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Does Parent Training Format Affect Treatment Engagement? A Randomized Study of Families at Social Risk?

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Abstract

We examined whether parent engagement in parent training (PT) differed based on PT format (parent group-based with video versus mastery-based individual coaching with child) in an economically disadvantaged sample of families seeking behavioral treatment for their preschool children in an urban mental health clinic. Parents (N=159; 76.1% mothers, 69.8% African American, 73% low-income) were randomized to one of two interventions, Chicago Parent Program (parent group + video; CPP) or Parent Child Interaction Therapy (individualized mastery-based coaching; PCIT). Parent engagement indicators compared were PT attendance and completion rates, participation quality, and parent satisfaction. Risk factors predictive of PT attrition (parent depression, psychosocial adversity, child behavior problem severity, length of wait time to start PT) were also compared to determine whether they were more likely to affect

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Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the Johns Hopkins Institutional Research Board. Informed consent was obtained from all individual participants included in the study.

Author Contributions:
DG: designed and led the study and wrote the majority of the manuscript. HB: collaborated on the study design, co-led the study, and helped write and edit the manuscript. CB: led the data analyses and helped write and edit the manuscript MO: collected the data and helped write and edit the manuscript. MKU: collaborated in the data analysis and helped write and edit the manuscript.

engagement in one PT format versus the other. No significant differences were found in PT attendance or completion rates by format. Clinicians rated parents' engagement higher in PCIT than in CPP while satisfaction with PT was rated higher by parents in CPP compared to PCIT. Never attending PT was associated with more psychosocial adversity and externalizing behavior problems for CPP and with higher baseline depression for PCIT. Parents with more psychosocial adversities and higher baseline depression were less likely to complete PCIT. None of the risk factors differentiated CPP completers from non-completers. Delay to treatment start was longer for PCIT than CPP. Strengths and limitations of each PT format are discussed as they relate to the needs and realities of families living in urban poverty.

Keywords

Parent training; treatment engagement; socioeconomic disadvantage; Parent Child Interaction Therapy; Chicago Parent Program; psychosocial adversity

Introduction

Parent training (PT) is the most well-established treatment approach for reducing conduct problems in young children (Comer, Chow, Chan, Cooper-Vince, & Wilson, 2013; Epstein, Fonnesbeck, Potter, Rizzone, & McPheeters, 2015; Furlong et al., 2012). Although there are many different PT programs available, there are fundamental consistencies across most of them. For example, all PT programs function under the assumption that parents can increase their capacities to become the change agents for their children's behavioral difficulties by helping parents change their own behavior. Most PT programs follow the same theoretical principles based on social learning theory and teach similar strategies such as positive reinforcement, effective limit setting, problem-solving skills, and managing negative affect (Garland, Hawley, Brookman-Frazee, & Hurlburt, 2008; Reyno & McGrath, 2006). All programs include "homework" so parents can practice the new skills with their children between PT sessions. Finally, PT programs are typically guided by a manual detailing essential intervention components and the order of implementation to control for treatment fidelity across clinicians (Garland et al., 2008).

Despite these similarities, PT programs vary widely in their format (i.e., group-based, individual coaching); delivery strategy (i.e., face to face versus digital/online delivery), length and number of sessions needed to complete treatment, and whether children are involved in the treatment sessions or parents alone are the target of intervention (Kaminski, Valle, Filene, & Boyle, 2008). These are important differences that have implications for parents, who may prefer or respond better to one format over another, clinicians who may not be or may not wish to become trained in a particular PT modality, and clinic administrators whose concern for cost and efficiencies may dictate which PT formats are most acceptable for the agency to invest in (Herman-Smith, Pearson, Cordiano, & Aguirre-McLaughlin, 2008; Wymbs et al., 2016).

However, if parents do not participate in PT, no one benefits. Attrition rates from PT are substantial. A recent systematic review of parent engagement rates in behavioral parent training studies found that on average, 25% of eligible parents refused to participate in PT

and 26% dropped out before initiating PT(Chacko et al., 2016). Of those who did participate in PT, attendance rates tended to be higher in programs using individual formats (84% of sessions attended) than group-based formats (71% of sessions).

Understanding how differences in PT formats affect parent attendance and completion, quality of participation, and satisfaction with PT is a critically important question, particularly for parents who have low-incomes, limited formal education, or a history of mental health problems. Parents who have psychosocial risk factors appear to have greater difficulties engaging in child mental health treatment compared to other parents (Haine-Schlagel & Walsh, 2015). Historically underserved populations, including African Americans and families living in poverty, are also at increased risk of prematurely dropping out of PT (Chacko et al., 2016; Lundahl, Risser, & Lovejoy, 2006). High rates of premature drop out limit the potential benefit of evidence-based PT treatments for children from historically underserved populations and contribute to the well-documented economic-based and racial and ethnic disparities in child mental health treatment (Alegria, Alvarez, Ishikawa, DiMarzio, & McPeck, 2016; Harrison, McKay, & Bannon, 2004; Hodgkinson, Godoy, Beers, & Lewin, 2017).

There are multiple advantages and disadvantages of each PT format that could affect parent engagement and that need to be considered. For example, there are a number of advantages to group-based PT. Multiple families are treated at one time, using fewer resources (i.e., less therapist time, clinic space, administrative time per parent), which can make group-based PT more cost-efficient than individual PT modalities (Wymbs et al., 2016). Group-based formats may benefit parents through participation in a therapeutic group with other parents who share their experiences. These shared experiences can help validate parents' childrearing frustrations and successes and offer parents alternative solutions based on other group members' experiences (Cunningham et al., 2013; Taylor & Conger, 2017). The use of video vignettes as part of the group discussion can be highly effective for raising parents' awareness of ineffective strategies parents sometimes use that trigger or maintain misbehavior as well as helping parents visualize new, more effective strategies they may never have seen before (Gross, Garvey, Julion, & Fogg, 2007). These features, which can also serve to "normalize" the experience of raising a child with challenging behavior, can minimize the stigma associated with seeking mental health treatment.

However, there are several challenges associated with group-based PT in a clinic setting. Group-based PT modalities are highly structured, resulting in the loss of flexibility to individualize treatments to each parents' needs and level of skill acquisition or to change meeting times to better suit parents' individual preferences. Set group times can lead to more schedule conflicts for families who have limited control over their work hours, competing family demands, or limited access to transportation. In addition, parents enrolled in a group may have to delay starting PT until the required number of parents for the group has completed the clinic intake process and all parents are ready to start. This delay could be substantial for those enrolled early if it takes a while to compose a full group of parents. Another limitation is the inability of parents who miss one or more sessions to acquire the missed content. Even if the clinician is able to provide the content in an abbreviated form, the full therapeutic benefit of the parent group process is lost. Another challenge is that

parents in the group may progress at different rates with some parents needing more time than others to fully comprehend and effectively apply the new content. Finally, some parents may be reluctant to participate in a group PT format because of discomfort disclosing to and trusting others, limited interpersonal skills, or wanting more individualized help. All of these limitations to a group-based PT format are likely to affect parent engagement in group-based PT.

In contrast, individual PT approaches are often more flexible and capable of being individualized to the needs of the parent and child. As a result, schedule conflicts are less likely to interfere with PT sessions and delays in starting PT may be less likely to occur because treatment can commence once a clinician becomes available and a mutually agreeable time is set. For families participating in individual PT, treatment can progress at a rate more closely linked to the parents' ability to learn the new skills. If the child is included in the treatment, clinicians can directly observe parents' skill acquisition and tailor the intervention accordingly, a benefit not available in most group-based PT models. Indeed, this opportunity for in vivo practice and feedback has been found to be a particularly powerful aspect of individual coaching formats (Kaminsky, Valle, Filene & Boyle, 2008). Finally, missed sessions do not mean that content will not be delivered, only that it will be delivered at a later time when the parent returns to treatment.

However, individual PT that requires parents to master each skill before learning another may take longer to complete than anticipated by parents, the agency, or payers. Compared to group PT formats, individual PT formats based on mastery attainment may be more arduous and challenging for parents who are already stressed due to psychosocial adversity. Individual PT can also be more costly to parents because of additional travel and, for many parents, added time off from work to participate in more than a set number of PT sessions. As a result, parents may be more likely to initiate individual PT (because treatment sessions can be scheduled more conveniently) but less likely to complete PT if treatment progresses over a longer period of time than they had anticipated or can accommodate.

Previous studies have examined parents' preferences for group versus individual PT and found that parents who were single, had less education and had lower incomes tended to prefer individual over group-based PT (Wymbs et al., 2016). However, it is unclear whether these preferences would influence actual engagement in treatment if that was the only format provided. A recent study by Niec, Barnett, Prewett, & Shanley Chatham, (2016) compared a 14-week individual PCIT format with a 14-week group-based PCIT format and found no differences in attendance, homework completion, parent satisfaction, or clinician rated parent participation. They also found that the majority of parents completed PCIT, regardless of the format to which they were randomized. However, the individual PCIT format used, modified to fit within a 14-week time frame regardless of whether parents mastered the skills, was a substantial deviation from the standard protocol required of certified PCIT clinicians in real world settings. In addition, nearly all families in this sample were White and educated beyond the high school level, limiting the extent to which the findings from this study can be generalized to parents with limited education and raising young children in urban poverty. Parents from economically and educationally disadvantaged backgrounds tend to experience more stress and daily life challenges because

of their limited access to resources that support families with young children (e.g., access to affordable high quality childcare, employment opportunities, safe neighborhoods, and stable housing) (Borre & Kliewer, 2014). In order to improve parent engagement in PT, particularly for low-income and racially and culturally diverse populations at greatest risk of not engaging in their children's mental health treatment, we need to understand how different PT modalities when implemented as prescribed in real world contexts influence parents' likelihood of attending and completing PT.

The purpose of this study is to examine whether parent engagement in face to face PT differs by PT format in a sample of low-income, predominantly African American parents seeking behavioral treatment for their 2- to 5-year old children. For this study, parent engagement is defined by multiple indicators including parent attendance at their PT session, completion of PT treatment as prescribed, quality of parent participation during the PT sessions, and parent satisfaction with treatment. We also wanted to understand whether certain risk factors, identifiable at intake, would predict parent engagement in individual or group-based PT. Based on prior research showing that severity of child behavior problems at treatment entry, parent mental health, and history of psychosocial adversity are associated with PT participation, we also explored the extent to which these factors differentiate PT participation and completion by treatment format (Chacko et al., 2016; Leijten, Raaijmakers, de Castro, & Matthys, 2013; Ofonedu, Belcher, Budhathoki, & Gross, 2017). Finally, given that PT format can affect the length of time parents may have to wait to initiate PT, we hypothesized that parents assigned to group-based PT would experience longer delays to treatment start than parents assigned to individual PT and that treatment delay would be associated with not initiating PT.

Method

Participants

To best inform practice, it is particularly important to conduct these studies in real world settings, where the families served have multiple and complex problems and the treatments are delivered by the practitioners employed at the clinic using only the resources normally available (Ghate, 2016; Weisz, Krumholz, Santucci, Thomassin, & Ng, 2015). Therefore, to enhance generalizability, this study was conducted in a large urban, fee-for-service mental health clinic serving a predominantly low-income, African American population of families in Baltimore, MD with complex social and emotional needs and all PT treatments were delivered by licensed clinicians employed at the clinic. Approximately 80% of the population served in this clinic are African American and 97% receives Medicaid. Inclusion criteria were that the "parent" was a biological or adoptive parent or legal guardian seeking mental health treatment for their 2- to 5-year old child because of behavior problems, spoke English, and was willing to be randomized to one of two evidence-based PT programs that use different treatment formats: The Chicago Parent Program (CPP) or Parent-Child Interaction Therapy (PCIT). Parent exclusion criteria were parents who had severe mental illness, were actively using alcohol or drugs, or had low IQ or limited cognitive capacities as these characteristics would interfere with parents' abilities to fully participate in PT. Foster parents or relatives without legal status for the target child were excluded as they might not

have been able to complete the full study. Children who were actively suicidal, psychotic, or diagnosed with autism or Pervasive Developmental Disorder were also excluded from the study. These exclusion criteria were assessed by a licensed clinician during the diagnostic interview. Excluded families were referred for other appropriate treatments at the clinic.

The sample consisted of 159 parents seeking treatment for their 2- to-5-year old children's behavior problems. Most study parents were the target child's mother (76.1%), had attained a high school diploma/GED or less (58.5%), were unemployed (59.7%), were African American (69.8%), and were unmarried (74.8%). As shown in Table 1, there were no significant differences by PT condition on the parents' relationship to the target child, highest level of education achieved, race, employment status, marital status, baseline depression scores, or psychosocial adversities. The majority of parents in both conditions reported annual household incomes less than $20,000. Overall, the sample represents a highly vulnerable population of families seeking mental health care for their young child. As shown in Table 2, there were no significant differences on child age, gender, mean baseline CBCL externalizing or internalizing scores, or primary psychiatric diagnosis by treatment condition.

Clinicians at this agency used evidence-based manualized therapies; PCIT and CPP were two of over 10 different evidence-based therapies offered to families (e.g., Trauma-Focused Cognitive Behavioral Therapy, Child-Parent Psychotherapy). To reduce barriers to attendance, the clinic provides cab service to and from the clinic for families who require this service and reside within 20 miles of the clinic, child-care for siblings not participating in the treatment session, check-in calls for families on the wait-list, and appointment reminder calls. Average wait time from phone intake to study participants' first scheduled treatment session (regardless of whether they attended the session) was 87.9 days (SD = 57.4).

Procedures

Using a block randomization procedure, parents were randomly assigned to CPP or PCIT in blocks of 10; the first randomized block of 10 participants was randomly selected using a coin flip. This procedure enabled us to recruit continuously for CPP until a full group of 10 parents was enrolled and parents in PCIT had time to complete their treatment, creating clinician openings for the next block of PCIT participants. Families were recruited into the study from the clinic population after parents had completed the phone intake and diagnostic intake interview process and their eligibility could be established. Diagnostic intake includes a comprehensive parent interview to collect a psychosocial history; a medical and mental health history of the parent, child and family; and an emotional, behavioral, and developmental assessment of the child. Following the diagnostic interview, determination of study eligibility was made. Eligible parents were approached with information about the study to determine their interest in participating. All of the 161 parents approached about the study consented to participate. Following consent, parents completed a series of baseline measures (described below) and were randomized to one of the two PT formats. Two parents withdrew from the study following consent but before baseline assessments were obtained, leaving a final sample of 159 parents and children.

All PT sessions were led by licensed masters- or doctorally prepared clinicians employed at the clinic between 2012 and 2016 and who had been previously trained in either CPP or PCIT. There was no clinician crossover of treatments (i.e., clinicians only implemented CPP or PCIT) and no participant crossover of treatments (i.e., parents could only participate in CPP or PCIT). Parents in both conditions could request individual therapy sessions if they needed additional support or crisis intervention beyond PT. Each of these PT programs are described below.

The Chicago Parent Program—The Chicago Parent Program (CPP) is a 12-session group-based PT program that uses video vignettes, group discussion, and role-play exercises (Gross et al., 2009). To address the lack of evidence-based PT programs for families of color raising young children in low-income urban communities, the CPP was designed in collaboration with an advisory board of African American and Latino parents from low-income urban communities to ensure that the content, program principles, and video vignettes were relevant, culturally sensitive, and ecologically valid (Gross et al., 2007). The two-hour weekly CPP sessions are typically comprised of eight to 12 parents and are led by two clinician group leaders. Parents view and discuss over 150 brief video vignettes of parents and children engaged in a range of situations in their homes and in public settings that are designed to stimulate discussion and problem-solving. Sessions focus on skills for building positive parent-child relationships such as following the child's lead and effective use of praise (sessions 1-4); child behavior management skills such as using clear commands and strategies for following through on commands (sessions 5-8); stress management and problem-solving skills (sessions 9-10), and skill maintenance (sessions 11-12). Parents are assigned weekly homework to help them practice the new skills with their children; parents discuss their successes and challenges using the new skills at the following session. Children do not participate in group sessions so childcare is provided during the CPP sessions. To create a nurturing environment for the group, refreshments are provided for parents and their children. In prior research focused on economically disadvantaged families and families of color, approximately 38% of parents who enrolled in CPP never attended (Gross et al., 2009); 14% of enrolled parents completed the program (Garvey, Julion, Fogg, Kratovil, & Gross, 2006).

Over the course of the study, four clinicians implemented the CPP group sessions and submitted audio recordings of all of their CPP sessions for independent fidelity rating. These clinicians had previously completed the 2-day CPP training workshop and passed a written exam testing their knowledge of CPP content. Fidelity of audio recorded sessions was assessed using the Chicago Parent Program Fidelity Checklist (Breitenstein et al., 2010). This checklist measures clinician competence on 15 skill items (scale scores range from 1 to 3, with higher scores indicating greater group-leader skill) and adherence to session-specific protocols (rated as a percent of CPP components completed during the session). Mean group leader competence scores on a random selection of 20% of audio recorded CPP sessions was 2.7 (SD=0.24). Mean adherence was 85% (SD=1.0%).

Parent-Child Interaction Therapy—Parent-Child Interaction Therapy (PCIT) uses an individualized coaching format in which children and parents are treated together in 1-hour

sessions (S. M. Eyberg et al., 2001). The parent wears an earpiece that enables them to hear what the clinician is saying to them as they coach the parent from behind a one-way-mirror. There are two sequential phases to PCIT: child-directed interaction (CDI) and parent-directed interaction (PDI). During CDI, parents learn skills for building positive interactions with their children (e.g., following the child's lead during play, effective use of praise) and strengthen their sense of parenting efficacy. Once parents master these skills, they progress to the PDI phase. During PDI, parents learn child behavior management strategies (e.g., giving clear commands, following through on commands). Parents are assigned weekly homework to help them practice the new skills with the child between sessions. Stress management and problem-solving skills are woven into PCIT sessions. Prior to initiating PCIT, each family participates in systematic evaluation of parent and child interaction and child behavior (Hembree-Kigin & McNeil, 1995). This allows PCIT to be tailored to the individual needs of the child and family and serves as a baseline evaluation for child behavior and parenting skills.

At the beginning of each PCIT session, parents are asked about their child's behavior over the preceding week with a focus on problem-solving and generalization of skills. Treatment progress is monitored by the clinician at each session using program-specific assessments of child behavior and parents' observed use of the new skills. Most families who complete PCIT reach mastery (i.e., complete CDI and PDI) in 10 to 20 sessions over 3 to 4 months, although more sessions over a longer period of time have been reported for economically disadvantaged families to complete PCIT (Budd, Hella, Bae, Meyerson, & Watkin, 2011; Franco, Soler, & McBride, 2005).

Attrition rates from PCIT have varied across studies but have typically been higher among those who were more economically disadvantaged and from racial and ethnic minority backgrounds. For example, Fernandez & Eyberg, (2009) reported a 36% attrition rate in their predominantly White and economically mixed sample while Lyon & Budd, (2010) reported a 71% attrition rate in their predominantly low-income, ethnic minority sample.

Four clinicians implemented all of the PCIT sessions for this study and submitted video recordings for independent fidelity ratings to PCIT International. These clinicians had previously completed the PCIT training requirements (see http://www.pcit.org for PCIT certification training requirements) and during the course of the study became certified as PCIT providers. Certification required PCIT clinicians to demonstrate mastery in administering and scoring standardized PCIT measures used for assessment and treatment planning, achieve 80% agreement with a PCIT trainer in scoring observed parent and child behavior (based on live coding or coding from a criterion video recording), meet at least 85% treatment integrity for CDI and PDI protocols, and pass a written exam that assessed their knowledge of PCIT. Based on achieving these benchmarks, PCIT fidelity for this study was high.

Measures

Parent participation in PT—CPP and PCIT differ in session length (2 hour sessions for CPP versus 1 hour sessions for PCIT) and numbers of sessions (12 sessions for CPP versus a variable number of PCIT sessions linked to parent pace of mastery) and therefore,

comparing participation by number of sessions attended would not be meaningful. Parent participation was measured in two ways: (1) whether parents attended any PT sessions (i.e., “attenders”) and (2) whether they completed PT (i.e., “completers”). For PCIT, which can have an indefinite number of sessions, parents who achieved mastery by completing the CDI and PDI portions of the program are defined as PCIT completers. For CPP, parents who attended at least 80% of the CPP sessions (i.e., at least 10 of 12 sessions) are considered to be CPP completers. This threshold for CPP completion is based on the fact that new parenting skills content is taught in the first 10 sessions while the last two sessions focus solely on review and skill maintenance. If a parent missed one or two of the first 10 sessions, they will still be exposed to that content in the last two sessions. We examined whether parents were more likely to attend or complete treatment when randomly assigned to one PT format compared to the other.

Quality of parent participation in PT—Following the parent’s last PT session, clinicians assessed the extent to which that parent had been actively engaged in PT using the Engagement Form (Garvey et al., 2006). This 7-item measure taps the degree to which parents appeared to attend to and understand the content delivered through the coaching (PCIT) or videos and group discussion (CPP), actively participated in PT sessions, were willing to disclose personal experiences, were not resistant to new ideas, and correctly applied the principles and strategies taught in the sessions and in the assigned homework. Items are scored on a 4 point scale of “not at all” to “most of the time” with higher scores indicating higher quality of parent participation in PT sessions. All parents who attended at least one PT session were assessed for participation quality by their assigned clinician. Validity of the Engagement Form has been supported in previous studies showing its significant relationship with improvements in teachers’ and parents’ ratings of child behavior problems and PT implementation fidelity (Breitenstein et al., 2010; Garvey et al., 2006). Cronbach’s alpha reliabilities for the Engagement Form were 0.80 for the CPP condition and 0.75 for the PCIT condition. We examined whether quality of parent participation differed by PT format.

Parent satisfaction with PT—Following the parent’s last PT session, parents completed a Likert-type Program Satisfaction form assessing the extent to which they believed they and their children’s behavior had improved as a result of the PT program, the extent to which different components of the program were difficult for them to do and were useful, and whether they would recommend the PT program to other parents. This form is completed with a research assistant and is not shared with the clinician. For this study, we compared parents’ satisfaction ratings by PT format on 3 items analyzed separately: (1) the extent to which they believe their child’s behavior is now worse, the same, better, or much better than before they started PT; (2) how satisfied they were with the parent sessions on a 4-point scale of very dissatisfied to very satisfied; and (3) whether they would highly recommend, recommend, or not recommend this treatment program to another parent. Parents who attended at least one PT session completed this measure.

Length of treatment delay—Length of treatment delay was calculated using the number of days between the parent’s initial phone intake appointment at the clinic and the date of

their first scheduled PT session, regardless of whether the parent attended the first PT session. Based on the assumption that PT groups would take longer to form and get started than scheduling an initial PCIT session, we hypothesized that the length of treatment delay would be greater for parents randomized to CPP than to PCIT.

Parent depressive symptoms—At baseline, parents completed the Center for Epidemiologic Studies Depression Scale-Revised (CESDR), a 20-item measure of depressive symptoms. The validity of the CESDR has been demonstrated in prior studies confirming its factor structure and equivalence with other measures of depression (Van Dam & Earleywine, 2011). Cronbach's alpha reliability in this sample was 0.92. Based on prior PT research showing higher attrition among parents with more mental health problems, we hypothesized that mean CESDR scores would higher among non-attenders relative to attenders and completers in both conditions.

Psychosocial adversity—A social risk index was created to collect data on 11 indicators of psychosocial adversity that have been previously found to be important correlates of parent-child risk and mental health treatment engagement (Ofonedu et al., 2017; Popp, Spinrad, & Smith, 2008). Risk items (coded yes/no) include whether parent had less than a high school education, was unemployed at study entry, reported an annual family income less than $20,000 or was receiving Medicaid, was living with more than 4 adults and children, had more than 3 children living in the home, had a history of homelessness, was less than 20 years old at study entry, was less than 20 years old at the birth of their first child, reported a history of substance use, reported a history of domestic violence, and had a baseline CESDR score of 16 or higher indicating clinically significant depressive symptoms. Based on prior PT research demonstrating higher attrition among parents with more psychosocial adversity, we hypothesized that total number of parent adversities (scores range from 0-11) would be higher among non-attenders relative to attenders and completers in both conditions.

Severity of child behavior problems—Parent report of child behavior problems was measured using the Child Behavior Checklist 1½-5 (CBCL), a well-established parent-report measure of externalizing and internalizing behavior problems for young children from diverse racial, ethnic, and economic backgrounds (Achenbach & Rescoria, 2000; Gross et al., 2006). Cronbach's alpha reliabilities for the current study were .91 for the externalizing scale and .85 for the internalizing scale. Based on prior research suggesting that parents of children with more severe behavior problems were a greater risk for dropout, we hypothesized that baseline externalizing and internalizing behavior problem scores would be higher among those who did not complete PT in both conditions (Reyno & McGrath, 2006).

Reasons for never attending PT—Parents who initiated treatment for their child but never attended PT were contacted to inquire about their primary reason for never attending (Ofonedu et al., 2017). If parents could not be reached, the research team contacted the assigned clinician to see if they had information from the parent as to why they had elected not to pursue treatment. Based on the data obtained, 14 categories of reasons for never attending were identified: Medicaid insurance became inactive, family crises, long wait time,

parent no longer interested/no reason provided, parent no longer interested/child's behavior improved, parent unable to commit the time to treatment, parents' schedule conflicted with treatment time, clinician recommended a different treatment than PT, parent lost custody of child, parent chose another provider, family moved out of the service area, family was discharged due to multiple no-shows, parent did not like the research questions asked during baseline assessments, and reason unknown/unable to contact parent. We examined whether reasons for never attending differed by PT format.

Data Analyses

Descriptive analysis was used to summarize participant characteristics and demographics. Data were compared by PT format using independent sample t-tests for continuous variables and chi-square tests or Fisher's exact tests for categorical variables. Parametric methods were used when the statistical assumptions were satisfied, otherwise nonparametric alternatives or exact methods were used. No measures had more than 25% of items missing. If a scale was missing one or more items, scale scores were computed across items using mean imputation. Data analyses were performed using SAS version 9.4; all statistical tests used an alpha of 0.05.

Parent satisfaction measures were collected at follow-up from parents who had attended at least one PT session. However, we are missing all or some parent satisfaction data from 6 parents (12.2%) who attended PCIT and 4 parents (8.0%) who attended CPP. Therefore, the sample sizes for these analyses are smaller (n=43 and 46 respectively).

The first 8 parents enrolled into the study were recruited from the existing caseload of clients at the clinic who were not receiving PT. As a result, their initial intake appointment at the clinic occurred prior to study initiation. Data from these pre-existing cases, all randomized to the CPP block, were excluded from analyses pertaining to the length of treatment delay since none were experiencing delayed treatment. All other data obtained from these pre-existing cases were included in the analyses.

Three parents randomized to PCIT in the last year of the study were still in active treatment at study conclusion. Therefore, data from these participants were excluded ("censored") from analyses pertaining to completion rates and predictors of PCIT completion.

Results

Parent Participation by PT Format

There was no significant difference in rates of non-attendance by PT format. Twenty-nine parents in the CPP condition (36.7%) and 31 parents in the PCIT condition (38.8%) who initiated a mental health treatment referral for their child never attended PT [$\chi^2(1)=0.07$, $p=0.791$]. Thus, parents randomly assigned to group-based PT were just as likely to never attend PT as were parents randomly assigned to individual PT.

A key difference between CPP and PCIT is the maximum number of sessions parents could attend before completing treatment. For CPP, the maximum number of PT sessions offered is 12 group sessions over 12 weeks. Treatment was extended for one additional week if the

session date fell on a holiday, the clinic was closed or when a snow storm severely affected transportation.

For mastery-based PCIT, there is no maximum number of PT sessions parents can participate in before completing treatment. Among parents who attended at least one PT session, those randomized to PCIT attended more than twice the number of sessions (*M*=17.3 sessions; SD=14.08) as those randomized to CPP (*M*=7.5 sessions; SD=3.57) [*t*(97)=-4.76; *p*<.0001; 95% *CI* [-13.86, -5.71]]. However, based on number of PT treatment hours received, amount of treatment exposure was not significantly different since each CPP session is 2 hours long (*M*=15.0 treatment hours, SD=7.14) and each PCIT session is 1 hour long (*M*=17.3 treatment hours, SD=14.08) [*t*(97)=-1.03; *p*=0.305; 95% *CI* [-6.74, 2.13]].

There was no significant difference in the number of parents who completed PT; 18 parents completed CPP (22.8% of all randomized CPP cases; 36.0% of all CPP attenders) and 15 completed PCIT (19.5% of all randomized uncensored PCIT cases; 30.6% of all PCIT attenders) [$\chi^2(1)=0.25$, *p*=0.613, among attenders only]. Among parents who completed PCIT, parents attended an average of 31 sessions (range = 12 to 52 sessions), not including the required PCIT behavioral observation sessions used to collect baseline behaviors. Although there was wide variation, the average length of time it took parents to complete PCIT was 406 days (range = 140-1044 days). It is important to note that only sessions that focused on PT skills were included in this number; other sessions focused on crisis intervention were not included in these calculations.

Following discharge, clinicians rated the extent to which the parent had actively participated in their respective PT treatment. Although parents in both conditions were rated by their assigned clinicians as being highly engaged in PT, PCIT parents were rated as more engaged in PT (*M*=3.4; SD=0.47) than were CPP parents (*M*=3.2; SD=0.49)) [*t*(97)=-2.47 , *p* = 0.015 ; 95% *CI* [-0.43, -0.05].

Parents rated their satisfaction with the PT treatment to which they were randomly assigned. As shown in Table 3, there were no significant differences between PT groups in parents' assessments of improvements in their child's behavior or the extent to which they would recommend the PT program to another parent. However, parents' overall satisfaction with PT was higher in the CPP group than in the PCIT group [Fisher's Exact *p*=0.049].

Delay to Starting Treatment by PT Format

We hypothesized that because PT groups would take longer to form and begin treatment than an individually scheduled PCIT session, delay to treatment start would be greater for participants randomly assigned to CPP than to PCIT. Contrary to our hypothesis, PCIT participants waited longer for their first scheduled PCIT session (*M*=139.6 days; SD=76.67) than CPP participants (*M*= 112.3 days; SD=71.73 days) [*t*(91)=-1.76 , *p* = 0.040, 95% *CI* for mean difference 1.6,52.9 days].

Factors Associated with PT Initiation and Completion by PT Format

We wanted to understand whether three risk factors previously identified as predictors of PT participation were differentially associated with attendance and treatment completion by PT

format. Specifically, we examined whether baseline scores on severity of child behavior problems, parent depressive symptoms, and number of psychosocial adversities were associated with attending or completing PT in group-based versus individual PT formats. We first compared those who attended at least one PT session ("attenders") with those who never attended PT ("non-attenders") to determine whether these risk variables differentiated treatment initiation by PT format. We then compared those who completed PT ("completers") with a combined group of parents who never attended or attended but never completed PT ("non-completers") to determine whether these risk variables differentiated treatment completion by PT format. Results are presented in Table 4.

Within CPP, parents who never attended PT reported more psychosocial adversities than those who attended at least one CPP session ($t(76)=2.39$ (one-tailed); $p = .009$; 95% *CI* for mean difference [0.25, 1.44]. While not clinically significant, baseline CBCL externalizing scores were significantly higher among those who never attended CPP ($M=31.0$, SD=8.70) than those who attended at least one CPP session ($M=26.9$, SD=10.45; $t(77)=1.82$, $p = .036$ (one-tailed); 95% *CI* for mean difference [0.3, 8.0]. No other risk factors significantly differentiated those who did and did not attend CPP. In addition, none of the risk variables differentiated CPP completers from non-completers.

Within PCIT, parents who never attended treatment had higher baseline levels of depression than those who attended at least one PT session [$t(78)=3.50$, $p<0.001$; 95% *CI* for mean difference (5.7, 15.9]. No significant differences were found between those who did and did not attend treatment on number of psychosocial adversities or severity of child behavior problems. Parents who completed PCIT differed from those who did not on psychosocial adversity and parent depression. Parents who completed PCIT had fewer psychosocial adversities [$t(75)=2.38$, $p=0.010$] and lower baseline depression scores [$t(75)=2.32$, $p=0.012$] than non-completers. Severity of child behavior problems did not predict PCIT attrition.

Factors Associated with Never Attending PT by PT Format

Parents' reasons for never attending PT by condition are presented in Table 5. No significant differences in parent reasons for never attending PT by PT format were found. Although nearly three times as many parents randomized to CPP (27.6%) than PCIT (9.7%) reported schedule conflicts with the treatment time as the primary reason they never attended, when compared against all other reasons for never attending, this difference did not reach statistical significance [$\chi^2(1)=3.21$, $p=0.073$] based on a 2 by 2 contingency table analysis.

Discussion

In this study, we sought to understand whether the format in which parent training (PT) is delivered affects multiple indicators of treatment engagement in a socially and economically disadvantaged sample of parents seeking mental health treatment for their 2-5 year old children. Specifically, we examined whether parents randomized to PCIT (mastery-based individual parent-child coaching format) or CPP (parent group-based format) would differ in their participation and completion rates, the quality of their participation in PT sessions, and their satisfaction with treatment. We also explored whether several risk factors were more

likely to affect treatment attendance and completion in one PT format than the other. These risk factors included number of psychosocial adversities the parent had experienced, degree of the parents' depression, and severity of child's behavior problems at baseline. We also evaluated the impact of contextual barriers to PT, such as treatment delay, schedule conflicts, and family crises that might uniquely affect parents assigned to one PT format versus another.

Although attrition was substantial in both conditions, parents randomized to CPP were just as likely to attend and complete PT as were parents randomized to PCIT. Approximately 63% of parents in the CPP condition attended at least one CPP group session and 36% of those parents completed CPP. These participation rates are comparable to those obtained in prior studies using CPP with low-income non-clinical samples in which 67% of parents attended at least one group session and 21% of those parents completed CPP (Garvey et al., 2006). Among parents in the PCIT condition, 61% attended at least one PCIT session and approximately one third of those parents completed PCIT. Framed in terms of attrition, 81% of the parents enrolled in PCIT and 77% enrolled in CPP dropped out of treatment before completing PT.

However, among completers, the number of sessions and amount of time needed for parents to complete PCIT was quite different from CPP. The maximum number of group sessions parents can attend for CPP is 12 2-hour sessions and the maximum amount of time to complete CPP is typically 12 consecutive weeks (approximately 84 days). In contrast, the maximum number of 1-hour PCIT sessions a parent can attend to achieve mastery depends on how long it takes parents to acquire the skills and is therefore highly variable. In this sample, parents who completed PCIT attended an average of 30 PCIT sessions over 406 days.

The amount of time these parents and clinicians invested in completing PCIT is far greater than what has been previously reported in the literature for PCIT. In the original validation studies, PCIT treatment length was described as requiring an average of 12 to 16 weekly one-hour sessions and approximately 36% of parents in those studies dropped out (S. M. Eyberg, Nelson, & Boggs, 2008). Subsequent investigations that included more economically disadvantaged parents have cited a similar number of sessions used to complete PCIT, however the majority of participants in these studies dropped out of treatment before reaching mastery. For example, in a study of 14 low-income parents and children with conduct problems, Lyon and Budd (2010) reported that parents completed PCIT in 12 to 15 sessions but only four of those parents reached mastery. Similarly, Lanier et al. (2011) reported that parents in their study completed PCIT in an average of 17 sessions. However, 69% of the parents dropped out before completing PCIT and attrition was significantly higher among parents with lower incomes and psychosocial functioning. That the parents and children in the current study remained in treatment for over a year, attending an average of 30 PCIT sessions (and as many as 52 sessions) is likely a reflection of the strong commitment the clinic and the therapists have made to keeping these highly fragile families engaged in mental health treatment for as long as possible. Indeed, had the number of PCIT sessions been capped at 10 sessions, to be consistent with the criteria for CPP completion, only one study parent would have completed PCIT.

While the quality of parent participation in treatment was rated as high in both PT conditions, clinicians rated the parents in PCIT as significantly more engaged in treatment than the parents in CPP. This may be due to the strength of the therapeutic relationship that can be formed when parents work individually with one clinician over an extended period of time relative to a time-limited parent group where the therapeutic relationship is shared among many group members.

Interestingly, parents randomized to the group-based CPP format rated their satisfaction with PT more favorably than did parents randomized to PCIT. There are several possible reasons for this finding. First, parents participate in CPP groups with other parents who share their struggles. This aspect of parent groups can be a welcomed relief to parents who may feel helpless and demoralized by their children's behavior. Second, parents attend the 2-hour groups without their children present (children are in school or in another room with supervised childcare), providing parents, most of whom were single-parents, with much-needed respite. Third, parents learn the new skills by watching and discussing video vignettes of other parents managing challenging situations. This method of vicariously learning new parenting skills can place far less pressure on parents than being directly observed applying the new skills with their child from behind a one-way mirror. Finally, refreshments are served during CPP group sessions, creating a social, nurturing, and supportive environment.

Parents who were more depressed and experienced more psychosocial adversities were less likely to complete PCIT whereas neither of those risk factors differentiated parents who did and did not complete CPP, a finding that is consistent with those reported by others (Lanier et al., 2011). For parents who have limited executive functioning and self-regulation skills secondary to overwhelming stress and depression, PCIT may represent a more challenging strategy for learning new parenting skills than what is required for a group-based format that uses vicarious learning. For example, during PCIT coaching sessions parents must listen to, comprehend, remember, and apply the verbal guidance they are receiving from the clinician via an earpiece. Parents may also need to inhibit their usual response to their child's aversive behavior while regulating negative emotions that this behavior might be eliciting from them. All of this requires a sophisticated set of self-regulation and executive functioning skills, which may be too challenging for parents who are depressed and face multiple adversities. More research on the role of parent's executive functioning skills for completing PCIT is recommended.

The findings highlight the need for additional research in several areas related to meeting the mental health needs of children from families experiencing multiple psychosocial adversities. First, parents might benefit from a 2-staged PT protocol, first attending group-based PT where they receive social support and vicariously learn the new skills by watching and discussing videos of other parents using the techniques. Parents might then move more quickly and confidently through PCIT because they now understand and have tried the behavioral strategies but may still need some individualized coaching to support mastery. This would be an important area for future research to understand the most cost-effective treatment options for supporting high-risk families of young children. Second, these data support the need for more rigorous studies testing PCIT adaptations for increasing retention

among high-risk populations (Chaffin et al., 2009; S. M. Eyberg, 2005), including perhaps a method for modifying parent "mastery" requirements without losing treatment fidelity or effectiveness. Finally, each PT format has different advantages and disadvantages which might be used to help guide parents in choosing which format they might prefer, giving parents greater control over their children's mental health care. More child mental health research is needed focusing on which interventions are most beneficial for which families and under what circumstances.

We had hypothesized that length of treatment delay would be greater for CPP than PCIT because parents enrolled in a group-based PT format would need to wait to begin treatment until a full group of parents had been formed. Contrary to our hypothesis, length of treatment delay was greater for parents randomized to PCIT. The greater treatment delay may be due to how long parents were engaged in PCIT, which increased the wait time for an available PCIT clinician for other parents. The fact that treatment progresses at the rate with which parents acquire the new skills may make individualized PT formats more vulnerable to treatment delays if there are a limited number of certified PCIT clinicians and the parent population is struggling with depression and many adversities associated with urban poverty.

We had anticipated that parents randomized to group-based PT would identify schedule conflicts as a more frequent reason for never attending PT relative to individual PT. In this study, more parents randomly assigned to group-based PT did identify schedule conflicts as the primary reason they never attended PT, although this difference did not reach statistical significance. Nonetheless, it was an important barrier to attendance for nearly three times more parents in the group-based than in the individual PT condition. Clinics offering group-based PT might consider offering multiple groups with different meeting times to reduce attendance barriers related to schedule conflicts.

The average wait time for study parents' first scheduled treatment, after their diagnostic interview session, was approximately 12 weeks. Prolonged waiting times to begin mental health treatment are not uncommon in community mental health agencies and the treatment delay likely contributed to the elevated attrition in this sample (American Academy of Child & Adolescent Psychiatry, 2013; Gallo et al., 2017; Ofonedu et al., 2017; Westin, Barksdale, & Stephan, 2014). There are a number of possible reasons for this delay including a limited supply of available mental health clinicians trained in these evidence-based programs and the challenges of scheduling appointments with parents who are struggling with multiple economic, psychological, and social adversities. It is noteworthy that only 5 parents in this study identified the wait time as the primary barrier to attending PT. Many of the reasons they did offer for never attending PT (i.e., family crises, moving, choosing another provider, health insurance becoming deactivated, losing custody of their child) could potentially be linked to situations or events that are more likely to arise as time elapses waiting to start mental health treatment. Indeed, multiple "no-shows" without prior discussion with the clinician and "inability to contact the family" together comprised the most common reasons for never attending. These reasons for non-attendance may be attributable to cell phone inactivation and housing instability – a frequent challenge for families experiencing urban poverty and social adversity. These barriers highlight the complexities of providing high

quality care for vulnerable families seeking child mental health treatment in our current mental health care system.

Severity of child behavior problems predicted non-attendance in CPP. However, once parents attended their first PT session, severity of parent reported child behaviors was not associated with further attrition for either format. This suggests that while children's behavior problems are an important motivator for parents seeking help, the many other challenges these families face can interfere with being able to get the mental health care they need for their children.

Limitations

There are a number of important study limitations. First, as described earlier, there are other differences between the CPP and PCIT beyond the fact that one is implemented in parent groups using video and the other is delivered individually to parents with their child using a coaching model. The most notable difference is treatment length (12 sessions versus a variable number of sessions based on parent mastery). Although the study by Niec et al., (2016) controlled for many of these differences by comparing an adapted 14-week PCIT group versus 14-weeks of individual PCIT, neither version adhered to standard PCIT guidelines as currently practiced by certified PCIT therapists. Indeed, it is remarkable that despite the wide difference in treatment length between CPP and PCIT in the current study, parent attrition and completion rates were similar.

Second, in this study we did not compare the effectiveness of the two PT programs. It is possible that although parents were equally likely to attend and complete PT offered in a group versus individually, one PT format might be more effective than the other, making it a preferred choice regardless of its other disadvantages. Although there were no significant differences in the percent of parents reporting their child's behavior had improved, these global ratings are limited indicators of change. We are currently analyzing whether these PT formats differ in their effects on a broad range of parenting and child behavior outcomes as well as their cost.

Another limitation relates to the generalizability of the findings. A strength of this study is that it was implemented under real world conditions (i.e., using only the resources available in the community mental health agency), thereby enhancing its external validity. That it was conducted in a single fee-for-service mental health clinic, however, limits generalizability to other agencies serving a different population and employing a different reimbursement structure.

Although the validity of the parent engagement measure used in this study has been previously supported, it does not include all indicators of parent engagement (Haine-Schlagel et al., 2015). In addition, clinicians were required to complete it only once at discharge. We decided on this strategy to reduce clinician burden as they were employed by the clinic, not the study team, and we were sensitive to the administrative documentation burdens they already endured. Nonetheless, clinician recall may have been biased by factors such parent no-show rates or the quality of the parent's most recent visit.

Finally, this study was underpowered to fully test many of the subgroup analyses related to attrition or to conduct moderation analyses (i.e., to evaluate whether PT format moderates associations between risk variables and engagement outcomes). Given the small sample size and the multiple tests, these results should be interpreted with some caution.

Despite these limitations, there are a number of important strengths to this study. First, this study used a randomized design to directly compare multiple indicators of parent engagement in PT that uses a group-based + video format versus an individualized PT format with direct parent-child coaching in a highly vulnerable population of families. The results suggest that PT formats that include peer support may be important for parents struggling with depression and multiple adversities, as evidenced by the higher attrition in PCIT of parents with these risk factors. Second, the study was implemented under real world conditions that included client waiting lists, limited capacity of clinical resources to conduct specialized evidence-based interventions, and families with complex mental health and psychosocial needs. Yet, both evidence-based treatments were delivered with a high degree of fidelity. These qualities lend support to both the internal and external validity of the findings. Finally, this study highlights the importance of identifying evidence-based treatments that are best suited for addressing the mental health needs of young children growing up in urban poverty when parents are struggling with their own social and emotional difficulties.

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Table 1

Parent Demographic Characteristics by PT format condition (N=159)

Characteristic	CPP (n=79)	PCIT (n=80)	P-value
Participant's Relationship to the Child, n (%)			0.345[a]
Mother	59 (74.7)	62 (77.5)	
Father	8 (10.1)	5 (6.3)	
Foster parent	3 (3.8)	0 (0.0)	
Grandmother	5 (6.3)	7 (8.8)	
Aunt	1 (1.3)	4 (5.0)	
Other	3 (3.8)	2 (2.5)	
Parent Ethnicity, n (%)			0.276 [a]
Non-Hispanic	74 (93.7)	78 (97.5)	
Hispanic or Latino	5 (6.3)	2 (2.5)	
Parent Race/ethnicity, n (%)			0.120 [a]
Black or African American, Non-Hispanic	53 (67.1)	58 (72.5)	
White, Non-Hispanic	16 (20.3)	19 (23.8)	
Other	10 (12.7)	3 (3.7)	
Parent's Highest Level of Education, n (%)			0.206 [a]
High school/GED or less	48 (60.8)	45 (56.3)	
Associate/vocational degree or some college	28 (35.4)	26 (32.5)	
Bachelor's or graduate degree	3 (3.8)	9 (11.3)	
Parents' Current Employment Status, n (%)			0.941 [a]
Working	24 (30.4)	27 (33.7)	
In school only	2 (2.5)	3 (3.7)	
Not working	49 (62.0)	46 (57.5)	
Other	4 (5.1)	4 (5.0)	
Marital status, n (%)			0.404 [a]
Married	17 (21.5)	14 (17.5)	
Unmarried	43 (54.4)	42 (52.5)	
Unmarried, living with a partner	17 (21.5)	17 (21.3)	
Other	2 (2.5)	7 (8.8)	
Annual household income, n (%)			0.155 [a]
<$20,000	60 (75.9)	56 (70.0)	
$20,000-$40,000	13 (16.5)	10 (12.5)	
>$40,000	6 (7.6)	14 (17.5)	
Number of psychosocial adversities, M (SD)	4.0 (1.55) *	3.6 (1.82)	0.139 [b]
Depression level at baseline, M (SD)	17.2 (16.0)	16.0 (14.39)	0.630 [b]

Note:

[a] P-value from Chi-square or Fisher's exact test as appropriate;

[b] P-value from t-test; all 2-tailed tests;

*value missing from one participant

Table 2

Child Age, Gender, Baseline Behavior Problem Scores, and Primary Diagnosis by PT format condition (N=159)

Child characteristic	CPP (n=79)	PCIT (n=80)	P-value
Child's sex, n (%)			0.233
Boy	42 (53.2)	50 (62.5)	
Girl	37 (46.8)	30 (37.5)	
Child age (years)			
Mean (SD)	3.6 (1.08)	3.7 (0.97)	0.471
CBCL Externalizing, Mean (SD)	28.39 (9.10)	26.10 (9.77) *	0.147
CBCL Internalizing, Mean (SD)	18.79 (9.28)	17.11 (8.48) *	0.236
Child primary diagnosis, n (%)			0.902
ADHD	11 (13.9)	9 (11.3)	
Adjustment disorder	43 (54.4)	44 (55.0)	
Disruptive behavior disorder	9 (11.4)	11 (13.8)	
Oppositional defiant disorder/conduct disorder	9 (11.4)	9 (11.3)	
Posttraumatic stress disorder	6 (7.6)	4 (5.0)	
Separation anxiety disorder	1 (1.3)	3 (3.8)	

Note: P-value from t-test and Chi-square or Fisher's exact test as appropriate; all 2-tailed tests;

* missing score for one child

Table 3

Parent Satisfaction by PT Format (n=89)

Characteristic	CPP (n=46) n (%)	PCIT (n=43) n (%)	P-value
At this point, I feel that my child's behavior is:			0.476
Worse than before	2 (4.3)	6 (13.9)	
The same as before	6 (13.0)	5 (11.6)	
Better than before	26 (56.5)	19 (44.2)	
Much better than before	10 (21.7)	12 (27.9)	
I don't know	2 (4.3)	1 (2.3)	
Overall, how satisfied are you with the parenting sessions?			0.049
Dissatisfied	0 (0.0)	2 (4.6)	
Satisfied	16 (34.8)	22 (51.2)	
Very satisfied	30 (65.2)	19 (44.2)	
Overall, would you recommend his treatment program to another parent?*			0.304
Would not recommend	0 (0.0)	1 (2.3)	
Recommend	12 (26.7)	16 (37.2)	
Highly recommend	33 (73.3)	26 (60.5)	

Note: P-value from a Fisher's exact test; all 2-tailed tests. Only parents who attended at least one PT session completed these questions.

*n=45 in CPP group for this item only due to missing data.

Table 4

Mean (SD) Risk Scores for Non-Attenders, Attenders, and Completers by PT Format

	CPP			PCIT		
Risk Variable by Attendance Status	**Never attended (n=29)**	**Attended ≥ 1 session (n=50)**	**p-value**	**Never attended (n=31)**	**Attended ≥ 1 session (n=49)**	**p-value**
Number of psychosocial adversities	4.6 (1.67) *	3.7 (1.41)	0.009	3.8 (1.93)	3.5 (1.76)	0.281
Parent depression (CEDSR)	19.3 (15.40)	16.0 (16.41)	0.191	22.6 (17.8)	11.8 (9.83)	0.001
Externalizing behavior problems (CBCL)	31.0 (8.70)	26.9 (10.45)	0.036	26.0 (9.92) †	26.2 (9.79)	0.472
Internalizing behavior problems (CBCL)	18.2 (9.03)	19.2 (9.49)	0.327	19.0 (9.15) †	16.0 (7.93)	0.064
	CPP			PCIT		
Risk Variable by PT Completion Status	Completed CPP (n=18)	All other CPP parents (n=61)	p-value	Completed PCIT (n=15)	All other PCIT parents (n=62)	p-value
Number of psychosocial adversities	3.8 (1.56)	4.1 (1.56)	0.222	2.7 (1.18)	3.9 (1.87)	0.010
Parent depression (CESDR)	17.6 (17.88)	17.1 (15.59)	0.457	9.0 (9.82)	18.4 (14.83)	0.012
Externalizing behavior problems (CBCL)	27.2 (11.17)	28.8 (9.69)	0.279	24.1 (8.41)	26.5 (10.08) †	0.201
Internalizing behavior problems (CBCL)	20.2 (9.79)	18.4 (9.16)	0.230	14.3 (8.34)	17.9 (8. 58) †	0.078

Note: All t-tests were one-sided per the directional research hypotheses posed for these variables;

* number of psychosocial adversities missing for one participant;

† CBCL externalizing and internalizing scores missing for one participant.

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Table 5

Primary Reason Parent Never Attended Treatment by PT format (n=60)

Primary Reason Parent Never Attended PT	CPP (n=29) n (%)	PCIT (n=31) n (%)
Family crises	1 (3.4)	2 (6.5)
Family moved away from area	2 (6.9)	2 (6.5)
No longer interested, reasons unknown	2 (6.9)	3 (9.7)
No longer interested, child's behavior improved	1 (3.4)	3 (9.7)
Wait time too long	3 (10.3)	2 (6.5)
Parent discharged after multiple "no-shows"	2 (6.9)	3 (9.7)
Parent did not like the research questions asked	1(3.4)	0 (0)
Parent unable to commit the time to treatment	1 (3.4)	2 (6.5)
Schedule conflicts with treatment time	8 (27.6)	3 (9.7)
Parent lost custody of child	0 (0)	1 (3.2)
Medicaid insurance became inactive	4 (13.8)	0 (0)
Parent chose another provider	0 (0)	4 (12.9)
Clinician recommended a different treatment	0 (0)	1 (3.2)
Unable to contact family	4 (13.8)	5 (16.1)