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Feasibility and Effectiveness of Parent-Child Interaction Therapy with Victims of Domestic Violence: A Pilot Study

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Abstract

Parent-Child Interaction Therapy (PCIT) is an evidence-based treatment for young children (aged 2.5 to 7 years) with externalizing behavior problems. Since its development, PCIT has been applied to a wide array of childhood problems and has a significant evidence base for families with histories of child physical abuse. The current study extended the existing literature by testing the effectiveness and feasibility of PCIT in an urban domestic violence shelter with community-based clinicians delivering the treatment. Seven clinicians implemented PCIT with parent-child dyads which included 21 preschool (M = 4.57 years; SD = 1.50) children. Families completed assessments at baseline, mid-treatment, and post-treatment. Nine families completed PCIT (43%). Completion of PCIT was associated with improved child behavior, parenting practices, and mental health symptoms. Considerations for treatment delivery and future directions are discussed.

Keywords

Parent-Child Interaction Therapy; domestic violence; interpersonal violence; aggression; treatment effectiveness

Introduction

In the United States (U.S.) approximately 1 in 3 women (35.6%) experience domestic violence (e.g., rape, physical violence and/or stalking by an intimate partner) in their lifetime (Black et al., 2011). Similarly, 1 in 4 (25%) of children are exposed to family violence during their lifetime (Hamby, Finkelhor, Turner, & Ormrod, 2011), with the vast majority (90%) of these children directly witnessing the violence between their caregivers. Domestic violence, once thought of as “violence against women,” actually affects each member of the family and can result in a variety of consequences for children, parents, and the parent-child relationship (Lapierre, 2010; Wolfe, Crooks, Lee, McIntyre-Smith & Jaffe, 2003).

Children’s reactions to witnessing domestic violence can be varied, complex, and dynamic. Their reactions may be influenced by age and developmental level (Sternberg et al., 2006) as well as the type and severity of abuse experienced (McFarlane et al., 2007). In fact, a recent review of 122 studies published between 2005 and 2011 (Lourenco et al., 2013) found that children who witness domestic violence exhibit internalizing symptoms (e.g., depressive symptoms, insecurity, and posttraumatic stress; 75.8%), externalizing and adjustment symptoms (e.g., behavior problems, aggression; 32.6%), and poor school performance (e.g., declining academics, bullying; 20%) at higher rates than their peers. Witnessing domestic violence at a young age can interfere with skill development (e.g., problem solving, communication, relational) and the security of the child’s attachment to their primary caregiver (Osofsky, 2004).

Young children who witness violence are especially vulnerable due to their dependence on a caregiver for protection, limited communication skills, and developing brains (Zero to Six

Collaborative Group, 2010). Further, when a child's parent is also impacted by a stressful event, such as domestic violence, the relationship between the caregiver and child may be impacted. This relationship is especially salient as children's reactions to domestic violence are strongly influenced by their relationships with their parent as well as parent functioning (Osofsky, 2004). Mothers who experience domestic violence have significantly higher rates of mental health symptoms (e.g., depression and anxiety; Levendosky et al., 2006), which have been found to mediate outcomes for children (Huang, Wang, & Warrener, 2010). Mothers who experience domestic violence also have a higher likelihood of engaging in harsh parenting practices, which have been found to exacerbate child behavior problems (Gustafsson & Cox, 2012; Huang et al., 2010).

Understanding not only the impact of exposure to domestic violence on an individual, but also the influence on the family system is essential to intervention planning. Early intervention is essential for young children and their caregivers to prevent negative outcomes and potentially long-lasting problems across the child's lifespan (Huang et al., 2010). Additionally, interventions should involve the parent and child together in treatment with a focus on building a strong parent-child relationship (Holt et al., 2008; Roberts et al., 2013).

Fortunately, over the past twenty years, as knowledge concerning the impact of domestic violence on families has increased, so has the availability of services for this population (Panzer, Philip, & Hayward, 2009). One service, domestic violence shelters, offers a variety of programs for adults and children, spanning from programs addressing family's basic needs (e.g., housing) to offering short- and long-term counseling services. While shelters can address several concerns (e.g., safety, transportation), a few unique obstacles exist for families residing in shelters.

For example, given the communal living environment of some shelters, child disruptive and aggressive behaviors are particularly problematic. Aggression, even when it is exhibited by a young child, can be difficult for parents and shelter residents to witness because it serves as a potential reminder of aggression perpetrated against them. Mothers often enter a shelter in a time of crisis, yet they are expected to care for their children and manage their children's behavior (Krane & Davies, 2002). In a survey of 3,410 residents in 215 domestic violence shelters across eight states, Lyon et al. (2008) found the majority (71%) of mothers entering shelter environments reported needing support to respond their child's distress or disruptive behaviors. Further, shelter residents reported the most common problem encountered in shelter settings was conflict with other residents, with parenting being a frequent cause for conflict. Parenting challenges in a shelter environment were highlighted when shelter rules impact parenting practices, such as prohibiting spanking/corporal punishment. Teaching parents positive parenting skills during this time can alleviate stress, encourage safety and address practical concerns (Center for Child and Family Health, 2010).

An additional barrier for families residing in shelter environments is the brevity of contact and uncertainty related to length of stay (Poole, Beran, & Thurston, 2008). As a result, collaboration and coordination with other community-based service providers is essential so services started during a shelter stay can continue after parents and their children leave.

Ongoing collaboration can also provide continued support as family circumstances and needs change over time.

One available evidence-based intervention that addresses several of the common concerns for this population, including the needs to enhance the parent-child relationship, strengthen effective parenting skills, and target disruptive behaviors for young children is Parent-Child Interaction Therapy (PCIT). PCIT is an internationally-recognized, evidence-based parenting program for families who have children with externalizing behavior problems (Eyberg & Funderburk, 2011; McNeil & Hembree-Kigin, 2011). The program is unique in that it involves coaching parents as they interact with their young child (ages 2.5 to 7 years).

PCIT consists of two treatment phases. The first phase, Child-Directed Interaction (CDI), focuses on relationship enhancement, while the second phase, Parent-Directed Interaction (PDI), targets effective discipline and limit setting. For each phase, parents attend one didactic session without their child present, with the PCIT therapist reviewing specific skills that will be 'coached' in subsequent sessions. Critical clinical components of PCIT have been identified and include: involving the child and parents together in treatment, coaching parents, using assessment to guide treatment, and tailoring treatment to the child's developmental level (Herschell, Calzada, Eyberg, & McNeil, 2002). For most families, the full course of standard PCIT treatment is conducted in 12 to 20 weekly, one-hour, clinic-based sessions. PCIT is mastery based so families move from CDI to PDI, as well as from PDI to graduation, once parents have mastered pre-defined skills.

Standard PCIT has been extensively tested; numerous treatment outcome studies demonstrate improvements in parent skill and child behavior (Herschell et al., 2002). Parents report lower parenting stress, more internal (rather than external) locus of control, and increased confidence in parenting skills after completing PCIT (Cooley, Veldorale-Griffin, Petre, & Mullis, 2014). Observations of child behavior have demonstrated decreases in disruptive behavior as well as increases in compliance. Parents report their child's behavior improves from the clinical range to within normal limits on multiple parent-report measures (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). Parents also report high satisfaction with both the outcome and process of PCIT (Schuhmann et al., 1998). Moderate to large effect sizes for PCIT (pre to post treatment) have been reported for child behavior (d = 0.61 to 0.94); for parent behavior (d = 1.11 to 3.11); and for parent report of child behavior (d = 1.31 to 1.45; Thomas & Zimmer-Gembeck, 2007).

PCIT has been applied to a wide array of diagnostic populations (e.g., Bagner, Fernandez, & Eyberg, 2004; Choate, Pincus, Eyberg, & Barlow, 2005; McDiarmid & Bagner, 2005; Thomas & Zimmer-Gembeck, 2012; Wagner & McNeil, 2008) and has been adapted for implementation with younger and older children. To fit different treatment modalities, PCIT has been successfully abbreviated (Graziano, et al., 2015) as well as adapted to be used as a group (Niec, Hemme, Yopp, & Brestan, 2005) and in-home (Ware, McNeil, Masse, & Stevens, 2008) intervention. There is a particularly strong evidence for PCIT's application with child physical abuse (Chaffin et al., 2004; Lanier, Kohl, Benz, Swinger, & Drake, 2014; Thomas & Zimmer-Gembeck, 2012) and it is recognized as an evidence-based program for

this population (e.g., Kauffman Report). Despite these adaptations, Standard PCIT has not been systematically evaluated in a domestic violence center for children and their parents who have been exposed to domestic violence.

Within the literature, a rationale for PCIT's use with families who have experienced domestic violence has been articulated (Borrego, Gutow, Reicher, & Barker, 2008) and a case study of the use of PCIT with a mother and her three-year old who had experienced domestic violence has been published (Pearl, 2008). Keeshin et al. (2015) implemented a parent- training/coaching program based on the CDI phase) of PCIT with eight mother-child dyads in a shelter environment, finding mothers increased their use of positive communication skills (from a median frequency count of five in the first session to 30 at the last session during a five minute observation) while decreasing negative comments following intervention.

In a larger trial, 127 mother-child dyads, who reported experiencing interparental violence, defined by the authors as violence being present in the home (ranging from chronic arguments to domestic violence), were seen within a university hospital-based outpatient clinic specializing in treating families with histories of child maltreatment (Timmer, Ware, Urquiza, & Zebell, 2010). Timmer et al. (2010) compared nonrandomized mother-child dyads who were violence-exposed (n = 62) and mother-child dyads who were not exposed (n = 67) who completed Standard PCIT. Results indicated that PCIT was helpful for both groups in reducing children's behavior problems, and that both phases of treatment (CDI and PDI) were necessary for greatest behavioral improvements for both groups. Mother-child dyads who were exposed to violence and those not exposed had comparable rates of treatment completion (35% and 42%, respectively) and modest reduction in parent distress. Results also indicated significant treatment effects on parent self-report of psychological symptoms, as measured by the Global Severity Index.

Although PCIT may be a promising intervention for families with exposure to domestic violence, other evidence-based interventions also warrant consideration. Both Trauma-Focused Cognitive Behavior Therapy (TF-CBT) and Child-Parent Psychotherapy (CPP) are evidence-based interventions for youth and families who have experienced traumatic stress, such as witnessing or experiencing violence (e.g., Cohen, Mannarino, & Lyengar, 2011; Deblinger, Lippmann, & Steer, 1996; Ghosh Ippen, Harris, Van Horn, & Lieberman, 2011; Lieberman, Van Horn, & Ghosh Ippen, 2005). While TF-CBT and CPP both have strong support, PCIT offers some unique features which are strengths for working with families who have experienced domestic violence.

Specifically, the duration of PCIT is relatively brief, with families completing treatment in an average of 12 to 20 weekly sessions. Further, improvements in the parent-child interaction and child behavior can occur quickly, with significant change occurring in as little as three sessions (Hakman, Chaffin, Funderburk, & Silovsky, 2007). The average duration of CPP treatment, which varies based on family need, ranges from an average of 30 to 50 sessions (Liberman, Van Horn, & Ghosh Ippen, 2005; The National Child Traumatic Stress Network, 2012). This duration of the treatment may not be appropriate for families in immediate need of child behavioral change. Although TF-CBT has a comparable duration of

8 to 25 sessions (Cohen, Mannarino, Kliethermes, & Murray, 2012), TF-CBT is not considered a first-line treatment for young children with a predominate referral concern of disruptive, defiant, and aggressive behaviors (Child Sexual Abuse Task Force and Research & Practice Core, 2004). Further, although TF-CBT allows for joint parent-child sessions, the parent is not always required to participate in treatment.

This study examined the implementation of PCIT in a domestic violence shelter for several reasons. PCIT offers an intervention with a relatively brief duration working with the parent and child together. Furhter, as noted above, PCIT can result in rapid child behavior change while promoting a strong parent-child bond. Additionally, given that a history of domestic violence is associated with lower parenting satisfaction (Ehrensaft & Cohen, 2012) and that parenting stress is influential in the relation between exposure to family violence and the mental health functioning of young children (Roberts et al., 2013), an intervention like PCIT is promising. This interveniton, which is a dyadic, skill-baesd model, addresses several needs of families who have experienced domestic violence as described in the literature.

The Current Study

The current study extends the existing literature by testing the feasibility and effectiveness of the full model of PCIT in an urban domestic violence shelter with community-based clinicians delivering the treatment. It extends the growing field of research on factors influencing EBT implementation because of its focus on community-based clinicians and families as well as its application in a novel setting. Specifically, although PCIT has been implemented with a clinic-referred population screened for exposure to domestic violence (Timmer et al., 2010), in this implementation PCIT was introduced to families as a shelter service. Additionally, this study includes the implementation of the standard PCIT model, including both phases of treatment, with data collection at both the parent and child level, in contrast to the model implemented by Keeshin et al. (2015) that included only the first part of PCIT and parent-level data (e.g., parent skills).

Three aims guided the research: (1) to understand the feasibility of delivering PCIT in a community-based domestic violence shelter (e.g., fidelity to the model, treatment barriers and participation), (2) to evaluate the effectiveness of PCIT on key outcome variables including: child behavior, parenting practices, and parental mental health, and (3) to explore barriers to treatment participation contributing to attrition. It was anticipated that it would be feasible to deliver PCIT in the domestic violence shelter (e.g., fidelity), but barriers and participation would be challenging. It also was hypothesized that standard PCIT outcomes would be found, including decreases in child behavior problems, and parent mental health symptoms, as well as increases in positive parenting practices.

Method

Participants

The primary setting for this study was a Women's Center & Shelter (WC&S), a large urban shelter for women and their children with previous exposure to domestic violence. In the year before this study was initiated, the WC&S served 3,671 adults who had experienced

domestic violence as well as their 611 dependent children. The center provided both residential and non-residential services. Women could reside in the shelter for up to 60 days; however, their length of stay was variable: 36% of women stayed less than 7 days whereas 20% stayed longer than 45 days. The WC&S, in collaboration with a community-based mental health agency, provided behavioral health services while families were at the WC&S and following the family's transition back into the community. Women and children who began participating in PCIT at the WC&S could continue receiving the service at a community-based location following discharge.

Clinicians—Seven clinicians (6 female, 1 male) were trained to provide PCIT services. Clinicians' average age was 47.8 (*SD =14.66*) years, with a range between 32 and 67 years. Clinicians were Caucasian (85.7%) or African American (14.3%). Clinicians held primarily a master's degree (71.5%) with some clinicians holding a PhD (28.6%). Clinician's primary roles within the community agency included therapist (57.1%), directors or managers (42.9%), and/or school-based service providers (42.9%), with some clinicians reporting multiple roles.

Training in PCIT: Clinicians participated in a year-long training process that was developed and conducted by a PCIT International Certified Master Trainer; workshop training was supported by a second PCIT International Certified Master Trainer. The training schedule included a two-day workshop supplemented by weekly two to three hour learning sessions. During learning sessions, clinicians participated in group and individual activities. Lecture style presentations were mixed with behavioral rehearsal opportunities. Skills were explained and modeled by an expert trainer, and then participants role-played skills until mastery was met within training sessions. Additionally, clinicians received feedback through face-to-face case consultation sessions with the trainer and videotape review completed by their trainer. Clinician competence was assessed over time using a 21-item competency checklist (Eyberg & Funderburk, 2011). Checklist items included skill sets necessary to successfully implement PCIT. Training structure adhered with the most recent PCIT International Training Guidelines at the time of implementation.

Families—To be included in the study, families had to meet the following eligibility criteria: a) child's age was between 2 and 7 years; b) referral for treatment was due to child's emotion dysregulation or externalizing behavior, low parent skill, or a strained parent-child relationship; and c) the parent and child had regular contact (i.e., at least three visits per week if child was not in parent's custody). Families were excluded from study participation if any of the following were reported at the research baseline assessment: a) the child or parent had a known cognitive delay or active Post-Traumatic Stress Disorder, b) the participating caregiver was a perpetrator of child sexual abuse, or c) the parent was actively experiencing psychotic symptoms or abusing substances.

For this pilot study, primary referral concerns included were those most appropriate for participation in PCIT. For example, there is evidence to support the utility of PCIT with children with cognitive delays or intellectual disabilities (e.g., Bagner & Eyberg, 2007). However, comprehensive screening for children's cognitive functioning, including verbal abilities, was not feasible within the current study budget. Similarly, children or parents

experiencing active Post-Traumatic Stress Disorder symptoms were excluded from this study, as a treatment more directly focused on trauma, such as TF-CBT or CPP, seemed more appropriate.

PCIT was conducted with families of 21 children (15 male, 6 female) with an average age of 4.57 (*SD* = 1.50) years, with 9 families (43%) completing treatment. Children were Caucasian (*n* = 11; 52.4%) or Black/African American (n= 10, 47.6%). All children were residing with their participating parents at the time of PCIT. A portion of children had previously experienced abuse (*n* = 7; 33.3%). See Table 1 for demographic characteristics of all child participants. Families participated in PCIT according to the standard protocol, which included weekly one-hour treatment sessions guided by the most recent PCIT manual (Eyberg & Pincus, 1999) available at the time of training and service delivery. While residing at the WC&S, families participated in treatment on-site in a standard PCIT playroom. Upon transition, families continued participation in services at community-based outpatient sites partnering with the shelter.

The majority of participating parents were biological mothers (*n* = 17; 81.0%). Parents were primarily single, never married (*n* = 10; 47.6%), high-school educated (*n* = 5; 23.8%) and currently unemployed (*n* = 10; 47.6%). The majority of parents reported experiencing past abuse (*n* = 16; 76.2%) as well as multiple traumatic or stressful life events. On average, parents reported experiencing 12 traumatic or stressful life events (*M* = 12.38, *SD* = 6.92). Please see Table 2 for demographic characteristics of all parent participants.

Procedure

Upon arrival to the WC&S, families participated in an intake process for the shelter. During the shelter intake that was conducted by an intake worker, families were referred to behavioral health services if it seemed as if the families might need or could benefit from services. Behavioral Health Clinicians working at the WC&S then completed a general clinical assessment session to identify treatment needs. Treatment needs could include a wide variety of services (e.g., trauma treatment, general counseling, PCIT). The Behavioral Health Clinicians who conducted general clinical assessments had also received training in assessing and identifying PCIT-appropriate presenting problems and referral concerns. If the clinician determined the family was appropriate for PCIT, the clinician referred the family for PCIT Services, which often was with the same Behavioral Health Clinician. For all families referred to PCIT Services, Behavioral Health Clinicians presented the family with a “permission to contact” form that the parent signed if they were interested in hearing more about the study. The clinician faxed the form to a research assistant, who called the family to confirm eligibility, introduce informed consent, and schedule the first research assessment session with the family. Research assessment sessions were completed by an independent research assistant during a scheduled time outside of therapy. Families could receive PCIT, but not participate in the study if they declined study participation.

Measures

Parents completed assessments at three time points: baseline (before the CDI Teach Session), midway through PCIT (once CDI skills were mastered), and at the completion of

PCIT (graduation). All measures were standardized, written measures completed by the parent.

Demographic information—A demographic information questionnaire was included to acquire characteristics of the participating parent-child dyads (e.g., child/caregiver age, gender, ethnicity, race, and history of abuse).

Life experiences: The Life Stressors Checklist-Revised (LSC-R) is a 30-item self-report instrument designed to screen life events which may be traumatic and/or stressful to respondents (Norris & Hamblen, 2004). This measure assesses the presence of events (e.g., physical assault, sexual assault, neglect) in the respondent's life or one of the stressors occurring to someone else. Even though this measure requests sensitive information, it has been demonstrated to be acceptable with respondents (Wolfe, Kimmerling, Brown, Chrestman, & Levin, 1996).

Treatment effectiveness

Child behavior: The Eyberg Child Behavior Inventory (ECBI) is a 36-item parent-report to measure externalizing behaviors for children ages 2 through 16 years (Eyberg & Pincus, 1999). The ECBI has been demonstrated to exhibit adequate psychometric properties with a variety of samples (see Eyberg & Pincus, 1999, for a review) and to accurately discriminate children exhibiting clinically elevated levels of behavior from their typical peers (Rich & Eyberg, 2001).

Parenting practices: The Alabama Parenting Questionnaire (APQ) is a 42-item parent self-report (Shelton, Frick, & Wooten, 1996). This measure was designed to consider a variety of parenting practices most relevant to child disruptive behaviors, including degrees of parental involvement/supervision, use of inconsistent or harsh discipline, as well as use of positive parenting. The APQ has good psychometric properties including internal consistency (alpha = .68) and criterion validity in differentiating clinical and non-clinical groups (e.g., Dadds, Maujean, & Fraser, 2003).

The Parenting Locus of Control (PLOC) – Short Form Parent Questionnaire is a 25-item assessment, utilized to assess parents' perceived level of control of their child's behaviors. Scores can range from 25 to 125, with higher scores indicating more external locus of control. Roberts, Victor, and Rowe-Halbert (1992) demonstrated adequate test-retest reliability with a sample of parents (n = 31) with children ages 2 to 12 years. Authors also noted the PLOC was sensitive to treatment for 72 families referred for treatment due to children's oppositional behaviors.

Parental mental health: The Symptom Checklist-90-R (SCL-90-R) is a widely used, 90-item self-report symptom inventory that measures a broad range of psychological problems (Derogatis, 1992). Nine scales (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism) as well as three global indices of distress (global severity index, positive symptom distress index, and positive symptom total) are assessed. The SCL-90-R has been

utilized with diverse populations and has successfully differentiated between clinical and community populations (e.g., Holi, Sammallahri, & Aalberg, 1998; Schmitz et al., 2000).

Treatment engagement and satisfaction—The Barriers to Treatment Participation Scale (BTPS) is a 58-item self-report instrument which assesses consumers' perceived barriers to treatment participation, including barriers related to life stressors/events, demands of treatment, perceived importance of treatment and client-therapist relationships (Kazdin, Holland, & Crowley, 1997). Kazdin et al. (1997) found adequate levels of internal consistency on the total barriers scale (0.86 for both the Spearman-Brown coefficient and coefficient alpha) as well as initial support for the convergent validity of the measure to distinguish between groups of consumers who are likely to drop out and those who complete treatment.

The Therapy Attitude Inventory (TAI; Brestan, Jenifer, Rayfield, & Eyberg, 1999) is a 10-item self-report instrument that assesses parental satisfaction with treatment at the completion of the intervention. Brestan et al. (1999) found high reliability (Cronbach's alpha = 0.91) as well as adequate stability through multiple administrations over a four-month time period (0.85). Previous studies (e.g., Eisenstadt et al., 1993; Schuhmann et al., 1998) have noted that this instrument provides unique information regarding satisfaction with the process and outcomes of treatment.

Data Analyses

Descriptive statistics were used to examine participant characteristics, using means and percentages accompanied by confidence intervals to provide measures of the magnitude of effects and the degree of precision. Group differences were assessed via independent samples *t*-tests, and Pearson's Chi square analyses for all pre-treatment characteristics and treatment effectiveness variables. Group differences between treatment completers and non-completers were also assessed using independent samples *t*-tests. Bivariate correlations were conducted to examine session data.

Treatment completion/process—As indicated above, 21 children participated in PCIT treatment with their caregivers. Of those, 43% ($n = 9$) completed treatment. The majority of non-completing families (67%; $n = 8$) dropped out of treatment prior to achieving mastery of the first phase of treatment. The remainder (33%; $n = 4$) met mastery of the Child-Directed Interaction skills, but did not complete the second phase of treatment. Although nine families completed treatment, only five completed all assessments at post-treatment. Further, across timepoints, some assessments were unable to be scored due to omitted items/ incomplete completion. As a result, Tables 3 and 4 include only those participants with comparable assessments completed at both pre- and mid-treatment or pre- and post-treatment, respectively. Although completion rates varied across timepoints and measures, seven treatment completers and four non-completers finished all measures

Treatment effectiveness—The effectiveness of treatment was evaluated with regard to child behaviors, parenting practices, and mental health functioning (see Table 3 – 4). Following the completion of PCIT, results indicated statistically significant child behavioral

gains on both the ECBI Intensity scale, $t(6) = 5.19$, $p = 0.003$, and ECBI Problem scale, $t(7) = 5.06$, $p = 0.002$. Mean ECBI scores fell below the clinical cut-off at pre- and post-treatment. At post-treatment caregivers' report of the frequency and intensity of difficult child behavior as well as how problematic behaviors were reduced by more than 50% and fell well into the normative child behavior range (Eyberg & Pincus, 1999).

Results indicate some self-reported parental gains following treatment for treatment completers. Post-treatment parental report on the APQ indicated statistically significant improvements in scores within the Inconsistent Discipline domain, $t(5) = -4.62$, $p = 0.006$. Post-treatment follow-up scores on the PLOC indicated increased parental perceptions of control, $t(5) = 4.26$, $p = 0.008$.

Parental self-report of their mental health needs also indicated a reduction in symptoms. On average, treatment completers reported 31.4 behavioral health symptoms at pretreatment and reported half as many symptoms (i.e., $M = 16.8$) at post-treatment. Significant gains were noted with regard to parent scores on the Global Severity Index, $t(5) = 3.02$, $p = 0.03$, indicating an overall reduction of behavioral health symptoms, as well as on the Positive Symptom Total scores (i.e., number of positive mental health symptoms reported) following treatment completion, $t(7) = 3.38$, $p = 0.02$.

Treatment engagement and satisfaction—Parents reported barriers to treatment and overall treatment satisfaction at mid-treatment, allowing for comparisons between completers and non-completers (see Table 3). Post-treatment scores were also reported for treatment completers (see Table 4). Assessment of barriers was completed at mid-and post-treatment, as the items on the instrument assume participation in a service at the time of responding. Parental self-report of barriers to treatment (BTPS) indicated the presence of numerous barriers for treatment completers ($M = 20.86$, $SD = 1.77$) and non-completers ($M = 31.75$, $SD = 11.70$). However, treatment non-completers reported not only the presence of more barriers, but a greater impact of these stressors and obstacles at mid-treatment than treatment completers ($t(9) = 2.52$, $p = 0.03$). Notably, barriers remained high at post-treatment for completers as well ($M = 19.67$, $SD = 3.78$).

There were no significant differences between treatment completers and non-completers in satisfaction with PCIT ($t(9) = -1.58$, $p = 0.15$) as measured using the TAI. All reported high satisfaction at mid-treatment. For treatment completers, treatment satisfaction remained high at post-treatment ($M = 46.71$, $SD = 4.42$).

PCIT session fidelity—Clinicians were asked to videotape all PCIT sessions ($n = 101$). Videotapes of 42 sessions (42%) were reviewed for five of the seven (71%) clinicians in the cohort. All session tapes submitted were reviewed for fidelity. Due to logistical challenges (e.g., remembering to set up and record sessions) the majority of sessions (59%) were not submitted or were submitted, but were not recorded properly, and therefore, did not allow for review. The treatment integrity checklist (Eyberg & Pincus, 1999), which is the gold standard for the assessment of PCIT fidelity, was used to assess treatment session fidelity. Each session video was coded by a bachelor's level research associate and then recoded by a postdoctoral research associate. Discrepancies were discussed and consensus was met.

Coders remained uninformed of the participant treatment completion status at the time of the video review. Overall session fidelity ratings were high. Behavior observation ratings of treatment fidelity indicated an average of 90% fidelity across sessions (i.e., clinicians included 90% of essential components of treatment session as indicated by the treatment integrity checklist of the PCIT protocol).

Discussion

This study examined the feasibility and effectiveness of PCIT conducted in a WC&S with caregivers who had recently experienced domestic violence and their children. Cautious support was demonstrated for the effectiveness of PCIT with this population; however, the feasibility of delivering the treatment with the standard protocol (i.e., weekly, one- hour sessions) in a shelter setting is questionable. Results indicated that completion of PCIT had a positive and significant impact on child behavior, parenting practices, and mental health symptoms, but only 42% of families completed the full course of treatment.

Improvements in child behavior were noted at post-treatment. Scores on both the ECBI Intensity and Problem scales indicated statistically and clinically significant improvements in behavior for children. Although child behaviors were not significant at baseline, scores were elevated and approaching significance. As young children exposed to domestic violence are at risk for developing externalizing behavior problems (Huang et al., 2010), this reduction of child behavior problems is notable.

In terms of parenting practices, caregivers reported more consistent discipline and increased feelings of control related to children's behaviors. Although a positive trend was noted, no significant improvements were reported in the domain of positive parenting practices. This is surprising given the goal of the first phase of PCIT treatment; however, parent report at baseline in this domain was high and approaching ceiling (M = 26, 82 for completers; M = 25.08 for non-completers, respectively, out of a possible score of 30). Additionally, parents' initial perceptions of their positive parenting practices may have been skewed. Further, parent report on the APQ indicated improvements in consistency with discipline which likely influenced gains in child disruptive behaviors.

Caregivers reported a significant reduction of their own mental health symptoms across scales on the SCL-90. Although only the Global Severity Index and Positive Symptom Total were statistically significant, for all global scales, effect sizes were large indicating a clinically significant impact. These outcomes are consistent with the intended impact of participation in PCIT. Timmer et al. (2010) found similar effects, also finding significant reduction in mother's Global Severity Index scores following completion of treatment.

As anticipated, treatment dropout rate was high (57.2%), but comparable to other community studies (e.g., 67%; Pearl et al., 2012) as well as with a similar population of violence exposed dyads (e.g., 65%; Timmer et al., 2010). Regardless, 57.2% is unacceptable. Most drop out occurred early in treatment. Only two families dropped out of treatment between mid-and post-treatment. As indicated above, the measure exploring dropout was completed at mid- and post-treatment. Therefore, due to the timing of dropout, data related

to barriers to treatment participation were not obtained for families who terminated treatment before the mid-point.

The high rate of life stressors might have impacted families' ability to participate in PCIT particularly as they were transitioning out of the shelter. Although reasons for treatment dropout are not available for all families, study notes indicate that for at least four families, termination of treatment coincided with their transition from the shelter setting. For some women, leaving the shelter comes with a number of significant life changes including relocating to new areas, changing schools/medical doctors/ jobs, and establishing new support systems. These factors alone may contribute to increased dropout rates.

Further, PCIT has strong evidence for children with externalizing behaviors and child physical abuse. As noted above, young children who witness domestic violence are particularly at risk for developing externalizing behavior (Huang et al., 2010). Further, harsh parenting practices in tandem with the emergence of child externalizing behaviors noted in this population (Gustafsson & Cox, 2012; Huang et al., 2010) may also put families at risk for child maltreatment, for which there is especially strong evidence for the application of PCIT (Chaffin et al., 2004; Lanier et al., 2014; Thomas & Zimmer-Gembeck, 2012).

Within this sample, despite primary referral concerns including child emotion dysregulation or externalizing behaviors, the average level of child behavioral difficulty at intake, as indicated by the ECBI, fell in the subclinical range. As a result, although many children presenting with their caregiver in a shelter setting may not yet be exhibiting clinically-significant disruptive behaviors, those children may be at-risk for later developing clinically-significant behavioral problems. .

Children with subclinical behaviors were included in an attempt to support at-risk dyads by promoting strong parent-child relationships and effective discipline; however, this consideration might have also impacted families' continued participation in treatment, as addressing child behavior may not have been the most pressing need for the family. Chaffin and colleagues (2009; 2011) included children with subclinical behaviors in their trials that focused (similarly) on families affected by violence and found that families were better retained and outcomes were better (even child abuse recidivism) if families participated in a self-motivational orientation intervention before participating in PCIT. A similar motivational enhancement could have improved the retention rate in this study.

There were no major differences at baseline between completers and non-completers, which limits our ability to predict who might drop out of treatment. At mid-treatment, there were no differences in overall treatment satisfaction between completers and non-completers. Families who were able to complete mid-treatment assessments had met mastery criteria in the first phase of treatment (CDI) which focuses on relationship enhancement. Improvements in the parent-child interaction and child behavior can occur quickly and early in treatment (i.e., during the first phase), with significant change occurring in as little as three sessions (Hakman et al., 2007). This may account for the high satisfaction across groups, with drop out occurring after mid-treatment due to satisfaction with treatment gains or due to the shift in treatment to a focus on effective discipline.

Treatment completers reported significantly fewer barriers to treatment participation as measured by the BTPS at mid-treatment. Barriers to treatment appeared unique for each family, with little consistency across participants. Treatment non-completers reported more numerous and problematic barriers (see Table 3). As indicated above, the BTPS was completed at mid- and post-treatment. Therefore, we were unable to predict treatment completion status utilizing this report. Further, although no patterns emerged at the item level related to the stressors experienced between groups, common barriers were reported across participants.

For instance, of the eleven families who completed the BTPS at mid-treatment, 82% ($n = 9$) rated scheduling appointments to be problematic at least once. Likewise, 73% ($n = 8$) indicated that participating in the service (PCIT) added little to moderate amounts of stress to their lives (on a scale of no stress to a great deal of stress). Furthermore, 64% ($n = 7$) reported that PCIT was more work than anticipated. Although PCIT services were provided in the shelter setting, due to the transient nature of families' placements, the continuation of care offered in the community may not have been as easy to access as anticipated. These findings highlight the importance of two issues: (1) assessing barriers throughout the treatment process and (2) developing strategies within treatment protocols to address barriers as treatment progresses, rather than employing retention strategies only early in treatment. For instance, families reported some concerns related to inaccurate expectations of the demand of therapy, which has been demonstrated to predict attrition (Nock, Phil, & Kazdin, 2001).

Given that PCIT is a mastery model, it may be possible to conduct the same number of sessions over a shorter timeframe so that the treatment duration could coincide with the duration of the shelter stay; this would help avoid dropout due to the transition of leaving the shelter. It seemed for participants in this study that the transition from the shelter was stressful and a point when participants lost contact with their PCIT clinicians, despite attempts to provide continuation of care in the community. Several adaptations to the model format are currently being examined which might address issues related to dropout.

For instance, Graziano et al.(2015) recently completed a pilot study examining an intensive, condensed version of PCIT (90-minute sessions daily for two weeks) with children exhibiting externalizing behavior problems. Initial results indicated high completion rates/ attendance, as well as reduction in parent stress and child externalizing behavior problems. It also might be possible to improve treatment retention by conducting group PCIT. Likewise, Berkovits et al. (2010) also found promising results for preventive intervention utilizing two abbreviated versions of PCIT (a four-session group format and providing written materials with practice guidelines describing basic steps of PCIT) in pediatric primary care. These formats, which might provide additional social support, could offer added benefit to this population, given that the transition to a shelter inherently affects the dyad's social network and environment. Given the recommended first step in tailoring EBTs is to study the original treatment protocol (Eyberg, 2005; Niec et al., 2005), these changes were not part of the current study, but should be examined in future research.

Limitations

From a scientific perspective, a larger number of participants and use of random assignment would be preferable. Given that this was a pilot study, conducted with a vulnerable population in a community setting, randomization and a comparison condition were not possible. The small sample size in the current study limited the selection of analyses; statistical procedures which account for intercorrelations within data due to nesting (i.e., multiple families being seen by clinicians working in agencies) were not employed due to the small sample size. However, the scope of this project was meant to provide pilot data on PCIT feasibility and effectiveness using the standard treatment protocol to inform larger future efforts.

Given the nature of the study setting, additional information was unavailable. For instance, due to the sensitive nature of a family's status, as well as the temporary status of the residential setting, data were not available regarding other services a family received before, during, or following PCIT. Similarly, with the array of services available through the WC&S and partner agencies, it is unclear how clinicians selected families for PCIT. Further, although improvements were noted in parental mental health symptoms, it is not clear what additional factors might have influenced this variable when participating in PCIT services. For instance, improvements may also be attributed to removal from domestic violence or individual services for the parent.

An additional limitation is the lack of direct observation to collect data related to change in parent and child behavior. Inclusion of observational data would have strengthened conclusions. Additionally, weekly session data related to the implementation of the treatment was not available. As a result, no analyses could be conducted to explore how parent skill development impacted treatment progress. Although additional factors have been identified to predict drop out, such as more maternal negative talk and less maternal praise at intake (Fernandez & Eyberg, 2008), session data such as DPICS data were not collected for this pilot.

Finally, as the study intended to explore fidelity while evaluating feasibility, another limitation is related to the availability of video recorded sessions. Although session tapes were reviewed for treatment fidelity by coders uninformed of family completion status, the sample of video sessions able to be reviewed did not allow for random sampling across sessions or clinicians. Further, as not all therapists submitted video tapes (five of seven submitted tapes), the sample of sessions available for review may include only those therapists who felt confident enough to submit session tapes. However, despite these limitations, the design of the study allows for some insight into considerations for working with this population within a shelter setting.

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Table 1

Child demographic means and percentages for all participants: treatment completers and non-completers

	All		Completers		Non-Completers	
	n	**%**	***n***	**%**	***n***	**%**
Gender						
Male	15	71.4	7	77.8	8	61.5
Female	6	28.6	2	22.2	4	30.8
Ethnicity						
Not Hispanic or Latino	14	66.7	9	100.0	5	41.7
Unknown or preferred not to report	5	23.8	0	0.0	5	41.7
Hispanic or Latino	2	9.5	0	0.0	2	16.7
Race						
White	11	52.4	6	66.7	5	41.7
Black or African American	10	47.6	4	44.4	6	50.0
American Indian or Alaska Native	1	4.8	1	11.1	0	0.0
Child history of abuse						
No history	12	57.1	5	50.0	8	68.7
Physical abuse	3	14.3	3	30.0	0	0.0
Both physical and sexual abuse	3	14.3	2	20.0	1	8.3
Unknown or preferred not to report	2	9.5	0	0.0	2	16.7
Sexual abuse	1	4.8	0	0.0	1	8.3

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Table 2

Parent Demographic Means and Percentages for All Participants: Treatment Completers and Non-completers

	All		Completers		Non-Completers	
	n	**%**	***n***	**%**	***n***	**%**
Relationship to participating child						
Biological mother	17	81.0	9	100.0	8	66.7
Biological father	1	4.8	0	0.0	1	8.3
Adoptive mother	1	4.8	0	0.0	1	8.3
Grandmother	1	4.8	0	0.0	1	8.3
Uncle	1	4.8	0	0.0	1	8.3
Ethnicity						
Not Hispanic or Latino	16	76.2	9	100.0	7	58.3
Unknown or preferred not to report	5	23.8	0	0.0	5	41.7
Race						
White	11	52.4	6	66.7	5	41.7
Black or African American	8	38.1	3	33.3	5	41.7
Unknown or preferred not to report	2	9.5	0	0.0	2	16.7
Caregiver history of abuse						
Both physical and sexual abuse	11	52.4	7	77.8	4	33.3
Physical abuse	4	19.0	2	22.2	2	16.7
No history	3	14.3	0	0.0	3	25.0
Unknown or preferred not to report	2	9.5	0	0.0	2	16.7
Sexual abuse	1	4.8	0	0.0	1	8.3
Life Stressors Checklist						
Number of Stressors	21	$M = 12.39$; $SD = 6.92$	9	$M = 12.01$; $SD = 7.04$	12	$M = 19.09$; $SD = 24.05$
How Affected	20	$M = 36.70$; $SD = 29.27$	9	$M = 32.00$; $SD = 23.31$	11	$M = 40.55$; $SD = 34.01$

Table 3

Mean Scores at Pre and Mid Treatment for Treatment Completers and Non-completers

	Completers			Non-completers					95% CI		
Measure	***N***	***M***	***SD***	***N***	***M***	***SD***	***t***	***p***	**LL**	**UL**	**Cohen's *d***
Pretreatment											
Child Behavior											
ECBI Intensity Raw	8	139.00	33.64	12	141.42	43.03	.13	.35	−35.59	40.43	−.06
ECBI Problem Raw	9	16.78	8.36	12	17.00	10.38	.05	.20	−8.62	9.07	−.02
Parenting Practices											
APQ Involvement	8	39.36	6.50	12	37.25	13.14	−.42	.68	−12.70	8.48	.20
APQ Inconsistent Discipline	9	16.76	4.12	12	15.42	3.23	−.84	.41	−4.69	2.01	.36
APQ Positive Parenting	9	26.82	4.94	12	25.08	3.20	−.98	.34	−5.46	1.98	.42
PLOC	9	62.38	5.23	12	67.83	10.90	1.38	.18	−2.82	13.72	−.64
Parental Distress and Mental Health											
SCL-90 Global Severity Index	8	.63	.33	12	.75	.59	.54	.60	−.36	.61	−.25
SCL-90 Positive Symptom Total	8	33.43	15.96	12	36.94	21.58	.39	.56	−15.27	22.29	−.18
SCL-90 Positive Symptom Distress Index	8	1.61	.45	12	1.73	.43	.60	.56	−.30	.54	.27
Midtreatment											
Treatment Engagement and Satisfaction											
BTPS	7	20.86	1.77	4	31.75	11.70	2.52	.03	1.10	20.69	−1.30
TAI	7	43.86	2.73	4	38.75	8.06	−1.58	.15	−12.42	2.21	.85

Note. CI = confidence internal; *LL* =lower limit; *UL* = upper limit.

Table 4

Mean Scores for Treatment Completers at Pre and Post Treatment

		Pre		Post				95% CI		
Measure	***N***	***M***	***SD***	***M***	***SD***	***t***	***p***	**LL**	**UL**	**Cohen's *d***
Child Behavior										
ECBI Intensity Raw	6	124.00	14.57	61.50	18.19	5.19	.003	31.55	93.45	3.79
ECBI Problem Raw	7	13.71	6.10	4.43	4.43	5.06	.002	4.80	13.78	1.74
Parenting Practices										
APQ Involvement	5	36.78	7.04	41.40	3.71	−2.03	.113	−10.95	1.71	−.82
APQ Inconsistent Discipline	6	16.97	1.90	11.00	2.97	4.62	.006	2.65	9.29	2.39
APQ Positive Parenting	6	25.57	5.73	28.17	1.83	−1.06	.34	−8.90	3.70	−.61
PLOC	6	61.17	5.56	46.03	8.74	4.26	.008	6.01	24.27	2.07
Parental Distress and Mental Health										
SCL-90 Global Severity Index	6	0.52	.31	0.27	0.26	3.02	.029	.04	.46	.87
SCL-90 Positive Symptom Total	6	31.40	18.22	16.83	13.80	3.38	.020	3.50	25.64	.90
SCL-90 Positive Symptom Distress	6	1.42	.24	1.26	.32	1.33	.24	−.15	.47	.57
Treatment\Engagement and Satisfaction										
TAI	7	--	--	46.71	4.42	--	--	--	--	--
BTPS	6	--	--	19.67	3.78	--	--	--	--	--

Note. CI= confidence internal; *LL* =lower limit; *UL* = upper limit