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Effectiveness of Parent–Child Interaction Therapy Delivered to At-Risk Families in the Home Setting

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An evaluation was conducted for 83 parent–child dyads who participated in parent–child interaction therapy (PCIT) delivered in-home by community agency therapists. Data included self-report measures and therapist observations at baseline and post-treatment. Results indicated significant positive changes in child/parent behavior and parent attitudes for dyad completers. Overall, parents who completed in-home PCIT reported significantly more positive child outcomes than noncompleters and had a significantly lower risk of child abuse. Implications for implementing PCIT into community practice are discussed, including reducing barriers, in-home modifications, and model fidelity in practice with high-risk communities.

KEYWORDS *child abuse, efficacy, in-home, parent–child interaction therapy, parenting, prevention*

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INTRODUCTION

There is a growing consensus among experts that behavioral, skill-based parent training programs should be a primary strategy for prevention and intervention of the two most common forms of substantiated maltreatment, neglect and physical abuse (Barth et al., 2005; Dore & Lee, 1999; Whitaker et al., 2005). One of these programs, parent-child interaction therapy (PCIT; Eyberg, 1988; Hembree-Kigin & McNeil, 1995; Hood & Eyberg, 2003), has shown effectiveness with families at high risk for child maltreatment (Chaffin et al., 2004; Timmer, Urquiza, McGrath, & Zebell, 2005). PCIT is a clinic-delivered, behavioral parent training program initially developed to help parents address children's behavior problems through a two-stage intervention. The first stage is a relationship enhancement phase (child-directed interaction [CDI]), and the second stage is a discipline phase (parent-directed interaction [PDI]). In CDI parents create more positive relationships by ignoring annoying, but not dangerous, behavior and increasing their use of labeled and unlabeled praise, reflections, and behavior descriptions. At the same time they decrease the number of questions, commands, and negative verbalizations. In PDI parents learn to give clear, individual, developmentally appropriate, positively stated commands in a neutral tone. They also learn to follow through consistently with labeled praise for compliance or warnings and time-out for noncompliance. Chaffin and colleagues (2004) compared parents receiving PCIT to parents receiving a standard psycho-educational group parent training program in a randomized clinical trial. The study demonstrated PCIT to be significantly more effective at reducing the likelihood of child protection allegations for physical abuse at 1 year posttreatment with families who were previously involved with child protective services (Chaffin et al., 2004). Further, Timmer and colleagues (2005) found that after participating in PCIT, mother-child dyads, with a history of maltreatment, reported reductions in frequencies of child behavior problems and parental stress compared with pretreatment.

Research investigations of PCIT have been conducted almost exclusively with families who receive services in a clinic setting where therapists use a one-way mirror and bug-in-the-ear device for parent coaching. As documented by Masse and McNeil (2008), in-home delivery of PCIT can reduce barriers and offers several clinical advantages for families and treatment providers over the clinic setting. First, conducting in-home PCIT can reduce logistical barriers that are often responsible for client no-shows and late arrivals, resulting in enhanced client engagement, retention, and satisfaction. In fact, a study by Fernandez and Eyberg (2008) found that logistical barriers, such as transportation, were one of the most commonly reported reasons for parental termination of PCIT services before completion. Logistical barriers may be especially critical to the attrition of parents of low socioeconomic status and

education—parents often considered at increased risk for perpetrating child abuse (Mersky et al., 2009; Schumacher et al., 2001; Stith et al., 2009). Notably, the Centers for Disease Control and Prevention Task Force on Community Preventive Services recommended home visitation as the major treatment delivery approach for working with families at-risk for child maltreatment (Briss et al., 2000).

In addition to reducing logistical barriers, in-home PCIT adds ecological validity to treatment services (Masse & McNeil, 2008); a provider can learn firsthand about the limitations a family has, particularly space limitations, which can impact the parent's ability to implement behavioral modification techniques such as time-out. In-home PCIT also eliminates many of the challenges that can negatively impact skill acquisition and behavior generalization of new skills from the clinic setting to everyday life (Masse & McNeil, 2008). The therapist can observe and coach parent behavior "in situ" as it typically occurs within the home setting, making it easier for the parent to understand the relevance of the skill in the environment where challenges arise. In addition to factors discussed by Masse and McNeil (2008), another advantage of in-home delivery is that providers have an opportunity to observe the dynamics between parents receiving services and other adults in the household, including another parent, housemates, or grandparents. The provider has the opportunity to develop rapport with these adults, which may enhance the consistency and congruency of behavioral skills across caregivers.

To date, one published study examined the validity of PCIT delivered completely in the home setting (Ware et al., 2008). Using a single-subject design with three families, Ware and colleagues (2008) found decreases in caregiver-reported child behavior problems and caregiver use of negative behavior. Increases in child compliance, caregiver use of positive behavior, and caregiver use of contingent praise were also found (Ware et al., 2008). Participating parents reported high levels of satisfaction with treatment (Ware et al., 2008). This study provides promising results and preliminary evidence supporting the feasibility of in-home PCIT with parents and some initial support that positive changes in caregiver and child behavior can occur. However, the study had limited external validity because two therapists worked with each family in several of the PCIT sessions delivered and a small number of families were included in the study.

Timmer et al. (2010) conducted a study that looked at adding an in-home coaching component to clinic-based PCIT to explore the potential benefits of providing services in natural environments. The study compared clinic-based PCIT with in-home sessions to clinic-based PCIT with social support services. Although the in-home component did not reduce the amount of child misbehavior or increase the caregiver's skill performance, it did significantly reduce the amount of stress reported by caregivers and increase their tolerance for their child's behavior (Timmer et al., 2010). Given that

parental stress is a risk factor for child maltreatment (Crouch & Behl, 2001) and that parents who have a history of physically abusive behavior are significantly more likely to interpret behavior as hostile or aggressive (Crouch et al., 2010), the impact of reducing stress and increasing tolerance may lower the risk of child maltreatment. Increasing a parent's ability to interpret neutral or mildly difficult parenting moments as positive ones lowers the number of negative attributions to the child and reduces the risk of angry or abusive reactions by the parent (Bugental et al., 2002; Crouch et al., 2010). Providing PCIT in-home may better meet the needs of families who are receiving the intervention to reduce the risk of child maltreatment, rather than addressing clinically significant child behavior problems.

In addition to most PCIT studies being conducted in the clinic versus home setting, the majority of research on PCIT has involved efficacy studies with an emphasis on internal validity (e.g., strict inclusion and exclusion criteria, close supervision, and fidelity monitoring of PCIT providers; Chaffin et al., 2004; Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; McCabe & Yeh, 2009; McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). Fewer effectiveness trials, which place more emphasis on external validity (e.g., community providers and settings, few exclusionary criteria), have been conducted (for exceptions, see Phillips, Morgan, Cawthorne, & Barnett, 2008). Effectiveness studies, with the greater orientation toward external validity, supplement the body of efficacy research by examining the effectiveness of PCIT with the inclusion of "real-world" elements. It is critical that researchers examine outcomes for families who receive PCIT in the community setting and that samples include an ethnically and racially diverse population, given recent evidence that evidence-based treatments and cultural competence may be more complementary than disparate (Miranda et al., 2005; Whaley & Davis, 2007).

Purpose of Current Study

The purpose of the current study is to further explore the effectiveness of in-home PCIT with a diverse sample of parent-child dyads by using data from a child maltreatment prevention program that implemented PCIT in family homes. Specifically, the clinical records of families who participated in PCIT at a community family support agency were examined for pre- and posttreatment data related to child behavior, parent behavior, and parent attitudes. Also of interest was the parents' reported satisfaction with services conducted in-home, as well as the service completion rates.

Two hypotheses were postulated:

- Families who complete in-home PCIT will demonstrate improved outcomes for child behavior and parenting behavior from pretreatment to posttreatment.

- Parents will report high levels of satisfaction and will have high levels of retention with in-home PCIT.

METHOD

Participants

The clinic records of 83 families who began PCIT services at a community family support agency in a mid-size southeastern city between January 2007 and January 2009 were reviewed. The service agency's mission was to provide child maltreatment prevention services to improve the parenting skills for at-risk parents, with services provided in-home in Spanish or English to minimize barriers due to transportation, socioeconomic issues (i.e., childcare costs), or language issues. Families were referred to the agency by the Department of Social Services, other family-serving community agencies, and community members. To enter the PCIT program, parents had to have children between the ages of 2 and 10 years, have regular contact with their children, and agree to services that included both parent and child participation. Sessions were scheduled in the home once a week, with sessions ranging in length from 45 minutes to 2 hours. Consistent with the focus of the family support agency, children did not have to present with significant externalizing behavior problems to participate in PCIT; thus, PCIT was implemented more as a skill-building program for parents at-risk for maltreatment than a mental health intervention for externalizing behavior disordered children, similar to the Chaffin et al. (2004) study. According to clinic records, 88% of parents were women ($n=73$), and 12% were men ($n=10$), with an average age of 30 years. Approximately 55% of parents were Latina/o ($n=46$), 37% were African American ($n=31$), and 7% were White ($n=6$). Ten percent of the parent sample was court mandated to receive services. Other demographic variables (socioeconomic status, parent education, relation of caregiver to child) were not collected in ways that allowed for analysis.

Measures

EYBERG CHILD BEHAVIOR INVENTORY (ECBI)

The ECBI is a 36-item parent-report measure that assesses conduct behavior problems for children ages 2 to 16 years (Eyberg & Pincus, 1999). The ECBI includes an Intensity scale that measures the frequency of undesirable child behaviors in a seven-point Likert scale format and a Problem scale that measures whether or not the parent perceives the behaviors as problematic (Eyberg & Pincus, 1999). A *T*-score of 60 or above (raw scores >130 on the Intensity scale and >14 on the Problem scale) on either of the two scales

is considered clinically significant. The reliability and validity of the ECBI is well established, and the measure is available in both English and Spanish (Eyberg & Pincus, 1999). This measure was completed by parents who participated in the PCIT program at pre- and posttreatment.

ADULT ADOLESCENT PARENTING INVENTORY (AAPI)

The AAPI is designed to assess the parenting and child-rearing attitudes of adult and adolescent parent and nonparent populations (Bavolek, 1990). Responses to the AAPI provide an index of risk for practicing parenting behaviors known to contribute to child maltreatment (Bavolek, 1990). Validity and reliability of the AAPI have been established with abusive parents expressing significantly ($p < .001$) more abusive attitudes than nonabusive parents (Bavolek & Keene, 2001). The measure is available in both English and Spanish. Items for four subscales (empathy, age appropriate expectations, reliance on corporal punishment, and role reversal) were administered to all parents who participated in the PCIT program at pre- and posttreatment.

DYADIC PARENT-CHILD INTERACTION CODING SYSTEM, THIRD EDITION (DPICS)

The DPICS is an analogue observation measure developed to assess the quality of parent-child interactions (Eyberg, Nelson, Duke, & Boggs, 2005). Validity for DPICS has been established by discrimination between referred and non referred families in treatment for child externalizing behaviors (for review, see Eyberg et al., 2005). Therapists completed the DPICS with families at pre- and posttreatment and during PCIT treatment sessions. Six DPICS parent categories were tallied for families during CDI, which included total positive parent behaviors (talk, behavior description, reflection, labeled praise, and unlabeled praise) and total negative parent behaviors (question, indirect commands, direct commands, and negative talk). During PDI direct and indirect commands, child's response (obey, disobey, or no opportunity), and child compliance (total number of obeys divided by the total number of given commands for which there was an opportunity to comply) were tallied. Therapist scores for these categories were computed as follows: during the first and last CDI sessions, frequency counts for the positive parent behaviors were summed to compute a total pre- and posttreatment measure. Similarly, the pre- and posttreatment frequency counts were summed to measure total negative parent behaviors. For PDI sessions, pre- and posttreatment totals of both direct and indirect commands given by the parent were summed, as well as the child's response after each command. Child compliance was defined as the total number of obeys divided by the total number of given commands for which there was opportunity to comply.

SATISFACTION MEASURE

A seven-item satisfaction survey was developed by the staff at the family support agency to assess client satisfaction related to the helpful and unhelpful aspects of the intervention, reasons for termination, and any suggestions for changes. The satisfaction survey had five questions that required a “yes” or “no” response and two open-ended questions for clients to indicate the positive and negative aspects of the program. All parents who finished PCIT completed this measure at the end of treatment.

TREATMENT COMPLETION

Family treatment completion was determined by reviewing family clinic records for completion of PCIT. Completers were considered those who graduated from treatment after completing both the CDI and PDI modules.

Study Design and Procedures

A one-group, pretest–posttest design was used to evaluate the effectiveness of home-based PCIT services for this population. Specifically, the clinic files of 83 parent–child dyads that received in-home PCIT between 2007 and 2009 were examined to collect information on several measures delivered as a part of usual PCIT services. Pre- to posttest differences were examined for each of the treatment measures for all completers, as well as noncompleters for whom post-assessment data were available. Training of PCIT therapist and the in-home PCIT program delivered to families are described below.

PCIT TRAINING FOR COMMUNITY THERAPISTS

Therapists at the family support agency were trained by a primary PCIT trainer with 7 years of experience providing PCIT to families and training to providers and a cotrainer with 3 years of PCIT experience. Training was delivered over a period of 10 months in 2007 and 2008. Therapists completed workshops that included didactics and role play for the PCIT model. The first 10 sessions the therapists conducted with families post-workshop were monitored, either live or via video recording, by PCIT trainers to ensure competence and treatment integrity. Training included coding work, with success at DPICS coding being achieved when trainees were within two tally marks of the trainer on praise (labeled and unlabeled), behavior descriptions, reflections, commands, negative talk, and questions during a 5-minute coding session. Since training was completed in 2008, the locally trained PCIT supervisor at the agency conducted two fidelity-monitoring sessions per therapist per year to ensure consistency with the PCIT model and to verify coding stayed consistent across team members. In addition, the team held

regular staff in-service training to maintain coding skills and model fidelity and to develop skills around motivation and engagement.

DESCRIPTION OF IN-HOME PCIT

The initial visit with families included an assessment of family strengths and needs that integrated the orientation described in the PCIT manual (Eyberg, 1999). Parents were provided an overview of the PCIT model and consented to treatment. At the second session the PCIT assessment—establishing the baseline for the DPICS measure—was completed. The treating therapist had the following supplies: PCIT-appropriate toys, two-way radios with an earpiece (in-home bug-in-the-ear substitute), plastic tablecloth, clipboard, small timer, and folder with forms and handouts. The PCIT assessment differed from clinic-based PCIT in that a tablecloth was placed on the floor for play if children were under age 6 or there was no table in the home. If there were multiple children, all were permitted in the play area. This modification was necessary because no one was available to supervise the additional children. Similar to the treatment manual, parents were instructed that there would be three situations where parents directed children what to do while the assessor observed the children's behavior. A DPICS coding was completed for 5 minutes of child-led play, 5 minutes of parent-led play, and 5 minutes of clean-up. When coding the parent the therapist coded all verbalizations, regardless of the child to whom they were directed, as long as the child participated (defined as starting out in the play area). The visit concluded with administration of the ECBI for each child aged 2 to 10 years who participated in PCIT and an AAPI for each parent who participated.

After the assessment the family moved into the CDI phase of treatment as described by Hembree-Kigin and McNeil (1995), with a few exceptions. The CDI phase began with a video that described the PCIT treatment process (UC Davis Medical Center, 2000). The therapist then discussed with the family how in-home PCIT differs from the clinic-based PCIT described in the video and explained how the radios and ear-bugs work during coaching. The therapist then explained that she would sit away from the play area to view interactions between the parent and child and would use the handheld radio to communicate with the parent.

During CDI sessions the therapist coached the parents in using praise, reflection, imitation, describing, and enthusiasm (PRIDE skills) as described in the PCIT manual with the following exceptions. If there was more than one child participating in therapy, the therapist coached the parent to work with each child, giving equal amounts of attention. During the play observation, if a child tried to engage the therapist during special play time, the therapist offered no response, or a polite but unenthusiastic response, and redirected the child back to the parent. Parents were coded on DPICS every session, except the first CDI and PDI coaching sessions.

Once the parents met DPICS criteria, meaning they gave 10 labeled praises, 10 reflections, and 10 behavior descriptions in 5 minutes with fewer than three questions, commands, or negative comments, the family moved to PDI. Parents of children aged 7 and older were moved into PDI when they achieved seven labeled praises, seven reflections, and seven behavior descriptions in 5 minutes with fewer than three questions, commands, or negative comments. As outlined in the treatment manual, parents were taught skills for giving good commands and the time-out sequence (Eyberg, 1999). Alternatives to the PDI back-up time-out room as a consequence for children not cooperating with time-out were used due to space restrictions and age-inappropriate conditions in the homes where families served resided. For example, many families shared an apartment with another family and had only the bathroom to use as a time-out room. With many residents using one bathroom, it would have been hard to reserve it for time-out and difficult for parents to ensure the room would be child-safe in advance. For 2-year-olds or developmentally delayed 3-year-olds, a second chair time-out approach was used (as described in Hembree-Kigin & McNeil, 1995). For children 3 years and older a privilege-based reinforcement sticker system was used as detailed in the training materials developed by the Cincinnati Trauma Treatment Training Center. Specifically, the therapist coached the parent to hold up privilege stickers and provide a warning if the child would not walk to the time-out chair or stay in the chair. If the child did not go to or stay in the chair, the child lost the sticker and the corresponding consequence (watching a specific show/video that day, juice with dinner, a particular snack or activity), and the child was actively ignored for 3 minutes. Using these alternative back-up consequences reduced the risk of parents, at high-risk of child maltreatment, engaging physically with their child while taking them to the room (similar to modifications in Chaffin et al., 2004) and added an additional positive discipline technique to parents' skill set.

After parents mastered the PRIDE skills of CDI and the discipline routine of PDI, as measured by their DPICS, they learned to set house rules and use public time-out. Any additional remaining behavior problems were also addressed. Typically, families completed PCIT within 3 to 4 months. At the graduation session the therapist reviewed parents' accomplishments, provided a celebratory snack, presented the parents with completion certificates, re-administered the ECBI and AAPI, and provided a satisfaction survey. If parents indicated they wished to discontinue services before reaching mastery, the therapist asked parents to complete posttreatment paperwork. Most paperwork for noncompleters was obtained in this way. If a family became no longer reachable by home visit or phone for scheduled appointments, a letter was sent requesting a response within 2 weeks or the agency would consider the case closed. If there was no response from families or they expressed a desire to close, then they, or their referring agency, were sent closing paperwork, along with a stamped envelope addressed to the center.

DATA ANALYSES

Paired sample *t*-tests were used to evaluate the effectiveness of the in-home PCIT for participating families by measuring pre–post changes on the ECBI, AAPI, and DPICS for the families.

RESULTS

Preliminary Analyses

Independent samples *t*-tests were run to examine whether group differences emerged between completers and noncompleters for any of the outcome measures. No differences emerged between groups for scores on the ECBI subscales, DPICS, or AAPI.

Pre- to Postchange for Self-Report Measures

Table 1 displays the means, standard deviations, and *t*-tests for the self-report measures of parent completers and noncompleters who provided valid responses on pre- and posttreatment measures. As seen in Table 1, for the ECBI Intensity scores a paired samples *t*-test revealed a significant decrease from pre- to posttreatment for both completers, $t(53) = 7.362$, $p < .0001$, and noncompleters, $t(11) = 3.028$, $p < .05$. Similarly, a paired samples *t*-test indicated significant decreases for the ECBI Problem scores for completers, $t(53) = 6.877$, $p < .0001$, and noncompleters, $t(11) = 2.271$, $p < .05$. The effect size, based on the ECBI *T*-scores, was 1.16. For the AAPI, paired samples *t*-tests revealed that parent completers demonstrated significant positive changes from pre- to posttreatment for inappropriate expectations, $t(47) = -3.65$, $p < .01$, physical punishment, $t(47) = -4.16$, $p < .0001$, and role reversal, $t(47) = -4.39$, $p < .0001$, subscales but not for lack of empathy subscale, $t(47) = -1.205$, $p = 0.234$. No significant differences emerged for the noncompleters from pre- to postassessment on the AAPI subscales. An effect size of 0.541 was demonstrated on the AAPI.

Pre- to Postchange for DPICS

Table 1 also presents the means, standard deviations, and *t*-test results for the DPICS scores for PCIT completers (no data were available for non-completers). Paired samples *t*-tests indicated significant differences for DPICS ratings from pre- to posttreatment for positive interactions between the parent and child, $t(48) = -9.55$, $p < .0001$, negative interactions, $t(48) = 7.20$, $p < .0001$, direct and indirect commands, $t(43) = 3.926$, $p < .0001$; $t(43) = 3.435$, $p < .001$, child disobedience, $t(43) = 5.187$, $p < .0001$, and child

TABLE 1 Pretreatment and Posttreatment Measure Results for In-Home PCIT Completers and Noncompleters

Measure	Pretreatment Scores		Posttreatment Scores		<i>t</i> (<i>df</i>)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Completers					
ECBI Intensity (<i>T</i> -scores)	61.26	9.570	49.13	10.25	7.362 (53)**
ECBI Problem (<i>T</i> -scores)	64.22	11.848	51.24	9.546	6.877 (53)**
AAPI					
Inappropriate expectations	4.63	1.658	5.83	2.167	-3.65 (47)**
Lack of empathy	5.31	2.115	5.65	1.804	-1.205 (47)
Physical punishment	5.02	1.973	6.38	2.100	-4.16 (47)**
Role reversal	4.85	2.423	6.23	2.408	-4.39 (47)**
DPICS					
Child-directed interaction					
Total positives	18.84	10.266	43.78	15.926	-9.55 (48)**
Total negatives	26.29	17.351	9.06	7.690	7.20 (48)**
Parent-directed interaction					
Direct commands	11.39	8.780	5.89	4.053	3.926 (43)**
Indirect commands	8.91	11.739	3.20	2.858	3.435 (43)**
Child obeys	7.20	4.743	6.23	3.443	1.294 (43)
Child disobeys	2.80	2.539	0.82	1.084	5.187 (43)**
Child compliance with opportunity to comply	0.682	0.258	0.861	0.188	-3.81 (43)**
Overall compliance	.3973	.2023	.72951	.2436	-7.72 (42)**
Noncompleters					
ECBI Intensity	64.15	12.041	55.31	12.399	3.028 (12)*
ECBI Problem	65.08	11.172	57.75	11.925	2.271 (11)*
AAPI					
Inappropriate expectations	3.80	1.935	4.07	2.404	-0.405 (14)
Lack of empathy	4.33	2.968	4.27	2.219	0.105 (14)
Physical punishment	5.00	1.964	5.27	2.658	-0.414 (14)
Role reversal	3.87	2.031	4.80	2.859	-2.018 (14)

Note. *Significant at $p < 0.05$, **Significant at $p < 0.01$.

compliance, $t(43) = -3.81, p < .0001$. The overall effect size for the DPICS was 0.87.

Treatment Completion

Of the 83 parent–child dyads, 65.1% of parents completed treatment ($n = 54$). Paired samples *t*-tests revealed significant differences in ethnicity ($p < .01$), language ($p < .01$), and mandate for services ($p < .05$) between completers and noncompleters, with completers more likely to be Latino/a (64.8%), Spanish speaking (61.1%), and not mandated to receive services (92.6%), as compared to noncompleters (37.9% Latino/a, 37.9%, Spanish speaking, and 31% mandated for services, respectively). The mean number of sessions for parents who did not complete treatment was 8.69 ($SD = 5.83$, range = 2–30) versus 17.87 ($SD = 5.75$, range 10–40) for those who finished the PCIT

program. The number of sessions included all sessions the family met with the therapist, including sessions related to assessment and graduation. A significant percentage of noncompleters were unavailable to complete posttest data; however, 37% of noncompleters completed a posttest ECBI and 49% completed the AAPI.

Parent Satisfaction

Most parents reported that they were given clear explanations of what to expect about the program (100% completers, 96% noncompleters), that PCIT was a positive learning experience (100% completers, 86.7% noncompleters), and that they would recommend PCIT to friends or family members (98.3% of total sample). A relatively small percentage of parents reported that 3 months was not enough time for PCIT delivery (23.8% completers, 30.8% noncompleters).

DISCUSSION

The primary purpose of this article was to evaluate the effectiveness of in-home PCIT delivered by community therapists with families at-risk for maltreatment. PCIT was provided in alignment with PCIT International's model (McNeil & Hembree-Kilgin, 2010) in that it included two stages (CDI and PDI), required parents to exhibit mastery, and involved coaching and coding of skills. PCIT was modified from the criteria set by PCIT International by showing a video during the didactic sessions, including siblings throughout the intervention, serving children up to age 10 (similar to studies focused on child maltreatment), and using an alternative to the time-out room as a back-up for time-out (similar to studies focused on child maltreatment). Strong pre- and posttreatment effects were demonstrated for families who completed in-home PCIT, both on parent report measures that were delivered as part of PCIT protocol (ECBI) and on a parent attitude measures for risk of child abuse (AAPI) that were required as part of standard assessment for families by the service agency. The reductions in parent-reported child behavior problems on the ECBI were especially impressive in this population of parents, because many children (51.9% of completers and 48.4% on noncompleters) were not exhibiting clinically significant behavioral symptoms at pretreatment, likely because families were more often referred to treatment for parent skill deficits than for child oppositional behavior. As for parent attitudes measured on the AAPI, significant improvements were reported in three areas: fewer inappropriate expectations, less physical punishment, and reduced role reversal. However, no significant change was observed in parental development of empathy. The focus of PCIT is on behavior modification techniques (active ignoring) and attention as a reward for

positive behavior (Hembree-Kigin & McNeil, 1995). Thus, by nature of the intervention, therapists working with families may under emphasize parent empathy for children's emotional states in favor of consistent rules and consequences for behavior.

Significant improvements in parent-child interactions were observed by the treating therapists as measured by the DPICS. There was a significant increase in positive interactions and compliance. There was also a significant reduction in negative interactions, commands, and child disobedience.

Ware et al. (2006) compared her ECBI intensity scores and percent of child compliance to four other PCIT outcome studies (Eisenstadt et al., 1993; McNeil et al., 1991; Nixon et al., 2003; Schuhmann et al., 1998). Although the ECBI data (Ware et al., 2006) table was in its raw form rather than *T*-score form, a comparison of the pre- and postmeans can be done by translating the means from Ware et al. into *T*-score formats. Table 2 displays mean *T*-scores for ECBI Intensity pretreatment and posttreatment, as well as child compliance rates. The range of means (as *T*-scores) for ECBI Intensity pretreatment went from 67 to 74, with Ware and colleagues being the lowest. The mean ECBI intensity score in the present study was 61.26 for completers. This aligns with the hypothesis that families receiving this intervention are not experiencing the same level of challenging behavior at baseline as families receiving PCIT due to child behavior rather than parent needs. Means for ECBI Intensity posttreatment ranged from 48 to 60, with Ware and colleagues' mean as the lowest (the next lowest was 58). This study found that completers had a mean ECBI Intensity score on the low end of the range, similar to Ware et al., with $M = 49.13$. Child compliance rates at pretreatment ranged broadly from 21.79% to 64% of commands being complied with, relative to the total number of commands, with Ware et al. once again on the low end of the range with a premean of 21.79 and a

TABLE 2 Comparison of ECBI Intensity (*T*-scores) and Child Compliance Rates to Previous Studies

Study	ECBI Intensity Scores		Percent Child Compliance	
	Pre <i>M</i>	Post <i>M</i>	Pre <i>M</i>	Post <i>M</i>
Galanter et al., 2011	61.26	49.13	68.2	86.1
Ware et al., 2006	67	48	21.79	100.00
Nixon et al., 2003	70	58	64	81
Schuhmann et al., 1998	~72	60		
Eisenstadt et al., 1993	71	54	47	73.1
McNeil et al., 1991	74	~53	40.7	70.4

Note. ECBI = Eyberg Child Behavior Inventory; Percent child compliance = total number of times complying divided by total number of commands.

standard deviation of 25.61. The children in this study's sample were relatively compliant to start, with 68.2% showing compliance given the opportunity to comply ($SD = 20.23$). At posttreatment, the mean ranged from 70.4% to 100%. Ware and colleagues were at the top of this range, with the next highest study, by Nixon, at 81%. In this study the percentage of child compliance posttreatment was 86.1% with a standard deviation of 18.8. The pretreatment means obtained on child compliance and ECBI Intensity scores were not as high as those in previous studies, probably because families were referred more to change parent behavior than child behavior. However, the posttreatment means were comparable with previous PCIT studies' outcomes.

Similar to completers, the 11 noncompleters who provided posttreatment assessment data on child behavior had parent-reported significant positive changes in child behavior. These parents completed eight treatment sessions on average, and perhaps the positive improvements in child behavior change was a primary reason for their early termination. However, unlike the completers, the 17 noncompleters who completed the parent attitude survey did not demonstrate changes in parental attitudes. One possible explanation for this finding is that parents with poorer attitudes are more likely to drop out of treatment. Another possibility is that the PDI module of PCIT, which comes later in the treatment protocol and focuses on behavior management techniques, may contain the more active ingredients for improving parent attitudes about childrearing. A third possibility is that a certain dose of PCIT is required to change attitudes. The finding of Chaffin et al. (2004) that parents who completed typical parenting services showed improvements on the ECBI but did not have the reduced rate of future reports of parents who completed PCIT supports this interpretation, given that the AAPI is a valid, reliable measure for risk of child abuse. The improvement in parents' perceptions of current behavior did not address the underlying risk of future negative parent-child interaction and abuse.

A secondary purpose of this was to examine the impact of in-home delivery of PCIT on parent retention and satisfaction. Nearly two-thirds of parents completed PCIT (65.1%). Thus, the attrition rate of 34.9% is a significant improvement from those found in other family therapy services, which often range from 40% to 65% (Wierzbicki & Pekarik, 1993). This rate is similar to what was reported in a recent clinical trial on PCIT, where 36% of parents dropped out of treatment (Fernandez & Eyberg, 2008). Thus, providing PCIT in the home does appear to reduce at least some access barriers and have a positive impact on rates of service completion. These findings are especially noteworthy because this sample of parents may be less motivated to seek and complete treatment due to their children's lower levels of behavior problems as compared with other study samples. Parent satisfaction ratings were also very promising, suggesting that in-home PCIT is both feasible for and acceptable to families.

Limitations of the Current Study

Although this study improves our understanding of the impact of in-home PCIT for at-risk families, several limitations should be considered. First, the threats to internal validity relevant in any single-group design are of concern. Second, there was a relatively small sample size in this study. Third, because this project began as a post-hoc program evaluation, researchers were unable to measure factors involved with the implementation (e.g., fidelity, organization characteristics) of PCIT in this particular community agency that could have impacted results; this limitation negatively impacts the generalizability of these findings.

Additionally, although the observational scores by treating therapists were indicative of significant parent–child interaction progress, the results should be interpreted with some caution. The DPICS observational measure is typically scored by blinded research assistants in clinical trials (Chaffin et al., 2004), allowing for an objective rating of parent–child interaction. However, in this community agency, where PCIT was implemented as usual practice, observations were coded by the treating therapist as required in the PCIT protocol, introducing potential bias to the scoring when examined in a research context. There was no discernible coding bias in the sessions observed per therapist (for the purpose of model fidelity this was 10 per therapist initially, along with two more annually) that were coded by another therapist; 21% of DPICS coding included in the study had a reliability coder. For these sessions the therapists were coding with fidelity to the other team members using the criteria established in the abridged coding manual (Chase & Eyberg, 2006).

A final weakness to be noted is the limited posttreatment data available for noncompleters of the program. Although it was fortunate to have some data on noncompleters, the subset that were located and agreed to complete closing paperwork after terminating services are likely a biased sample. Parents who terminated services and refused all contact with program staff may not have exhibited as much positive progress. Nonetheless, the progress of this group is encouraging and may indicate that fewer treatment sessions are necessary to improve child behavior when PCIT is delivered in the home setting versus clinic setting.

Conclusions and Future Directions

Overall, this study suggests that PCIT delivered in the home setting can have a positive impact on parent and child behavior, consistent with the findings of Ware (2008). Additionally, delivering PCIT in the home setting appears to offer many of the clinical advantages indicated by Masse and McNeil (2008), including improving retention and significant family satisfaction with services. Subsequent to this initial evaluation, it is recommended that future

work compare the two delivery approaches of PCIT in a randomized clinical trial to further understand whether the additional clinical advantages of in-home delivery postulated by Masse and McNeil (e.g., ecological validity, generalization) result in better outcomes for families than clinic-delivered PCIT, particularly for families where risk of maltreatment is the primary concern given the results found by Timmer et al. (2010). Based on the limitations of the study design outlined previously, findings must be interpreted with caution, and further research is recommended to test these same hypotheses through a more rigorous study design. Further investigations focused on parents at-risk of maltreatment should ideally collect data on maltreatment reports and re-reports to track real-world results.

Future research could also further explicate the key ingredients needed for effective PCIT delivery. For instance, because some success has been found with in-home delivery approaches, it may be unnecessary to require two rooms and a one-way mirror in standard PCIT delivery in the clinic setting. In addition, the success in this study of using second chair or privilege removal as consequences for refusing to go to or leaving the time-out chair (as opposed to a time-out room) warrants further research comparing consequences for leaving time-out, particularly for therapists using PCIT to build stronger parent-child relationships (as opposed to treating conduct disorder). The newly published second edition of *Parent-Child Interaction Therapy* establishes some important modifications to PCIT, including setting as standard the use of a backup time-out room for teaching children to stay in the time-out chair (McNeil & Hembree-Kilgin, 2010). Given that the Centers for Disease Control and Prevention Task Force on Community Preventive Services recommendation that families at-risk for child abuse be served in their homes to reduce barriers to treatment (Briss et al., 2000) and that many of those settings may not be easily adapted to create a time-out room, a randomized trial comparing the efficacy of alternative methods to the time-out room would be very important for those using PCIT as a parenting intervention. Using the privilege removal method as a back up to time-out has the added benefit of giving parents practice using a skill (taking small, meaningful privileges away) that gives them an additional positive discipline tool. The Kaufman Report (Chadwick Center on Children and Families, 2004) indicates PCIT is one of three best practices in response to abuse and neglect; it is essential that this tool be accessible to the high-risk families who need it most.

Additional PCIT research is needed that includes a parental attitude measure to determine the reasons for little or no change in parental attitudes for noncompleters. Although some noncompleters in this study likely discontinued treatment due to positive behavior changes in their children, they demonstrated no significant changes in parental attitudes as measured by the AAPI. There are multiple possible explanations for this lack of change, including parental attitude contributing to noncompletion or additional sessions or PDI training being necessary to affect parental attitudes.

However, further research with a comparative parental attitude measure is necessary.

Further research is also warranted on the inclusion of siblings in PCIT throughout treatment to address the logistical barrier of lack of childcare for siblings of the identified child. This modification allows parents to develop their skills to fit the situations they face in the home and may have an impact on the time it takes parents to learn the skills, as well as parent satisfaction.

The population served by the community agency of study was a very diverse and high-risk population (impoverished, ethnic minority, limited English) and, thus, quite different from many of the families included in the clinical trials where strict inclusion and exclusion criteria were delineated. Although there is emerging research examining the effectiveness of PCIT with different cultural and language groups, including Puerto Rican (Matos, Torres, Santiago, Jurado, & Rodriguez, 2006), Mexican American (McCabe & Yeh, 2009), and Chinese (Leung, Tsang, Heung, & Yiu, 2009), the success of this intervention without culturally adapting PCIT indicates that the model can have success with populations very different from those in the original clinical trials.

This study offers support that PCIT is an appropriate program for working with families at highrisk for maltreatment in the community setting, particularly Latino families. One of the most contentious issues in the field is the extent to which research-based treatment programs can be delivered in community settings and achieve or approach the outcomes seen in randomized trials (Hunsley & Lee, 2007). The agency that participated in this study was conducting PCIT as part of their services as usual with no outside evaluators involved in the post-PCIT training. The entire evaluation for this study was conducted through record review by researchers at a university with no affiliation to the services agency before summer of 2009, and there was no contact with families by the researchers. Thus, this agency is one example of a successful research-to-practice application, where an evidence-based practice was fully used within the constraints of a real-world setting and related positive outcomes were found in the families served.

REFERENCES

- Barth, R. P., Landsverk, J., Chamberlain, P., Reid, J. B., Rolls, J. A., Hurlburt, M. S., . . . Kohl, P. L. (2005). Parent-training programs in child welfare services: Planning for a more evidence-based approach to serving biological parents. *Research on Social Work Practice, 15*, 353–371.
- Bavolek, S. J. (1990). *Research and validation report of the Adult-Adolescent Parenting Inventory*. Park City, UT: Family Development Resources.
- Bavolek, S. J., & Keene, R. G. (2001). *Adult-Adolescent Parenting Inventory: AAPI-2 administration and development handbook*. Park City, UT: Family Development Resources.

- Briss, P. A., Zaza, S., Pappaioanou, M., Fielding, J., Wright-De Agüero, L., Truman, B. I., . . . Harris, J. R. (2000). Developing an evidence-based guide to community preventive services—methods: The task force on community preventive services. *American Journal of Preventive Medicine*, *18*(1 Suppl), 35–43.
- Bugental, D. B., Ellerson, P. C., Lin, E. K., Rainey, B., Kokotovic, A., & O'Hara, N. (2002). A cognitive approach to child abuse prevention. *Journal of Family Psychology*, *16*, 243–258.
- Chadwick Center on Children, & Families. (2004). *Closing the quality chasm in child abusetreatment:Identifying and disseminating best practices*. Retrieved from <http://www.chadwickcenter.org/Documents/Kaufman%20Report/ChildHosp-NCTA brochure.pdf>
- Chaffin, M., Silovsky, J. F., Funderburk, B., Valle, L. A., Brestan, E. V., Balachova, T., . . . Bonner, B. L. (2004). Parent-child interaction therapy with physically abusive parents: Efficacy for reducing future abuse reports. *Journal of Consulting and Clinical Psychology*, *72*, 500–510.
- Chase, R., & Eyberg, S. (2006). *Abridged manual for the dyadic parent-child interaction coding system (3rd ed.)*. Gainesville: University of Florida.
- Crouch, J. L., Milner, J. S., Skowronski, J. J., Farc, M. M., Irwin, L. M., & Neese, A. (2010). Automatic encoding of ambiguous child behavior in high and low risk for child physical abuse parents. *Journal of Family Violence*, *25*, 73–80. doi:10.1007/s10896-009-9271-2
- Curtis, N. M., Ronan, K. R., Heiblum, N., & Crellin, K. (2009). Dissemination and effectiveness of multisystemic treatment in New Zealand: A benchmarking study. *Journal of Family Psychology*, *23*, 119–129.
- Dore, M. M., & Lee, J. M. (1999). The role of parent training with abusive and neglectful parents. *Family Relations*, *48*, 313–325.
- Eisenstadt, T. H., Eyberg, S. M., McNeil, C. B., Newcomb, K., & Funderburk, B. (1993). Parent-child interaction therapy with behavior problem children: Relative effectiveness of two stages and overall treatment outcomes. *Journal of Clinical Child Psychology*, *22*, 42–51.
- Eyberg, S. (1999). *Parent-child interaction therapy: Integrity checklists and session materials*. Gainesville: University of Florida.
- Eyberg, S. M. (1988). Parent-child interaction therapy: Integration of traditional and behavioral concerns. *Child & Family Behavior Therapy*, *10*, 33–46.
- Eyberg, S. M., & Pincus, D. (1999). *Eyberg Child Behavior Inventory Sutter Student Behavior Inventory—Revised professional manual*. Odessa, FL: Psychological Assessment Resources.
- Eyberg, S. M., Nelson, M. M., Duke, M., & Boggs, S. R. (2005). *Manual for the dyadic parent-child interaction coding system (3rd ed.)*. Gainesville: University of Florida.
- Fernandez, M. A., & Eyberg, S. M. (2008). Predicting treatment and follow-up attrition in parent-child interaction therapy. *Journal of Abnormal Child Psychology*, *37*, 431–441.
- Guterman, N. B. (1997). Early prevention of physical child abuse and neglect: Existing evidence and future directions. *Child Maltreatment*, *2*, 12–34.
- Hembree-Kigin, T., & McNeil, C. (1995). *Parent-child interaction therapy*. New York, NY: Plenum.

- Hood, K. K., & Eyberg, S. M. (2003). Outcomes of parent-child interaction therapy: Mothers' reports of maintenance to six-years after treatment. *Journal of Clinical Child and Adolescent Psychology, 32*, 419–429.
- Hunsley, J., & Lee, C. M. (2007). Research-informed benchmarks for psychological treatments: Efficacy studies, effectiveness studies, and beyond. *Professional Psychology: Research and Practice, 38*, 21–33.
- Leung, C., Tsang, S., Heung, K., & Yiu, I. (2009). Effectiveness of parent-child interaction therapy (PCIT) among Chinese families. *Research on Social Work Practice, 19*, 304–313.
- Masse, J. J., & McNeil, C. B. (2008). In-home parent-child interaction therapy: Clinical considerations. *Child and Family Behavior Therapy, 30*, 127–135.
- Matos, M., Bauermeister, J. J., & Bernal, G. (2009). Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behavior problems: A pilot efficacy study. *Family Process, 48*, 232–252.
- McCabe, K., & Yeh, M. (2009). Parent-child interaction therapy for Mexican Americans: A randomized clinical trial. *Journal of Clinical Child & Adolescent Psychology, 38*, 753–759.
- McNeil, C. B., & Hembree-Kilgin, T. L. (2010). *Parent-child interaction therapy* (2nd ed.). New York, NY: Springer.
- Mersky, J. P., Berger, L. M., Reynolds, A. J., & Gromoske, A. N. (2009). Risk factors for child and adolescent maltreatment: A longitudinal investigation of a cohort of inner-city youth. *Child Maltreatment, 14*, 73–88.
- Minami, T., Wampold, B. E., Serlin, R. C., Kircher, J. C., & Brown, G. S. (2007). Benchmarks for psychotherapy efficacy in adult major depression. *Journal of Consulting and Clinical Psychology, 75*, 232–243.
- Miranda, J., Bernal, G., Lau, A., Kohn, L., Hwang, W. C., & La Fromboise, T. (2005). State of the science on psychosocial interventions for ethnic minorities. *Annual Review of Clinical Psychology, 1*, 113–142.
- Phillips, J., Morgan, S., Cawthorne, K., & Barnett, B. (2008). Pilot evaluation of parent-child interaction therapy delivered in an Australian community early childhood clinic setting. *Australian and New Zealand Journal of Psychiatry, 42*, 712–719.
- Schuhmann, E. M., Foote, R. C., Eyberg, S. M., Boggs, S. R., & Algina, J. (1998). Efficacy of parent-child interaction therapy: Interim report of a randomized trial with short-term maintenance. *Journal of Clinical Child Psychology, 27*, 34–45.
- Schumacher, J. A., Slep, A. M. S., & Heyman, R. E. (2001). Risk factors for child neglect. *Aggression and Violent Behavior, 6*, 231–254.
- Stith, S. M., Liu, T., Davies, C., Boykin, E. L., Alder, M. C., Harris, J. M., . . . Dees, J. E. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior, 14*, 13–29.
- Timmer, S., Urquiza, A., McGrath, J., & Zebell, N. (2005). Parent-child interaction therapy: Application to maltreating parent-child dyads. *Child Abuse and Neglect, 29*, 825–842.
- Timmer, S. G., Zebell, N. M., Culver, M. A., & Urquiza, A. J. (2010). Efficacy of adjunct in-home coaching to improve outcomes in parent-child interaction therapy. *Research on Social Work Practice, 20*, 36–45.

- UC Davis Medical Center (Producer). (2000). *Parent child interaction therapy: How to better manage your child's behavior* [DVD]. Available from <http://www.pcit.org>
- Ware, L. M., McNeil, C. B., Masse, J., & Stevens, S. (2008). Efficacy of in-home parent child interaction therapy. *Child & Family Behavior Therapy, 30*, 99–126.
- Whaley, A. L., & Davis, K. E. (2007). Cultural competence and evidence-based practice in mental health services: A complementary perspective. *American Psychologist, 62*, 563–574.
- Whitaker, D. J., Lutzker, J. R., & Shelley, G. A. (2005). Child maltreatment prevention priorities at the Centers for Disease Control and Prevention. *Child Maltreatment, 10*, 245–259.
- Wierzbicki, M., & Pekarik, G. (1993). A meta-analysis of psychotherapy dropout. *Professional Psychology, Research and Practice, 24*, 190–195.