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Implementing the Bounce Back Trauma Intervention in Urban Elementary Schools: A Real-World Replication Trial

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The current study provides the first replication trial of Bounce Back, a school-based intervention for elementary students exposed to trauma, in a different school district and geographical area. Participants in this study were 52 1st through 4th graders (M_{age} = 7.76 years; 65% male) who were predominately Latino (82%). Schools were randomly assigned to immediate treatment or waitlist control. Differential treatment effects (Time × Group Interaction) were found for child-reported posttraumatic stress disorder (PTSD) and parent-reported child coping, indicating that the immediate treatment group showed greater reductions in PTSD and improvements in coping compared with the delayed group. Differential treatment effects were not significant for depression or anxiety. Significant maintenance effects were found for both child-reported PTSD and depression as well as parent-reported PTSD and coping for the immediate treatment group at follow-up. Significant treatment effects were also found in the delayed treatment group, showing reductions in child-reported PTSD, depression, and anxiety as well as parent-reported depression and coping upon receiving treatment. In conclusion, the current study suggests that Bounce Back is an effective intervention for reducing PTSD symptoms and improving coping skills, even among a sample experiencing high levels of trauma and other ongoing stressors.

Impact and Implications

This study advances the evidence for Bounce Back, a school-based intervention aimed at elementary school students exposed to traumatic events. Results show that the Bounce Back intervention, implemented by school-based mental health professionals, is effective in treating symptoms of posttraumatic stress and improving coping skills for low-income and highly stressed school-age children.

Keywords: trauma, intervention, school, children, elementary students

Over the past decade, there has been increasing awareness of the prevalence and negative sequelae of exposure to trauma among school-age children. In the National Survey of Children's Exposure to Violence sample, 47.6% of children ages 6–9 years had experienced a physical assault in the past year, 13.8% had experienced maltreatment, 10.7% had witnessed community violence,

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and 5.8% had witnessed family violence (Finkelhor, Turner, Shattuck, & Hamby, 2015). Although many children show resilience after traumatic exposure, one large longitudinal study found that rates of psychiatric disorders such as depression, anxiety, and disruptive behavior were almost double among youth exposed to trauma compared with nontraumatized youth (Copeland, Keeler, Angold, & Costello, 2007). Furthermore, children with exposure to multiple types of trauma are at increased risk for developing symptoms of posttraumatic stress (Copeland et al., 2007).

Not surprisingly, trauma exposure exerts a negative impact on academic outcomes (Porche, Fortuna, Lin, & Alegria, 2011). Trauma exposure, particularly when it is chronic or occurs early in development, has a direct negative impact on neurobiology, attention, and cognitive processes (Shonkoff, 2010). In addition, psychological symptoms disrupt children's ability to effectively regulate their emotions and behaviors and focus in the classroom (Porche et al., 2011). Given widespread trauma exposure and its impact on school performance, educational settings have increasingly recognized the need for trauma-informed strategies to increase identification of students who may be showing early signs of distress and prevent subsequent academic impact (Cole, Eisner, Gregory, & Ristuccia, 2013). The provision of mental health services in schools increases the likelihood that students will receive needed treatment because it reduces common barriers to accessing treatment, such as transportation, cost, and stigma (Overstreet & Mathews, 2011). This is particularly important for low-income, minority youth, who are both more likely to experience trauma and less likely to receive mental health treatment (Crouch, Hanson, Saunders, Kilpatrick, & Resnick, 2000).

A school-based intervention with a strong evidence base is the Cognitive Behavioral Intervention for Trauma in Schools (CBITS). CBITS has been shown to reduce symptoms of posttraumatic stress disorder (PTSD) and depression in one randomized controlled trial (RCT; Stein et al., 2003) and a quasi-experimental design conducted with Latino immigrant students (Kataoka et al., 2003). Although CBITS is a promising school-based intervention for 5th- through 12th-grade students, there are limited evidence-based trauma interventions for elementary students designed for and tested in the school setting. Trauma-focused cognitive–behavioral therapy (TF-CBT) has a strong evidence base for use with younger children, but it has not been formally evaluated in schools (Cohen, Mannarino, & Deblinger, 2006). Thus, Bounce Back was created as a developmentally modified adaptation of CBITS that integrated some components of TF-CBT (Langley, Gonzalez, Sugar, Solis, & Jaycox, 2015). Bounce Back is structured similarly to CBITS, although activities and content are tailored for 5- to 11-year-old children and parent involvement is a core component because parents may play a more central role in helping younger students practice and generalize new coping skills. In a previous RCT, students who received Bounce Back showed significant reductions in posttraumatic stress and anxiety symptoms compared with waitlist students (Langley et al., 2015).

Despite the initial support provided by Langley et al. (2015), more research is needed to establish Bounce Back as an evidence-based treatment and support continued dissemination. To classify a treatment as well established, efficacy must be demonstrated as significantly superior to a waitlist control or placebo treatment in at least two research settings by two independent research teams (Southam-Gerow & Prinstein, 2014). In addition to increasing the evidence base for Bounce Back, there is continued need to demonstrate that interventions are effective in multiple real-world settings serving diverse populations (Weisz, Sandler, Durlak, & Anton, 2005). There remains a substantial gap in evidenced-based treatments and their implementation and sustainability in real-world community settings, often due to difficulty matching the characteristics and resources of community care (Atkins, Rusch, Mehta, & Lakind, 2016). The first RCT was designed to close this gap by developing Bounce Back in partnership with the community and conducting a mixed efficacy-effectiveness trial with a school setting while still providing some supports from research staff (e.g., staff support for screening, materials; Langley et al., 2015). Building on this foundation, subsequent trials delivered in community settings with "usual care" providers and resources are needed to ensure that Bounce Back is effective in the settings where it will be disseminated.

Current Study

The current study was the first replication trial of Bounce Back in a different school district and geographical area and was designed to extend previous research in several ways. First, it provided a replication trial to expand the evidence base for Bounce Back. Second, it focused on "usual care" providers and resources to demonstrate effectiveness in a real-world community setting. Specifically, school-based clinicians were responsible for identifying and screening students, forming groups, and delivering the intervention with support typical for their school district without added implementation assistance from a research team. Finally, Bounce Back was delivered to a community sample of young children and families who were predominantly Latino, low income, and highly stressed. Taken together, the current study aimed to evaluate the effectiveness and acceptability of Bounce Back in a real-world setting with a highly stressed community population. The hypotheses of the current study were (a) that students who received Bounce Back immediately would show greater symptom reduction at 3-month follow-up (posttreatment) compared with students assigned to delayed treatment, (b) that students in the immediate treatment group would show maintenance of improvements from baseline to 6 months, and (c) that students assigned to delayed treatment would show symptom reduction upon receipt of treatment (3–6 months). These hypotheses were evaluated for the primary outcome of PTSD symptoms as well as anxiety, depression, coping skills, and classroom behavior.

Method

Participants

This study was conducted at eight schools within an urban school district in Illinois from 2013 to 2016. Some schools participated multiple years, resulting in a total of 12 unique Bounce Back groups. All participants received the intervention only once. Groups ranged from three to six student participants across first through fourth grades, with efforts made to have groups composed of students within one grade level of each other. This school district serves predominantly low-income (93%) and Latino (93%) students, more than half (58%) of who are classified as English Language Learners. Participants in this study were 52 first through

fourth graders (M_{age} = 7.76 years; 65% male) who were predominately Latino (82%). Almost half of the students (47%) had two immigrant parents, 16% had one immigrant parent, and 37% had no immigrant parents. Parents/caregivers participating in this study (M_{age} = 35.75 years, *SD* = 8.81, range = 24–65) were 83% female. More than half of the participants (59%) had a household income of less than $25,000, supporting an average of four individuals (*M* = 3.77 individuals, *SD* = 1.89), making the present sample significantly more financially strained than the initial Bounce Back RCT (43.3% had a household income of $40,000 or less, supporting an average of four individuals; Langley et al., 2015). In the present study, more than half (55%) of parents had an education of less than high school, compared with approximately one quarter of parents (24%) in the initial Bounce Back RCT (Langley et al., 2015).

Measures

Children, parents, and teachers completed assessments at baseline, 3 months (postintervention for the immediate group, postwaitlist for the delayed group), and 6 months (3 months postintervention for the immediate group, immediately after intervention for the delayed group). The following measures were completed at all three time points unless otherwise noted.

Trauma exposure. Parents and children reported on children's exposure to trauma using the Modified Traumatic Events Screening Inventory for Children—Brief Form (TESI-C-Brief; Ford et al., 2000). The questionnaire was administered verbally by clinicians to children and by research staff to parents at baseline and then by research staff to both children and parents at subsequent time points. Parents and children responded to 21 items that measured a range of traumatic experiences such as accidental trauma, physical abuse, loss, and violence. Previous research has supported the use of the TESI to assess childhood trauma exposure and is unique in its inclusion of community violence and utility with young children (e.g., Gonzalez, Monzon, Solis, Jaycox, & Langley, 2016; Strand, Sarmiento, & Pasquale, 2005). In addition, reviews have found the TESI to have strong psychometric properties (e.g., Ribbe, 1996), and it has been used with Spanish-speaking populations (Gonzalez et al., 2016). Parents also reported on their own exposure to traumatic events using a modified version of the TESI-C-Brief (Ford et al., 2000).

PTSD symptoms. Parents and children reported on children's symptoms of PTSD using the University of California–Los Angeles PTSD Reaction Index (UCLA-RI; Steinberg, Brymer, Decker, & Pynoos, 2004), a 20-item questionnaire on posttraumatic stress symptom frequency during the past month. This instrument was administered verbally by research staff and school social workers to children and with paper and pencil for parents. Items on this scale correspond to *Diagnostic and Statistical Manual of Mental Disorders* (fourth edition; *DSM–IV*) criteria for PTSD and are rated on a 5-point Likert-type scale from 0 (*never*) to 4 (*most of the time*). The UCLA-RI has strong support for its internal consistency, test–retest reliability, and convergent validity with diagnoses of PTSD (Steinberg et al., 2004). The UCLA-RI has also been used in Spanish-speaking populations (e.g., Allen, Cisneros, & Tellez, 2015). Cronbach's α in this sample ranged from .86 to .92 for parent report and from .74 to .92 for child report across time points.

Depression. Children completed the self-report version of the Children's Depression Inventory (CDI; Kovacs, 1992). An item assessing suicidal ideation was excluded in this study, yielding a 26-item version, a common compromise when working within schools (e.g., Sun & Wang, 2015). For each item, children selected the statement that best described them from among three options, with item scores ranging from 0 to 2. Parents also reported on their child's symptoms by completing a parent version of the CDI at each time point. The CDI has strong psychometric properties and has been used in Spanish-speaking populations (Molina, Gómez, & Pastrana, 2009; Sun & Wang, 2015). Cronbach's α for parent report in this sample ranged from .88 to .90 and from .85 to .86 for the child report.

Anxiety. Children completed the Screen for Child Anxiety Related Emotional Disorders Child Report (SCARED-C; Birmaher et al., 1999), a 41-item measure that includes five factors: somatic/panic (13 items) generalized anxiety (9 items), separation anxiety (8 items), social phobia (7 items), and school phobia (4 items). There is strong support for the test–retest reliability as well as concurrent and discriminant validity of the SCARED-C (Birmaher et al., 1997, 1999), and the measure has been used across ethnically diverse samples (e.g., Langley et al., 2015). Participants rated the items of each factor on a 3-point scale. In the current sample, Cronbach's α ranged from .86 to .92.

Coping. Parents reported on children's coping using the Responses to Stress Questionnaire (RSQ; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000), a 57-item measure that assesses responses to stress. The primary control coping factor was used in this study and includes nine items assessing problem-solving, emotional expression, and emotion regulation rated on a 4-point scale of 0 (*not at all*) to 4 (*a lot*). The RSQ consistently demonstrates good reliability and validity, and there is support for its use in Spanish-speaking populations (Connor-Smith et al., 2000). In the current study, Cronbach's α ranged from .70 to .77.

Classroom behavior/school functioning. Teachers reported on children's school functioning using the Strengths and Difficulties Questionnaire (SDQ) Teacher Report; Goodman, 1997). The SDQ is a 25-item questionnaire with five subscales assessing school functioning: emotional symptoms, conduct problems, hyperactivity/inattention problems, peer problems, and prosocial behavior. The SDQ has demonstrated good validity and adequate reliability, including with Spanish-speaking populations (Goodman, 1997; Rodríguez-Hernández et al., 2012). A total difficulties score is calculated by summing the first four subscales, with a higher score indicating more problems. The Cronbach's α for the current sample ranged from .80 to .86.

Satisfaction measures. Satisfaction measures were selected to be consistent with the satisfaction measure used in the original RCT (Langley et al., 2015). Parents and children reported on satisfaction with Bounce Back postintervention. Parents rated four questions regarding how much they liked Bounce Back, benefits of the program, influences on parent–child interactions, and importance of the program on a scale from 0 (*not at all*) to 4 (*a whole lot*). Children rated how much they liked Bounce Back on a 3-point scale from 0 (*not at all true*) to 2 (*very true*). For parents, items were averaged to get a mean satisfaction score.

Clinician satisfaction. Clinicians responded to six questions assessing their satisfaction with the Bounce Back program. Questions focused on how much the clinician liked the program, diffi-

culty of implementation, implementation challenges, satisfaction with training, quality of materials, and opinion on the need for the program in general. Questions were rated on a five-point scale from 0 (*not at all*) to 4 (*a whole lot*), and clinicians were given the opportunity to respond in an open-ended manner below each scale.

Clinician fidelity. Clinicians rated their fidelity to Bounce Back implementation after each session. Clinicians completed a checklist of specific content for each session and then rated the degree to which they covered each topic on a 4-point scale ranging from 0 (*not at all*) to 3 (*thoroughly covered*), with the specific items varying by session. Checklists were based off of those used in the RCT as observer reports and were adapted for self-report (Langley et al., 2015).

Study Design and Procedure

This institutional review board-approved replication trial of Bounce Back included extra efforts to promote sustainability of the intervention beyond the research study period, as recommended by Langley et al. (2015). In the original RCT, all children in grades 1–5 were screened for trauma exposure by researchers. In this replication trial, screening and enrollment were designed to be consistent with the school district's policies for other Tier 2 interventions; thus, they were conducted by the school social workers. Consistent with the initial trial, a two-step recruitment and informed consent/assent process was used for the screening and enrollment of participants in the intervention (Langley et al., 2015).

First, in the screening step, teachers and school social workers identified children in the first through fourth grades who might benefit from a trauma-focused intervention through the school referral process. Trained school social workers identified students on their caseload, in classrooms, and trained teachers and other school staff on how to identify students who were appropriate to refer to the Bounce Back intervention. Students were then screened by school social workers who were already providing clinical services in the school and trained in Bounce Back, thus creating a more efficient and sustainable way to target and screen students. The inclusion criteria were (a) exposure to trauma (identified using the modified TESI-C-Brief; Ford et al., 2000) and (b) current moderate to severe symptoms of PTSD (score of ≥25 on the UCLA-RI; Steinberg et al., 2004).

In the enrollment step, school social workers spoke with parents of eligible children to determine interest in their children participating in Bounce Back and solicit permission to share contact information with research staff. Research staff then met with parents to discuss the research study and obtain informed consent. At the same visit, parents completed a baseline assessment of demographics and key study variables. Research staff subsequently coordinated with school social workers to meet with each student to obtain informed assent and complete additional research measures.

Using block randomization, schools were randomly assigned to immediate treatment or to a waitlist control once students were screened. Because of these block randomization procedures, schools that participated multiple years were not necessarily in the same condition across all 3 years. Children assigned to immediate treatment began the Bounce Back group within a few weeks whereas the delayed group waited approximately 3 months for the intervention. All participants were reassessed 3 months after baseline (after the immediate group had completed Bounce Back). After this assessment, the delayed group received the intervention whereas the immediate group waited for 3 months without further intervention. Finally, all participants completed an assessment 6 months after baseline. Parent participants received $15 gift cards as compensation for each research assessment. Parents that completed all three assessments received an additional $15 gift card. See Figure 1 for an overview of enrollment.

Bounce Back Intervention

The Bounce Back intervention is a developmentally tailored, skill-building group comprising 10 sessions and led by school-based social workers and/or school psychologists (Langley et al., 2015). In the current study, groups were cofacilitated. The group targets students from kindergarten to fifth grade and uses TF-CBT to teach students coping skills. For example, students receive psychoeducation about the prevalence and symptoms of trauma and learn affect identification, relaxation techniques, cognitive coping, social support, and problem-solving. These concepts are reinforced in concrete, developmentally appropriate ways (e.g., progressive muscle relaxation by teaching students to "squeeze lemons") and with an emphasis on visuals (e.g., engaging cartoons to learn about thoughts, feelings, and actions). Social workers guide students in creating a fear hierarchy, allowing students to gradually face an anxiety-provoking situation to improve functioning. In addition to the 10 group sessions, the social worker and child meet individually for two sessions to craft and process their trauma narrative, with a caregiver or supportive adult invited to a third session in which the child shares their narrative. Finally, caregivers are invited to a maximum of three psychoeducational sessions with the social worker to introduce them to skills that children learn in the group. To enhance real-world effectiveness and maximize parent participation, social workers were given the option to facilitate these sessions over the phone, abbreviate these sessions (e.g., combining sessions into longer meetings), and/or conduct sessions with groups of caregivers. For a more comprehensive description of the intervention, please refer to Langley et al. (2015).

Training and Supported Implementation

School social workers completed student screening, intervention implementation, and postintervention follow-up assessments as part of their job responsibilities. All clinicians were part of the existing school mental health program and were masters-level social workers employed by the school district. The developer of Bounce Back provided training (one full-day session) to the school-based clinicians who delivered Bounce Back and was available for consultation throughout the study but was not part of the investigative team. During intervention implementation, clinicians met 7 times (approximately once per month) as a group for implementation support, consistent with the model used by the trainers for CBITS and Bounce Back in the state of Illinois. Implementation support was provided by several authors of the present study, all of who have doctoral degrees in clinical psychology and experience providing supervision and implementation support for evidence-based interventions in schools. Additional implementation support was provided via an implementation toolkit tailored to the school district (which included tools such as

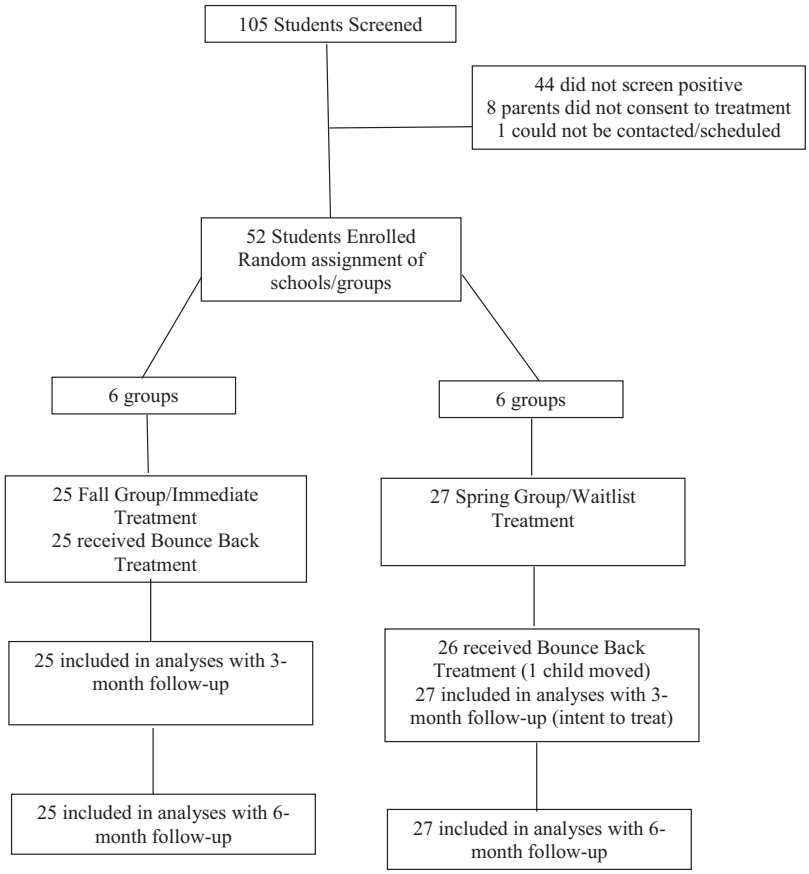

Figure 1. Participant enrollment. Missing data ranged from 2% to 12% for child report and 10–23% for parent report across measures/time. However, data were imputed; thus, all cases were analyzed.

Spanish translation of materials, educational materials to enhance teachers' knowledge about trauma in students, fidelity monitoring forms, an implementation calendar with relevant district holidays, and session tips), regular contact with school and district administrators, and email contact with implementers.

Analytic Strategy

Consistent with the approach taken in the original trial (Langley et al., 2015), differential treatment effects were tested between groups, maintenance effects were tested within the immediate treatment group, and treatment effects within the delayed group were tested. Repeated-measures analyses of variance (ANOVAs) were conducted using IBM SPSS Statistics 22. For differential treatment effects (hypothesis 1), a time (within-subject factor) by group (between-subject factor) interaction was examined (baseline to 3 months). Treatment maintenance effects (hypothesis 2) were conducted with the immediate treatment group comparing baseline to 6 months. Finally, treatment effects were examined within the delayed treatment group by comparing outcome variables at 3 and 6 months. All tests included the following outcome variables: PTSD symptoms (child and parent report), depression (child and parent report), anxiety (child report), coping skills (parent report), and classroom behavior (teacher report). Differential treatment effects were also tested using hierarchical linear modeling (HLM) to account for the nested nature of the data (child nested within group/school) and results were replicated (available upon request). However, because there is not a clear way to denote an effect size in HLM (Niehaus, Campbell, & Inkelas, 2014), the repeated-measures ANOVAs with estimates of effect size are presented. Analyses conducted with GPower (Faul, Erdfelder, Lang, & Buchner, 2007) indicate that this approach is adequately powered to detect a medium effect size.

Data were entered manually and then checked by a second person. Discrepancies were noted and corrected. Missing data rates for child-reported variables ranged from 2% to 12% across measures/time. Missing data rates for parent-reported variables ranged from 10% to 23% across measures/time. Little's (1988) missing completely at random test was conducted, and data were determined to be missing at random. Subsequently, missing data were imputed using maximum likelihood multiple imputation procedures (using SPSS 24.0 Expectation Maximization program).

Results

See Table 1 for baseline descriptive statistics. Indicators of normality were also checked, revealing that data were not significantly skewed, platykurtic, or leptokurtic. There were no group differences across demographic characteristics at baseline. However, parent report of PTSD symptoms was significantly higher for

Table 1
Demographic and Baseline Characteristics

Demographics/characteristics	Full sample (N = 52)	Immediate treatment group (n = 25)	Delayed treatment group (n = 27)	p
Gender				
Male	33 (64.5%)	16 (64.0%)	17 (62.96%)	.94
Female	19 (36.5%)	9 (36.0%)	10 (37.03%)	
Race/ethnicity				
African American/Black	2 (3.8%)	1 (4.0%)	1 (3.7%)	
White/Caucasian	3 (5.9%)	1 (4.0%)	2 (7.4%)	
Latino	29 (55.8%)	11 (44.0%)	18 (66.6%)	.09
Latino/Caucasian	12 (23.1%)	9 (36.0%)	3 (11.1%)	
Latino/Native American	3 (5.9%)	3 (12.0%)	0 (0.0%)	
Missing	3 (5.9%)	0	3 (11.1%)	
Income category				
$4,999 or less	6 (11.5%)	3 (12.0%)	3 (11.1%)	
$5,000–14,999	12 (23.1%)	5 (20.0%)	7 (25.9%)	
$15,000–24,999	11 (21.2%)	4 (16.0%)	7 (25.9%)	.68
$25,000–39,999	5 (9.6%)	3 (12.0%)	2 (7.4%)	
$40,000 or more	7 (13.5%)	5 (20.0%)	2 (7.4%)	
Unsure	8 (15.4%)	5 (20.0%)	3 (11.1%)	
Missing	3 (5.8%)	0 (0.0%)	3 (11.1%)	
Grade				
1st	4 (7.7%)	2 (8.0%)	2 (7.4%)	
2nd	16 (30.8%)	8 (32.0%)	8 (29.6%)	.40
3rd	29 (55.8%)	15 (60.0%)	14 (51.9%)	
4th	3 (5.8%)	0 (.0%)	3 (11.1%)	
Age, years	7.76 (0.88)	7.68 (0.80)	7.83 (0.96)	.55
Primary caregiver education	11.06 (3.01)	11.40 (2.36)	10.71 (3.59)	.32
Trauma exposure (TESI-C-Brief)	6.90 (4.04)	6.56 (4.04)	7.23 (4.09)	.56
CR PTSD (UCLA-RI)	34.69 (11.43)	35.00 (11.78)	34.41 (11.31)	.85
PR PTSD (UCLA-RI)	22.29 (13.78)	26.36 (12.33)	18.52 (14.20)	.04
CR depression (CDI)	14.36 (8.90)	13.08 (8.01)	15.54 (9.66)	.33
PR depression (CDI)	10.33 (8.39)	11.44 (8.47)	9.29 (8.35)	.36
CR anxiety (SCARED-C)	36.68 (13.37)	35.64 (15.04)	37.65 (11.83)	.59
PR child coping (RSQ)	2.57 (0.55)	2.65 (0.60)	2.49 (0.49)	.30
TR classroom behavior (SDQ)	11.76 (6.40)	13.54 (5.79)	10.11 (6.60)	.05

Note. The p values correspond to χ^2 tests for categorical variables and t tests for continuous variables. CR = child report; PR = parent report; TR = teacher report.

the immediate treatment group at baseline. Thus, parent report of baseline PTSD was controlled for in differential treatment analyses. Children reported experiencing high levels of trauma at baseline (M = 6.90, SD = 4.04; range = 2–20). The most commonly reported traumas included separation from a parent or a loved one (68.8%), family member arrest or deportation (63.0%), witnessing a physical fight (60.4%), family member with a serious illness (54.3%), and involvement in a serious accident (50%). Parents also reported high trauma exposure (M = 7.46, SD = 4.55; range = 0–18).

Feasibility and Acceptability

Parents reported good satisfaction with the Bounce Back program (M = 3.37, SD = 0.76; scale 0–4). On average, children reported liking the Bounce Back program (M = 1.86, SD = 0.45; scale 0–2). On a scale of 0 to 4, clinicians reported a strong need for Bounce Back at their school (M = 3.30, SD = 0.80), liking Bounce Back on average (M = 2.75, SD = 0.55), and that training was sufficient (M = 2.79, SD = 0.71), but also some difficulty implementing Bounce Back (M = 2.10, SD = 0.79). Clinicians reported good fidelity of their delivery of Bounce Back (M = 2.53, SD = 0.30; scale 0–3).

Because Bounce Back was delivered during the school day, attendance was high for group sessions and clinicians were encouraged to conduct make-up sessions for students who were absent. Thus, 90–98% of children attended scheduled sessions or received a make-up over the 10 group sessions. Most of the children (84%) had caregivers who attended at least one parent session, compared with almost complete parent involvement (97%) in the initial Bounce Back RCT (Langley et al., 2015). Of the caregivers who participated in Bounce Back, 19% completed either a psychoeducation or a treatment session, and 65% completed both a psychoeducation and a treatment session. Parent involvement ranged from zero to four sessions completed (M = 1.98, SD = 1.19).

Intervention Effects

Repeated-measures ANOVAs were used to test the hypotheses of the current study, with results shown in Table 2. Effect size benchmarks for η_p^2 are .01 for small, .06 for medium, and .14 for large (Cohen, 1988). Differential treatment effects (Time × Group interaction) were found for child-reported PTSD (η_p^2 = .11, p = .02, 95% confidence interval [CI] lower to upper = −17.09 to −2.14) and parent-reported child coping (η_p^2 = .13, p = .01,

Table 2
Intervention Effects

Variables	Baseline		3 months		6 months		Differential treatment effect (0–3 months)		Immediate treatment group (0–6 months)		Delayed treatment group (3–6 months)	
	Immediate *M* (*SD*)	Delayed *M* (*SD*)	Immediate *M* (*SD*)	Delayed *M* (*SD*)	Immediate *M* (*SD*)	Delayed *M* (*SD*)	*F*	η_p^2	*F*	η_p^2	*F*	η_p^2
CR PTSD (UCLA-RI)	35.00 (11.78)	34.41 (11.31)	21.64 (9.37)	29.72 (15.51)	23.02 (17.84)	21.41 (15.54)	**5.79***	**.11**	**13.10****	**.35**	**8.32****	**.24**
PR PTSD (UCLA-RI)	26.36 (12.33)	18.52 (14.20)	23.89 (11.55)	17.90 (16.63)	22.16 (11.38)	19.05 (15.47)	0.03	.00	**4.37***	**.15**	0.34	.01
CR Depression (CDI)	13.08 (8.01)	15.54 (9.66)	10.64 (7.50)	12.87 (8.83)	9.86 (7.79)	9.52 (7.59)	0.91	.02	**6.54***	**.21**	**5.41***	**.17**
PR Depression CDI	11.44 (8.47)	9.29 (8.35)	9.78 (6.89)	8.30 (7.51)	9.81 (6.32)	6.36 (6.93)	0.00	.00	3.37^{+}	.12	**5.97****	**.19**
CR Anxiety (SCARED)	35.64 (15.04)	37.65 (11.83)	31.32 (16.95)	31.31 (13.79)	30.92 (16.96)	26.38 (11.03)	0.42	.01	3.18^{+}	.12	**4.57***	**.15**
PR Child Coping RSQ	2.65 (0.60)	2.49 (0.49)	2.97 (0.57)	2.33 (0.52)	3.03 (0.34)	2.58 (0.72)	**7.11****	**.13**	**8.81****	**.27**	**8.04****	**.24**
TR Classroom Behavior (SDQ)	13.54 (5.79)	10.11 (6.60)	12.28 (6.71)	8.68 (6.62)	13.04 (7.32)	8.51 (6.26)	0.01	.00	0.23	.01	0.07	.003

Note. CR = child report; PR = parent report; TR = teacher report. Significant effects are shown in bold.
$^{+}$ $p < .10$. * $p < .05$. ** $p < .01$.

95% CI lower to upper = 0.27 to 0.91). These effects indicate that the immediate treatment group showed greater reductions in PTSD and improvements in coping compared with the delayed group. There were not significant differential treatment effects for depression or anxiety. Maintenance effects in the immediate treatment group were also measured by comparing baseline and 6-month follow-up scores. Significant maintenance effects were found for both child-reported PTSD and depression as well as parent-reported PTSD and coping, showing that students in the immediate treatment group showed reductions in PTSD and depression along with improvement in coping at 6 months (3 months after treatment was completed). There was no maintenance effect for anxiety. Treatment effects were also tested in the delayed treatment group by comparing scores at 3-month and 6-month assessments. Effects were significant for child-reported PTSD, depression, and anxiety as well as parent-reported depression and coping, with students showing reductions in symptoms and improvement in coping. There were no significant effects for teacher-reported classroom behavior.

Discussion

This study evaluated the effectiveness of Bounce Back in a real-world setting with a highly stressed community population. Results demonstrated that symptoms of PTSD were significantly reduced among students who received Bounce Back immediately compared with those on the waitlist, consistent with the initial trial conducted by Langley et al. (2015). In addition, this trial demonstrated significant improvements in active coping skills for children who immediately received Bounce Back. For example, students showed improvements in use of problem-solving, emotion regulation, and emotional expression, all of which are critical social-emotional skills for elementary students that support the adaptive management of future challenges and stress (Wadsworth, Raviv, Santiago, & Etter, 2011). Improvements in PTSD symptoms and coping were maintained at 6-month follow-up for the immediate treatment group, and delayed treatment showed significant improvement in both areas when they received treatment as well. These findings help to establish Bounce Back as an effective intervention for young students with elevated PTSD symptoms.

Replication of the findings of the original Bounce Back trial is particularly encouraging given that the current study sample could be considered higher risk. Specifically, participants reported experiencing more traumas, lower family income, and lower parental education than the original Langley et al. (2015) sample. Another notable characteristic of the current sample is that most students had at least one immigrant parent. The replication of the original study findings demonstrates that the benefits of Bounce Back are generalizable to different samples and community contexts. Furthermore, Latino children are more likely than their Caucasian counterparts to have unmet mental health needs (Kataoka, Zhang, & Wells, 2002), and Bounce Back holds great promise in promoting access to evidence-based mental health services for these children.

Although there were several significant improvements in depression and anxiety when examining maintenance effects and delayed treatment effects, there were no significant differential treatment effects for these symptoms. Whereas Langley et al. (2015) did find differential treatment effects for anxiety, the cur-

rent sample may have been experiencing more chronic and ongoing stressors (e.g., financial stress, community violence), which can contribute to ongoing anxiety and depression (Santiago, Wadsworth, & Stump, 2011). In fact, some research suggests that standard treatments may be less effective for low socioeconomic status children and families experiencing high levels of ongoing stressors (e.g., Leijten, Raaijmakers, de Castro, & Matthys, 2013). It is also possible that the effects were too small to be detected in this study.

In the current study, a concerted effort was made to ensure that the delivery of Bounce Back mirrored the conditions under which Bounce Back will be delivered outside of the research study to improve the external validity and generalizability of results. This is particularly important in the school setting, in which mental health service delivery is constrained by the competing demands and structures of a system designed for education rather than mental health (Kataoka, Rowan, & Hoagwood, 2009). Therefore, the intervention was delivered by existing school-based clinicians who followed the protocols that exist for group mental health interventions and received training and implementation support at the level typical for the district when bringing on new interventions. Similar to the Langley et al. (2015) study, the approach that was taken in the current study viewed feasibility, acceptability, and sustainability as being of primary importance. In this study, the research staff provided even fewer resources, including not conducting screening of participants, than in the original research study to ensure readiness for large-scale dissemination in the broader Chicago metropolitan area. As in the original trial, parents and children reported high levels of satisfaction with the intervention, and clinicians were able to maintain fidelity to the core content and activities. Clinicians reported a strong need for this intervention and good satisfaction with the program and training; however, they also reported some difficulties implementing the intervention, citing factors such as time, competing demands, and challenges with parental involvement. The implementation challenges noted by clinicians underscore the importance of providing ongoing technical assistance to clinicians who are adopting evidence-based interventions. The developers of the Bounce Back program have recognized this importance, and ongoing implementation support is available from the developers or trainers. For those unable to take advantage of direct implementation support from an expert trainer, the Bounce Back developers have made available extensive online resources through their website, www.bouncebackprogram.org.

Despite the novel findings of the current study, there are several important limitations. Certain limitations accompany the real-world efficacy design by nature because it was conducted within a community setting with "usual care" providers and resources. One such limitation was the relatively small sample size. The number and size of groups that the providers were able to conduct were limited by competing job demands. In addition, providers screened children independently from the research staff and used a referral-based method of identifying students as opposed to conducting a universal screening, consistent with their district procedures. Although universal screening may have identified more students in need of treatment, similar to many other schools across the country, the schools participating in this study did not have the capacity to universally screen and subsequently treat a larger number of students. Parent engagement was variable across schools because clinicians were responsible for independently scheduling parent sessions. In addition, a design compromise of randomization at the school level as opposed to the individual level was made to effectively work within the school system because school clinicians were unable to conduct both an immediate treatment group and a delayed treatment group within each school. Finally, clinicians self-reported their fidelity to the intervention, making the ratings susceptible to bias.

Despite limitations, the current study suggests that Bounce Back is an effective intervention, even among a sample experiencing high levels of trauma and other ongoing stressors. Additional research should evaluate the effects of Bounce Back with other populations experiencing different types of trauma (e.g., military, natural disaster, terrorism). Future research should continue to examine implementation of Bounce Back because clinicians reported some challenges to implementing the intervention. Independent observations of fidelity might strengthen understanding of the implementation challenges. Qualitative approaches could also be used to obtain in-depth feedback from clinicians and other school personnel on factors influencing implementation success and sustainability. Despite implementation challenges, students still showed significant improvement in PTSD symptoms and coping skills. Thus, this early intervention appears to reduce distress and provide students with coping resources for managing future and ongoing stress and trauma.

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