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Early Intervention for Families Experiencing Homelessness: A Pilot Randomized Trial Comparing Two Parenting Programs

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Objective: As part of a larger community-based, service-driven research project, the primary purpose of this pilot randomized study was to examine the feasibility and acceptability of delivering time-limited adaptations of parent–child interaction therapy (PCIT) and child–parent psychotherapy (CPP) within a sample of children experiencing homelessness. The secondary goal was to examine the promise of both interventions in improving parent/child outcomes. ***Method:*** One hundred forty-four young children (18 month–5 years old; M_{age} = 3.48, *SD* = 1.09; 43.1% female; 78.5% Black/African American; 27.1% Hispanic) and their mothers were recruited from a women's homeless shelter and randomly assigned to 12 weeks of either PCIT or CPP delivered by shelter clinicians on-site. Attendance, fidelity, and program satisfaction were obtained. Families completed pre- and postintervention assessments, including observational data on maternal verbalizations during a child-led play session. ***Results:*** Both time-limited PCIT and time-limited CPP were successfully implemented with similarly high levels of intervention fidelity (>90%) and satisfaction by mothers (85%). Completion rates were similar across both time-limited PCIT (76.6%) and time-limited CPP (71.4%). Both time-limited CPP and PCIT resulted in decreases in children's posttraumatic stress, parental stress, and increases in maternal positive verbalizations. Only time-limited PCIT resulted in significant improvements in externalizing behavior problems in children and reductions in maternal negative verbalizations. ***Conclusions:*** Time-limited PCIT and CPP are acceptable, feasible, and hold significant promise for helping families within a homeless shelter environment and by extension, other transitional and/or shelter environments. A full randomized trial is warranted to determine which program may offer a more effective intervention.

What is the public health significance of this article?

This study shows how a service-driven, community–university partnership can play a large role in addressing the mental health needs of sheltered children and families by identifying their clinical needs and showing the feasibility, acceptability, and promise of providing evidence-based early intervention programs within a shelter setting. Time-limited versions of well-established early intervention programs like parent–child interaction therapy (PCIT) and child–parent psychotherapy (CPP) were feasible to implement and well-accepted by families. Both PCIT and CPP hold significant promise for helping families within a homeless shelter. A larger future randomized trial is warranted to determine whether PCIT may offer a more effective intervention targeting externalizing behavior problems and parenting relative to CPP.

Keywords: parenting intervention, young children, externalizing behavior problems, trauma, homelessness

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Homelessness is a global problem impacting over 100 million people worldwide (United Nations-Habitat, 2005). Most troubling, the most recent census data (from 2013) indicates that one in every 30 children in the United States, or 2.5 million, experience homelessness each year (Bassuk et al., 2014). Despite the magnitude of childhood homelessness, there is a dearth of recent empirically based research assessing the special needs of homeless children and effective supportive interventions to address those needs in shelter environments. Studies most often cited, now more than two decades old, find disproportionally higher rates of unmet health needs (e.g., acute health problems, trauma-related injuries) in children experiencing homelessness than in the general population (Wood et al., 1990). Up to 78% of children experiencing homelessness suffer from at least one mental health issue (e.g., depression, behavior problems) along with academic and/or developmental delays (Committee on Community Health Services, 1996; Weinreb et al., 1998). Providing extended mental health services presents unique challenges for children and families experiencing homelessness. Specifically, although shelter stays have lengthened for many families, the most recent scientific study indicates that approximately three quarters of all families experiencing homelessness are "temporary" shelter users (i.e., shelter stays tend to be no more than 3 months in length; Culhane et al., 2007). Meaning that families only have physical access to any given shelter's services for short periods of time. Moreover, given that over half of all homeless children in the United States are under the age of 6 (Samuels et al., 2010), it is particularly important to investigate the feasibility and initial promise of delivering evidence-based parenting programs within a shelter setting.

Mental Health Needs of Young Children Experiencing Homelessness

Externalizing behavior problems, including aggression, defiance, inattention, hyperactivity, and impulsivity are the most common reasons for early childhood mental health referral (Cormier, 2008). In addition to having a highly stable and persistent course starting as early as age 2 (Lee et al., 2008), early-onset externalizing behavior problems are associated with a developmental trajectory of psychosocial impairment, including increased risk for later antisocial behavior (Moffitt et al., 2002), substance use disorders (Lee et al., 2011), peer rejection (Hoza, 2007), and negative academic outcomes (Loe & Feldman, 2007). Therefore, young children with externalizing behavior problems represent an optimal at-risk population for early intervention.

Children experiencing homelessness are at a higher risk for developing early-onset (Koblinsky et al., 2000) and more severe presentations of externalizing behavior problems (Bassuk, Weinreb, et al., 1997) than their nonhomeless peers. The National Child Traumatic Stress Network reports that "more than one-fifth of homeless preschoolers have emotional problems serious enough to require professional care, but less than one-third receive any treatment" (Bassuk & Friedman, 2005, p. 2). Notably, such estimates likely represent an underestimation of comparative risk of mental health difficulties, due to reliance on comparing children experiencing homelessness to low-income youths as opposed to all age-matched peers (Bassuk et al., 2015).

Homelessness is associated with a higher incidence of exposure to traumatic events (Anooshian, 2005; Cowan, 2007; Guarino & Bassuk, 2010; Hicks-Coolick et al., 2003; Perlman & Fantuzzo, 2010), complex trauma (i.e., polyvictimization or prolonged exposure to trauma), and adverse childhood experiences, including poverty, family and housing instability, separation from caregivers, community violence, and decreased access to health care and educational services (Masten et al., 1997; Panter-Brick, 2004; Shelton et al., 2009; Zlotnick, 2009). Indeed, 20% of youths experience some form of trauma and approximately half of trauma survivors experience polyvictimization (e.g., Saunders & Adams, 2014).[1] The varied presentation of posttraumatic responses is highlighted by the extensive number of possible combinations of symptoms of posttraumatic stress disorder delineated in the *Diagnostic and Statistical Manual of Mental Disorders, fifth edition* (American Psychiatric Association, 2013), which includes externalizing behavior problems as well as internalizing symptoms. Although experiences vary, homelessness represents a complex stressor to which the majority of children respond at a minimum with worries about the safety of themselves and their families (National Center on Family Homelessness, 1999). Given the multitude of serious difficulties associated with childhood homelessness, it is imperative to test interventions that might successfully target trauma symptoms. As such, parent-based early intervention programs with their proven efficacy in the general population (Eyberg et al., 2001), offer a treatment option worth investigating.

Parenting Challenges

As with children, parents vary in their response to homelessness. Whereas some parents demonstrate resiliency and positive parenting practices other parents struggle, or their preexisting parenting difficulties are exacerbated in the face of the increased challenges imposed by homelessness. Overall, studies suggest that homelessness is associated with increased parental frustration and decreased confidence in parenting (Lee et al., 2010), decreased parental warmth, decreased positive parent–child interactions (Koblinsky et al., 1997), increased incidence of negative parenting behaviors including violence or aggression (Lindsey, 1998; Torquati, 2002), and consequently increased involvement with child protective services and foster care placement (Fantuzzo & Perlman, 2007; McChesney, 1995).

[1] Rates of childhood trauma vary substantially based upon the specific traumatic events examined. Please see Saunders and Adams (2014), for a more detailed examination of the epidemiology of trauma in children and adolescents.

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There are no other previously published or currently in press works stemming from this same data set.

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Parent–child relationships can be influenced by parents' own chronic medical, mental health, and substance abuse difficulties that are exacerbated when experiencing homelessness (Arangua et al., 2005; Caton et al., 2005; Lee et al., 2010; Shinn & Weitzman, 1996; Weinreb et al., 2006). Homeless families are also more likely than their homed counterparts to be headed by single mothers who often have received minimal education and job training (Bassuk, Buckner, et al., 1997; Burt et al., 1997), and who have often experienced negative parenting role models, substantial childhood trauma, and/or recent domestic violence (e.g., Anooshian, 2005; Swick & Williams, 2010). Finally, the environmental constraints of the shelter itself may exacerbate parenting difficulties. Parents experiencing homelessness often report feeling judged by other residents and shelter staff for their parenting practices (Lindsey, 1998). For parents who have relied on corporal punishment as a disciplinary strategy, feelings of frustration, and lack of control when living in a shelter can be exacerbated by the fact that shelters typically impose both child-level behavioral expectations and restrictions on the use of corporal punishment (Lindsey, 1998; Swick & Williams, 2010). The numerous risk factors faced by children and parents experiencing homelessness coupled with the influence that parent–child relationships have on children's well-being highlights the importance of promoting positive parenting strategies in shelter environments.

Evidence-Based Parenting Programs

Behavioral parent training (BPT) programs are among the most well-established evidence-based interventions for externalizing behavior problems in young children (Eyberg et al., 2008). BPT programs reduce externalizing behavior problems by promoting positive parent–child interactions and parental consistency in the use of noncorporal disciplinary strategies such as time-outs (Haack et al., 2017). Large effect sizes (Ess) on both behavioral outcomes (Kaminski et al., 2008) and trauma symptoms (e.g., Pearl et al., 2012) have been documented across various BPT programs. One such evidence-based BPT program, focused on in the present study, is parent–child interaction therapy (PCIT; Eyberg et al., 2001).

PCIT is divided into two phases: child-directed interaction and parent-directed interaction (see McNeil & Hembree-Kigin, 2010 for a comprehensive description of the skills taught in PCIT). Although originally designed to treat externalizing behavior problems, PCIT has been demonstrated to be effective in the treatment of children exposed to a variety of early childhood stressors, including domestic violence (Borrego et al., 2008; Pearl, 2008), caregiver psychopathology (e.g., Babinski et al., 2014; Chengappa et al., 2017; Pemberton et al., 2013), and early childhood maltreatment (e.g., Pearl et al., 2012; Self-Brown et al., 2012). Hence, on the one hand, PCIT may be an ideal intervention for children and their families who are experiencing homelessness. On the other hand, traditional PCIT might be difficult to implement in its totality with sheltered families. Specifically, shelter stays may not be long enough to satisfy strict "mastery" criteria (Lieneman et al., 2019) for an intervention that averages 20.5 sessions. In fact, one of the only studies, to our knowledge, to examine PCIT within a domestic violence shelter (n = 21) found a completion rate of only 43%. The authors pointed out that the transition out of the shelter was a primary factor involved in families dropping out of treatment (Herschell et al., 2017).

Child–parent psychotherapy (CPP; Lieberman et al., 2005) is an evidence-based intervention designed for the treatment of early childhood trauma. The intervention is divided into three phases: assessment and engagement, core intervention, and recapitulation and termination. CPP is effective in improving parent–child interactions, children's cognitive functioning (Lieberman et al., 2015), and trauma symptoms (Lieberman et al., 2005). As with PCIT, CPP has been effectively utilized in the presence of several early life stressors, including impoverishment, caregiver psychopathology (Cicchetti et al., 2000), comorbid anxiety and depression symptoms, and placement in the foster care system (Lieberman et al., 2015). However, to date, CPP has not been examined within the context of homelessness. Full implementation of CPP can require 50–52 weeks making implementation difficult with homeless families who may be unable to stay in a given shelter for more than a few months (Culhane et al., 2011).

The viability of shortening the delivery of evidence-based parenting programs to maximize rapid improvement and cost-effectiveness has received increased attention in the recent literature (Hare & Graziano, 2021; Mersky et al., 2015). A time-limited approach to PCIT and CPP might be particularly well suited to families experiencing homelessness. Time-limited PCIT entails a standard number of sessions that do not require that caregivers meet "mastery" criteria prior to graduation. In effect, time-limited PCIT of 10–12 sessions has demonstrated promising results both in improving parent–child interactions and child compliance, thereby diminishing externalizing behavior problems (Graziano et al., 2020; Nixon et al., 2003; Thomas & Zimmer-Gembeck, 2012). A time-limited adaptation of CPP would maintain the requirement that families pass through all three phases of intervention in a standard abbreviated number of sessions. To our knowledge, no study to date has piloted the feasibility and initial promise of time-limited CPP nor time-limited PCIT with sheltered families delivered by shelter clinicians onsite. Given the effectiveness of both PCIT and CPP with at-risk populations, and the clear applicability of time-limited versions of such programs, an empirical investigation of their feasibility, acceptability, and initial promise with homeless families is warranted. It is also important to point out that while examining parenting skills via the use of observational coding schemes (e.g., DPICS) is part of most PCIT studies (Thomas & Zimmer-Gembeck, 2007), only one study to our knowledge has examined whether CPP can impact observable parenting skills (e.g., Chinitz et al., 2017).

Goals of the Present Study

Taken together, it is clear that children and families experiencing homelessness possess a wide range of needs, compounded by stressors leading up to and including homelessness, which negatively affect the well-being of children, parenting, and the parent–child relationship. Given that children under 6 years of age represent the largest segment of children experiencing homelessness, it is particularly important to evaluate evidence-based parenting interventions that might be appropriate for this vulnerable population. Thus, as part of a larger community-based service-driven research project (Arcia, 2020), the primary goal of the present study was to examine the feasibility and acceptability of having two established parenting programs being delivered within a time-limited format by shelter clinicians onsite to support

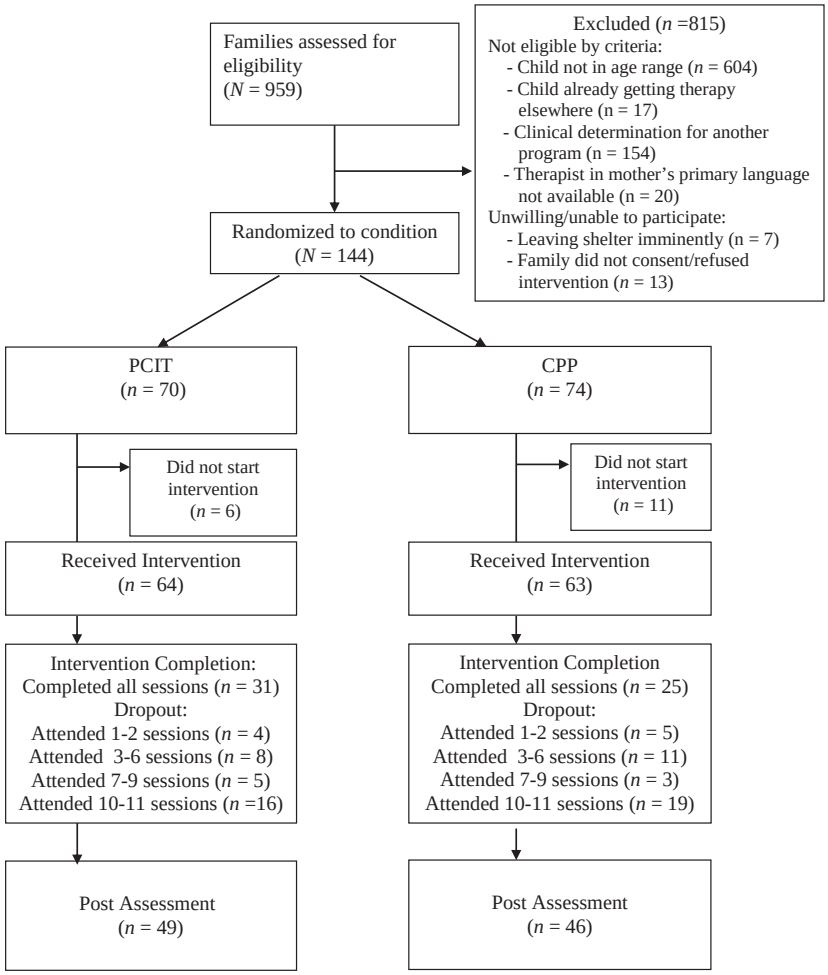
sheltered children and mothers experiencing homelessness. The secondary goal was to examine the initial promise of both interventions in terms of improving child and maternal outcomes. Following a clinical assessment, families were randomized to receive 12 sessions of either (a) PCIT or (b) CPP delivered within the homeless shelter. First, we hypothesized that both time-limited programs would be feasible to implement, be well attended, and receive high consumer/intervention satisfaction scores. Information obtained from this pilot randomized study would also be used to fine-tune the study design in preparation for a future full-scale randomized trial. As it relates to our secondary goal, we expected both time-limited interventions to yield promising improvements across child and parent outcomes.

Method

Participants and Recruitment

The present study, which was part of a larger service-driven, community-based, research project, took place at one of the largest women's shelters in the United States. To qualify for the present study, families were required to (a) have a child between the ages of 18 months and 5 years and (b) have a mother who spoke English or Spanish. Though mothers could elect to receive clinical services without participating in the service-driven research, 946 out of the 959 (99%) mothers entering the shelter provided written consent for the results of their initial screening assessment and response to intervention to be used in research. Exclusionary criteria, for the current pilot randomized study, included children (a) not being in the target age range, (b) already receiving therapy services elsewhere, or (c) requiring referral for other services (e.g., applied behavior analysis due to suspected Autism Spectrum Disorder). Of note, mothers with multiple children within the study's inclusion criteria could only have one child identified for study inclusion (66 siblings were therefore excluded). Based on the clinician's assessment, the child with the greatest impairment was identified for study inclusion. See Figure 1, for a consort diagram outlining study enrollment and reasons for exclusion. It is important to note that all children who were excluded from this pilot randomized trial offered age-appropriate

Figure 1
Consort Flow Diagram



Note. PCIT = parent–child interaction therapy; CPP = child–parent psychotherapy.

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clinical services, based on their initial assessment. For example, time-limited CPP was offered for children from birth to 17 months, time-limited PCIT was offered for children ages 6–7, (time-limited) trauma-focused cognitive behavioral therapy (TF-CBT) was offered for children over the age 7, and referrals were made as appropriate to third-party providers. See Arcia (2020), for details regarding the additional therapeutic services, clinical needs, and outcome data for nonrandomized sample as well as Spiegel et al. (2022) regarding the TF-CBT services provided and related outcomes.

The participating sample consisted of 144 young children whose mothers provided consent to participate in the study. Children had a mean age of 3.48 years (range: 18 months to 5.75 years of age, *SD* = 1.09 years) with 43.1% females. Children were predominately Black/African American (78.5%) and Hispanic (27.1%). Only one child was currently or had ever taken psychotropic medication. See Table 1, for other descriptive sample data. The 144 children in this study were from 144 families, and maternal participation was a requirement of inclusion. Thus, maternal sample size was also 144.

Study Design and Procedure

This study was approved by the university's institutional review board and registered at https://clinicaltrials.gov (NCT04459845). Families (mom and child) were randomized to time-limited PCIT ($n = 70$) or time-limited CPP ($n = 74$) without stratification using a randomly generated number table following their preintervention assessment. Clinicians at the homeless shelter who delivered the interventions, in the mother's preferred language, were master's level licensed clinical staff or therapists in training who were certified or in the process of receiving their certification in PCIT or CPP. For PCIT, counselors received weekly supervision by a licensed clinical psychologist, who was a certified trainer by PCIT International. For CPP, a licensed mental health counselor who had completed CPP training provided biweekly supervision

Table 1
Participant Baseline Demographic Variables by Initial Intervention Assignment

Demographic variables	Total sample ($N = 144$)	PCIT ($n = 70$)	CPP ($n = 74$)
Child sex (% male)	56.9	64.3	50.0
Mean child age (*SD*)	3.48 (1.09)	3.34 (1.10)	3.61 (1.08)
Child race (%)			
Black	78.5	77.1	79.7
White	20.1	22.9	17.6
Biracial	1.4	0.0	2.7
Child ethnicity (%)			
Latinx	27.1	30.0	24.3
Non-Latinx	72.9	70.0	75.7
Maternal education (%)			
Some high school	45.1	48.6	41.9
High school diploma/Completed GED	38.2	35.7	40.5
Technical degree	4.9	1.4	8.1
Some college	9.0	14.3	4.1
Associate's degree	0.7	0.0	1.4
Bachelor's degree	2.1	0.0	4.1
Maternal employment status (%)			
Unemployed	71.5	61.6	82.2
Employed	28.5	38.4	17.8
Mother's victimization history (%)			
Adult violence (i.e., domestic violence, sexual trauma)	52.1	52.9	51.4
Childhood psychological/emotional abuse	38.2	37.1	39.2
Childhood physical abuse	36.8	38.6	35.1
Childhood sexual abuse	34.7	38.6	31.1
Childhood neglect	28.5	27.1	29.7
Home language (%)			
Monolingual (English only)	81.3	79.3	83.1
Monolingual (Spanish only)	3.3	3.4	3.1
Bilingual (Spanish/English)	13.8	17.2	10.8
Bilingual (English/other language)	1.6	0.0	3.0
Department of child and families involvement (%)			
Present	16.0	18.6	13.5
Past	50.0	48.8	51.2
Child's ECBI in clinical range (scores ≥131)	36.3	34.4	38.0
Child's CATS in clinical range (scores ≥12)	47.3	50.0	45.0
Child's BDI-2 in referral range	35.7	34.8	36.5

Note. Values enclosed in parentheses represent standard deviations. PCIT = parent–child interaction therapy; CPP = child–parent psychotherapy; GED = General Educational Development Test; ECBI = Eyberg Child Behavior Inventory; CATS = Child and Adolescent Trauma Screen–Caregiver; BDI-2 = Battelle Developmental Inventory, 2nd Edition.

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and biweekly consultation calls with a leading national CPP trainer. Additionally, it is important to note that consistent with what is common in community trials, a portion of cases (35%) were seen by a therapist cross-trained in both CPP and PCIT. Due to the setting, it was not possible to record sessions to systematically measure intervention fidelity and/or intervention contamination. However, clinicians for each intervention modality completed content checklists for each session.

At intake clinicians and trained staff administered an assessment protocol that lasted approximately 2 hr and included: (a) a biopsychosocial interview of mothers that gathered relevant background information on the family, (b) questionnaires on children's externalizing behavior problems, trauma experiences, and symptoms, (c) questionnaires on maternal parenting stress, and (d) videotaped observations of three 5-min standard parent–child interaction situations that varied in the degree of parental control expected (child-led play, parent-led play, and clean-up). During the same visit, a clinician administered the Battelle Developmental Inventory, 2nd Edition (BDI-2; Newborg, 2005), a comprehensive assessment tool used to assess developmental skills in children aged birth to 7 years 11 months. With the exception of the BDI-2, which was not repeated, families completed a similar postintervention assessment upon completion of intervention (i.e., 12 sessions) or 4 months after the start of the intervention. The mean time between the pre- and postintervention assessment was 4.77 months, $SD = 1.92$ months. The mean time between the first intervention session and postintervention assessment was 3.98 months, $SD = 1.45$; 25th percentile = 3.12 months, 50th percentile = 3.77 months, 75% percentile = 4.57 months). Eighty-four percent of the families who completed the intervention finished their postassessment within 4 months from starting the intervention. Families were given small incentives, such as a small toy for the child or small gift for the parent, upon completion of the assessments, and all interventions were provided at no cost.

Intervention Description and Adaptation

PCIT (Eyberg & Robinson, 1982)

PCIT is a manualized evidence-based BPT program that integrates social learning and attachment theories. In PCIT, parents proceed through two distinct phases: child-directed interaction (CDI), which resembles traditional play therapy and parent-directed interaction (PDI), which resembles clinical behavior therapy. During CDI, parents follow their child's lead in play by using the nondirective PRIDE (i.e., *do skills*): *P*raising the child, *R*eflecting the child's statements, *I*mitating the child's play, *D*escribing the child's behavior, and using *E*njoyment. Parents learn to apply PRIDE skills to the child's appropriate play and ignore undesirable behaviors and are taught to avoid verbalizations that take the lead away from the child during the play (i.e., *don't skills*), including questions, commands, and negative statements (e.g., criticism). During PDI, parents set limits to reduce child noncompliance and negative behavior. They learn to use effective commands and consistently follow through with timeout for noncompliance.

The CDI and PDI phases each begin with a didactic teaching session. During all other sessions, the therapist coaches each parent in vivo in their use of the CDI and PDI skills with their child. Of note, in the present study therapists coached parents in the same room given that the homeless shelter was not equipped with one-way mirror rooms that traditionally have been used in PCIT. A combination of the standard time-out procedure along with the swoop-and-go method (used when another room was not available for the time-out room or if the mother did not feel comfortable using a time-out room) was implemented. In traditional PCIT, parents must also meet "mastery" criteria after each phase to progress and complete treatment. Mastery of CDI is met when parents are able to demonstrate a high level of positive parenting skills during a 5-min observation period. Mastery of PDI consists of limiting negative parenting and successfully implementing appropriate consequences during another 5-min interaction with their child. Consequently, treatment course can vary greatly in length with the largest PCIT study ($n = 1{,}318$), to our knowledge, averaging 20.5 weekly sessions (Lieneman et al., 2019). For a full detailed description of traditional PCIT, see Zisser and Eyberg (2010). The only adaptations the present study made, similar to prior work (Thomas & Zimmer-Gembeck, 2012), were to limit the number of sessions to 12 and to not require that mothers meet "mastery" criteria to progress and complete treatment. Thus, all families randomized to time-limited PCIT were offered 12 total weekly sessions (6 sessions of CDI and 6 sessions of PDI).

CPP (Lieberman et al., 2005)

CPP is a relationship-based treatment that was originally developed to improve the psychological and relational functioning of young children exposed to trauma. CPP integrates attachment, cognitive behavioral, social learning, and psychodynamic theories and focuses on the child–parent relationship as a way to improve the child's adaptive functioning. Various intervention strategies are flexibly employed in CPP including (a) joint construction of a trauma narrative, use of play and language to identify and address traumatic triggers, and building of an emotional vocabulary; (b) unstructured, supportive developmental guidance to provide psychoeducation regarding children's safety and developmental needs, (c) modeling protective behavior, (d) insight-oriented interpretations to increase self-understanding in parent and child, (e) emotional support and affect regulation, and (f) assistance with daily living issues, including crisis intervention, case management, and service referrals.

CPP is conducted with the parent–child dyad in unstructured weekly hour-long sessions which allow therapists to flexibly tailor each session to the needs of the individual family. CPP was originally designed as a yearlong intervention in which therapists move through three phases: assessment and engagement, core intervention, and recapitulation and termination (see Lakatos et al., 2019 for a full description of each of the phases of CPP). Although the intention of CPP is for the parent–child dyad to complete 50 sessions, the average number of sessions completed actually tends to be much lower at about 21 sessions (Hagan et al., 2017), which is similar to PCIT. The only adaptions to CPP made in the present study were to (a) limit the number of sessions to 12 (to equate the intervention dose to that of PCIT) and (b) make sure that therapists progressed families across all phases of CPP prior to termination. The flexibility of CPP was maintained in terms of no imposed number of sessions per phase.

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Primary Outcomes (Aim 1: Feasibility and Acceptability)

Intervention Fidelity

For both modalities, therapists completed content checklists for each session. Intervention supervisors randomly checked 20% of those sessions by comparing the electronic health records (EHR) intervention session notes to the checklists. Any discrepancies (e.g., EHR note indicated a certain therapy session that did not match up to the fidelity checklist; or a content was described in the EHR but not noted on the fidelity checklist) were resolved between the supervisor and clinician and, if need be, the fidelity checklist was amended. Finally, weekly or biweekly (if consultation calls were occurring) group supervision lasting between 1 and 2 hr was provided by an expert in each respective modality.

Intervention Completion and Attendance

Attendance for each session was measured from therapists' contact notes within the EHR system. Intervention completion rates were calculated based on the percentage of families that completed 12 sessions within a 16-week period. The present study also calculated the percentage of families that eventually completed almost all interventions beyond the 16-week assessment period defined as completing at least 10 out of the 12 sessions.

Consumer/Intervention Satisfaction

Parents provided ratings of satisfaction at postintervention by completing selected items from the Therapy Attitude Inventory (Brestan et al., 1999). Parents indicated their degree of satisfaction across a 5-point Likert scale regarding (a) improvements in the parent–child relationship, (b) progress the child has made in his/her general behavior, (c) progress the child has made in his/her trauma symptoms or traumatic/stressful experiences, (d) general feeling about the program parent participated in, and (e) how likely the parent was to recommend the program to others. The mean level of satisfaction was calculated across these five items ($\alpha = .72$) with higher scores reflecting higher levels of satisfaction with the intervention.

Secondary Outcomes (Aim 2: Initial Promise of Interventions)

Measures of Parent-Level Outcomes

Parenting Stress. Mothers completed the Parenting Stress Index–Short Form (PSI-SF; Abidin, 1983). The PSI-SF is a widely used 36-item self-report instrument for parents of children ages 1 month to 12 years measuring parental stress (Abidin, 1983). All scales derived from the PSI-SF have demonstrated strong test–retest reliability in previous studies (e.g., Barroso et al., 2016). The PSI-SF total raw score was used to measure overall parenting stress (α's for the present study = .85–.90).

Parenting Skills. The *Dyadic Parent–Child Interaction Coding System–4th Edition* (DPICS-IV; Eyberg et al., 2013), an established behavioral coding system was used to measure the quality of parent–child interactions during a 5-min child-led play session which was recorded and transcribed. Consistent with prior research (Bagner et al., 2016; Graziano et al., 2020), staff coded from the video recording and created a composite of positive parenting verbalizations (behavior descriptions, reflections, praises) and negative parenting verbalizations (questions, commands, and negative talk) used during child-led play. To account for mothers' total verbalizations, including neutral verbalizations, the present study used a proportion score ranging from 0 to 1 for both positive and negative verbalizations (e.g., the total number of positive verbalizations was divided by the total number of positive, negative, and neutral verbalizations; Bagner et al., 2016). Staff coders, who were masked to intervention status, were trained to 80% agreement with a criterion tape and 20% of the observations were coded a second time. Reliability for the *positive* and *negative verbalizations* was excellent (*r*'s range from .96 to .97).

Measures of Child-Level Outcomes

Externalizing Behavior Problems. Mothers completed the *Eyberg Child Behavior Inventory* (ECBI; Eyberg & Ross, 1978), a 36-item questionnaire that is designed to assess the presence of externalizing problems in children ages 2 through 16 years. The ECBI has been demonstrated as having high internal consistency and strong test–retest reliability (Funderburk et al., 2003; Robinson et al., 1980). In the present study, the total intensity scale raw score was used as the main measure of externalizing behavior problems (α's = .84–.93).

Posttraumatic Stress Symptoms. Mothers of children ages 3 and older completed the *Child and Adolescent Trauma Screen–Caregiver* (CATS-C; Sachser et al., 2017), which consists of an event checklist of 15 potentially traumatic events, as well as the frequency of each of the 20 posttraumatic stress symptoms (PTSS), based on *Diagnostic and Statistical Manual of Mental Disorders, fifth edition* criteria (American Psychiatric Association, 2013). Responses are provided based on a 4-point Likert scale ranging from 0 (*never*) to 3 (*almost always*) with higher scores indicative of greater PTSS. The CATS has demonstrated good internal consistency and test–retest reliability (e.g., Nilsson et al., 2021; Sachser et al., 2017; Suliman et al., 2005). The total severity score of PTSS was used in the present study (α's = .72–.75).

Data Analytic Plan

All analyses were conducted using Statistical Package for the Social Sciences, Version 20 (SPSS 26). There was 5% missing data for preintervention variables. Approximately 36% of postintervention data were missing due to families who dropped out of intervention and did not complete any postintervention assessments. Families with completed versus partial data did not differ on any demographic variables, and dropout was principally due to departure from the shelter. As recommended in clinical trials, intent-to-treat analyses with multiple imputations were used (Collins et al., 2001; Jakobsen et al., 2017; Little & Yau, 1996; Rubin, 1996; Von Hippel, 2020).

Preliminary analyses focused on examining any associations between demographic variables and all outcomes of interest. Next, for our primary analyses, we report intervention fidelity, completion, attendance, intervention duration, and intervention satisfaction for both intervention groups as well as examined potential differences via chi-square analyses or analyses of variance (ANOVAs). For our secondary analyses, multiple repeated measures ANOVAs were conducted to examine changes in terms of parenting and child outcomes from pre- to postintervention. Holm's step-down procedure was

implemented to reduce Type 1 error (Holm, 1979). Cohen's *d* ES estimates for within-subjects were calculated for each intervention by comparing pre- and postintervention scores. As an exploratory step (given the pilot nature of the present study), we also calculated between-group ES (*d*) by comparing the pre–post change scores in the two intervention groups (positive scores = a higher effect for time-limited PCIT relative to CPP).

Results

Preliminary Analyses

Correlations between child age, child sex, maternal employment status, and maternal education with all outcomes of interest were examined. Child age was positively related to proportional use of negative parenting verbalizations ($r = .17$, $p = .038$) and total parenting stress PSI ($r = .25$, $p = .003$) at postintervention. Maternal employment status was significantly related to parental use of positive parenting verbalizations ($r = .30$, $p < .001$), use of negative parenting verbalizations ($r = .36$, $p < .001$), and behavior problems on ECBI ($r = -.17$, $p = .047$) at postintervention. No other demographic variables (child sex, ethnicity/race, maternal education) were significantly related to any outcome of interest. As seen in Table 1, rates of clinically elevated scores were similar across groups at preintervention. Of note, 44.2% of children were clinically elevated in at least one domain (ECBI, CATS, BDI-2), with 16.7% of children elevated across all three domains measured.

Primary Outcomes (Aim 1: Feasibility and Acceptability; Table 2)

Fidelity

Overall intervention fidelity of the content covered across time-limited PCIT sessions was high ($M = 96\%$; range 82%–100%). Procedural and content fidelity of time-limited CPP were also high (procedural fidelity $M = 92\%$; range 75%–100% and content fidelity $M = 93\%$; range 79%–100%).

Intervention Completion Rates

It is important to note that 14.9% of families in time-limited CPP and 8.6% of families in time-limited PCIT dropped out after randomization and never initiated any intervention (see Figure 1 and Table 2). Of families that initiated intervention, 48.4% of

Table 2
Feasibility and Acceptability Outcomes

Outcome variable	Total sample ($N = 144$)	PCIT ($n = 70$)	CPP ($n = 74$)
Fidelity of intervention sessions (%)			
Content fidelity	94; range 79–100	96; range 82–100	93; range 79–100
Procedural fidelity	N/A	N/A	92; range 75–100
Intervention completion rates (%)			
Dropped out after randomization and never completed a single session	11.8	8.6	14.9
Completed intervention on time (12 sessions within 16 weeks)	44.1	48.4	39.7
Completed intervention with delay (at least 10 sessions after 16 weeks)	74.0	76.6	71.4
	M (*SD*)	*M* (*SD*)	*M* (*SD*)
Duration of intervention			
Average duration in weeks to complete intervention	16.41 (5.66)	16.60 (5.01)	16.19 (6.34)
Average number of attended sessions	9.43 (3.67)	9.58 (3.37)	9.27 (3.99)
% of intervention completers who attended at least 10 sessions within			
12 weeks	28	25	31
14 weeks	53	53	53
16 weeks	65	59	71
20 weeks	85	84	87
24 weeks	93	96	89
Acceptability: Intervention satisfaction			
Overall satisfaction	4.24 (.68)	4.23 (.69)	4.26 (.67)
Improvement in relationship with child	4.01 (.90)	4.11 (.84)	3.91 (.95)
Progress my child has made in his/her general behavior	4.19 (1.08)	4.33 (1.14)	4.03 (1.02)
Progress my child has made in his/her trauma symptoms	4.05 (1.12)	4.00 (1.24)	4.10 (1.00)
General feeling toward parenting program	4.63 (.64)	4.46 (.73)	4.80 (.47)
How likely are you to recommend the program?	4.21 (.87)	4.14 (.79)	4.29 (.96)

Note. Values enclosed in parentheses represent standard deviations. PCIT = parent–child interaction therapy; CPP = child–parent psychotherapy; N/A = not applicable.

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families in time-limited PCIT ($n = 31$) completed the intervention (i.e., 12 sessions) within 16 weeks compared to 39.7% of families in time-limited CPP ($n = 25$). Completion rates did not differ significantly between the time-limited PCIT and time-limited CPP group ($\chi^2 = 1.01$, $p > .05$). Of note, 71.4% of families in time-limited CPP and 76.6% of families in time-limited PCIT eventually completed the intervention (i.e., after 16 weeks and defined by the shelter as completing at least 10 out of the 12 sessions).

Duration of Intervention

The mean number of weeks to complete the intervention was 16.24, $SD = 5.63$. Further examination of the duration of treatment for intervention completers indicated that 28% of families were able to complete at least 10 sessions within 12 weeks, 53% of families were able to complete at least 10 sessions within 14 weeks, 65% of families were able to complete at least 10 sessions within 16 weeks, 85% of families were able to complete at least 10 sessions within 20 weeks, and 93% of families were able to complete at least 10 sessions within 24 weeks.

The average number of attended intervention sessions did not differ significantly between the two groups (time-limited PCIT = 9.58 sessions, $SD = 3.37$, and time-limited CPP = 9.27 sessions, $SD = 3.99$). See breakdown of number of sessions attended per intervention in Figure 1. Of note, families moving out of the shelter was almost exclusively the reason for lack of intervention completion.

Acceptability of Intervention

Mothers reported high levels of overall satisfaction across both time-limited PCIT ($M = 4.23$, $SD = .69$) and time-limited CPP ($M = 4.26$, $SD = .67$). As seen in Table 2 across specific items, mothers across both time-limited PCIT and time-limited CPP reported feeling great improvements in their parent–child relationship, feeling like their child made progress in terms of their general behavior, progress related to their trauma symptoms or traumatic/stressful experiences, and generally positive feelings about the parenting programs. Mothers indicated that they would likely recommend both programs to others. Specifically, 89% of mothers in time-limited PCIT and 94% of mothers in time-limited CPP would likely or very likely recommend the parenting programs to others.

Secondary Outcomes (Aim 2: Initial Promise of Interventions; Table 3)

Parenting and Child Outcomes

As seen by the ESs in Table 3, mothers in both time-limited PCIT and time-limited CPP reported significant reductions in terms of their parenting stress. Significant improvements in proportion of positive parenting verbalizations were also seen for mothers across both interventions. Only mothers in time-limited PCIT; however, experienced significant reductions in negative parenting verbalizations.

As it relates to child outcomes, mothers in both time-limited PCIT and time-limited CPP reported significant reductions in their children's PTSS. Only mothers in time-limited PCIT; however, reported significant reductions in their children's externalizing behavior problems.

Of note, for all analyses (examining both parent and child outcomes), analyses were repeated as analyses of covariances with maternal education, age, and duration of intervention (i.e., time from first intervention session to last intervention session) entered as covariates. The pattern of results were unchanged with the inclusion of these covariates. Therefore, for parsimony, the results of the analyses without covariates included were reported in Table 3.

Exploratory Analyses Comparing PCIT to CPP

Parenting and Child Outcomes

A significant time by group interaction was noted for proportion of negative, $F(1, 142) = 55.71$, $p < .001$, and positive, $F(1, 142) = 66.04$, $p < .001$, parenting verbalizations. Specifically, mothers in time-limited PCIT had significantly greater reductions in total proportion of negative verbalizations as well as increases in proportion of positive verbalizations compared to mothers in time-limited CPP at postintervention assessment from preintervention levels. A significant time by group interaction was also found for parenting stress, $F(1, 142) = 3.92$, $p < .05$. In other words, mothers in time-limited PCIT reported significantly greater reductions in overall parenting stress relative to mothers in time-limited CPP. A significant time by group interaction was also noted for overall externalizing behavior problems, $F(1, 142) = 7.88$, $p < .01$, such that mothers in time-limited PCIT reported significantly greater reductions in their children's externalizing behavior problems ($d = -.40$) compared to mothers in time-limited CPP ($d = -.01$). Of note, a three-way interaction (intervention type by time by clinically elevated status) was nonsignificant, $p = .40$. As it relates to children's PTSS, no time by group effect was found. Finally, it is important to point out that we examined whether children who were initially clinically elevated in these domains (externalizing behavior problems and PTSS) benefited more from PCIT or CPP. Of note, a three-way interaction (intervention type by time by clinically elevated status) was nonsignificant, $p = .77$.

Discussion

The present study represents the first pilot randomized trial, to our knowledge, examining the feasibility, acceptability, and initial promise of two abbreviated time-limited versions of well-established early intervention programs, namely PCIT and CPP, in a homeless shelter. It is important to point out the high rates of clinically elevated externalizing behavior problems (36%), trauma symptoms (47%), and developmental delays (35%) were found in our sample with 16.7% of the sheltered children being clinically elevated across all three domains. As it relates to our intervention, both time-limited PCIT and time-limited CPP were successfully implemented within the homeless shelter as evidenced by high fidelity rates as well as high satisfaction ratings by mothers. Completion rates and average attendance were similar across both time-limited PCIT and time-limited CPP. Both time-limited CPP and PCIT resulted in decreases in children's posttraumatic stress and parental stress, and increases in maternal positive verbalizations. Only time-limited PCIT resulted in significant improvements in externalizing behavior problems in children and reductions in maternal negative verbalizations. These findings are discussed further below.

A significant issue in the field of early intervention has been not only a lack of access to evidence-based programs for those with the

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Table 3
Results of ANOVA Analyses Examining Parent and Child Outcomes of Time-Limited PCIT and CPP

Outcome variable	Preintervention *M* (*SD*)	Postintervention *M* (*SD*)	Pre to post change *M* (*SD*)	Time effect *F*	Pre–post *d* [95% CI]
Parenting outcomes					
Parenting stress: PSI total stress raw score (*P*)				86.15***	
PCIT	91.529 (21.78)	73.964 (16.20)	17.565 (18.99)	—	−.92 [−1.26, −.56]
CPP	87.068 (20.95)	75.680 (16.93)	11.388 (18.94)	—	−.60 [−.93, −.27]
Proportion of negative parenting verbalizations (O)				105.41***	1.60 [1.22, 1.97]
PCIT	.552 (.15)	.266 (.14)	.286 (.15)	—	−1.98 [−2.37, −1.57]
CPP	.565 (.15)	.519 (.14)	.046 (.15)	—	−.31 [−.01, .63]
Proportion of positive parenting verbalizations (O)				176.38***	1.84 [1.44, 2.22]
PCIT	.099 (.08)	.393 (.19)	.294 (.14)	—	2.02 [1.60, 2.41]
CPP	.100 (.08)	.171 (.12)	.071 (.10)	—	.70 [.36, 1.02]
Child outcomes					
Externalizing behavior problems: ECBI total raw score (*P*)				8.60**	.39 [.05, .71]
PCIT	116.118 (41.94)	100.889 (34.47)	15.229 (38.21)	—	−.40 [−.73, −.06]
CPP	116.118 (41.94)	116.351 (36.89)	.233 (39.42)	—	−.01 [−.31, .33]
Posttraumatic stress symptoms: Total severity score (*P*)				24.43***	−.04 [−.37, .29]
PCIT ($n = 41$)	11.003 (7.06)	7.605 (4.62)	3.398 (5.84)	—	−.57 [−.90, −.29]
CPP ($n = 47$)	11.302 (7.75)	7.648 (4.96)	3.654 (6.36)	—	−.56 [−.89, −.23]

Note. P = parent report; O = observation; PCIT = parent–child interaction therapy; CPP = child–parent psychotherapy; ECBI = Eyberg Child Behavior Inventory; PSI = Parenting Stress Index; CI = confidence interval; ANOVA = analysis of variance. Cohen's standardized *d* is reported for each intervention group (within-group effect). All significant effects remained significant even after implementing Holm's step-down procedure.
** $p < .01$. *** $p < .001$.

greatest needs but also the transportability of an efficacious intervention to a usual-care or community setting (e.g., a homeless shelter; Herschell et al., 2004; Silverman et al., 2004). The present study takes a crucial step in documenting the high levels of clinical need in young, sheltered children, such as elevated rates of externalizing behavior problems, trauma, and developmental delays. Most importantly, this study shows the feasibility of providing in-house therapist training/supervision to aid in the delivery of two well-established evidence-based interventions within a homeless shelter. Completion rates of time-limited PCIT (76.6%) and time-limited CPP (71.4%) delivered within the homeless shelter were comparable to if not slightly better than those of previous university- or community-based trials of the same or similar parenting programs which typically document dropout rates ranging from 35% to 50% (Chaffin et al., 2009; Danko et al., 2016; Eyberg et al., 2001; McCabe & Yeh, 2009).

Thus, a homeless shelter that can provide these parenting services in-house has tremendous advantages in terms of circumventing common barriers to providing interventions to this at-risk population, most notably engagement in the face of multiple, complex needs and stressors faced by parents, time limitations, lack of resources of both shelters and those they serve, and transportation. Providing free, in-house assessments and supportive parenting programs reduced barriers to access services and allowed flexibility in terms of scheduling and rescheduling weekly sessions, which helped address the well-documented attendance difficulties of families participating in other parenting programs (Axford et al., 2012; Baker et al., 2011). Finally, the use of time-limited interventions also likely contributed to the reduced dropout rates, as the time-limited format addressed difficulties associated with sustaining proximity to therapeutic services for families in transition (Culhane et al., 2007). It is important to note that the primary reason for intervention dropout once a family initiated the intervention in this study was exiting the shelter. Future work should examine the optimal ways in which we can continue to reach families when they leave the shelter including offering, for example, telehealth services that have been successfully done with PCIT (Comer et al., 2017).

While emergency, transitional, or supportive housing programs for homeless families often provide parenting support services, the implementation of empirically supported parenting programs is quite rare (Gewirtz & Taylor, 2009). Our study shows that both time-limited CPP and time-limited PCIT significantly increased the proportion of positive parenting verbalizations as well as improved/reduced overall parenting stress. The fact that a 12-session time-limited version of CPP was moderately effective in changing some of these parenting outcomes is meaningful given that CPP was originally designed to be a year-long intervention (Lieberman et al., 2005). Our exploratory analyses indicated that the largest impact on mothers' parenting (verbalizations and stress) came from those participating in time-limited PCIT which significantly outperformed time-limited CPP. Given the pilot nature of the present study, a future randomized trial is warranted to confirm whether time-limited PCIT indeed outperforms time-limited CPP when delivered within the shelter setting by shelter staff.

PCIT has been demonstrated to be effective in the treatment of children exposed to a variety of early childhood stressors including domestic violence (Borrego et al., 2008; Pearl, 2008). Herschell et al. (2017) also successfully demonstrated with a small sample ($n = 21$) how PCIT can be effective within a domestic violence shelter,

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although poor completion rates (43%) due to families transitioning out of the shelter were noted as a limitation. The present study adds to this scarce shelter literature by demonstrating that time-limited CPP and time-limited PCIT conducted by shelter staff onsite can lead to good intervention completion rates (71.4% and 76.6%, respectively) and be effective in improving parenting and child outcomes in families currently experiencing homelessness. It also expands the literature on effective administration of CPP and PCIT with parents from a minority background, as 78.5% of our mothers were Black/African American and 27.1% were Hispanic/Latina. The study also demonstrates the high transportability of both time-limited CPP and time-limited PCIT. In the case of PCIT, it demonstrated that expensive resources (e.g., one-way mirrors, camera) are not necessary for intervention success, as the shelter's therapists provided live coaching in the same room as the family (e.g., playrooms at the shelter). These findings suggest that both time-limited CPP and PCIT can be effectively and affordably administered within the context of homeless and other shelters and offers a promising avenue for addressing the pressing parenting needs of the most at-risk, in need, and underserved populations in our communities.

As it relates to our secondary goal of examining the initial promise of both time-limited PCIT and time-limited CPP on child outcomes, time-limited PCIT was the only program to see statistically meaningful reductions in children's externalizing behavior problems. Both parenting programs also had promising results as it relates to reducing children's PTSS. Our exploratory comparison analyses indicated that both seemed to help reduce children's trauma symptoms at similar levels (even when we examined children with the highest baseline levels of trauma). The effects of these interventions were comparable to the effects of other well-known interventions of PTSS (Silverman et al., 2008); which is particularly noteworthy as PCIT was not originally designed as an intervention for childhood trauma. Again, given the pilot nature of this study, a future randomized trial will be required to confirm whether time-limited PCIT can indeed be equally as effective as time-limited CPP in reducing child trauma symptoms. However, at this point, it does appear that PCIT is not merely an intervention for externalizing behavior problems, but one that has a broader impact on early childhood psychopathology.

The exact mechanism by which PCIT addresses childhood trauma is unknown. However, targeting the parent–child relationship remains one of the core goals of trauma treatment in young children given their difficulty in verbally expressing past trauma (e.g., Lieberman et al., 2005). When considering the higher rates of externalizing behavior problems among children experiencing trauma (Cecil et al., 2017; Levendosky et al., 2002), PCIT's dual focus on parent–child interactions and behavioral contingency management is particularly helpful. The more structured and live coaching aspect of how PCIT targets the parent–child relationship and parental discipline practices may have contributed to its success relative to CPP's more unstructured nature. Certainly, the time-limited aspect of both interventions may also have influenced these results, as the reduction in the number of sessions was greater for CPP than it was for PCIT (i.e., CPP was designed to be a yearlong intervention whereas PCIT is on average 20.5 sessions). Thus, it is unclear whether with a longer intervention period, CPP may have had an impact on children's externalizing behavior problems and/or performed better than PCIT in addressing trauma symptoms.

It is important to acknowledge that numerous studies have documented the effectiveness of traditional CPP in reducing preschool children's trauma symptoms and behavior problems across diverse samples, including history of child maltreatment, exposure to domestic violence, foster care, immigrant families, and low-income families (Ghosh Ippen et al., 2011; Lieberman et al., 2005; Toth & Gravener, 2012; Weiner et al., 2009). The present study represents the first documentation, to our knowledge, that a time-limited CPP approach can still yield significant moderate results in reducing trauma symptoms in sheltered children. Given the transient nature of sheltered families, the limited resources available, and the high demands within homeless shelters, time for intervention is at a premium making effective time-limited intervention protocols particularly valuable. Pending confirmation in a future randomized trial, it would appear that PCIT lends itself better to a time-limited adaptation relative to CPP as an effective intervention addressing complex presentations with both externalizing behavior problems and trauma-related concerns in this young age group.

Limitations

In terms of our limitations, first, we cannot speak to the long-term maintenance of time-limited PCIT and time-limited CPP without follow-up data. The lack of follow-up was due to families exiting the shelter and limitations on the shelter's resources. Second, it is important to acknowledge that we did not have a control group for ethical reasons given the service-driven nature of this study. Thus, it is possible that some of the improvements seen in our parent and child outcomes were partially due to the infrastructure and supportive nature of the shelter. When interpreting the within-subject ESs for time-limited CPP and PCIT, it is important to acknowledge that the magnitude of such improvements may also be influenced by statistical artifacts (e.g., regression to the mean, expectation effect). Third, the coding system (DPICS) used to measure mothers' positive and negative verbalizations was originally developed for PCIT (Eyberg et al., 2013). Thus, perhaps it is not too surprising that in our exploratory analyses mothers in time-limited PCIT outperformed those in time-limited CPP on those outcomes, although mothers in time-limited CPP also did significantly improve their positive verbalizations. Implementation of observational codes targeting more attachment-related behaviors (e.g., general levels of warmth) that are less skills based is recommended for future work, although one recent study showed that these DPICS codes are moderately to highly correlated with some of the attachment-related behavior codes (Blizzard et al., 2018). It would also be valuable for future work to include other sources, beyond maternal report, for measuring children's externalizing behavior problems (e.g., preschool teacher ratings, clinical observations). Fourth, as with most community trials, it is important to note that 35% of our cases were led by a clinician cross-trained in both PCIT and CPP. While we implemented fidelity checklists as well as consistent supervision, it is always possible that some intervention contamination may have occurred. Finally, while we recognize the importance of father's involvement for children's development and early intervention (Lundahl et al., 2008; Wilson & Prior, 2011), our study's setting (i.e., women's shelter serving

only women) only allowed the examination of the mother–child relationship/interaction.

Clinical Implications and Lessons Learned

In terms of clinical implications, the present study shows the importance of offering early evidence-based assessments of the needs of sheltered children to detect and address their developmental and mental health needs. Most importantly, this study shows the feasibility and initial promise of embedding evidence-based parenting programs for early intervention within a homeless or domestic violence shelter. Overall, it shows that children and families within a shelter can benefit from time-limited CPP and time-limited PCIT in terms of not only reducing parenting stress but learning new parenting strategies that within a short period of time have significant benefits for children's behavioral and emotional functioning. Our initial results also indicate that PCIT seems to offer a more promising intervention for targeting externalizing behavior problems and parenting for this sheltered age group. There is a growing consensus on the importance of addressing mental health needs within homeless shelters, particularly of vulnerable children (Bassuk & Friedman, 2005). This study shows how a service-driven, community–university partnership can play a large role in addressing the mental health needs of sheltered children and families with the potential to transform the trauma of homelessness into a window of opportunity.

Given the promising results of this pilot randomized trial, future work would benefit from a full-scale randomized control trial to determine which interventions work best when administered within the context of a homeless shelter. To this end, we offer the following regarding our lessons for future researchers looking to conduct a clinical trial within a homeless shelter. First and foremost, as noted above, this trial highlighted the importance of time-limited administration of clinical interventions. Even with the provision of time-limited services, drop-out rates were substantial due to relocation from the shelter and subsequently, missing data were substantial at postintervention. From a clinical perspective, these findings suggest a need for the provision of telemedicine and/or transportation services to allow for the continuation/completion of clinical intervention after families have left the shelter setting. From a research perspective, these findings also likely suggest a need for the use of participant payment for completion of post-intervention assessments to reduce missing data. Additionally, our pilot data indicate that one can expect dropout rates to be about 50%–60% if trying to complete the intervention within a 16-week period but that such dropout rates decrease to about 25% when allowing families to complete the intervention in 24 weeks. We encourage researchers to use such information when conducting power analyses to determine future sample sizes as well as planning when to conduct their postintervention assessments.

Second, interventions delivered within the homeless shelter setting, which has limited resources, should be cost-effective. The findings of this study are promising in suggesting that even without traditional costly PCIT materials (e.g., one-way mirror setup), significant reductions in symptomology can be found. From a research perspective, one area in which cost-cutting presented difficulties was the assessment of intervention fidelity. The present study used intervention checklists which are cost-effective but subject to unwanted bias given that they are completed by treating clinicians. Treating clinicians were also cross-trained in multiple intervention modalities to meet the diverse needs of the population they serve. From a clinical perspective, this is somewhat unavoidable and in fact is a strength for the shelter at which these clinicians work. However, from a research perspective, cross-training allows for the possibility of intervention contamination/cross-over effects. Hence, future studies should attempt to record a portion of intervention sessions to better measure treatment fidelity and potential contamination/cross-over effects.

Finally, this study highlights the benefits of forming community–university-based partnerships. As it relates to the present study, such partnership was initiated by the homeless shelter which resulted in joint decision-making as it relates to all aspects of the study (e.g., choosing the outcomes, how to train shelter staff on conducting assessments and interventions). As such, the results of the present study are highly generalizable to other shelters who given the appropriate training are fully capable of implementing such evidence-based interventions with high fidelity and efficacy. From a research perspective, the community–university partnership allowed for a more rigorous examination of evidence-based interventions than has ever been conducted previously in a shelter environment. Shelter staff who engaged and worked daily with the sheltered families provided a necessary layer of trust which allowed for an astonishing 99% participation rate in our research protocol from a vulnerable population who are often hesitant to enroll in university-based research. At the same time, inclusion of a university researcher allowed for more rigorous research protocols and analysis of results than would be likely to be conducted by a shelter alone. As such, although a community–university partnership may not be necessary clinically for the provision of evidence-based interventions, it is highly valuable in determining which interventions work and which works best for this at-risk population.

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