

Evaluating a Comprehensive Strategy to Improve Engagement to Group-based Behavioral Parent Training for High-risk Families of Children with ADHD

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Abstract Behavioral parent training (BPT) is an evidence-based intervention for the treatment of attention-deficit/hyperactivity disorder (ADHD) and related disruptive behavioral disorders of childhood. Despite convincing data on effectiveness, engagement to BPT, particularly for high-risk families, has been a long standing, yet understudied, issue. Data from a clinical trial of a comprehensive BPT approach to enhance engagement and outcomes (the Strategies to Enhance Positive Parenting [STEPP] program) are presented herein. The STEPP program was compared to a traditional group-based BPT program on propensity to attend treatment, propensity to complete homework over the course of treatment, and dropout from BPT. Additionally, factors empirically related to engagement to treatment and targeted by the STEPP program were analyzed to determine whether these factors were enhanced by participation in the STEPP program. In a randomized cohort of 80 single-mothers of school-age children with ADHD, analyses demonstrated that the STEPP program lead to greater propensity to attend treatment over time and a greater

propensity to complete homework over the course of treatment. Furthermore, participation in the STEPP Program was associated with a lower rate of dropout. Finally, data suggested that parents assigned to the STEPP program reported significant improvements in factors empirically related to engagement that were targeted within the STEPP program (i.e., amount and quality of social support from their group members, expectations for treatment, and perceived barriers to treatment participation). Results of the study have implications for targeting engagement throughout the process of BPT, particularly for high-risk families.

Keywords Behavioral parent training · Attention-deficit/hyperactivity disorder · Engagement, retention · High-risk families

Behavioral parent training (BPT) has a long history as an effective treatment for attention-deficit/hyperactivity disorder

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(ADHD), oppositional defiant disorder (ODD), and conduct disorder (CD) (Eyberg et al. 2008; Pelham and Fabiano 2008). Although efficacious, engagement to BPT (e.g., attending treatment sessions, completing homework, premature dropout, etc.) is a critical issue. Studies have demonstrated that families who are more engaged in BPT have significantly better outcomes (e.g., Prinz and Miller 1994). Unfortunately, it is common for 40–60 % of families with children diagnosed with ADHD, ODD, and/or CD to have challenges in fully engaging in BPT (e.g., Armbruster and Kazdin 1994).

Although poor engagement has been a long standing issue for BPT programs (Nock and Ferriter 2005), to our knowledge, only five randomized clinical trials have explicitly evaluated enhancements with a primary goal to engage and retain families of children with ADHD, ODD, and/or CD in BPT. These engagement enhancements have typically been implemented prior to or during BPT. Together, these studies have demonstrated that various enhancements can improve engagement to BPT for families of children with ADHD, ODD, and/or CD.

Prinz and Miller (1994) as well as Kazdin and Whitley (2003) focused on the incremental benefit of an adjunctive problem solving treatment to individually administered BPT on engagement. The problem solving intervention focused on supporting parents in identifying and implementing solutions to address life concerns (e.g., health problems, external demands). Findings from the Prinz and Miller study demonstrated that the enhanced BPT resulted in fewer families dropping out of treatment; specifically, 47 % in the BPT-alone group versus 30 % in the BPT plus problem solving intervention. Kazdin and Whitley found that the addition of an adjunctive problem solving component did not improve treatment attendance. However, the analyses only included families who completed BPT, therefore it is unclear the extent to which the enhanced BPT differentially impacted rates of engagement for the entire sample.

Miller and Prinz (2003) determined whether the match between parental attributions of child behavior and the focus of treatment would impact engagement to BPT. Specifically, these authors attempted to determine the match between locus of control (i.e., external or internal) and treatment focus (parent-only, child-only, or parent and child) on engagement to individually administered BPT and/or individually administered child treatment. In line with their hypotheses, it was found that the mismatch between parental locus of control and treatment focus was substantially related to premature dropout. Families for whom there was a mismatch between parental locus of control and focus of treatment were significantly more likely to drop out of treatment (48 %) compared to parents who received treatment that was aligned with their locus of control (24 %).

Nock and Kazdin (2005) implemented enhancements to address practical barriers to treatment, maladaptive cognitions, and motivation for treatment during the course of

individually administered BPT. In this study, the enhancement intervention was implemented over three individual sessions interspersed throughout BPT. The enhancement sessions consisted of the therapist eliciting self-motivational statements to enhance attributions about treatment from parents (e.g., “What steps can you take to help change your child’s behavior?”). Therapists also inquired about practical barriers to participation (e.g., transportation) and assisted parents in problem solving these barriers. Results of this study demonstrated that compared to an individually administered BPT-alone group, families in the enhanced individually administered BPT group had greater attendance to treatment and greater implementation of behavioral skills at home. In addition, approximately 45 % of families in the enhanced BPT intervention dropped out from treatment compared with 65 % of families in the traditional BPT program. Nock and Kazdin also determined the mediating role of parent motivation (i.e., parent readiness to participate and perceived ability to participate) in the relationship between treatment attendance and adherence. Results indicated a trend toward the mediational role of motivation in explaining the effects of the enhanced BPT and adherence to treatment; however, no mediational effect was found for parent motivation and the relationship between the enhanced BPT and attendance.

In the most recent clinical trial of enhancements to improve engagement to BPT, Chacko et al. (2008; 2009) developed a comprehensive engagement strategy for group-based BPT. The Strategies to Enhance Positive Parenting (STEPP) BPT program was developed to maximize engagement to and outcomes following BPT for high-risk families of youth with ADHD—specifically single-mother families (Kazdin and Mazurick 1994; Kazdin et al. 1993). The STEPP program included several enhancements to the format, delivery, and content of traditional BPT that were hypothesized to affect cognitions, attributions, motivation, barriers, social support, and parenting skill putatively related to engagement in and outcomes following BPT. The STEPP program included a pre-BPT enhanced intake focused on addressing maladaptive cognitions/expectations, a problem solving intervention, subgroup formats, and child motivational enhancements during BPT. In a randomized clinical trial, compared to traditional group-based BPT, the STEPP program was found to significantly improve child and parenting behavior but also to significantly improve attendance and homework completion, with large between-group effect sizes ($>.70$) for both engagement outcomes (Chacko et al. 2009).

The STEPP program is a notable study in the literature on engagement to BPT in that, to our knowledge, it is the only study to evaluate the impact of enhancements specifically for a group with high risk for poor engagement (i.e., single mothers). Moreover, it is the only study, to our knowledge, that has evaluated enhancements to improve engagement to group-based BPT. These are significant advancements in the

field for at least two reasons. First, as others have stated (Kazdin and Whitley 2003), enhancements to BPT should focus on those individuals where there is a higher risk for poor engagement. Secondly, engagement to group-based BPT is an understudied, yet critical area of investigation. As shifts in health care policy in the United States dictate increased access to mental health services, efficiency in service delivery will become increasingly important. Group-based BPT offers much promise in enhancing efficiency while not attenuating effectiveness relative to individually administered BPT (e.g., Webster-Stratton 1984). However, unlike individually administered BPT which is flexible in terms of content, pace, and delivery, group-based BPT follows a fixed-format. This fixed format may impose significant challenges to engagement that families may not experience in individually administered BPT. Given these issues, understanding and enhancing engagement to group-based BPT, particularly for higher-risk groups, such as single-mothers, is a critical line of research.

Although our understanding of how to improve engagement to BPT has advanced, the utility of data to inform next generation iterations of enhancements to engagement is limited. First, most studies have documented the effect of an enhancement on average rates (e.g., average rates of attendance, average rate of homework completion) of engagement over time points, averaged across individuals. Although important, data reported at this level masks the potential variability in engagement as a function of time. Further, data on average levels of engagement also fails to illustrate the impact of engagement methods during the course of BPT. Engagement is an ongoing process—one that begins before active treatment and is essential during the course of treatment (Nock and Ferriter 2005). Moreover, engagement between BPT sessions is not ideal—implementation of behavioral parenting skills at home (i.e., homework) is often variable (Nock and Kazdin 2005). Steps toward refining methods to improve ongoing engagement can only be informed by data assessing variability in engagement (e.g., attendance and homework completion) over the course of BPT. Moreover, understanding the extent to which an adjunctive enhancement component affects putative factors that attenuate engagement to BPT has direct implications for elucidating the mechanisms/process of engagement in BPT. Although limited, studies discussed earlier have found that parental attributions for child behavior (Miller and Prinz 2003) and parent motivation for treatment (Nock and Kazdin 2005), are impacted by or related to the enhanced BPT being studied. Collectively, a better understanding of the effects of engagement methods throughout BPT as well as the impact of adjunctive enhancement components on putative factors related to engagement to BPT will likely add substantially to refining our understanding of when

and how to target efforts at engaging families at critical points during BPT.

The primary purpose of this paper is to utilize engagement data from the randomized clinical trial of the STEPP program (Chacko et al. 2009) to further explore the effects of the STEPP program as compared to the traditional BPT program on various engagement outcomes. Chacko et al. (2009) found that average levels of engagement (% sessions attended, % homework assignments completed) were greater among parents in STEPP than those in traditional BPT program. Although important, these analyses only reported overall mean differences for data collected longitudinally across nine treatment sessions. Given that sporadic attendance is an issue for a substantial number of families, while others drop out at varying time points during the course of BPT, attendance and other related variables (e.g., homework completion) should be analyzed using tests that account for variability at each time point. Analyses of this kind, such as latent growth modeling, offers a unique opportunity to examine whether the propensity to attend sessions and complete homework assignments differs over time between parents in STEPP versus those in traditional BPT. Herein we also focus on the extent to which the STEPP program relative to a traditional BPT program impacted factors hypothesized as influencing treatment engagement.

The specific aims of this paper are to determine the impact of the STEPP program compared to a traditional group-based BPT program on: 1) propensity to attend treatment sessions and complete homework assignments throughout the intervention; 2) dropout from treatment, and; 3) factors hypothesized to be impacted by the engagement methods (i.e., amount and quality of social support between single-mothers within their group, expectations regarding treatment, perceived barriers to treatment participation). It is hypothesized that participation in the STEPP program will result in greater propensity to attend each session and to complete each homework assignment. We also hypothesize that there will be fewer dropouts from the STEPP program. Lastly, we hypothesize that factors targeted within the STEPP program will be enhanced/improved relative to the traditional BPT program. Collectively, this paper attempts to provide greater clarity regarding the impact of a comprehensive engagement strategy for group-based BPT, results of which should inform how best to target engagement methods for high-risk families in group-based BPT.

Methods

Participants

Between September 2002 and March 2005, single-mother families were recruited for this study through

radio advertisements, mailings, and school referrals. Single-mothers were required to be the primary caregiver and residing without a significant other (e.g., child's father, boyfriend, fiancé'); however, single-mothers were included in this study if they resided with other individuals (e.g., parents, siblings, roommates). Single-mothers were not excluded from participation for the presence of any psychiatric conditions. Children were required to be between 5 and 12 years-old at the start of treatment and were required to meet diagnostic criteria for ADHD (any type). The family met with study staff to conduct a formal assessment for a diagnosis of ADHD prior to enrolling in the study. ADHD diagnosis was determined through completion of parent and teacher rating scales of DSM symptoms (i.e., Disruptive Behavior Disorder [DBD] rating scale; Pelham et al. 1992), completion of semi-structured interviews with the parent (Disruptive Behavior Disorder [DBD] semi-structured parent interview; Pelham 2002), and assessment of cross-situational impairment through completion of parent and teacher rating scales (Impairment Rating Scale; Fabiano et al. 2006). More specifically, an ADHD symptom was counted toward meeting the symptom criterion for ADHD if either the parent or the teacher endorsed the symptom as occurring at a clinically-significant rate ("pretty much" or "very much" of the time). Additionally, information from DBD rating scales were integrated with the DBD interview and discrepancies between parent rating scale and interview endorsements of symptoms were addressed through a consensus between the therapist and clinical supervisor. Both the single-mother and teacher were required to endorse clinically-significant impairment on the Children's Impairment Rating Scale at home and school, respectively, in order to meet impairment criterion for ADHD. Families were excluded if the child had an estimated full-scale IQ of less than 80 based on either the Wechsler Intelligence Scale for Children (Wechsler 1991) or from testing during the 6 months prior to the intake, was diagnosed with a pervasive developmental disorder, or if there was evidence of psychosis.

Procedures

Mother's consent and child assent were obtained before the initial intake. The informed consent and assent forms were approved by the university's Institutional Review Board. Treatment conditions included: (1) a 9 week, group-based traditional behavioral parenting training group (traditional BPT; $n=40$); (2) the 9 week group-based Strategies to Enhance Positive Parenting (STEPP; $n=40$) program, or; (3) a wait-list control group ($n=40$). In order to maximize treatment group size, treatment (i.e., traditional BPT and

STEPP program) was randomly assigned to time blocks (i.e., Fall or Spring). Mothers were randomly assigned within time block to either the traditional BPT or the STEPP program for that time block or the wait-list control group. Given the aims of this paper, participants in the wait-list control group were not included in the analyses. Characteristics of the traditional BPT and STEPP program participants are detailed in Table 1. The groups did not differ on any of the demographic variables.

Traditional BPT The traditional BPT program was a manualized, 9 week, group-based BPT program held for two and one-half hours each week. Mothers engaged in a collaborative, large group format to discuss and learn about effective parenting strategies (e.g., positive attending, planned ignoring, incentive systems, time-out, etc.). Sessions included videotaped vignettes of parenting errors whereby mothers identified these errors and then formulated alternative parenting strategies. Furthermore, the therapist facilitated group discussions by asking questions to encourage mothers to make adaptive attributions about the effects of their parenting on their child's behavior. Therapists modeled the parenting techniques with further role-play by mothers. Mothers were also assigned weekly homework assignments based on the contents of the session. During the program, children (and their siblings between the ages of 5–12) participated in a concurrent traditional, group-based child social skills program (see Chacko et al. 2008; 2009 for greater details).

STEPP program Identical to traditional BPT, the STEPP program included a collaborative, large group format, identical BPT content, identical order of presentation of BPT content, identical videotaped vignettes to depict parenting errors, therapist facilitated questions and group discussions, modeling, and role-plays by mothers. Children (and their siblings between the ages of 5–12) also participated in a group-based child social skills program.

The STEPP program, however, also included several enhancements to the format, delivery, and content of traditional BPT which were conceptualized to improve engagement and outcomes for high-risk families. First, the STEPP program incorporated an enhanced intake procedure that addressed possible practical barriers to treatment participation, addressed maternal cognitions regarding expectations for treatment, and addressed maternal attributions regarding their own parenting behavior and their child's behavior, factors which have been demonstrated to impact engagement in children's mental health services in general as well as BPT specifically (Kazdin et al. 1997; McKay et al. 1998; Nock and Kazdin 2001; Nock and Kazdin 2005; Miller and Prinz 2003). Mothers who were assigned to the STEPP program were asked about possible practical barriers to

Table 1 Participant characteristics for STEPP and traditional BPT groups

	STEPP	Traditional BPT
Child age in years	Mean =7.36 (SD=1.86)	Mean =8.17 (SD=2.42)
Child sex	77 % male	66%male
Single-mother age (years)	Mean =34.05 (SD=8.27)	Mean =36.77 (SD=8.56)
Single-mother education (years)	Mean =13.84 (SD=1.66)	Mean =14.28 (SD=1.95)
Percent of single- mothers within income levels	<=\$10,000 (10 %)	<=\$10,000 (7.5 %)
	\$11–20,000 (47.5 %)	\$11–20,000 (50 %)
	\$21–30,000 (25 %)	\$21–30,000 (25 %)
	\$31–40,000 (12.5 %)	\$31–40,000 (12.5 %)
	>=\$41,000 (5 %)	>=\$41,000 (5 %)
Baseline Beck Depression Inventory	14.26 (10.67)	14.28 (11.68)
Child race/ethnicity	52 % Caucasian	56 % Caucasian
	27 % African American	18 % African American
	8 % Latino	13 % Latino
	13 % Biracial	13 % Biracial
Child ODD/CD Comorbidity Status	67.5 % ODD	70 % ODD
	12.5 % CD	10 % CD
	10 % DBD-NOS	10 % DBD-NOS

STEPP Strategies to Enhance Positive Parenting. *BPT* Behavioral Parent Training. *SD* Standard Deviation. *ODD* Oppositional Defiant Disorder. *CD* Conduct Disorder. Some percentages sum to greater than 100 % due to rounding error

ongoing involvement and these barriers were problem-solved during the initial intake (e.g., McKay et al. 1998). Furthermore, open-ended questions were asked of mothers regarding their expectations about their involvement in treatment and their child's involvement in treatment. Mothers were also asked open-ended questions regarding their expectations about the rate and potency of treatment related improvements for their child and about their attributions regarding locus of control of their child's behavior and the effect of their parenting. Misconceptions/inappropriate expectations regarding these issues were discussed and clarified with the mother during the intake. It was hypothesized that the enhanced intake procedure would improve expectations for treatment and mitigate perceived barriers to treatment participation, thereby increasing attendance to treatment.

Perceived social support has been hypothesized to be critical to engaging high-risk mothers in BPT (Bagner and Eyberg 2003). Although often conceptualized as support from the therapist, in group-based treatment, perceived social support from group members may be equally important. Over the past decade, Cunningham and colleagues have developed a coping modeling, problem-solving format for BPT (COPE; Cunningham et al. 1998). This format incorporates smaller subgroups within the large BPT group. This format allows mothers to have the opportunity to confront problems, make errors, and arrive at a common solution together in a smaller, more manageable format. Importantly, within this format, mothers are allowed the opportunity to discuss issues without involving the therapist directly. This subgroup format allows

some mothers, particularly those who may be more socially anxious or those who may not feel or want to engage with a larger group of adults, the opportunity to learn from peers, give one another supportive feedback, and engage in treatment. It was hypothesized that the addition of the COPE subgroup format would improve social support between mothers resulting in greater engagement to treatment.

Ongoing life stressors have long been associated with issues in engagement to BPT (e.g., Webster-Stratton and Hammond 1990). Problem solving as an adjunctive component to BPT has yielded positive effects on attendance and outcomes (Kazdin and Whitley 2003; Pffiffer et al. 1990; Prinz and Miller 1994). The STEPP program incorporated an abbreviated form of D'Zurilla and Nezu's (1999) highly flexible problem solving therapy. Mothers were asked to specify adult- and child- focused problems that may interfere with their parenting or affect their psychosocial functioning as well as identify issues that may impact their attendance and engagement to BPT as topics to address within the framework of the adjunctive problem solving therapy.

The COPE subgroup also augments the problem solving treatment process. Within the STEPP program, each subgroup discussed each member's problem using the problem solving treatment guidelines with support from members within the subgroup and, when necessary, from the therapist. Subgroups then discussed the problem and the steps used to solve the problem with the large group. This approach continues to enhance social support for mothers, allows for the development of several possible solutions to a problem from peers, and allows several mothers within the large

group to address problems during the same session, thus maximizing efficiency. Collectively, it was hypothesized that the adjunctive problem solving component within the context of a COPE subgroup format would improve social support between mothers and reduce perceived barriers to treatment attendance and homework completion.

In order to enhance parenting skill acquisition, the standard child social skills program that was delivered concurrently with the STEPP mother group was modified. During certain sessions, mothers would observe paraprofessionals modeling the use of the parenting skill with their child in the children's social skills program. Subsequently, mothers would implement the parenting skill with their child in the children's social skills group and receive feedback from the therapist and other members of the mother's subgroup when the interaction was completed. Finally, a motivational system was developed that focused on children earning incentives based on meeting both within session and weekly, home based behavioral goals. This provided an opportunity for mothers to observe how these motivational systems worked, to have a consistent means of delivering rewards during the STEPP program, and also allowed children in the STEPP program an opportunity to be consistently rewarded for attaining treatment goals at home and during sessions. Collectively, both the mother-child interactions and within session motivational system were developed to primarily improve treatment outcome; although, an additional benefit of the motivational enhancement was to directly influence mother engagement through enhancing child motivation to participate in treatment.

Dependent Measures

Treatment attendance, homework completion Mother's attendance at each session was coded as present/absent. Homework based on session content was assigned for session one through eight. Homework was counted as completed if the mother attended the BPT session, submitted her homework for the week, and attempted to complete some portion of the homework assignment.

Dropout Dropout from BPT was defined as the mother explicitly stating that she did not want to continue treatment or a mother failing to appear for three consecutive sessions despite repeated efforts at contacting and engaging the mother. Time-to-dropout, an additional estimate of ongoing engagement, was defined as the time from initial session to the session where the criterion for dropout was met for an individual mother.

Therapy process and treatment equivalence Several assessments from mothers and independent-coders were completed using measures developed specifically for this study in order to determine the extent to which factors that were conceptualized as impacting engagement (i.e., social

support from mothers within their group, expectations for treatment, perceived barriers to treatment participation) were improved/enhanced for participants assigned to the STEPP program relative to the traditional BPT group. In addition, assessments of clinician/therapist behaviors were completed by mothers and independent-coders to determine if differences in therapist qualities (i.e., competence, amount and quality of social support) may have differed between treatment conditions. Cohen's *d* effect size reported for these measures were calculated by subtracting the mean of the STEPP group minus the mean of the traditional BPT group divided by the pooled standard deviation.

Several measures were administered to assess a mother's experience and engagement in treatment. First, at the end of the intake procedure, all mothers were requested to complete a nine-question evaluation of the intake (Intake Acceptability Form- Parent version). This measure addressed issues such as the therapist-mother/child alliance, how comfortable the mother was with the intake procedure, if a mother's questions were answered appropriately and satisfactorily, the mother's comfort in starting treatment, and the overall quality of the intake. The Intake Acceptability Form-Parent version requires the mother to answer questions on a five-point likert-rating scale from one (*Not well*) to five (*Very Well*). This form was completed to determine the extent to which a mother's experience with the therapist and the intake procedures may have differed between treatment conditions.

Furthermore, independent coders who were unaware of treatment status and study aims completed a complementary measure, the five-item Intake Acceptability Form-Coder version. This measure assessed coder perspectives on support provided by the therapist, the quality of the components of the intake procedure implemented by the therapist, the quality of how questions related to the parenting group were answered, and overall quality of the intake process. The Intake Acceptability Form-Coder requires the coder to answer questions on a five-point Likert rating scale from one (*Not well*) to five (*Very Well*). This measure was completed based on review of audiotapes of each intake. Twenty percent of the audiotapes were coded between the two raters to assess for inter-rater reliability ($Kappa = 0.87$).

At the end of treatment, mothers were requested to complete an evaluation of their assigned treatment using the nine-item Treatment Process Form- Parent version. The Treatment Process Form- Parent version asked mothers to complete statements related to the competence of the therapist, the amount and quality of social support provided by the therapist, the frequency and quality of social support provided by other mothers, the extent to which their expectations regarding the treatment were met, and the extent to which their expectations regarding the rate and potency of change in their child's behavior were met. The Treatment Process Form-Parent version requires the mother to complete statements on a five-

point Likert rating scale from one (*Very Poor/Did not meet my expectations*) to five (*Very good/Met all my expectations*). This measure was added to assess if important aspects hypothesized as being enhanced in the STEPP program (i.e., social support from other mothers within their group, appropriate expectations regarding treatment and therapeutic benefits) were impacted and varied between treatment groups.

Independent-coders who were blind to treatment status and study aims completed the five-item Treatment Process Form- Coder version. This measure assessed how well information and social support were provided by the therapist, the level of social support provided by group members, and the quality of the treatment session components implemented by the therapists. The Treatment Process Form-Coder version requires the coder to answer questions on a five-point Likert rating scale from one (*Not well*) to five (*Very Well*). This measure was completed through observing videotaped recordings of each treatment session. Twenty percent of the videotapes were coded between the two raters to assess for inter-rater reliability ($Kappa = .84$). This measure was added as an additional source of information to assess if aspects hypothesized as being enhanced in the STEPP (i.e., social support from other mothers) were impacted and varied between treatment groups.

Barriers to treatment were assessed at the end of treatment through completion of the Barriers to Treatment Participation Scale (BTPS; Kazdin, et al. 1997). The BTPS measures parents' perceptions of barriers to treatment participation involving stressors and obstacles that compete with treatment (e.g., conflict with significant other), treatment demands and issues (e.g., treatment was too confusing), and perceived relevance of treatment (treatment met parent's expectations). The BTPS is measured along a five-point scale with one (*Never a problem*) to five (*Always a problem*). Several items were removed from the original BTPS that were not applicable to this study (e.g., My medical insurance did not cover this treatment). The BTPS was utilized to determine if the STEPP program resulted in reductions to perceived barriers to treatment participation. In this sample, Cronbach alpha was .82 for the BTPS.

Results

Session Attendance and Homework Completion

Latent growth curve modeling was conducted with MPlus Version 6.1 (Muthen and Muthen 2010) to test whether treatment group predicted the propensity, or likelihood, of attending sessions and completing homework throughout the intervention. First, we estimated unconditional models for session attendance (sessions one to nine) and homework completion (sessions two to nine). Next, growth terms were

regressed on treatment group to examine whether average levels of, and change in, session attendance and homework completion differed for participants in STEPP vs. traditional BPT. Since attendance and homework completion were dichotomous outcome variables, the weighted least squared means (WLSMV) estimator was used in both steps. Model fit indices were χ^2 , root mean square error of approximation (RMSEA), and comparative fit index (CFI). All participants contributed at least some data to these analyses; no cases were dropped owing to missing data because full-information maximum likelihood estimates were utilized.

Unconditional models first examined whether session attendance and homework completion changed linearly over time. Though linear models for attendance and homework fit the data well (attendance: $\chi^2_{(32, N=80)}=39.58, p=.17, CFI=.99, RMSEA =0.05$; homework: $\chi^2_{(24, N=80)}=31.14, p=.15, CFI=.98, RMSEA =0.06$), the mean and variance of the slope factor were nonsignificant in both models (attendance: $M=-0.09, p=.13, \text{variance} =.14, p=.46$; homework: $M=-.17, p=.64, \text{variance} =0.04, p=.83$). In other words, there was no change in the rate (increasing or decreasing) of attendance or homework completion during the intervention trial.

We then tested intercept-only models to investigate the average level of variability around session attendance and homework completion throughout the trial. Intercept-only models fit the data well for session attendance ($\chi^2_{(35, N=80)}=45.85, p=.10, CFI=.99, RMSEA =0.06$) and homework completion ($\chi^2_{(27, N=80)}=34.04, p=.17, CFI=.98, RMSEA =0.06$). The average variability around session attendance (variance =.76, $p<0.001$) and homework completion (variance =.63, $p<0.001$) were significant, indicating that the likelihood of participants attending sessions and completing homework (or not) varied during the course of treatment.

Next, to examine whether treatment group predicted variability in the propensity to attend sessions and to complete homework throughout the intervention trial, the average levels of attendance and homework completion were regressed on treatment group in separate models. Both of these models fit the data (attendance: $\chi^2_{(43, N=80)}=51.01, p=.19, CFI=.99, RMSEA =0.05$; homework: $\chi^2_{(34, N=80)}=51.36, p=0.03, CFI=.94, RMSEA =0.08$). Treatment group was a significant predictor of average attendance ($\beta=.54, p<0.001$) and homework completion ($\beta=.52, p<0.001$), such that the propensity to attend sessions and to complete homework assignments was greater among participants in the STEPP group than those in the traditional BPT group.

Dropout

Dropout from treatment was analyzed using logistic regression. Ten percent of mothers ($n=4$) dropped out of the

STEPP program compared to 65 % of mothers ($n=26$) in the traditional BPT program, $\chi^2(1, N=80)=28.05, p<0.0001$. The Wald statistic for the group variable was significant, $Wald=20.46, p<0.00001$. The odds ratio for mother drop-out was 16.71, which suggests that mothers were 16 times more likely to drop out of the traditional BPT group compared to the STEPP group.

In order to determine the timing of drop-out from treatment, Kaplan-Meier survival analyses were used to examine treatment group as a predictor of time-to-dropout of BPT. A statistically significant difference in the distribution of the time-to-dropout between mothers enrolled in the STEPP program versus those enrolled in the traditional BPT was observed (Breslow statistic $=22.32, df=1, p<.0001$; Fig. 1). The mean number of sessions prior to dropout for the STEPP and traditional BPT groups were eight and five sessions, respectively. The data suggests that mothers in traditional BPT dropped-out of treatment earlier than mothers in the STEPP program.

Therapy Process and Treatment Equivalence Measures

In order to assess mothers' experiences in treatment as well as to demonstrate the effectiveness of the treatment, multiple procedures were used. First, scores on the Intake Acceptability Form-Parent version were analyzed using MANOVA, with treatment group as the between subject factor (Group: STEPP, traditional BPT), to determine if there were any differences in the intake experience as reported by mothers (see Table 2). The omnibus test was not significant, $F(8, 78)=.56, p=.80$, indicating that there were no group differences on the nine questions of the Intake Acceptability Form-Parent version. An inspection of the means (see Table 2) for the nine questions indicated that mothers assigned to both the STEPP and

traditional BPT intakes had equivalent experiences during the intake process.

The Intake Acceptability Form-Coder version was analyzed using MANOVA, using treatment group as the between subject factor (Group: STEPP, traditional BPT), to determine if there were any differences in the intake as reported by coders. The omnibus test was not significant, $F(4, 78)=.32, p=.86$, indicating that there were no group differences on the five questions of the Intake Acceptability Form-Coder version. An inspection of the means (see Table 2) for the five questions indicated that the coders rated the clinician as providing equivalent quality of intake procedures and processes.

Scores on the Treatment Process Form-Parent version were analyzed using MANOVA, with treatment group as the between subject factor (Group: STEPP, traditional BPT), to determine if there were any differences in the experience of mothers in their respective BPT groups. The omnibus test was significant, $F(8, 76)=2.59, p=0.01$, indicating that there were group differences on the nine questions of the Treatment Process Form-Parent version (see Table 2). Univariate effects were significant for amount of social support received from other mothers in their group ($p=0.002$; effect size $=1.24$), quality of social support received from other mothers in their group ($p=0.002$; effect size $=1.76$), expectations regarding the rate of progress for children ($p=0.001$; effect size $=1.41$), and expectations regarding the amount of improvement ($p=0.001$; effect size $=1.36$). No differences were found between groups on the quality of the therapists, the amount and frequency of social support provided by the therapist, and expectations regarding the content covered during the BPT sessions and how the content was covered during the BPT sessions ($ps>.50$). As the means indicate, mothers assigned to the STEPP program found the amount

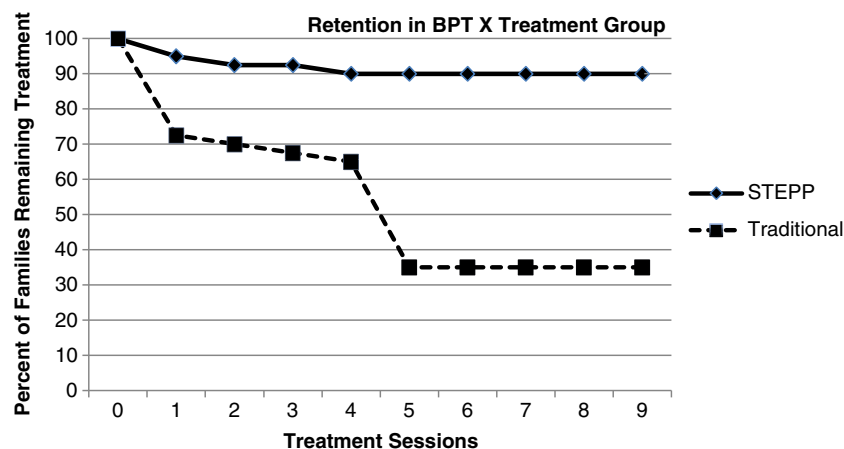


Fig. 1 Survival Analyses for time-to-dropout as a function of treatment group. Topics for treatment sessions included, respectively: (1) Introduction to social learning theory and the causes of child behavior; (2) Contingent Attention; (3) Planned Ignoring; (4) Effective

commands, Instructions, Premack Principles, and Transitional Warnings; (5) Developing Incentive Systems; (6) Introducing Time Out from Positive Reinforcement; (7) Time-Out Part II; (8) Planning Ahead; (9) Closing Session; Programming for Maintenance

Table 2 Means and standard deviations for STEPP vs. traditional BPT therapy process and equivalence measures

	STEPP		Traditional BPT		
	Mean	SD	Mean	SD	ES
BTPS- Total Score	81.23**	28.54	124.56	41.23	1.06
IAP Parent Comfortable	4.78	.33	4.72	.35	.17
IAP- Child comfortable	4.33	.27	4.37	.29	-.13
IAP-Parent Supported	4.78	.56	4.79	.45	-0.02
IAP-Parent Understood	4.67	.33	4.74	.38	-.18
IAP-Covered Information	4.76	.34	4.75	.33	0.03
IAP- Questions Assessment	4.78	.37	4.75	.34	0.09
IAP Questions for Group	4.56	.43	4.65	.48	-.18
IAP-Comfort Starting Group	4.78	.34	4.76	.35	0.06
IAP-Overall	4.75	.37	4.76	.38	-0.02
IAC-Supportive	4.56	.35	4.58	.37	-0.05
IAC- Covered Information	4.89	.33	4.85	.38	.11
IAC- Assessment	4.74	.38	4.80	.37	-.16
IAC-Address Questions about Group	4.50	.39	4.43	.37	.19
IAC- Overall	4.76	.34	4.79	.37	-0.08
TPP-Therapist Quality	4.79	.54	4.80	.76	-0.01
TPP- Therapist Amount Social Support	4.01	.89	4.11	.98	-.10
TPP- Therapist Quality Social Support	3.98	.87	4.03	.86	-0.06
TPP- Mothers Amount Social Support	4.31*	.86	2.53	1.43	1.24
TPP- Mothers Quality Social Support	4.23*	.85	3.05	.67	1.76
TPP-Content Covered	4.25	.25	4.15	.29	.34
TPP-Content Taught	4.29	.37	4.33	.30	-.13
TPP- Rate Child Progressed	4.33*	.87	2.45	1.33	1.41
TPP-Amount Child Improvement	4.37*	.85	2.67	1.25	1.36
TPC- Therapist Support	4.53	.37	4.55	.33	-0.06
TPC- Cover	4.78	.29	4.82	.26	-.15
TPC- Therapist Answer	4.89	.25	4.85	.23	.17
TPC- Parent Support	4.17*	.37	2.67	1.06	1.41
TPC- Overall	4.72	.26	4.76	.29	-.14

SD Standard Deviation. BPT Behavioral Parent Training. STEPP Strategies to Enhance Positive Parenting. ES Effect size. Effect sizes were calculated by subtracting the STEPP mean from the traditional BPT group mean and dividing by the pooled standard deviation. BTPS: Barriers to Treatment Participation Scale; IAP: Intake Assessment-Parent Form; IAC- Intake Assessment-Coder Form; TPP: Treatment Process parent Form; TPC: Treatment Process Coder Form; ** $p < 0.001$; * $p < 0.01$

and quality of social support they received from other mothers to be higher than mothers assigned to the traditional BPT group. Mothers in the STEPP program also reported that the rate and amount of improvements in their children met more of their expectations. Lastly, mothers also reported that the manner in which the content of their BPT sessions was taught met their expectations to a greater degree. Collectively this information provides empirical support for the conceptualization of the STEPP program as an intervention that increases social support for mothers within treatment, and clarifies expectations about the rate and potency of therapeutic benefit for their children.

Scores on the Treatment Process Form-Coder version were analyzed using MANOVA, with treatment group as the between subject factor (Group: STEPP, traditional BPT), to determine if there were any differences in the treatment experience as reported by coders. The omnibus test was

significant, $F(4, 24) = 3.25, p = 0.03$, indicating that there were group differences on the five questions of the Treatment Process Form-Coder version. Univariate effects were significant for amount of social support provided by mothers ($p = 0.001$; effect size = 1.41). An inspection of the means (see Table 2) for this item indicated that the coders rated the mothers from the STEPP group as being significantly more supportive of each other. No differences between groups were observed for the remaining four items ($ps > .70$). Coders rated that therapists did not differ on how supportive they were to mothers, the quality to which they covered the BPT content, the quality to which they answered mothers' questions, and their overall performance as a function of treatment group (i.e., traditional BPT and STEPP program). Means for each of these questions were high for both groups. Collectively, the data parallels data from mothers regarding the quality of therapists, the amount and quality of

social support provided by the therapist, and the amount and quality of social support provided by other mothers in their groups.

The BTPS for the STEPP and the traditional BPT program were analyzed using an independent samples *t*-test. This resulted in a significant effect, $t(74)=5.21, p<0.0001$ (effect size =1.01), indicating that there were group differences in perceived barriers to participation. Group means (see Table 2) indicated that mothers assigned to the traditional BPT program perceived more barriers to treatment than mothers in the STEPP program. This suggests that mothers in the traditional program perceived experiencing higher rates of barriers to treatment participation.

Discussion

The specific aims of this paper were to determine the impact of the STEPP program compared to a traditional group-based BPT program on: 1) propensity to attend treatment sessions and complete homework assignments throughout the intervention; 2) dropout from treatment, and; 3) factors hypothesized to be impacted by engagement methods (e.g., amount and quality of social support between mothers within their group, expectations regarding treatment, perceived barriers to treatment participation). As hypothesized, there was a greater propensity for participants to attend each session and to complete each homework assignment during the STEPP program than during the traditional BPT program. Survival analyses of time-to-dropout suggest similar patterns of dropout between both treatment groups, although dropout was attenuated in the STEPP program. In addition, compared to traditional BPT, the STEPP program enhanced/improved key empirically related factors hypothesized to be affect engagement. We discuss below the significance as well as implications of these findings for engagement to group-based BPT.

In this study, results of latent growth modeling analyses extend the findings of Chacko et al. (2009) in two notable ways. First, the present findings highlight that there was significant variability in rates of participant attendance and homework completion at each session regardless of treatment group. Second, and more importantly, treatment group predicted the average variability in session attendance and homework completion throughout treatment. Our prior study collapsed numerous data points for attendance (nine) and homework completion (eight) into a single count variable for each outcome, and demonstrated that the overall number of sessions attended and homework assignments completed varied significantly between groups. Herein, by accounting for variability at each data point, this conservative analytical approach provides stronger evidence in support of the STEPP program to encourage attendance and homework completion relative to traditional BPT.

A considerable difference across treatment groups in rates of dropout was observed in this study. In fact, families in the traditional BPT program were 16 times more likely to drop-out of treatment than families enrolled in the STEPP program. The finding that 65 % of mothers in the traditional BPT group dropped-out of treatment is in line with rates of dropout observed in the literature (Armbruster and Kazdin 1994). More surprising was the 10 % drop-out rate in the STEPP program. Importantly, studies focusing on enhancements to engagement to BPT for youth with clinical behavior disorders, which have utilized the same criteria for treatment dropout, have documented dropout rates of 24 % (Miller and Prinz 2003), 30 % (Prinz and Miller 1994), and 45 % (Nock and Kazdin 2005). As such, the low dropout rate in this sample of high-risk families is particularly notable.

Data support that the STEPP program enhanced/improved key factors empirically related to engagement (e.g., amount and quality of social support between mothers within their group, expectations regarding treatment, perceived barriers to treatment participation) compared to the traditional BPT program. To our knowledge, very few studies have assessed the extent to which adjunctive components impact factors hypothesized to improve engagement. Although future investigations are needed to better understand what leads to the effects of the STEPP program on these key factors, it is likely that aligning parental expectations with the expected benefits (and limitations) of BPT during the intake, the reinforcing nature of more close contact among subgroup members, and addressing practical and ongoing barriers to participation and more general problems in life through the enhanced intake and adjunctive problem solving component resulted in these improvements. As noted below, there are limitations to the study design and measurement that preclude definitive statements regarding causal impact of specific enhancement components.

Moreover, the finding that the STEPP program was more likely than traditional BPT to engage mothers throughout treatment is not entirely surprising given the impact of the STEPP program on several factors associated with engagement. In fact, it may be that these specific factors were also enhanced over time. For instance, social support is likely a factor that improves as a function of time spent in the group (i.e., the more mothers get to work with each other, the more social support they may perceive acquiring from their group). As such, propensity to attend treatment sessions may be related to continued improvement in factors, such as perceived social support among mothers in the STEPP program, which may also improve over time. Clearly, continuous measurement of these factors (e.g., perceived social support) at each session would be necessary to fully evaluate this hypothesis.

In addition to the findings on attendance and dropout, an interesting aspect regarding dropout from BPT is observed

through the survival analysis. As illustrated in the survival curve (see Fig. 1), a majority of dropout appears to occur at two points during treatment. First, many mothers who completed the intake procedure did not subsequently attend treatment. As depicted in Fig. 1, mothers in both the STEPP program and the traditional BPT program dropped-out before starting treatment. Specifically, 11 participants in traditional BPT (34 % of those who eventually dropped-out) and two participants in the STEPP program (50 % of those who eventually dropped-out) dropped-out prior to the start of treatment. Other studies have also found that a substantial number of families who express an interest in BPT never attend (e.g., 56 % in Fernandez et al. 2011). Although empirical investigation into characteristics of families who dropout early versus late from BPT has been conducted (e.g., Kazdin and Mazurick 1994), to our knowledge, no study has specifically attempted to understand characteristics of initially-interested families who subsequently do not attend BPT. Importantly, the findings of the present study highlight the beneficial impact of the enhanced intake implemented in the STEPP program on retaining mothers past the initial intake process in that 95 % percent of mothers in the STEPP program attended treatment.

The second time-point where a significant proportion of mothers dropped-out from BPT was at about the fifth session. It may be that the content of BPT plays a significant role in dropout for mothers who actually do attend BPT. For instance, mothers may have found that the more consequence based and intensive intervention components (e.g., time-out from positive reinforcement) too demanding and therefore discontinued treatment. Collectively, these results point to the need for greater discussion with mothers about the topics and content of BPT so mothers are fully informed about their treatment experience. As discussed earlier, these types of discussions were integrated within the enhanced intake procedure with the STEPP program. As such, although the patterns of dropout are very similar across the two treatment conditions, there is a clear attenuation of dropout with the STEPP program.

There are several limitations to this study. First, the effects of the STEPP program on engagement must also be interpreted in light of a clearly apparent, potential alternative explanation: the therapists involved in this study were aware of study hypotheses and differential behavior by therapists resulted in differential effects on engagement between the STEPP program and traditional BPT. This explanation appears unlikely. Mother's self-report as well as independent ratings by trained coders who were unaware of study hypotheses rated the therapists equally on competence and social support in both treatment groups, thereby reducing the likelihood that differential therapist competence and supportive behavior accounted for these findings. However, there remains the potential that unrecognized biases and unmeasured factors may still have impacted these outcomes.

Clearly, future studies that involve therapists who are unaware of study hypotheses are necessary to rule-out these alternative explanations for the effects of the STEPP program on engagement found in this study.

There are also limitations regarding the measures and analytic approaches utilized within this study. First, although random assignment to treatment was utilized in this study and as such, observed differences between the STEPP and traditional BPT programs on perceived barriers to treatment participation at post-treatment could be plausibly attributed to treatment, it is not possible to fully ascribe these differences as a function of participation in the STEPP program. An alternative interpretation is that the two groups differed on perceived barriers from the outset of treatment. As such, measuring changes in perceived barriers to treatment participation would be needed to more confidently state that differences between groups were due to the effect of the STEPP program. Moreover, given the exploratory nature of the analyses evaluating effects of treatment group on factors related to engagement (e.g., social support) and the relatively small sample sizes per group, we chose to utilize a standard p -value ($p < 0.05$) for significance rather than utilizing methods to adjust for Type I error. It is possible that some of the differences between treatment groups on these factors are spurious. Further exploration of these two limitations is warranted in future studies.

Given the advantages of the data presented herein relative to previously published data on engagement outcomes from this clinical trial (Chacko et al. 2009), there are clearer implications about specific enhancement components as they relate to engagement to group-based BPT. For instance, it is relatively clear that the pre-BPT engagement interview has substantial effects in increasing the number of families who attend BPT. In addition, when conducting group-based BPT, attention must be given not only to how the therapist supports mothers but also how mothers can best support each other.

The results of this study suggest that the multi-component engagement strategy implemented in the STEPP program has substantial effects on engagement throughout the course of BPT for a high-risk population of mothers of school-age youth with ADHD. Future directions in this line of empirical inquiry include a more in-depth examination of the specific impact of the various components on engagement as well as extending these current results to determine the mediating role of empirically related factors within this study (e.g., amount and quality of social support between mothers,) in the relationship between participation in the STEPP program and engagement. Dismantling the STEPP program to better understand what are the critical components and processes will allow for the development of a more parsimonious and cost-effective model of the STEPP program.

References

- Armbruster, P., & Kazdin, A. E. (1994). Attrition in child psychotherapy. *Advances in Clinical Child Psychology*, *16*, 81–108.
- Bagner, D. M., & Eyberg, S. E. (2003). Father involvement in parent training: when does it matter? *Journal of Clinical Child and Adolescent Psychology*, *32*, 599–605. doi:10.1207/S15374424JCCP3204_13.
- Chacko, A., Wymbs, B. T., Arnold, F. W., Pelham, W. E., Swanger-Gagne, M., Girio, E. L., et al. (2009). Enhancing traditional behavioral parent training for single-mothers of children with ADHD. *Journal of Clinical Child and Adolescent Psychology*, *38*, 206–218. doi:10.1080/15374410802698388.
- Chacko, A., Wymbs, B. T., Flammer-Rivera, L., Pelham, W. E., Walker, K. S., Arnold, F., et al. (2008). A pilot study of the feasibility and efficacy of the Strategies to Enhance Positive Parenting program for single mothers of children with ADHD. *Journal of Attention Disorders*, *12*, 270–280. doi:10.1177/1087054707306119.
- Cunningham, C. E., Bremner, R., & Secord, M. (1998). *COPE: the community parent education program: a school-based family systems oriented workshop for parents of children with disruptive behavior disorders*. Hamilton: COPE Works.
- D'Zurilla, T. J., & Nezu, A. M. (1999). *Problem-solving therapy: a social competence approach to clinical intervention* (2nd ed.). New York: Springer Publishing.
- Eyberg, S. M., Nelson, M. M., & Boggs, S. R. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive behavior. *Journal of Clinical Child and Adolescent Psychology*, *37*, 215–237. doi:10.1080/15374410701820117.
- Fabiano, G. A., Pelham, W. E., Waschbusch, D., Gnangy, E., Lahey, B., Chronis, A., et al. (2006). A practical measure of impairment: psychometric properties of the impairment rating scale in samples of children with attention-deficit hyperactivity disorder and two school-based samples. *Journal of Clinical Child and Adolescent Psychology*, *35*, 369–385. doi:10.1207/s15374424jccp3503_3.
- Fernandez, M. A., Butler, A. M., & Eyberg, S. M. (2011). Treatment outcome for low socioeconomic status african american families in parent-child interaction therapy: a pilot study. *Child & Family Behavior Therapy*, *33*, 32–48. doi:10.1080/07317107.2011.545011.
- Kazdin, A. E., Holland, L., Crowley, M., & Brenton, S. (1997). Barriers to treatment participation scale: evaluation and validation in the context of child outpatient treatment. *Journal of Child Psychology and Psychiatry*, *38*, 1051–1062. doi:10.1111/j.1469-610.1997.tb01621.x.
- Kazdin, A. E., & Mazurick, J. L. (1994). Dropping out of child psychotherapy: distinguishing early and late dropouts over the course of treatment. *Journal of Consulting and Clinical Psychology*, *62*, 1069–1074. doi:10.1037/0022-006X.62.5.1069.
- Kazdin, A. E., Mazurick, J. L., & Bass, D. (1993). Risk for attrition in treatment of antisocial children and families. *Journal of Clinical Child and Adolescent Psychology*, *22*, 2–16. doi:10.1207/s15374424jccp2201_1.
- Kazdin, A. E., & Whitley, M. K. (2003). Treatment of parental stress to enhance therapeutic change among children referred for aggressive and antisocial behavior. *Journal of Consulting and Clinical Psychology*, *71*, 504–515. doi:10.1037/0022-006X.71.3.504.
- McKay, M. M., Stoewe, J., McCadam, K., & Gonzales, J. (1998). Increasing access to child mental health services for urban children and their caregivers. *Health & Social Work*, *23*, 9–15. doi:10.1093/hsw/23.1.9.
- Miller, G. E., & Prinz, R. J. (2003). Engagement of families in treatment for childhood conduct problems. *Behavior Therapy*, *34*, 517–534. doi:10.1016/S0005-7894(03)80033-3.
- Muthen, B., & Muthen, L. (2010). *Mplus user's guide* (6th ed.). Los Angeles: Muthen & Muthen.
- Nock, M. K., & Ferriter, C. (2005). Parent management of attendance and adherence in child and adolescent therapy: a conceptual and empirical review. *Clinical Child and Family Psychology Review*, *8*, 149–166. doi:10.1007/s10567-005-4753-0.
- Nock, M. K., & Kazdin, A. E. (2001). Parent expectancies for child therapy: assessment and relation to participation in treatment. *Journal of Child and Family Studies*, *10*, 155–180. doi:10.1023/A:1016699424731.
- Nock, M. K., & Kazdin, A. E. (2005). Randomized controlled trial of a brief intervention for increasing participation in parent management training. *Journal of Consulting and Clinical Psychology*, *73* (5), 872–879. doi:10.1037/0022-006X.73.5.872.
- Pelham, W. E. (2002). *Attention deficit hyperactivity disorder: diagnosis, assessment, nature, etiology, and treatment*. Buffalo: CTADD.
- Pelham, W. E., & Fabiano, G. A. (2008). Evidence-based psychosocial treatments for attention-deficit/hyperactivity disorder. *Journal of Clinical Child and Adolescent Psychology*, *37*, 184–214. doi:10.1080/15374410701818681.
- Pelham, W.E., Gnagy, E.M., Greenslade, K.E., & Milich, R. (1992). Teacher ratings of DSM-III-R symptoms for the disruptive behavior disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *31*, 210–218. Retrieved from <http://eresources.library.mssm.edu:2372/ovftpdfs/FPDDNCLBBCJPLK00/fs046/ovft/live/gv023/00004583/00004583-199203000-00005.pdf>
- Pfiffner, L. J., Jouriles, E. N., Brown, M. M., Etscheidt, M. A., & Kelly, J. A. (1990). Effects of problem solving therapy on outcomes of parent training for single parent families. *Child and Family Behavior Therapy*, *12*, 1–11. doi:10.1300/J019v12n01_01.
- Prinz, R. J., & Miller, G. E. (1994). Family-based treatment for childhood antisocial behavior: experimental influences on dropout and engagement. *Journal of Consulting and Clinical Psychology*, *62*, 645–650. doi:10.1037/0022-006X.62.3.645.
- Webster-Stratton, C. (1984). A randomized of two parent training programs for conduct-disordered children. *Journal of Consulting and Clinical Psychology*, *52*, 666–678. doi:10.1037/0022-006X.52.4.666.
- Webster-Stratton, C. & Hammond, M. (1990). Predictors of treatment outcome in parent training for families with conduct problem children. *Behavior Therapy*, *21*, 319–337. Retrieved from [http://eresources.library.mssm.edu:2087/10.1016/S0005-7894\(05\)80334-X](http://eresources.library.mssm.edu:2087/10.1016/S0005-7894(05)80334-X)
- Wechsler, D. (1991). *The Wechsler intelligence scale for children—third edition*. San Antonio: The Psychological Corporation.