cognitive-Behavioral Intervention for Trauma in Schools.

ion of their school-based mental health clinician. One hundred fifty-nine students met the inclusion criteria and were offered participation in the program; written informed consent was obtained from parents, and assents were obtained from students. Thirty-three students did not participate; 28 parents did not give consent and 5 students did not agree to participate.

One hundred twenty-six students chose to participate and completed the baseline assessments. One hundred seventeen students (93%) completed the 3-month follow-up assessments; 113 (90%) completed both the 3-month and 6-month follow-up assessments. The study was conducted in compliance with the LAUSD's research review committee and the institutional review boards of RAND and UCLA.

Study Protocol

After the school mental health clinician obtained parent consent and student assent to participate in the program, a central office was used to randomly assign students to an early intervention group (n=61) or to a wait-list delayed intervention group (n=65) using random numbers generated by the clinician-researchers, using Microsoft Excel 2001.[31] Because school officials preferred to provide the intervention program to all students in the same academic year, students assigned to the wait-list delayed intervention comparison group participated in the program 3 months following screening of the early intervention group and all the participants had completed the 3-month follow-up assessment. The flow diagram (FIGURE 1) shows the sampling and assignment of students to the early intervention and delayed intervention groups, as well as the timing of the assessments and the intervention for both groups.

Intervention

The intervention was a 10-session CBT group called the Cognitive-Behavioral Intervention for Trauma in Schools (CBITS),[32] which was designed for use in an inner-city school mental health clinic with a multicultural population

(BOX). The CBITS intervention incorporates CBT skills in a group format (5-8 students per group) to address symptoms of PTSD, anxiety, and depression related to exposure to violence. Generally, in each session a new set of techniques was introduced by a mixture of didactic presentation, age-appropriate examples and games to solidify concepts, and individual work on worksheets during and between sessions. The techniques taught to the students were similar to those used in other CBT groups for individuals with PTSD.[33] The CBITS intervention emphasizes applying techniques learned in the program to the child's own problems. Homework assignments were developed collaboratively between the student and the clinician in each session and were reviewed at the beginning of the next session.

The CBITS intervention was implemented on a continuous basis from the late autumn through the spring of the 2001-2002 academic year by 2 full-time and 1 part-time psychiatric social workers from the LAUSD Mental Health Services Unit. The groups most often met once a week. Students were excused from 1 class period to attend the group sessions, which lasted 1 class period. Clinicians consulted with school administrators and liaison staff to determine when to conduct the group sessions. The

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Box. Cognitive-Behavioral Intervention for Trauma in Schools (CBITS)

Session 1
Introduction of group members, confidentiality, and group procedures
Explanation of treatment using stories
Discussion of reasons for participation (kinds of stress or trauma)

Session 2[*]
Education about common reactions to stress or trauma
Relaxation training to combat anxiety

Session 3
Thoughts and feelings (introduction to cognitive therapy)
Fear thermometer
Linkage between thoughts and feelings
Combating negative thoughts

Session 4
Combating negative thoughts

Session 5
Avoidance and coping (introduction to real-life exposure)
Construction of fear hierarchy
Alternative coping strategies

Session 6
Exposure to stress or trauma memory through imagination/drawing/writing

Session 7
Exposure to stress or trauma memory through imagination/drawing/writing

Session 8
Introduction to social problem solving

Session 9
Practice with social problem solving and hot seat

Session 10
Relapse prevention and graduation ceremony

*Individual session (between session 2 and 6): imaginal exposure to traumatic event.

Table 1. Clinical and Demographic Characteristics of Participants at Baseline

Characteristics	Mean (SD)	
	Early Intervention (n = 61)	Delayed Intervention (n = 65)
Age, y	11.0 (0.3)	10.9 (0.4)
Female, No. (%)	33 (54)	38 (58)
Child report		
Symptoms of PTSD, score*	24.5 (6.8)	23.5 (7.2)
Symptoms of depression, score†	17.6 (10.8)	16.7 (7.3)
No. of violent events experienced‡	2.9 (2.1)	2.7 (2.2)
No. of violent events witnessed‡	5.8 (2.2)	6.1 (2.2)
Any violence involving a knife or gun, No. (%)‡	44 (72)	52 (80)
Parent report§		
Psychosocial dysfunction	19.1 (9.4)	16.2 (8.1)
Teacher report‖		
Acting out problems	11.3 (7.0)	10.6 (5.5)
Shyness/anxiousness problems	10.2 (4.1)	11.0 (5.1)
Learning problems	13.8 (7.3)	12.7 (7.0)
Parent demographics		
Education, y	8.3 (3.6)	8.6 (4.2)
Married, No. (%)	48 (79)	45 (70)
Employed, No. (%)	25 (41)	31 (48)
Household income <$15 000, No. (%)	22 (36)	28 (44)

Abbreviation: PTSD, posttraumatic stress disorder.
*Child PTSD Symptom Scale (range, 0-51).
†Child Depression Inventory (range, 0-52).
‡Life Event Scale.
§Pediatric Symptom Checklist (range, 0-70).
‖Teacher-Child Rating Scale (range for subscales, 6-30).

sessions often were offered at different times each week so that they could be conducted during study halls and other nonacademic periods when possible, and to minimize the number of times a student would miss the same academic class.

The CBITS intervention previously had been pilot tested for feasibility and acceptability; a pilot study using the CBITS intervention manual and format is reported elsewhere.[29] School clinicians received 2 days of training for application of the intervention and weekly group supervision from the clinician investigators (B.D.S., L.H.J., S.H.K.). The school clinicians followed a treatment manual to ensure that the application of the intervention was standardized across clinicians. However, they had some flexibility to meet the specific needs of the students in the group.

Assessment of Intervention Integrity

We examined the integrity of the intervention as delivered by the clinicians compared with the CBITS manual by having an objective clinician rater listen to randomly selected audiotapes of sessions and assess both the extent of completion of the session material and the overall quality of therapy provided. Using a scale developed for this intervention, completion of required intervention elements, including at least cursory coverage of the topic, varied from 67% to 100% across sessions, with a mean completion rate of 96%. On 7 items assessing quality, quality of sessions was moderate to high across sessions.

Outcomes Examined

Data from students, parents, and teachers were collected at baseline, 3 months, and 6 months (Figure 1). To assess students' symptoms of PTSD, we used the CPSS,[30] a 17-item child self-report measure (range, 0-51 points), which has been shown to have good convergent and discriminant validity, high reliability,[30] and high internal consistency[29] in school-aged children. Students rated how often they were bothered by each symptom in the past month on a scale from 0

(not at all) to 3 (almost always). For program eligibility, symptoms of PTSD in the clinical range were defined as a sum score of 14 or more, consistent with moderate clinical levels of symptoms of PTSD.

Students' symptoms of depression in the past 2 weeks were assessed using a 26-item Child Depression Inventory (CDI).[34] The CDI (range, 0-52 points) assesses children's cognitive, affective, and behavioral symptoms of depression, and has good test-retest reliability and validity.[35-37] A single item that assessed suicidality was removed at the request of school personnel.

Child psychosocial dysfunction was assessed using the 35-item Pediatric Symptom Checklist (PSC) (range, 0-70 points),[38-41] in which the student's parent rated the frequency of the student's emotional and behavioral problems on a scale from 0 (never) to 2 (often).

Classroom behavior was assessed by having the student's teacher complete the 6-item Teacher-Child Rating Scale for shyness/anxiousness, learning problems, and acting out behavior problem subscales (range of subscales, 6-30 points).[42] The Teacher-Child Rating Scale, in which teachers rate how much of a problem each behavior has been on a scale from 1 (not a problem) to 5 (very serious problem), previously has been used to assess classroom behavior problems in comparable students.[43]

Analyses

We compared the early intervention and delayed intervention group clinical and demographic characteristics at baseline. To assess the effectiveness of the intervention, we used linear regression to estimate the mean difference in outcome scores between the 2 intervention groups at 3 months and at 6 months, adjusted for scores at baseline. Effect sizes were calculated to assess the magnitude of intervention effects. These were calculated as the ratio of the estimated treatment effect (early intervention score minus delayed intervention score at follow-up, after controlling for baseline scores) to the pooled SD at baseline.[44] All analyses were performed with Stata version 7.0.[45]

Table 2. Mean Differences Comparing 3-Month and 6-Month Scores for Students in the Early Intervention Group With Scores of Those in the Delayed Interventon Group, Adjusted for Baseline Score Values

	3-Month Assessment, Mean Scores*			6-Month Assessment, Mean Scores*		
Outcomes	Early Intervention Group (n = 54)	Delayed Intervention Group (n = 63)	Adjusted Mean Difference (95% CI)	Early Intervention Group (n = 53)	Delayed Intervention Group (n = 60)	Adjusted Mean Difference (95% CI)
Child report						
Symptoms of PTSD†	8.9	15.5	−7.0 (−10.8 to −3.2)	8.2	7.2	0.3 (−3.4 to 3.9)
Symptoms of depression‡	9.4	12.7	−3.4 (−6.5 to −0.4)	9.0	10.0	−0.8 (−4.1 to 2.5)
Parent report§						
Psychosocial dysfunction	12.5	16.5	−6.4 (−10.4 to −2.3)	9.4	8.9	−1.9 (−5.8 to 2.1)
Teacher report‖						
Acting out problems	9.4	10.2	−1.0 (−2.5 to 0.5)	9.2	10.7	−0.9 (−2.6 to 0.8)
Shyness/anxiousness problems	9.8	10.6	0.1 (−1.5 to 1.7)	9.2	10.9	−0.9 (−2.5 to 0.7)
Learning problems	12.7	13.3	−1.1 (−2.9 to 0.8)	13.5	14.7	−1.9 (−3.9 to 0.2)

Abbreviations: CI, confidence interval; PTSD, posttraumatic stress disorder.
*The 3-month assessment was obtained at the completion of the 10-week intervention therapy for the early intervention group and the completion of a 10-week waiting period for the delayed intervention comparison group. The 6-month assessment was obtained at the 3-month follow-up of the intervention therapy for early intervention group and the completion of the 10-week intervention therapy for the delayed intervention comparison group.
†Child PTSD Symptom Scale (range, 0-51).
‡Child Depressive Inventory (range, 0-52).
§Pediatric Symptom Checklist (range, 0-70).
‖Teacher-Child Rating Scale (range for subscales, 6-30).

RESULTS

Baseline Characteristics

The enrolled sample of 126 students had substantial levels of exposure to violence and symptoms of PTSD (**TABLE 1**). The mean number of violent events in the previous year experienced by the students was 2.8 and the mean number witnessed by the students was 5.9. The mean percentage of students who reported experiencing or witnessing violence involving a knife or gun was 76%. The mean CPSS score was 24.0, indicating moderate to severe levels of symptoms of PTSD. The mean CDI score was 17.2. The early intervention and delayed intervention groups did not show significant differences in baseline values.

The 3-month assessment was completed by 117 students (93%); 113 (90%) completed the 6-month assessment. At baseline, compared with students who completed all assessments, noncompleters (n=13) had higher CPSS scores (mean difference, 5.4; 95% CI, 1.5-9.4), CDI scores (mean difference, 8.1; 95% CI, 3.0-13.2), acting out classroom behaviors (mean difference, 7.7; 95% CI, 3.4-11.9), and classroom learning problems (mean difference, 5.2; 95% CI, 0.4-10.0). Other baseline characteristics between students who completed all assessments and those who did not were not significantly different.

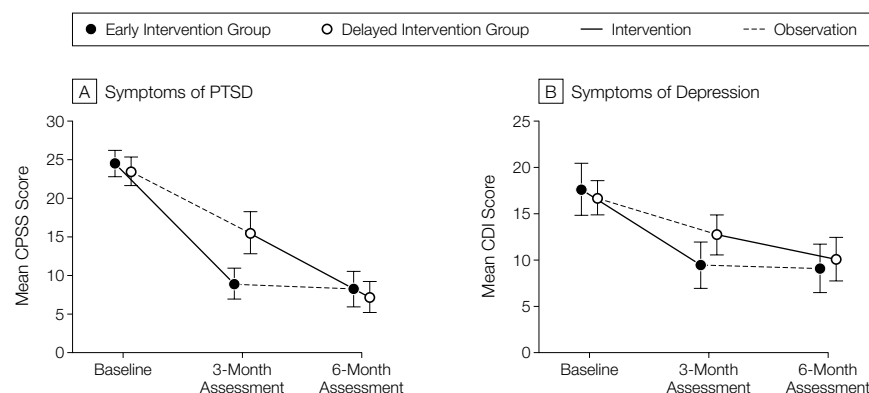### Outcomes of Early Intervention vs Delayed Intervention Groups

At the 3-month assessment, students in the early intervention group had significantly lower self-reported symptoms of PTSD than did students in the delayed intervention group (8.9 vs 15.5) (**TABLE 2**). The mean difference between the groups, adjusted for baseline scale scores, was −7.0 (95% CI, −10.8 to −3.2) (Table 2), an effect size of 1.08 SDs. This result indicates that 86% of the students who underwent CBITS intervention reported lower scores of symptoms of PTSD at 3 months than what would have been expected if they had not undergone intervention.[44] At 6 months, after the delayed intervention group completed the CBITS intervention, a difference no longer existed between the groups, with an adjusted mean difference of 0.3 (8.2 vs 7.2; 95% CI, −3.4 to 3.9) (Table 2 and **FIGURE 2**).

Scores for self-reported symptoms of depression also were lower in the early intervention group at 3 months than in those of the delayed intervention group, with an adjusted mean difference of −3.4 (9.4 vs 12.7; 95% CI, −6.5 to −0.4), an effect size of 0.45 SDs. This indicates that 67% of the students who underwent CBITS intervention reported lower scores of symptoms of depression at 3

months than what would have been expected if they had not undergone intervention. At 6 months, after the delayed intervention group completed the CBITS intervention, a significant difference no longer existed in the scores for symptoms of depression between the 2 groups, with an adjusted mean difference of −0.8 (9.0 vs 10.0; 95% CI, −4.1 to 2.5) (Table 2 and Figure 2).

Parents of students in the early intervention group reported significantly less psychosocial dysfunction at 3 months compared with parents of students in the delayed intervention group (12.5 vs 16.5) (Table 2). The adjusted mean difference was −6.4 (95% CI, −10.4 to −2.3), an effect size of 0.77 SDs. This indicates that 78% of the parents of students who underwent CBITS intervention had less psychosocial dysfunction at 3 months than what would have been expected if they had not undergone intervention. At 6 months, after the delayed intervention group completed the CBITS intervention, the parents of students in the early intervention and delayed intervention group had similar ratings of child psychosocial dysfunction, with an adjusted mean difference of −1.9 (9.4 vs 8.9; 95% CI, −5.8 to 2.1) (**FIGURE 3**).

Teachers did not report a significant difference in classroom behavior between students in the early interven-

Figure 2. Student Self-reported Scores for Symptoms of PTSD and Depression

CBITS indicates Cognitive-Behavioral Intervention for Trauma in Schools; CDI, Child Depression Inventory; CI, confidence interval; CPSS, Child PTSD Symptom Scale; and PTSD, posttraumatic stress disorder. The delayed intervention comparison group did not undergo CBITS during the first 3 months of the study. At the 3-month assessment, students in the early intervention group had significantly lower self-reported symptoms of PTSD than did students in the delayed intervention group. At 6 months, after the delayed intervention group completed the CBITS intervention, a difference no longer existed between the groups. At 3 months, scores for self-reported symptoms of depression were lower than in those of the delayed intervention group. At 6 months, this significant difference no longer existed. Error bars indicate 95% CIs.

Figure 3. Parent Report of Student Psychosocial Dysfunction
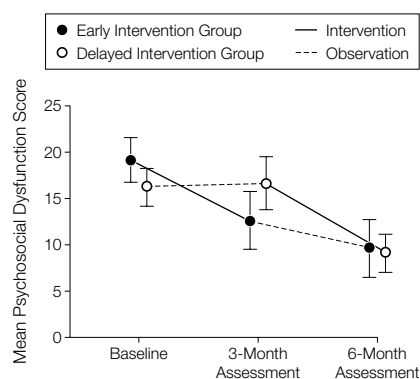
Parents of students in the early intervention group reported significantly less psychosocial dysfunction at 3 months compared with parents of students in the delayed intervention group. At 6 months, after the delayed intervention group completed the CBITS intervention, the parents of students in the early intervention and delayed intervention group had similar ratings of child psychosocial dysfunction. Error bars indicate 95% confidence intervals (CIs).

tion group and delayed intervention group (Table 2). At 3 months, the adjusted mean difference was −1.0 on the acting out behavior scale, 0.1 on the shyness/anxiousness scale, and −1.1 on the learning problems scale. At 6 months, the adjusted mean difference was −0.9 on the acting out behavior scale (Table 2 and **FIGURE 4**), −0.9 on the shyness/

anxiousness scale, and −1.9 on the learning problems scale (Figure 4).

COMMENT

This is the first study to date to use a randomized controlled trial to evaluate the effectiveness of an intervention for children with substantial levels of symptoms of PTSD who have been exposed to a wide range of violent events. Complementing the work of other researchers who have developed interventions for children affected by child sexual abuse,[46-48] natural disasters,[49,50] and single-incident traumas,[33] this study takes an important step toward developing and empirically evaluating a standardized intervention for children experiencing symptoms following exposure to violence.

Students who received this brief standardized intervention, delivered by school mental health clinicians on school campuses, had significantly fewer self-reported symptoms of PTSD and depression, and fewer reports of psychosocial dysfunction by parents at the 3-month assessment, than did students who were randomly assigned to a delayed intervention comparison group. The delayed intervention group experienced a smaller decrease in symp-

toms of PTSD and depression while on a waiting list to receive the intervention; when they received the intervention, they too showed a significant reduction in symptoms of PTSD and depression. At 6 months, after both groups had received the intervention, students in both groups had similar levels of symptoms of PTSD, depression, and psychosocial dysfunction.

In our prior research, we used a quasi-randomized design to examine the effectiveness of the CBITS intervention in a recent immigrant population of students in the third through eighth grades in a number of different schools.[29] In this study, we were able to evaluate the effectiveness of the intervention in a fully randomized controlled trial of sixth graders in the general school population, and we were able to monitor the fidelity of the intervention. The results of our prior study in recent immigrant students, combined with results of this study, demonstrate that a carefully implemented community-based intervention can significantly reduce symptoms of PTSD in the short term.

During the process of engaging school stakeholders as collaborative research partners, it became clear that we could have relatively few exclusion criteria for the intervention program.[28] This had the salutary effect of significantly increasing the generalizability of the study—for example, by not excluding students with comorbid disorders unless the student was deemed by the clinician to be too disruptive to participate in group treatment. Many clinicians have called for such increased generalizability as efforts are made to develop and evaluate interventions in community settings.[51,52]

In recent years, there have been increasing calls for developing effective mental health interventions that can be delivered within the constraints of community settings in which children and adolescents are commonly seen.[53,54] However, such interventions remain quite rare, and a recent review of school-based interventions noted the paucity of research in evaluating programs that address symptoms of PTSD,[55] despite the

Figure 4. Teacher Report of Students Using the Teacher-Child Rating Scale for Classroom Acting Out, Shyness/Anxiousness, and Learning Problem Subscales
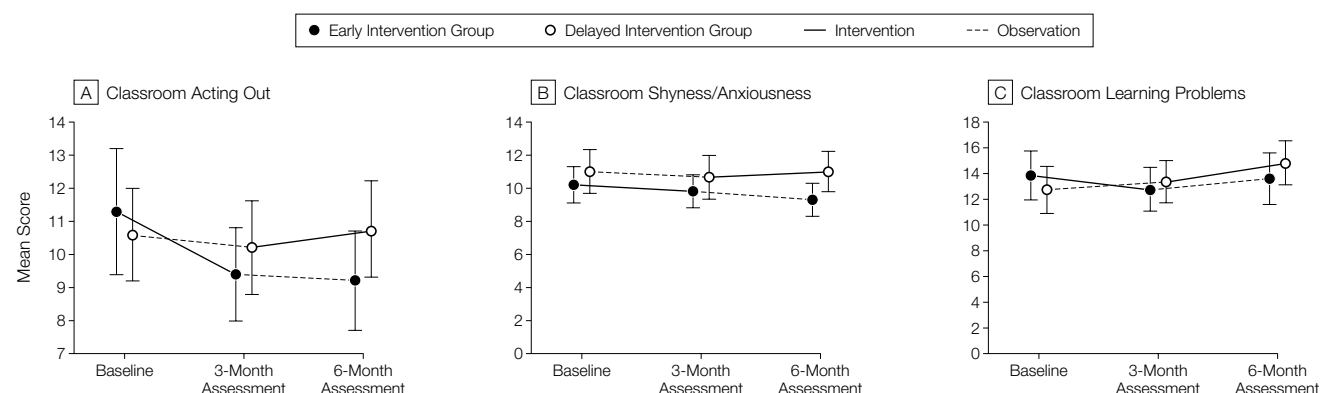
Teachers did not report a significant difference in classroom behavior between students in the early intervention group and delayed intervention group. At 3 months, the adjusted mean difference was −1.0 on the acting out behavior scale, 0.1 on the shyness/anxiousness scale, and −1.1 on the learning problems scale. At 6 months, the adjusted mean difference was −0.9 on the acting out behavior scale, −0.9 on the shyness/anxiety scale, and −1.9 on the learning problems scale. Error bars indicate 95% confidence intervals.

high prevalence of symptoms of PTSD in school-aged children.[10,16,19] Recognizing the need for such programs and the important role that could be played by schools, the *Report of the Surgeon General's Conference on Children's Mental Health: A National Action Agenda* called for an increase in schools' capacity to meet children's emotional needs.[56] Children from poor and minority backgrounds, those populations who are at highest risk for exposure to violence, are the same populations whose mental health needs are least likely to be met by the current health care system.[57] Interventions delivered in schools have the potential for overcoming many of the key barriers to accessing the health care system faced by these populations.[58]

For many children, schools have long been the de facto provider of mental health services.[59] School counselors, psychologists, and social workers traditionally have provided many of these services[60]; school-based health clinics, which often provide a range of health care and mental health services to students,[61,62] are another rapidly growing alternative.[63]

A critical aspect of this program was the collaborative partnership between school personnel and clinician-researchers. Our frequent consultations with school staff about implementation issues and our efforts to educate

teachers and administrators about how violence affects children helped to make the program acceptable and relevant to schools. Close work with school personnel during CBITS development also ensured that clinicians already working in schools could implement the program. The study results demonstrate the feasibility of our approach; school-based clinicians delivered the intervention with integrity and high quality. However, putting such a program in place does require shifting some of clinicians' day-to-day responsibilities. More time would be spent providing standard manual-based treatments for specific psychiatric problems and less time providing general supportive counseling. In addition, our program increased detection of mental health symptoms related to violence through general screening of students instead of relying on referrals from school staff. Such screening is critical since children experiencing disorders such as depression or PTSD are unlikely to be recognized and referred for treatment.[64,65]

The magnitude of the effect of this school-based intervention on child- and parent-reported outcomes is comparable with that of child psychotherapy intervention trials for other disorders that have been conducted in more homogeneous populations[66,67] and are considered "moderate" (for depression) to "very

large" (for symptoms of PTSD).[44] A national study reported that important risk factors for child mental health problems, such as poverty and single-parent status, were associated with PSC scores that were on average 4 points higher than scores of other children[39]; less than the 6-point improvement reported by parents in our intervention group.

Teachers did not report significant improvements in the classroom behavior of the early intervention group compared with the delayed intervention group at either 3 months or 6 months. Disagreement about symptoms or diagnosis in children as rated by children, teachers, and parents is common in studies using multiple informants, even those that use the same measure,[68] and student's classroom behavior is affected by many factors, not just the child's mental health. It may be that the improvement in symptoms in the early intervention group did not translate into improved classroom behavior. Another explanation is that there may be a time lag before children's symptomatic improvement translates into improved classroom behavior. This possibility may explain our finding that adjusted mean differences between the groups for the teacher-reported measures were approximately the same size or slightly greater at 6 months than 3 months, while the ad-

justed mean differences for the child and parent measures were much smaller at 6 months than 3 months. Teachers also may be more attuned to disruptive behaviors in their classroom and less aware of symptoms of anxiety and depression that a child may experience silently. Alternatively, the Teacher-Child Rating Scale subscales we used may not be as sensitive to clinical improvement as are the child and parent measures.

The discrepancies between the teachers' assessment and those of other respondents must be addressed in future research of school-based mental health programs, as must the impact of such interventions on other outcomes such as grades. The mission of schools continues to be education, not treatment. Widespread acceptance of school mental health programs requires more information about the impact of such programs on school outcomes, as well as data about whether such programs are cost-effective and can be implemented in ways that allow reimbursement for providing services.

All students received the intervention within a single academic year. As a result, we only examined the short-term effectiveness of the program. The intervention is designed to increase resilience and build coping skills, so it is possible that the intervention will have a lasting effect on the students as they face new stressors and traumatic events. At the time of screening, the students in the study had a high degree of chronic exposure to violence. It is promising that students who were randomly assigned to the early intervention group maintained improvement at the 6-month assessment. However, we have no information about exposure to new violence during this period. Such information and a longer follow-up period are needed to assess the intervention's long-term effectiveness and to determine if the program builds resilience as these vulnerable children face traumatic events in the future. This information also would tell us more about whether booster sessions or other follow-up might be necessary for some children. Follow-up over multiple academic years also is needed to directly examine the program's effect on school grades and other school outcomes.

The CBITS intervention was not compared with a control condition such as general supportive therapy, but rather with a wait-list delayed intervention. As a consequence, none of the informants (students, parents, or teachers) were blinded to the treatment condition. It is possible that the lack of blinding may have contaminated either the intervention or assessments. School staff and parents may have provided more attention and support to students who were eligible for the program while they were on a wait-list; alternatively, respondents may have been more likely to report improvement in symptoms for those students for whom they knew had received the intervention. Using blinded evaluators is an important step for the future, to provide an objective rating of outcomes.

Future research comparing CBITS with an alternative intervention, such as generic support and attention, also would be an important next step, in part to reduce biases among respondents, and also to control for the attention that children receive as being part of the program. However, such designs often are difficult to implement in school settings, where there is a push to provide the same program to all students, and randomization to a placebo can be seen as insensitive to the needs of students and families.[69] Further research also is needed to determine if our findings would be replicated in nonurban and non-Latino populations, and to examine the intervention's effectiveness in alternative settings treating large numbers of children, such as pediatric clinics, adolescent medicine clinics, and community mental health centers.

Violence remains a serious public health problem, the psychological consequences of which affect children across the country. Yet clinicians working with such children often have lacked evidence-based treatments. This intervention, designed in collaboration with the school district in which it was implemented and delivered by school clinicians, may be a promising model for community-based programs for children who experience or witness violence, who frequently face multiple barriers in accessing mental health services.

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