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Parental Homework Completion and Treatment Knowledge During Group Parent–Child Interaction Therapy

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Abstract

The purpose of this study was to examine how parental homework completion, session attendance, and treatment knowledge influenced parenting practices and confidence in using learned skills during behavioral parent training (BPT). Parents of 54 preschoolers (M_{age} = 5.07, 82% Hispanic/Latino) with externalizing behavior problems participated in an 8-week group BPT program. Pre-and posttreatment measures included parent-reported parenting practices and a treatment knowledge quiz. Parental homework completion, or home practice of skills, was reported by parents and collected weekly. Increases in positive parenting and decreases in negative parenting were observed (Cohen's d = .63 and .70, respectively), as well as increases in treatment knowledge (d = 1.46). Treatment knowledge moderated the association between parental homework completion and negative parenting as well as parenting skill-use confidence. Increased parental homework completion was only associated with decreases in negative parenting and increases in skill-use confidence for families with high treatment knowledge. Parental homework completion also moderated the association between session attendance and negative parenting, such that lower session attendance was only associated with higher negative parenting for families that had low parental homework completion. Findings highlighted the potential impact that parents' reports of home practice may have on improving parenting.

Keywords

behavioral parent training, externalizing behavior problems, homework, knowledge, adherence, parenting practices

Introduction

Broad externalizing behavior problems (BEBPs), including aggression, hyperactivity, inattention, and impulsivity, are among the most common mental health referrals among young children (Upshur, Wenz-Gross, & Reed, 2009). BEBPs are linked with a host of negative academic and social outcomes (Denham, 2006; Metcalfe, Harvey, & Laws, 2013; Redden, Ramey, Ramey, Forness, & Brezausek, 2003; Webster-Stratton, Reid, & Stoolmiller, 2008). Behavioral parent training (BPT) programs are among the most well-established evidence-based interventions to

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improve BEBPs in young children as they are associated with significant improvements in child behavioral functioning and parenting practices (Evans, Owens, & Bunford, 2014; Eyberg, Nelson, Duke, & Boggs, 2004). BPT programs have traditionally focused on employing parents as agents of child behavior change by training parents in behavioral principles (Briesmeister & Schaefer, 2007). Often BPT programs not only focus on didactically teaching parents positive parenting practices, but also, more often, use modeling and within-session skill practice to foster skill acquisition. One component common across many BPT models involves the use of parental homework assignments. Parental homework assignments typically involve asking parents to practice skills learned in treatment within the home context (Kazantzis, Deane, Ronan, & L'Abate, 2005).

Parental Homework Completion During BPT

The use of parental homework assignments within BPT programs aims to promote the generalization of parenting skills (Kazantzis et al., 2005). Studies examining learning mechanisms find that skill acquisition is largely enhanced when skills are practiced within natural contexts (Ma, Trombly, & Robinson-Podolski, 1999). Thus, homework assignments that require parents to practice skills at home may facilitate parenting skill acquisition by providing a more naturalistic context for skill generalization. Indeed, much more recent attention has been paid to parental homework completion as a stronger predictor of treatment adherence than session attendance as it involves more active participation from parents within naturalistic contexts (Clarke et al., 2015). Studies examining parental engagement with parenting programs in community samples have even included parental homework completion as a qualitative measure of treatment participation (Baydar, Reid, & Webster-Stratton, 2003; Nix, Bierman, & McMahon, 2009).

Although limited in quantity, a handful of studies have examined the unique effects of parental homework completion on BPT outcomes. Specifically, Clarke and colleagues (2015) documented the effects of parental homework completion on parent and child outcomes above and beyond session attendance. Another study examining parental homework completion also revealed differences in clinical significance of improvements in child behavior problems for families completing homework (Tynan, Chew, & Algermissen, 2004). Finally, Kling, Forster, Sundell, and Melin (2010) identified parental homework completion as a mediator of treatment outcomes implicating that parental homework completion may serve as a treatment mechanism during BPT.

Despite individual studies documenting the role of parental homework completion within BPT outcomes, a meta-analytic review revealed that BPT programs that assign parental homework do not differ in the magnitude of treatment effect size when compared with programs that do not assign homework (Kaminski, Valle, Filene, & Boyle, 2008). Although the review included 77 studies, it remained unclear how many studies were included in the analyses examining homework completion as this is not commonly a variable reported by most studies examining the efficacy of BPT programs. Given that the meta-analysis was conducted in 2008, and the majority of studies examining parental homework completion have been published more recently, an updated examination of this construct is warranted. In addition, this review also included studies examining both prevention programs as well as treatment programs. Perhaps, parental homework completion may not play a role for prevention programs but may be more important for treatment programs targeting clinically significant levels of behavior problems. Interestingly, this same meta-analysis also revealed that that BPT programs that involve in-session practice and coaching are most effective in reducing child behavior problems and increasing positive parenting skills. Undoubtedly, in-session practice and coaching may aid in making treatment skills more readily understandable and result in more beneficial home practice. However, the meta-analytic review focused on BPT programs as a whole and did not examine whether parental homework completion may have a differential impact for programs involving coaching. Thus, it remains unclear the

extent to which parental homework completion may affect treatment outcomes during BPT programs that involve in-session practice.

One particular BPT program that relies heavily on coaching and in-session practice, while making extensive use of parental homework assignments, is Parent–Child Interaction Therapy (PCIT; Zisser & Eyberg, 2010). Examining the effects of homework completion within the context of BPT programs that incorporate in-session practice, such as PCIT, may be especially important to determine the clinical utility of assigning homework during BPT beyond session practice. Few studies have examined the role of parental homework completion in PCIT. Some work has focused on treatment process variables and found that low parental homework completion during PCIT is predictive of treatment dropout (Danko, Brown, Van Schoick, & Budd, 2016; Lyon & Budd, 2010) and lower treatment satisfaction (Danko et al., 2016). Another study also compared homework during individual versus group PCIT and found no differences in rates of completion (Niec, Barnett, Prewett, & Shanley, 2016). However, all these studies examined treatment process variables and none examined actual treatment response in terms of parenting outcomes. Given the evidence-based status and wide use of PCIT for targeting BEBPs in young children (see Thomas & Zimmer-Gembeck, 2012, for a review), it is critical to examine parental homework completion as potential mechanisms contributing to the success in improving parenting outcomes. Only one study, to our knowledge, examined the effect of homework completion on parenting outcomes in a sample of children with developmental delays and found that parenting stress mediated the effects of parental homework completion on parenting outcomes (Ros, Hernandez, Graziano, & Bagner, 2016). However, given the high levels of stress in parents of children with developmental delays (Baker et al., 2003), the generalizability of these findings remains unclear. It remains important to examine the role of parental homework completion during PCIT within a more traditional sample of children with BEBP with normative cognitive development.

Although there is promising evidence for homework completion as a critical treatment component, parents report a host of barriers to homework completion. Specifically, parents from high-risk samples report that one of the biggest challenges in completing homework involves difficulty in implementing learned skills (Chacko, Anderson, Wymbs, & Wymbs, 2013). Given parental concerns with implementing strategies, one factor that may play a role in the completion of homework may be parental understanding of strategies presented in treatment. Limited understanding may not only contribute to barriers in completing homework but may also attenuate the positive effects of homework completion. Whereas home practicing of skills may be beneficial for parents with ample understanding of the skills presented in treatment, homework may be less beneficial for parents with limited understanding of skills to be practiced. Examining the role of parental knowledge within BPT interventions may provide insight into additional factors that interact with homework completion to enhance BPT outcomes.

Parental Knowledge of Parenting Practices

Measures that assess knowledge of parenting practices are useful in predicting parenting dysfunction, nurturance, confidence, and child behavior (Winter, Morawska, & Sanders, 2012). Parental knowledge of parenting practices may also be sensitive to treatment effects as parents who complete psychosocial interventions have better knowledge of parenting principles (Weinberg, 1999). However, these increases in knowledge are often not accompanied by enhancements in one's own parenting practices (Hechtman et al., 2004). Discrepancies between knowledge and implementation of parenting practices may be related to parental home practice of learned skills. Enhanced parental knowledge may only be predictive of acquisition of parenting practices for families that are actively practicing learned skills between treatment sessions (i.e., completing homework). Hence, it may be important to simultaneously examine links between

parental knowledge of skills learned in treatment and home practicing of such skills to fully understand the acquisition of parenting skills during BPT interventions.

Once again, it may be of importance to consider the role of parental treatment knowledge within BPT programs that take more active learning approaches with coaching and in-session practice, such as PCIT. To our knowledge, only one study, using undergraduate students, found evidence that an increase in PCIT knowledge was associated with the use of more praise during a role play after watching a training module (Lee, Wilsie, & Brestan-Knight, 2011). However, this study was limited to a sample of college students, and the role of PCIT knowledge remains untested with parents.

In addition, parental knowledge has been linked to measures of parenting confidence. Previous studies have demonstrated that the association between parenting confidence and positive parent–child interactions is dependent upon parental knowledge (Hess, Teti, & Hussey-Gardner, 2004). These findings suggest that parental knowledge may influence other parenting constructs such as confidence, which may also be simultaneously affected by homework completion. Importantly, factors such as parenting confidence are often included as components of parenting self-efficacy, which has implications for parenting competence (see T. L. Jones & Prinz, 2005, for a review). It may be important to examine how parental knowledge and home practicing of skills influence not only parenting behaviors but also parenting confidence in implementing strategies as this may play a role in adherence to BPT programs. Thus, in addition to examining traditional outcomes of BPT such as parenting practices, it may also be of utility to examine constructs of parenting self-efficacy such as parental confidence.

Current Study

In summary, homework completion has been associated with improved outcomes during group-based BPT programs (Baydar et al., 2003; Clarke et al., 2015; Kling et al., 2010; Tynan et al., 2004). Furthermore, parental gain of knowledge related to treatment principles may play a role in the acquisition of parenting skills presented in treatment (Morawska, Winter, & Sanders, 2009; Winter et al., 2012). However, no study, to our knowledge, has examined the joint contribution of homework completion and parental knowledge gains in a BPT program that involves in-session practice of parenting skills, such as group PCIT. The research questions that guided the current study were as follows:

Research Question 1: Are increases in parental homework completion and parental knowledge of skills learned in group PCIT independently associated with changes in parent-reported parenting practices? Is there an interaction between homework and knowledge that further explains changes in parenting practices?

We expected that parental homework completion and increases in parental knowledge of skills would be associated with improved parenting practices. Given previous research suggesting that treatment knowledge is predictive of implementation (Allen, Gharagozloo, & Johnson, 2012; Walrath, Sheehan, Holden, Hernandez, & Blau, 2006), we expected that increased parental homework completion would be more strongly associated with improved parenting practices for parents with higher treatment knowledge.

Research Question 2: Are increases in parental homework completion and parental knowledge of skills learned in group PCIT independently associated with changes in parent-reported parenting confidence? Is there an interaction between homework and knowledge that further explains changes in parenting confidence?

As with parenting practices, we expected that increased homework completion and treatment knowledge would be associated with improved parenting confidence. Similarly, we also expected that increased parental homework completion would be more strongly associated with improved parenting confidence for parents with higher treatment knowledge.

Method

Participants and Recruitment

The study was conducted at a large urban university in the Southeastern United States with a large Hispanic/Latino population. Families were recruited from local preschools and mental health agencies through brochures, radio ads, and open houses/parent workshops to participate in an intensive summer treatment program (STP). Eligibility to participate in an STP for prekindergarteners (STP-PreK) was determined by (a) an externalizing behavior problems *T*-score of 60 or higher on the parent or teacher Behavior Assessment System for Children–Second Edition (BASC-2; Reynolds & Kamphaus, 2004), (b) enrollment in preschool the previous school year, (c) an IQ of 70 or higher on the Wechsler Preschool and Primary Scale of Intelligence–Fourth Edition (WPPSI-IV; Wechsler, 2012), (d) no history of a primary diagnosis of autism or psychotic disorder, and (e) ability to attend an 8-week summer program. Children participated in an intake assessment to test for inclusion criteria. Twenty-four families were screened out due to not meeting the above criteria.

The current study utilized a subsample from a larger sample (n = 71) of preschoolers with BEBP who participated in the STP-PreK and/or BPT. The STP-PreK consisted of a kindergarten readiness classroom containing a behavior modification system and academic curriculum, whereas the BPT condition consisted of a group parenting program described in further detail below. Of the larger sample, 26 families received the STP-PreK + BPT as part of an open trial; 30 families received the STP-PreK + BPT as part of a randomized trial, while 15 received only BPT as part of the same randomized trial (see Graziano & Hart, 2016). Four families in the BPT-only condition dropped out of treatment (i.e., attended no parenting sessions) while an additional 13 families that completed treatment failed to provide any parenting data. Thus, the final sample in the current study consisted of 54 preschoolers (M_{age} = 5.07, 69% male) with complete data on all parenting measures at each study time point. All demographic data presented is representative of the selected sample used in the current study (n = 54). In addition, families that received BPT only versus those who received STP-PreK + BPT were compared on demographic variables (e.g., socioeconomic status [SES], child age, child sex, ethnicity) as well as study variables (e.g., parent homework completion, treatment knowledge). No significant differences were found. It is also important to note that results of the randomized trial demonstrated no significant differences in child behavior outcomes for families participating in the STP-Prek + BPT versus those who participated in BPT only (Graziano & Hart, 2016). According to the National Institute of Mental Health (NIMH) Diagnostic Interview Schedule for Children (C-DISC; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), 49% of children in the sample met diagnostic criteria for attention deficit hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD), an additional 32% met criteria for ADHD alone, and 10% met criteria for ODD alone. Further demographic information for this sample is provided in Table 1.

Study Design and Procedures

This study was approved by the university's institutional review board. All families completed a pretreatment assessment in which parents were asked to complete questionnaires about their

Table 1. Demographics for Sample.

Characteristic	Percentage in sample	*n*
Child race/ethnicity		
Non-Hispanic/Latino White	11.11	6
African American	5.56	3
Hispanic/Latino	81.48	44
Other	1.85	1
Parent race/ethnicity		
Non-Hispanic/Latino White	12.96	7
African American	5.56	3
Hispanic/Latino	77.78	42
Other	3.70	2
Parent primary language		
English	70.37	38
Spanish	29.63	16
Family marital status		
Intact two-parent household	55.56	30
Living with a partner	5.56	3
Single-parent household–divorced/separated	24.07	13
Single-parent household–never married	14.81	8
Maternal education		
High school graduate	11.1	7
Some college or associate's degree	37.03	20
Bachelor's degree	26.30	17
Graduate degree	19.20	9
Reporter of questionnaires		
Mothers	92.59	50
Fathers	5.56	3
Other (grandmother)	1.85	1
Referral		
Self-referred	32.4	17
Preschool	23.9	13
Physician/mental health professional	29.2	16
Friends	15.5	8

parenting practices and their child's behavior. All families also participated in a posttreatment assessment 1 week following the completion of the intervention. The feasibility and initial efficacy of the STP-PreK, which includes the parenting component, in improving children's BEBP and school readiness outcomes is reported elsewhere (Graziano, Slavec, Hart, Garcia, & Pelham, 2014). For the purposes of this study, we examined the extent to which parental homework completion and gains in parental knowledge during the parenting intervention influenced parenting practices for all families that completed the parenting program.

Screening Measures

Externalizing behavior problems. To asses children's behavioral functioning, parents and teachers were asked to complete the BASC-2 (Reynolds & Kamphaus, 2004). Previous studies have

provided evidence of internal consistency, reliability, and validity for the BASC-2 with alphas above .80 on all measures of reliability (Reynolds & Kamphaus, 2004). Items on the BASC-2 are rated on a 4-point scale (*never, sometimes, often, almost always*) and yield scores on broad internalizing, externalizing, adaptive, and social functioning domains. For the purposes of this study, the externalizing behavior problems composite *T*-score (αs = .82-.89) reported by parents (M = 65.72, SD = 13.78) and preschool teachers (M = 67.72, SD = 13.28) was used as the primary screening measure.

Intelligence. Children were administered the WPPSI-IV (Wechsler, 2012). Core subtests (block design, information, matrix reasoning, bug search, similarities, and picture memory) were administered by trained graduate students and research assistants and used to calculate a full-scale IQ (M = 89.88, SD = 14.96).

Parenting Intervention

Parents attended eight 2-hr weekly group parenting sessions based on the School Readiness Parenting Program (SRPP; Graziano, Ros, Hart, & Slavec, under review). Parents were invited to attend one of two weekly evening sessions with about 15 to 20 parents in each group. To maximize likelihood of attendance, parents were encouraged to attend either session based on their availability as the same content was delivered on both evenings. In addition, child care was provided during all sessions. The first half of each session of the SRPP focused on traditional parent training aspects (e.g., improving the parent–child relationship, use of reinforcement, time-out) based on PCIT (Zisser & Eyberg, 2010). Parents contributed to the didactic discussion via a Community Parent Education Program (COPE; Cunningham, Bremner, & Secord, 1998) style of problem solving that involves allowing families to actively contribute and guide the group discussion. The COPE style of problem solving encourages families to provide suggestions and solutions to one another rather than relying on strictly didactic information provided by the therapist. Behavior management content was based on PCIT with four sessions focusing on child-directed interaction (CDI) skills (e.g., labeled praise, reflections, imitation, descriptions, and enthusiasm). The remaining four sessions focused on parent-directed interaction skills (e.g., effective commands, time-out). Parents practiced skills with their own children in small groups while other parents observed. During the second half of each session, school readiness topics, such as managing behavior during homework time, promoting early literacy and numeracy, dialogic reading, and implementing positive home–school communication throughout kindergarten, were discussed.

Sessions were delivered by advanced clinical psychology graduate students who were trained in PCIT and were then subsequently trained in group parent training. Therapists received weekly supervision by a licensed clinical psychologist. Six of the eight group sessions were coded for treatment integrity (98%). Treatment integrity coding involved assessing for the inclusion of all session content for each given session. For instance, coders assessed for whether therapists followed the treatment manual's session procedures (e.g., providing session overview, collecting and assigning homework, coaching parent practice with children, reviewing parent practice) as well as content topics (e.g., covering reward systems, positive parenting strategies, time-out system, sleep routines). In addition, coders rated therapists on a 1- to 7-point scale (1 = *superior*, 7 = *inadequate*) in terms of how effective they were in engaging parents during the session (M = 1.20) and providing social reinforcement and support to parents (M = 1.20). Particularly important for the current study, integrity coding for every session included the collection and review of previous sessions' homework content as well as assignment of the following week's homework. Seventeen Spanish-speaking families attended concurrent sessions led by a bilingual therapist. Weekly sessions for Spanish-speaking families included the same content and were coded for treatment integrity with the same criteria as sessions delivered in English.

Measures

Parenting practices. To assess parenting practices, parents were asked to complete the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996), which consists of 42 items, measuring positive parenting, parental involvement, inconsistent discipline, poor monitoring/supervision, and corporal punishment. Responses for items are based on a 5-point scale: *never, almost never, sometimes, often, always*. Studies utilizing the APQ have provided evidence of criterion validity and utility in differentiating clinical and nonclinical samples (Frick, Christian, & Wootton, 1999; Shelton et al., 1996). Studies have also demonstrated good test–retest reliability for the APQ with estimates ranging from .84 to .90 (Dadds, Maujean, & Fraser, 2003). The APQ has been used with parents of children as young as 3 (Clerkin, Marks, Policaro, & Halperin, 2007). To reduce the number of analyses, and consistent with prior research showing that the APQ has a two-factor structure (i.e., Essau, Sasagawa, & Frick, 2006), we examined a positive parenting practices composite (αs = .68-.77; involvement and positive parenting) and a negative parenting practices composite (αs = .60-.70; poor monitoring/supervision, inconsistent discipline, and corporal punishment). Other studies examining the psychometric properties of the APQ in large samples have also documented similar estimates of internal consistency, with coefficients for the negative parenting scales between .55 and .73 (Dadds et al., 2003; Essau et al., 2006).

Parental homework completion and attendance. Treatment adherence was measured through parental weekly attendance to sessions and homework completion. Attendance of the primary caregiver for the purposes of the treatment was assessed. On average, primary caregivers attended 6.46 sessions. It is important to note that all families that started the intervention completed the program. As in traditional PCIT, parents were asked to practice CDI skills daily for 5 min at home (5 times a week). At the completion of each session, therapists passed out homework sheets for parents to return at the subsequent session where they were asked to check off each day that they practiced CDI skills for 5 min for that week, write what toys they played with each day, and document any problems or questions that arose while completing the home practice. At the beginning of each session, therapists collected homework sheets from parents and elicited discussion among parents regarding homework completion during the prior week. Parents who missed a session had the opportunity to turn in homework sheets at the following attended session. Parents who did not bring completed homework sheets to sessions were provided with homework sheets at the beginning of the session to fill out retrospectively. Homework completion scores were calculated based on the total number of days parents reported practicing CDI skills at home throughout treatment. Given the raw nature of the homework completion scores, all analyses controlled for number of sessions attended. As school readiness topics were presented throughout treatment, homework sheets also included other assignments (i.e., number of days parents completed dialogic reading with their child, number of times per week self-regulation games were played, number of times per week math/science activities were completed). However, for the purposes of the current study, only PCIT homework (i.e., CDI) was examined in an effort to focus only on homework related to BPT. Homework completion intended to promote school readiness skills was beyond the scope of this article.

Treatment knowledge. Treatment knowledge attainment was measured by quiz scores on a PCIT content knowledge quiz adapted from Lee et al. (2011) with added questions on school readiness topics. Previous studies examining the psychometric properties of the PCIT content quiz report internal consistency estimates of .73 and test–retest reliability estimates of .63 (Lee et al., 2011). Before each session, parents took a short quiz (five questions) regarding treatment principles that would be covered at that session. At postassessment, parents were administered a comprehensive

quiz on all of the parenting and school readiness principles covered throughout treatment (40 questions). Pretreatment knowledge scores were calculated for each parent based on the number of questions answered correctly out of possible questions for sessions attended. Posttreatment knowledge scores were based on questions answered correctly at the postassessment. The quiz score used in analyses included all questions including both PCIT specific content as well as school readiness topics. All questions were included as the school readiness topics were integral to the BPT program and influential in session content. In addition, many questions required parents to use knowledge across topics for which it was hard to disentangle knowledge from PCIT versus school readiness topics (e.g., "how to use PCIT skills while reading to your child").

Skill-use confidence. Parental confidence in using skills learned was assessed at the end of treatment using a subset of questions from the Therapy Attitude Inventory (TAI; Brestan, Jacobs, Rayfield, & Eyberg, 2000). The TAI has been used to assess parent satisfaction with parenting skills learned, child behavior improvements, and treatment methods (Brestan et al., 2000). Although previous studies examining the TAI have used the full scale (Brestan et al., 2000), the current study sought only to tap into items assessing parent confidence in using learned skills rather than general satisfaction with the treatment. Given the high internal consistency between items assessing confidence in learned skills ($\alpha = .80$) in the current sample, Questions 1 ("my confidence in my ability to discipline my child,"), 2 ("parenting techniques I feel I have learned,"), and 4 ("techniques for teaching my child new skills") of the TAI were used to create the skill-use confidence composite.

Parenting stress. To assess levels of parental stress, parents were asked to complete the parenting stress index–short form (PSI-SF; Abidin, 1995). The PSI-SF is a 36-item self-report measure yielding scales of parental distress, child behavior, and parent–child dysfunctional interaction. Studies have documented acceptable internal consistency ($\alpha = .83$) for the PSI-SF as well as concurrent validity with measures of parental psychopathology ($r = .54$), and parent perceptions of child behavior ($r = 31$; Haskett, Ahern, Ward, & Allaire, 2006). Total stress scores were used in analyses (αs = .72-.83, pre/post, respectively for the current sample). Internal consistency values were within the range of values deemed "acceptable" for Cronbach's alpha (Tavakol & Dennick, 2011).

SES. A Hollingshead four-factor index of social status was calculated for each family as a measure of SES (Hollingshead, 1975). SES calculations were based on parent-reported sex, education level, occupation, and marital status.

Data Analytic Plan

All analyses were conducted using SPSS 20.0. Complete data were available for all 54 families. Preliminary data analyses were conducted to examine any associations between demographic variables and any of the current study's outcome variables. To examine changes across the parenting variables (positive and negative parental practices and parental knowledge), we conducted multiple repeated-measures ANOVAs. Although we did not have a between-subjects factor, within-subjects follow-up contrast tests were conducted to examine any changes from pre- to posttreatment. Cohen's *d* effect size estimates were provided for all treatment analyses. Finally, regression analyses were conducted to examine the extent to which homework completion, session attendance, and improvements in treatment knowledge uniquely predicted skill-use confidence posttreatment as well as changes in parenting practices. Significant interactions were probed following procedures outlined by Aiken and West (1991) and the use of Hayes's macro (Hayes & Matthes, 2009).

Table 2. Descriptive Statistics.

Item	*M*	*SD*	Minimum	Maximum
Positive parenting practices pretreatment (P)	68.22	6.17	48.00	77.00
Negative parenting practices pretreatment (P)	30.00	6.32	20.00	49.00
Positive parenting practices posttreatment (P)	71.83	4.72	59.00	80.00
Negative parenting practices posttreatment (P)	25.52	4.65	19.00	39.00
Skill-use confidence (P)	4.55	0.44	3.00	5.00
Treatment knowledge pretreatment (P)	0.63	0.14	0.17	0.83
Treatment knowledge posttreatment (P)	0.81	0.10	0.47	0.97
Session attendance (O)	6.46	1.85	1.00	8.00
Parental homework completion (P)	15.43	8.34	0.00	32.00
Parental stress (P)	83.67	20.49	51.00	135.00
Socioeconomic status (P)	40.25	14.66	12.00	62.00

Note. P = parent-report measure; O = observed measure; $n = 54$ for all study variables.

Results

Preliminary Analyses

Descriptive statistics for all variables are presented in Table 2. Preliminary correlations revealed a significant association between homework completion and parental skill-use confidence ($r = .33$, $p = .01$), such that parents who reported practicing CDI skills at home more frequently also reported feeling more confident in using learned skills. Preliminary analyses did not reveal any other correlations between variables of interest. Analyses of demographic variables revealed a significant correlation between SES and parental homework completion ($r = .30$, $p = .03$) such that families with higher SES completed more homework. Parental stress was associated with session attendance ($r = -.31$, $p = .02$) such that caregivers that reported higher levels of parenting stress attended fewer parenting sessions. Preliminary analyses did not reveal any other associations between demographic variables and variables of interest (e.g., age, sex, maternal education). Subsequent analyses controlled for SES and parental stress.

Intervention Effects on Parenting Variables

Significant changes were observed across all parenting variables from pretreatment to posttreatment (see Table 2 for means, *SD*s). Specifically, parents reported an increase in the use of positive parenting practices, $F(1, 53) = 20.50$, $p < .001$; $d = .63$, and a decrease in the use of negative parenting practices, $F(1, 53) = 25.19$, $p < .001$; $d = .70$. In addition, parental knowledge about treatment principles also increased, $F(1, 53) = 105.26$, $p < .001$, $d = 1.46$.

Regression Analyses

Regression analyses were conducted to determine the unique effects of treatment knowledge, parental homework completion, and session attendance on outcome variables (i.e., positive parenting, negative parenting, skill-use confidence). Analyses controlled for pretreatment levels of respective outcome variables (e.g., controlling for pretreatment positive parenting in the regression with positive parenting as the outcome), SES, and parental stress (see Tables 3 and 4).

Positive parenting. As seen in Table 3, there were no main effects of treatment knowledge, homework completion, or attendance on positive parenting practices. Interactions between predictors

Table 3. Model for Predicting Parenting Practices Outcomes.

	β	*p*	*t*	Model R^2	ΔR^2	ΔF (*p*)
Positive parenting practices (P)						
Step 1	—	—	—	.24	.24	3.86** (.008)
Pretreatment positive parenting practices (P)	.45**	.001	3.53	—	—	—
Pretreatment knowledge (P)	−.22	.12	−1.58	—	—	—
SES (P)	.12	.38	0.89	—	—	—
Parental stress (P)	−.01	.93	−0.09	—	—	—
Step 2	—	—	—	.29	.06	1.18 (.33)
Posttreatment knowledge (P)	−.13	.38	−0.89	—	—	—
Parental homework completion (P)	.14	.32	1.02	—	—	—
Session attendance (O)	.19	.16	1.42	—	—	—
Step 3	—	—	—	.37	.08	1.77 (.17)
Treatment Knowledge × Session Attendance	−.25	.14	−1.52	—	—	—
Treatment Knowledge × Homework Completion	.31*	.04	2.13	—	—	—
Session Attendance × Homework Completion	.11	.51	0.67	—	—	—
Negative parenting practices (P)						
Step 1				.16	.16	2.35† (.07)
Pretreatment negative parenting practices (P)	.26†	.07	1.89	—	—	—
Pretreatment knowledge (P)	−.08	.58	−0.54	—	—	—
SES (P)	−.07	.62	−0.50	—	—	—
Parental stress (P)	−.22	.10	−1.68	—	—	—
Step 2	—	—	—	.22	.06	1.11 (.36)
Posttreatment knowledge (P)	−.17	.28	−1.09	—	—	—
Parental homework completion (P)	−.10	.51	−0.66	—	—	—
Session attendance (O)	−.15	.30	−1.06	—	—	—
Step 3	—	—	—	.42	.20	5.07** (.004)
Treatment Knowledge × Session Attendance	.20	.22	1.25	—	—	—
Treatment Knowledge × Homework Completion	−.36*	.01	−2.63	—	—	—
Session Attendance × Homework Completion	.41*	.02	2.49	—	—	—

Note. P = parent report; SES = socioeconomic status; O = observed measure.
†$p < .10$. *$p < .05$. **$p < .01$.

were entered on a final step. The addition of the interaction terms did not significantly increase the explained variance in positive parenting, $\Delta R^2 = .08$, $\Delta F = 1.77$, $p = .17$, thus the interaction between homework completion and treatment knowledge was not further examined ($\beta = .31$, $p = .04$).

Negative parenting. As seen in Table 3, there were also no main effects of treatment knowledge, parental homework completion, or attendance on negative parenting practices. Interactions between predictors were once again examined in a final step. There was a significant interaction between treatment knowledge and parental homework completion ($\beta = -.36$, $p = .01$). Probing of the interaction revealed that treatment knowledge moderated the association between parental homework completion and negative parenting, such that parental homework completion was only associated with decreases in negative parenting for families that had high treatment knowledge gains ($t = -2.83$, $b = -2.74$, $p = .007$; see Figure 1). In addition, there was a significant interaction between parental homework completion and session attendance in predicting negative parenting ($\beta = .41$, $p = .02$). Probing of the interaction revealed that parental homework completion moderated the association between session attendance and negative parenting. As seen in Figure 2, higher session attendance was only associated with decreases in negative parenting for families that had low parental homework completion ($t = -3.10$, $b = -3.28$, $p = .003$), while session attendance played no role in decreasing negative parenting for families that had high parental homework completion ($t = .98$, $b = 1.23$, $p = .33$).

Table 4. Model for Predicting Skill-Use Confidence.

Skill-use confidence (P)	β	*p*	*t*	Model R^2	ΔR^2	ΔF (*p*)
Step 1	—	—	—	.02	.02	0.26 (.86)
Pretreatment knowledge (P)	.04	.82	0.23	—	—	—
SES (P)	−.10	.52	−.65	—	—	—
Parental stress (P)	.09	.55	0.61	—	—	—
Step 2	—	—	—	.16	.15	2.73† (.05)
Posttreatment knowledge (P)	−.01	.97	−.03	—	—	—
Parental homework completion (P)	.41**	.008	2.78	—	—	—
Session attendance (O)	−.05	.71	−.37	—	—	—
Step 3	—	—	—	.33	.17	3.76* (.02)
Treatment Knowledge × Session Attendance	.17	.31	1.02	—	—	—
Treatment Knowledge × Homework Completion	.34*	.02	2.34	—	—	—
Session Attendance × Homework Completion	.03	.85	0.19	—	—	—

Note. P = parent report; SES = socioeconomic status; O = observed measure.
†$p < .10$. *$p < .05$. **$p < .01$.

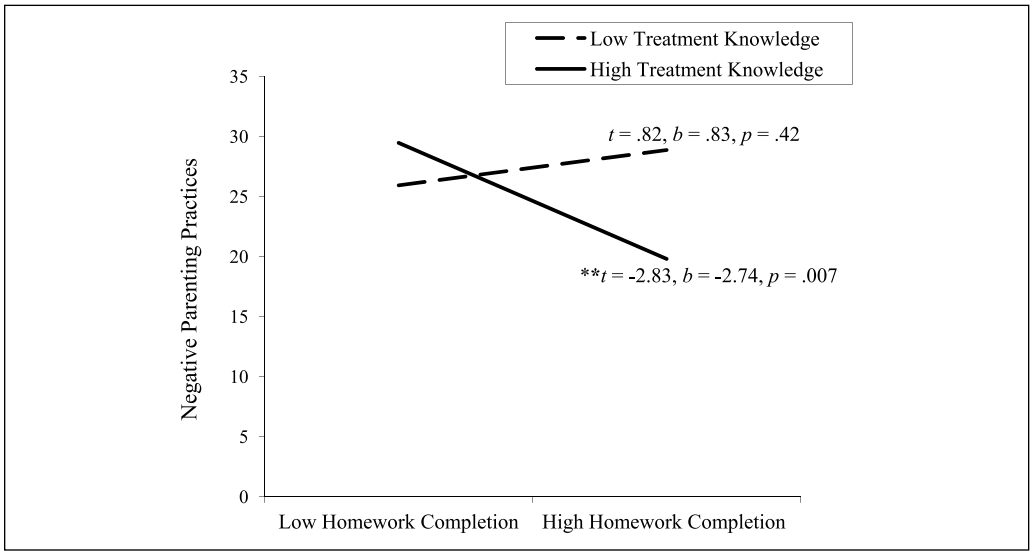

Figure 1. Parental homework completion by treatment knowledge on negative parenting practices.
**$p < .01$.

Skill-use confidence. As seen in Table 4, parental homework completion uniquely predicted parental confidence in using skills learned in treatment (β = .41, $p < .008$). Parents who reported practicing skills at home more frequently throughout treatment reported higher confidence in using learned skills at the completion of treatment. However, as seen in Step 3 of the model, the main effect was qualified by a significant interaction between treatment knowledge and parental homework completion (β = .34, $p = .02$). Probing of the interaction revealed that treatment knowledge also moderated the association between parental homework completion and skill-use confidence, such that the association between parental homework completion and skill-use confidence was present only for families with high treatment knowledge gains ($t = 3.65$, $b = .35$, $p = .0007$; see Figure 3). This association did not hold for families with low treatment knowledge gains ($t = .33$, $b = .03$, $p = .74$).

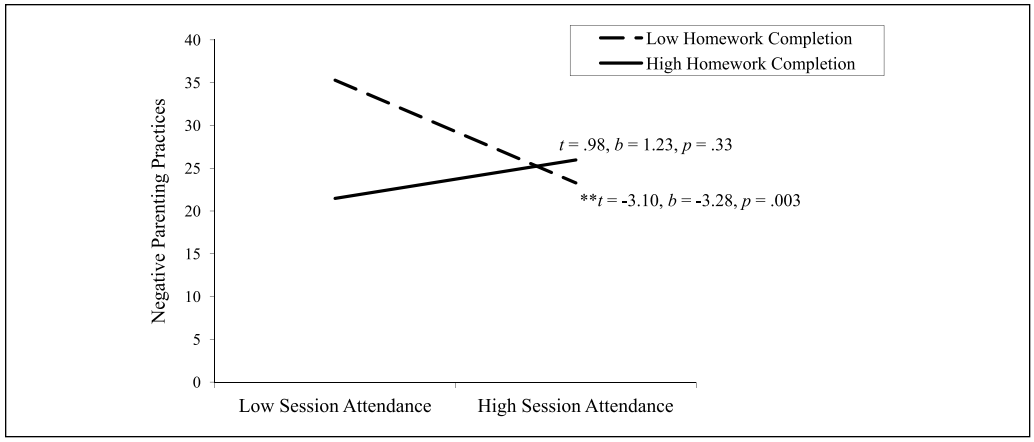

Figure 2. Session attendance by parental homework completion on negative parenting practices.
**$p < .01$.

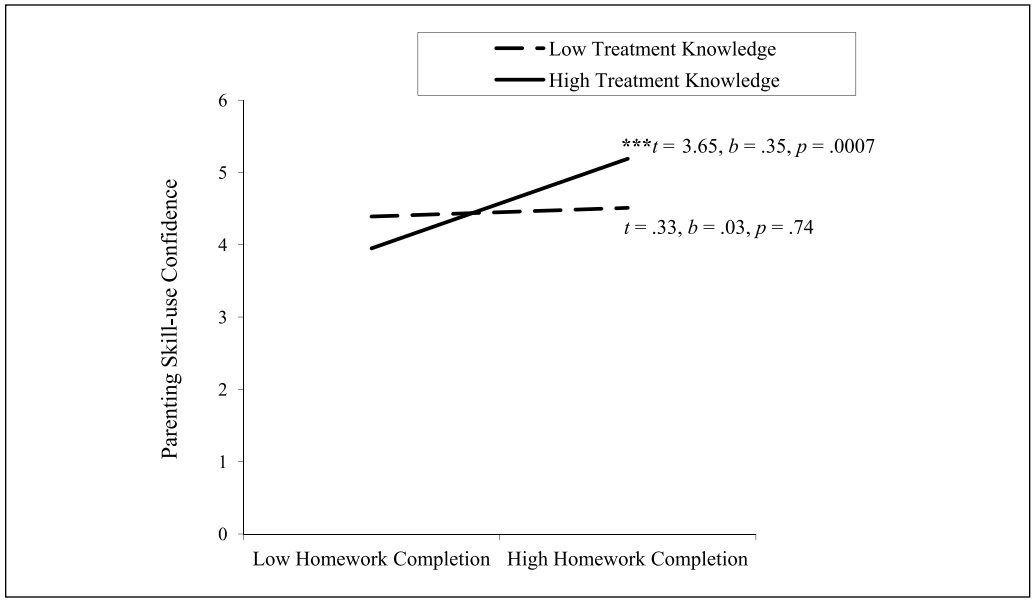

Figure 3. Parental homework completion by treatment knowledge on parenting skill-use confidence.
***$p < .001$.

Discussion

Previous work has shown that parental homework completion and session attendance are associated with improved outcomes during group-based BPT programs (Baydar et al., 2003; Clarke et al., 2015; Kling et al., 2010; Tynan et al., 2004). In addition, parental gain of knowledge about treatment principles plays a role in parenting outcomes (Morawska et al., 2009; Winter et al., 2012). However, limited work has examined these treatment processes (i.e., homework completion, session attendance, treatment knowledge gain) during group BPT programs that involve

in-session coaching, such as PCIT. In addition, no work has examined the joint contribution of these variables in predicting parenting outcomes. Thus, the purpose of the current study was to first examine how parental homework completion, session attendance, and treatment knowledge independently influence parenting practices and confidence in using learned skills during BPT and, second, to examine interactions between these predictors.

Consistent with previous literature and other BPT programs (Morawska et al., 2009; Pelham & Fabiano, 2008; Winter et al., 2012), results demonstrated that the SRPP was associated with increases in parental treatment knowledge and positive parenting as well as reductions in negative parenting. It is important to note that part of the SRPP involves teaching parents PCIT skills in a large group format and having them practice in subgroups while receiving coaching from therapists. Hence, these findings demonstrate the feasibility of incorporating in-session practice and coaching within a large group format while maintaining improvements in parenting practices and parental knowledge of skills. In addition, a strength of the current study that further supports the initial promise of the SRPP is that sessions were well attended by caregivers and all families completed the treatment. Findings from this study highlight the importance that homework completion may play in BPT programs that involve in-session coaching. Whereas Kaminski and colleagues (2008) found that homework was not predictive of treatment outcomes, findings from this study suggest that perhaps homework completion is most predictive of outcomes for BPT programs that require parents to practice skills with their own child, which may serve to enhance the effects of home practicing. Results of the current study are not completely divergent from the results of the previous meta-analytic review as we did not find a main effect for parental homework completion. However, interactions better explained associations (discussed in further detail below) that were not explored in the review.

The current study addresses a gap in the literature by demonstrating the joint effects of both homework completion and parental knowledge on parenting outcomes during a group BPT intervention. Contrary to previous studies (Baydar et al., 2003; Clarke et al., 2015; Kling et al., 2010; Morawska et al., 2009; Tynan et al., 2004; Winter et al., 2012), results of the current study did not reveal main effects of parental knowledge or homework completion on parenting outcomes. The current study may have diverged from previous studies examining homework in BPT programs due to the fact that the BPT program used involved group-based PCIT. Previous studies on homework completion utilized more traditional didactic BPT programs where the effects of homework completion may have a more readily observable direct effect. However, the conditional effects of homework completion may have been due to the more intricate nature of PCIT where parental knowledge may play a larger role, as compared with BPT programs that cover more general parenting principles that are easier to grasp. As mentioned in the literature review, no other studies have reported effects of homework completion on parenting outcomes during PCIT with children with BEBP, thus not allowing us to compare effects with other PCIT studies. Instead, the current study revealed that interactions better explained the association between these variables, such that the associations between homework completion and parenting outcomes were moderated by treatment knowledge. Specifically, high levels of homework completion were only associated with decreases in negative parenting practices for families that also had high treatment knowledge gains. This suggests that while homework completion may be beneficial, limited knowledge of appropriate skills during home practice may lead to diminished outcomes. These findings highlight the complexity of maximizing parent outcomes during BPT and suggest that not only frequency of homework or knowledge of skills is independently important but also the combination of both is necessary for maximizing outcomes. In addition, home practice without skill knowledge may lead to ineffective practice in the home. Studies examining the development of clinician skills find that treatment knowledge is associated with skill acquisition and implementation (Allen et al., 2012; Walrath et al., 2006). It may be important for future studies to investigate how diminished parental knowledge affects home practice by examining factors such as rate of acquisition of skills

and quality of implementation. In the current study, we examined homework completion in a more general manner. However, other factors such as skill proficiency (Bagner & Eyberg, 2007), as well as maternal warmth and responsiveness, which play a role in treatment outcomes (Davidov & Grusec, 2006), may be important for examining aspects of parent–child interactions as they relate to implementation. Future studies should also examine how the quality of parent–child interactions affects the effectiveness of homework in improving treatment outcomes.

In addition, treatment knowledge also moderated the association between homework completion and parental confidence in using parenting skills learned in treatment. Similarly, homework completion was associated with higher confidence for families with high treatment knowledge gains. Previous work has shown modest associations between parenting competence and parenting self-efficacy (see T. L. Jones & Prinz, 2005, for a review). It is plausible that parents with higher knowledge of parenting skills are consequently more competent in interacting with their children and thus report higher self-efficacy in their own parenting practices. Factors such as increased parental self-efficacy due to knowledge gains and increased home practicing may be responsible for higher levels of parental confidence in using treatment skills. Similarly, Clarke and colleagues (2015) found that increased parental homework was associated with higher parental self-efficacy. Individual biases in self-efficacy lead to cognitive attributions about successes and failures leading to alterations in subsequent motivation (Bandura, 1994). Thus, parents with low self-efficacy may then be more likely to have negative cognitive attributions about their success and/or failures during home practice and thus less motivated to continue practicing and learning new material. In addition, parental self-efficacy is predictive of parental discipline style (Sanders & Woolley, 2005). Future studies should examine how factors such as self-efficacy and treatment motivation affect not only homework completion but also motivation to learn treatment principles. An alternate explanation for the findings may also be considered. It is plausible that parents who experience greater improvements in treatment knowledge become more motivated to complete homework, thus further improving their outcomes.

In the current study, we also revealed homework completion as a moderator between the association between session attendance and changes in negative parenting, such that higher session attendance was only associated with decreases in negative parenting for families with low homework. While limited session attendance has been linked with poorer outcomes during BPT (Kazdin, Mazurick, & Siegel, 1994; Prinz & Miller, 1994), the present findings suggest that attendance may be particularly important for families that are not engaging in home practice. However, findings revealing no impact of attendance on outcomes for families with high levels of homework completion suggest that homework completion may serve to attenuate the effects of poor attendance. Consistent with previous studies demonstrating homework completion to be a stronger predictor of treatment response than attendance (Clarke et al., 2015; Nix et al., 2009), these results stress the importance of practice and generalizability of skills in the home environment even when attendance to actual sessions is low. Future work should focus on determining the mechanisms by which home practicing affects treatment outcomes, as it seems to involve more active participation and engagement than session attendance, which may involve more passive acquisition of information. In addition, it may be important to examine how engagement or "buy in" to strategies presented in BPT differentially affect homework completion versus sole attendance. Randomized controlled trials find that incorporating motivational interviewing strategies within BPT programs leads to higher session attendance, treatment adherence, and treatment motivation (Nock & Kazdin, 2005). Incorporation of these strategies has also been demonstrated to be effective for improving retention, particularly for populations with low treatment motivation (Chaffin et al., 2009). While motivational interviewing may serve to increase attendance and decrease dropout, future studies should examine how the use of motivational interviewing strategies may improve more active engagement in BPT in the form of homework completion.

Limitations and Future Research

There are limitations to the current study that should be addressed. A majority of the children enrolled in this study were also concurrently enrolled in a clinical STP (STP-PreK classroom intervention). This may serve as a limitation as participating in a full-day treatment program for children may indirectly affect parents' engagement with the BPT program in terms of likelihood of attending sessions and completing homework. For the purposes of this study, we only examined parental outcomes, as child outcomes are reported elsewhere as part of the main randomized controlled trial (RCT) for the STP-PreK (Graziano & Hart, 2016). Although participating in multimodal treatments may play a role in parental engagement, recent meta-analyses reveal that effect sizes for BPT programs on parent and child outcomes are not increased when children are receiving additional behavioral skills training (Comer, Chow, Chan, Cooper-Vince, & Wilson, 2013; Kaminski et al., 2008). Nonetheless, future studies should utilize samples that are exclusively receiving one form of treatment to examine how parental engagement variables, such as homework completion, are associated with parent and child outcomes solely as a function of BPT and not as a result of any parental contact that is part of another ongoing treatment.

The SRPP implemented in this study not only covered traditional parenting practices in the form of group PCIT but also incorporated school readiness topics such as dialogic reading. Although the majority of studies on parental knowledge have examined either parental knowledge of child development or parenting practices, few studies have examined parental knowledge of parenting principles related to school readiness domains. Research on parental homework completion during interventions that target school readiness is also limited. It is not clear how parental knowledge of these topics affects treatment outcomes that relate to parenting. In addition, parents in this sample were also asked to complete homework on parenting practices related to school readiness, such as practicing dialogic reading and implementing homework time routines. The current study focused on homework for the PCIT component of the sessions. It may be important for future work to determine how knowledge of these school readiness topics may affect parental home practice of skills conducive for school readiness.

The ethnic homogeneity of the current sample must also be considered. The majority of the sample was of Hispanic/Latino background. Studies examining PCIT with samples of predominately Hispanic/Latino families do find positive treatment effects (Matos, Torres, Santiago, Jurado, & Rodriguez, 2006; McCabe, Yeh, Garland, Lau, & Chavez, 2005). In addition, given the heightened barriers to treatment and issues with adherence for ethnic minorities, it is important to examine factors that relate to maximizing outcomes for this population, especially given that Hispanic/Latino children are the fastest growing and most understudied ethnic minority in the United States (La Greca, Silverman, & Lochman, 2009). Although attrition rates tend to be higher for ethnic minorities in psychosocial treatments (see Lau, 2006, for a review), the current study reveals some initial findings, in that even in the face of low adherence (e.g., poor attendance) outcomes can be maximized so long as families continue to practice skills at home. However, given the homogeneity of the sample, in the current study, we did not examine results by ethnic group, thus no firm conclusions can be drawn about the specificity of results for Hispanic/Latino families. Future work should examine parental engagement variables such as attendance and homework completion across ethnic groups to draw more definitive conclusions.

An important limitation to consider is that parent homework completion was reported exclusively by parents. Relying on parent reports of homework completion indeed presents a challenge, as parents may be more likely to overreport use of home practice. In addition, as parents participated in parent training and were continuously being assessed on their knowledge of treatment principles, the degree to which they overreported homework completion may have been affected

by socially desirable responding. However, this issue is not limited to the current study but, rather, is a shortcoming present across all literature examining parental homework completion during BPT programs. In fact, all studies discussed in the literature review were not only all based on parent report but also provided minimal information about how homework completion was assessed (Baydar et al., 2003; Kling et al., 2010; Nix et al., 2009; Tynan et al., 2004). Only one study provided details on how parent-completed homework sheets were coded (Clarke et al., 2015), which nonetheless, relied on parent reports. Similarly, studies examining homework completion during individual PCIT utilized the manualized PCIT homework sheets, which rely on parents completing sheets and returning them at each session (Danko et al., 2016; Lyon & Budd, 2010; Niec et al., 2016; Ros et al., 2016). These studies also similarly calculated homework completion according to the number of days that parents reported practicing CDI skills. Evidently, reliance on parent-reported homework compliance presents a problem across the field. Nonetheless, future work should focus on developing more innovative approaches to quantify aspects of BPT such as homework completion. For instance, more work is needed on the development and utilization of technological approaches to quantify homework, as increasing attention has been placed on smartphone technologies that focus on BPT aspects (see D. J. Jones, Forehand, McKee, Cuellar, & Kincaid, 2010, for a review).

An additional limitation of the current study is that the procedures used for recording homework, consistent with PCIT protocol, precluded us from systematically identifying whether the homework sheet was completed at home or whether parents were asked to complete homework sheets in session (i.e., if parents forgot to bring in and/or complete the homework sheet). Undoubtedly, homework sheets filled out by parents at home may be much less subject to bias then those filled out retrospectively during the session. Other studies on homework completion during PCIT have used similar approaches and raised similar concerns as a limitation (Ros et al., 2016). Future studies should more systematically document the completion of homework and examine potential bias by comparing outcomes of families that complete homework sheets retrospectively versus those that bring assignments completed to each session.

Finally, an additional limitation to consider is that parents reported on their own parenting practices as well as homework completion, which may have contributed to shared reporter bias. However, observational measures of parenting practices have been shown to be highly correlated with parental report of own practices through the APQ (Hawes & Dadds, 2006), suggesting acceptability in using parental report of parenting practices. In addition, parental knowledge of treatment skills learned in treatment was also conceptualized as a parent-report measure, as quiz data are not objective in nature and lack psychometric properties. Future studies should examine more objective measures of parental treatment knowledge, such as ratings of parental proficiency of material during session participation. Of note, although a variety of factors are discussed as potential mechanisms to explain the effects of homework completion on parenting practices, the reliance on parent-report measures utilized in this study precludes us from making more concrete inferences about directional or causal links. Conclusions from the current study should be interpreted with the caveat that parent reports of parenting are largely affected by participating in a BPT program focused on parenting practices.

Findings of the current study support the notion that homework completion may be beneficial for enriching outcomes for families that show enhanced understanding of the treatment principles. Clinical implications include recommendations for BPT programs to increase efforts to make therapy knowledge accessible and understandable to parents to maximize the benefits of home practicing of skills. Future studies should examine how monitoring parental knowledge of treatment skills may affect outcomes to ensure that families are attaining the maximum benefits from home practice. For example, it may be important to continuously assess parental knowledge of treatment skills throughout the course of treatment to target parents with low knowledge gains and provide additional assistance with not only comprehension of didactic material but also

strategies to increase self-efficacy. Targeting such mechanisms in BPT may be an important way for future studies to assess families at risk of dropping out, which may occur to families that do not understand the materials or have low levels of self-efficacy. Indeed, motivational interviewing research shows that incorporating strategies in BPT programs that aim to increase parental motivation and self-efficacy increases engagement in treatment (Chaffin et al., 2009; Nock & Kazdin, 2005). It will be important for future research to extend the applications of some of these motivational interviewing principles to BPT in the hopes of increasing engagement and self-efficacy to increase treatment motivation.

Conclusion

In sum, the purpose of the current study was to examine how components of BPT (session attendance, parental homework completion, treatment knowledge) play a role in maximizing parenting practices and confidence in using learned skills during group BPT. Findings of the current study highlight the differential impact of parental homework completion during BPT for improving parenting skills. Specifically, home practice of skills learned in treatment may not only attenuate the effects of poor attendance but also enrich outcomes for families that show enhanced understanding of the treatment principles. Results highlight the complexity of maximizing parent outcomes during BPT and suggest that not only frequency of home practicing but also knowledge of skills and attendance are important.

Authors' Note

The opinions expressed are those of the authors and do not represent views of the Institute of Education Sciences or the U.S. Department of Education or The Children's Trust.

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