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### A Pilot Study of the Feasibility and Efficacy of the Strategies to Enhance Positive Parenting (STEPP) Program for Single Mothers of Children With ADHD

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# A Pilot Study of the Feasibility and Efficacy of the Strategies to Enhance Positive Parenting (STEPP) Program for Single Mothers of Children With ADHD

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## Abstract

*Objective:* The Strategies to Enhance Positive Parenting (STEPP) program was developed to address putative factors related to poor engagement in and outcomes following traditional behavioral parent training (BPT) for single mothers of children diagnosed with ADHD.

*Method:* Twelve single mothers of children with ADHD were enrolled in an initial investigation of the feasibility and preliminary efficacy of the 9-week STEPP program.

*Results:* Results indicated that the STEPP program was effective in reducing problematic child behavior and improving parental stress and psychopathology at posttreatment. The STEPP program resulted in high rates of treatment attendance and completion and consumer satisfaction with the program. However, results also indicated that the STEPP program did not improve childrens' overall psychosocial impairment and resulted in small effect size findings across measures.

*Conclusion:* The results of the pilot study are encouraging but indicate a need to improve the potency and delivery of certain aspects of the STEPP program.

**Keywords:** behavioral parent training, ADHD, single mothers, treatment, enhancement

Behavioral parent training (BPT) has a long history as a successful treatment approach for various childhood mental health disorders (Briesmeister & Schaefer, 1998). BPT has been identified as an efficacious treatment ap-

proach for children with ADHD (Pelham, Wheeler, & Chronis, 1998). Beneficial effects of BPT have been reported for core ADHD symptoms (e.g., Anastopoulos, Shelton, DuPaul, & Guevremont, 1993; Sonuga-Barke,

Daley, Thompson, Laver-Bradbury, & Weeks, 2001), co-occurring oppositional problems, and functional impairment in children (Erhardt & Baler, 1990; Horn, Jalongo, Popovich, & Peradotto, 1987; Pisterman et al., 1989; Pisterman et al., 1992). In addition, BPT for families of children with ADHD has also demonstrated improvements in parental functioning (e.g., Anastopoulos et al., 1993; Pisterman et al., 1992; Sonuga-Barke et al., 2001). Collectively, the substantial evidence indicates that BPT significantly improves the functioning of children with ADHD and their families.

Despite the convincing empirical evidence for BPT, several limitations remain (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004). Specifically, several family, parent, and child characteristics often predict poor attendance to, engagement during, as well as limited benefits following BPT (Chronis et al., 2004; Miller & Prinz, 1990). One risk factor for poor progress during and following BPT is being a single mother (Bagner & Eyberg, 2003; Dumas & Wahler, 1983; Kazdin & Mazurick, 1994; Kazdin, Mazurick, & Bass, 1993; Lundahl, Risser, & Lovejoy, 2006; Miller & Prinz, 1990; Webster-Stratton & Hammond, 1990).

Single mother status has long been recognized as conferring risk in BPT (e.g., Dumas & Wahler, 1983). Compared to intact families, single-mother families are less likely to enroll in BPT (Cunningham et al., 2000), complete treatment (Kazdin & Mazurick, 1994; Kazdin et al., 1993), improve following treatment (Dumas & Wahler, 1983; Lundahl et al., 2006; Webster-Stratton & Hammond, 1990), or maintain gains over time (Bagner & Eyberg, 2003; Webster-Stratton, 1985). Despite having unique effects on the process and outcomes of BPT, single mother status is best conceptualized as a social address, which reflects a confluence of risks placing households headed by a single mother at increased risk for poor experiences during and following BPT.

Single mothers experience multiple, putative risk factors for poor attendance, increased dropout, and restricted therapeutic gains in BPT (Miller & Prinz, 1990), including higher rates of depression (Brown & Moran, 1997; Cairney, Boyle, Offord, & Racine, 2003; Lipman, MacMillan, & Boyle, 2001; Lipman, Offord, & Boyle, 1997; Turner, Wheaton, & Lloyd, 1995; Wang, 2004), less social support (Cairney et al., 2003; Weinraub, Horvath, & Gringlas, 2002; Weinraub & Wolf, 1983), and higher rates of stress (Brown & Moran, 1997; Cairney et al., 2003; Compas & Williams, 1990). These multiply stressed mothers are more likely to have greater practical barriers to treatment participation (e.g., Kazdin, Holland, Crowley, & Brenton, 1997; Kazdin & Wassell, 2000) and maladaptive cognitions regarding treatment

and their children (Nock & Kazdin, 2001), often resulting in additional difficulties faced by these families during and following BPT.

Taken together, the intrapersonal (e.g., depression, stress, cognitions), interpersonal (e.g., social support), and ecological (e.g., practical barriers) stressors place competing demands on a single mother's motivation to attend and fully engage in BPT (McKay & Bannon, 2004; Nock & Ferriter, 2005). As expected, these factors tend to diminish effective parenting behavior (Cochran & Niego, 2002; Deater-Deckard, 2004; Zahn-Waxler, Duggal, & Gruber, 2002) and compete with a parent's ability to focus on and change their parenting behavior and their child's environment while enrolled in BPT—changes that are critical for improving children's functioning (Patterson, 1982).

Leading researchers in BPT have noted that, "one of the most important directions for the successful growth of BPT in the next decade is the development of effective treatments for single parent, socially isolated families" (Dadds & McHugh, 1992, p. 252). Given the obvious need, the dearth of empirical studies on the enhancement of BPT for single mothers is surprising. Only two BPT studies have been conducted with this population—one with single mothers of children with elevated levels of behavior problems (i.e., Pfiffner, Jouriles, Brown, Etscheidt, & Kelly, 1990) and the other with single parents (mothers and fathers; Dadds & McHugh, 1992) of children with oppositional defiant disorder or conduct disorder (ODD/CD). However, no study has ever investigated the efficacy of BPT involving and targeting an exclusive sample of single mothers of children specifically diagnosed with ADHD, ODD, or CD.

Pfiffner and colleagues (1990) randomly assigned 13 single mothers of children with elevated levels of behavioral problems to either BPT or traditional BPT plus an adjunctive problem-solving treatment. Although both treatment groups experienced statistically significant reductions in parent reported and observed child disruptive behavior, the BPT plus problem-solving treatment group experienced higher rates of clinically significant improvement at 4-month follow-up. This study provided limited but important preliminary support for BPT, as well as problem solving, as an adjunctive treatment to BPT for single mothers of children with behavioral difficulties.

Dadds and McHugh (1992) evaluated the efficacy of an adjunctive social support intervention with BPT for 22 single parents (both mothers and fathers) of children diagnosed with ODD or CD. The social support intervention was aimed at improving the ability of important individuals in the lives of single parents (allies) to provide social

support. These allies partnered with single parents, problem solved, and identified solutions for parenting difficulties. Results of this randomized clinical trial demonstrated that the BPT-alone and the BPT plus ally support intervention resulted in improvements for both groups at posttreatment and follow-up, but no incremental benefits for the BPT plus ally support group were found.

Clearly, there is little research investigating how to engage and maximize both acute and long-term outcomes for single mothers of children with disruptive behavior disorders (DBD) in general, and no study involves single mothers of children diagnosed with ADHD. Developing specific programs for single-mother families and their children, many of whom experience complex multistressors in their life, is sorely needed. In an attempt to address the unique challenges faced by single mothers of children with ADHD during BPT and to maximize outcomes following BPT, the Strategies to Enhance Positive Parenting (STEPP) program was developed. The STEPP program incorporates several enhancements to traditional BPT, which target putative factors that impede successful involvement in BPT for this population. A pilot study was initiated to determine the feasibility and preliminary efficacy of the STEPP program with single mothers of children diagnosed with ADHD.

## Method

### Participants

Between January 2001 and February 2001, single-mother families were recruited through school referrals and mailings to schools and families who previously contacted the Center for Children and Families at the University at Buffalo for services. Inclusion criteria for this study included being a single mother who was the primary caregiver and did not reside with a significant other (e.g., child's father, boyfriend, fiancé) in the home. Furthermore, children were required to be between 5 and 12 years old at the start of treatment and were required to meet *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; DSM-IV-TR; American Psychiatric Association, 2000) diagnostic criteria for ADHD through parent and teacher rating scales of DSMIV-TR symptoms (Pelham, Gnagy, Greenslade, & Milich, 1992; Pelham, Milich, Murphy, & Murphy, 1989) and semistructured interviews (Pelham, 2002). Cross-situational impairment was assessed through parent and teacher ratings on the Impairment Rating Scale (IRS; Fabiano et al., 2006). Children were excluded from the study if the child had an IQ of less than 80 (either obtained from previous assessments, which occurred in the past year, or

**Table 1.** Participant Characteristics for STEPP Program Pilot Study

Child age in years	9 (SD = 2.5)
Child sex	83% male
Child comorbidity	75% ODD (n = 8); 17% CD (n = 2)
Mother age in years	35 (SD = 8.5)
Mother education in years	14 (SD = 2.8)
Child race/ethnicity	67% Caucasian, 25% African American, 8% Asian
Mother race/ethnicity	75% Caucasian, 17% African American, 8% Asian
Median family income	28,500 (range = 8,500-85,000)
Teacher DBD-I	1.93 (SD = 0.79)
Teacher DBD-H/I	1.90 (SD = 0.85)
Teacher DBD-ODD	1.37 (SD = 0.97)
Teacher IRS—Overall	4.68 (SD = 1.58)

DBD-I = Disruptive Behavior Disorders Rating Scale, Inattentive Factor; DBD-H/I = Disruptive Behavior Disorders Rating Scale, Hyperactive-Impulsive Factor; DBD-ODD = Disruptive Behavior Disorders Rating Scale, Oppositional Defiant Disorder Factor; IRS = Impairment Rating Scale; STEPP = Strategies to Enhance Positive Parenting.

obtained at intake). Children were also excluded if their primary diagnosis was a pervasive developmental disorder or if there was evidence of psychosis. If the child was currently taking medication, families that participated in the study were asked to keep their child's medication status steady or report changes immediately to the study coordinator.

Twelve single mothers and their children, diagnosed with ADHD, were recruited and enrolled in the pilot study of the STEPP program (see Table 1 for demographic information). Single mothers eligible for the study provided informed consent before the initial intake. Children who were eligible for the study signed an informed assent form in the presence of their parent. The informed consent and assent forms were approved by the Center for Children and Families at the University at Buffalo Institutional Review Board.

### Procedures

**STEPP program.** The STEPP program focused on several enhancements to the format, delivery, and content of traditional BPT including (a) an enhanced intake procedure that addresses possible practical barriers to treatment participation, maternal cognitions regarding expectation for treatment, and attributions regarding their children's behavior; (b) a group-based coping modeling problem-solving format; and (c) incorporation of a systematic, manualized problem-solving treatment to address parent-initiated, adult- and child-focused problems. These additions to traditional BPT programs were developed to address several major areas identified in



the research literature as being important to target with multiply stressed single mothers: practical barriers to treatment participation, maladaptive cognitions regarding their children and treatment, depression, social support, and life stressors (Chronis et al., 2004; Miller & Prinz, 1990). Targeting these areas may have multiple effects in terms of attendance to, engagement in, and outcomes following BPT as well as maintenance of treatment gains for single mothers of children with ADHD. Each of these enhancements will be discussed in turn.

**Enhanced intake.** Attendance and engagement during treatment is a prerequisite for obtaining positive outcomes. Given that single mothers are less likely to enroll in BPT (Cunningham et al., 2000) and more likely to dropout of BPT prematurely (Kazdin & Mazurick, 1994; Kazdin et al., 1993), targeting possible pretreatment cognitions/attitudes and barriers to treatment attendance may be important for this population. Research has indicated that pretreatment attitudes, expectations regarding treatment and behavior change in children, and practical barriers to treatment often impact attendance in subsequent treatment sessions (Kazdin & Mazurick, 1994; Kazdin et al., 1993; McKay, Stoewe, McCadam, Gonzales, 1998; Miller & Prinz, 2003; Morrissey-Kane & Prinz, 1999; Nock & Kazdin, 2001; Nock & Kazdin, 2005; Prinz & Miller, 1996). Parents often have misconceptions regarding the content, format, and process of treatment and subsequent behavior change for their children. When expectations and attitudes are not addressed and clarified, parents may be more likely to prematurely terminate treatment (Nock & Kazdin, 2001; Prinz & Miller, 1996). This may be particularly the case with parents who are less educated, are from a lower socioeconomic background, and perceive their children's behavior to be more severe and recalcitrant—characteristics often associated with single mothers of children with diagnosed behavioral problems (Anderson, 2003; Nock & Kazdin, 2001; Webster-Stratton, 1989). Moreover, single mother-headed families also perceive higher levels of practical barriers to ongoing involvement in treatment, which further diminish their participation (Kazdin et al., 1997; Kazdin & Wassell, 2000).

In an attempt to address these pretreatment factors, an enhanced intake procedure was designed that systematically addressed each factor during the intake. Parents who expressed interest in the STEPP program were informed about the intake process asked about immediate practical concerns that could be addressed at the time of intake, as well as possible barriers to ongoing involvement (McKay et al., 1998). Furthermore, open-ended questions were asked to single mothers regarding their expectations about their involvement in treatment (e.g.,

What role do you think you will have in treatment?), as well as their child's involvement in treatment (e.g., In what way do you think your child will be involved in treatment?). Single mothers were also asked open-ended questions regarding their expectations about the rate and potency of treatment-related improvements for their child (e.g., How fast do you expect to observe improvements in your child's behavior? How much of an improvement do you expect your child to make during the course of treatment?), and about their attributions regarding locus of control of their child's behavior and the affects of their parenting (e.g., What do you think causes your child to misbehave?). Misconceptions/ inappropriate expectations regarding these issues were discussed and clarified with the single mother during the intake. Lastly, practical barriers to ongoing involvement were addressed and solutions to these barriers were developed during the intake. Several aspects of the enhanced intake have been empirically investigated with low-income urban parents, many of whom were single mothers, seeking services for their child's mental health difficulties, and have been shown to improve initial and subsequent attendance to treatment sessions (McKay et al., 1998; Nock & Kazdin, 2005).

**Group-based coping modeling problem-solving format.** Attendance, engagement, and to a greater extent, social support can be improved by focusing on the format in which BPT is conducted. Group treatment promotes several important factors that may enhance motivation, engagement, and behavior change including a sense of universality, increasing hope, feeling accepted by others, insight, vicarious learning, and problem solving (Forsyth, 1999). Single mothers of children with ADHD have been shown to feel isolated in their roles as parents (Cunningham, Bennes, & Siegel, 1988). Focusing on an exclusive single-mother treatment group may prove to be an important format change that increases attendance, engagement, and social support.

Moreover, the process by which session content is delivered will also likely increase engagement and social support. Over the past decade there has been a growing recognition that BPT must take on a collaborative rather than didactic format (e.g., Webster-Stratton & Herbert, 1994). Although this format has been conceptualized as improving general engagement by parents in BPT, it does not necessarily ensure that every parent will have the opportunity to discuss and relate to other members within their group. Over the past decade, Cunningham and colleagues have developed a coping modeling problem-solving format for BPT, Community Parent Education (COPE; Cunningham, Bremner, & Secord, 1998; Cunningham, Davis, Bremner, Dunn, & Rzasa, 1993). This

format incorporates smaller subgroups within the large BPT group. This format allows parents 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, parents are given an opportunity to discuss issues with other parents in subgroups without involving the therapist directly. This subgroup format allows some parents (particularly those who may be more socially anxious, less comfortable engaging with a larger group of adults, or intimidated by the presence of the therapist) the opportunity to learn from peers, use other parents as resources, give one another supportive feedback, and engage in treatment.

#### **Systematic, manualized problem-solving treatment.**

Stressors experienced by parents often interfere with effective parenting (Bank, Forgatch, Patterson, & Fetrow, 1993). If parents are taught how to assess problematic situations (e.g., difficulty with their child's father) and feelings/moods (e.g., anger or depressed affect) and how to develop practical solutions, it is likely their parenting will improve. In fact, studies that have implemented a formal, adjunctive, problem-solving treatment to BPT to address multiple life stressors has shown improved outcomes beyond that found in traditional BPT alone (Kazdin & Whitley, 2003; Pfiffner et al., 1990; Spaccarelli, Cotler, & Penman, 1992). Furthermore, one study demonstrated that focusing on adult-focused problems during BPT decreased dropout of multiply stressed parents (Prinz & Miller, 1994). Given these findings, a systematic problem-solving treatment should have beneficial effects on single mothers' ability to parent effectively and their retention in BPT. Although adjunctive problem-solving treatments have been implemented to address life stressors (e.g., Prinz & Miller, 1994) problem-solving treatment is extremely flexible and has achieved broad effects on multiple areas of functioning (Nezu, 2004). Of importance to single mothers participating in BPT, systematic, manualized problem solving has been shown to also impact depression (Nezu, 2004). Thus, given the extant literature on the benefits of problem-solving treatment on life stress and depression, a systematic, manualized problem-solving treatment was added to the STEPP program.

The systematic, manualized problem-solving treatment, which was incorporated into the STEPP program, was an abbreviated form of D'Zurilla and Nezu's (1999) highly flexible problem-solving therapy. Problem-solving components included (a) problem orientation, (b) use and control of emotions in problem solving, (c) problem definition and formulation, (d) generation of alternative solutions, (e) decision making, and (f) solution implementation and verification. Single mothers were asked to specify adult- and child-focused problems that

may either interfere with their parenting or other problematic issues that often affect their psychosocial functioning. Typical problems that were addressed included time management, mood management, conflicts with relatives, dealing with anger effectively, and explaining divorce/separation to children. Given the flexible nature of problem solving, a variety of issues that are pertinent to the immediate needs of single mothers participating in the STEPP program can be addressed. This is particularly important given that a limitation of prior research on adjunctive content to traditional BPT has taken a "one-size-fits-all" model; all participants were required to participate in all enhancements (e.g., mood management) regardless of whether the enhancement were necessary/applicable for them (e.g., Webster-Stratton, 1994). The problem-solving component administered in this intervention allowed the parent to identify specific relevant difficulties and to implement a flexible treatment to address those difficulties.

The COPE subgroup also augments the problem-solving treatment process. As mentioned earlier, the COPE subgroup involves both a larger group and smaller subgroups. Within the STEPP program, each subgroup discusses 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 discuss the issue and the steps used to solve the problem with the large group. This approach continues to enhance social support for members within the STEPP program, allows for the development of several possible solutions to a problem from peers, and allows several members within the large group to address problems during the same session, thus maximizing efficiency.

In summary, several additions were made to traditional BPT to improve the process during and following BPT for single mothers of children diagnosed with ADHD including (a) an enhanced intake to address practical concerns about barriers to treatment, motivation, attitudes, expectations about treatment, and cognitions regarding locus of control and behavior change in their child; (b) an exclusive, single mother, collaborative, coping model; and (c) a systematic, manualized problem-solving treatment to address life stressors.

In addition to the STEPP program parent group, a concurrent children's social skills group was delivered to all children and their siblings (Cunningham et al., 1998). This program focused on teaching social skills (e.g., participation, cooperation, validation, and communication) through group discussions, modeling, and role plays. The addition of the social skills program was indicated for this population of children and parents for

two reasons. Firstly, the social skills program was necessary given the difficulties in peer relationships and social skills deficits often observed in children with ADHD (Pelham & Bender, 1982). It is likely that multimodal treatments, which target specific areas of impairment, are more likely to improve overall functioning in children with ADHD. Secondly, lack of child-care is often a barrier to attendance to treatment for families, and likely a critical obstacle for many single-mother households. Thus, offering a concurrent social skills group for all children in the family was also a practical decision.

### Measures

**ADHD and DBD Symptoms.** *DSM-IV-TR* symptoms of ADHD and ODD were measured using the DBD rating scale (Pelham et al., 1992) administered to the child's mother. The DBD is a 45-item measure that asks parents to rate the *DSM-IV-TR* symptoms of ADHD, ODD, and CD on a 4-point Likert-type scale (i.e., 0 = *Not at all*, 1 = *Just a little*, 2 = *Pretty much*, or 3 = *Very much*), with higher scores indicating more problems. For this study, average scores were obtained for symptoms of ADHD inattentive, ADHD hyperactive-impulsive (H/I), and ODD.

**Impairment.** Parent ratings of problem severity and need for treatment in important functional domains were measured using the IRS (Fabiano et al., 2006). The IRS measures impairment across domains of functioning as well as overall need for treatment. Parents place an "x" on a 7-point visual analog scale to signify their child's functioning along a continuum of impairment that ranges from 0 (*Not a problem at all. Definitely does not need treatment or special services*) to 6 (*Extreme problem. Definitely needs treatment and special services.*). A score of 3 or higher on the IRS is considered clinically significant impairment. The IRS item that measures the overall impairment experienced by the child and the need for treatment was used in the analyses.

**Parenting stress.** The Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995) was used to assess parental stress due to parent characteristics, child characteristics, and their interactions. The PSI-SF is a 36-item self-report measure used to assess parenting stress in three domains: Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. Items are measured along a scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Higher scores indicate greater levels of parenting stress. For this study, the total stress score, which is the sum of the three PSI-SF domains, was used.

**Maternal depression.** The Beck Depression Inventory (BDI; Beck & Steer, 1987; Beck, Ward, Mendelsohn,

Mock, & Erbaugh, 1961) is a 21-item self-report measure used to assess maternal depressive symptoms. Mothers were instructed to indicate which of the four statements best described how they felt over the preceding 2-week period. The BDI is scored from 1 to 4, with higher scores on the BDI indicating a greater degree of depression. A total score on the BDI, which is a sum of the 21-item measure, was used in the study.

**Engagement in treatment.** The number of sessions attended by the mother, the number of sessions attended on time, and the number of homework assignments completed were used as measures of parent engagement in treatment. These measures have previously shown sensitivity to differences in parent engagement in treatment (Cunningham et al., 1993; Prinz & Miller, 1994). Furthermore, dropout from the program was defined as attendance at less than half of the treatment sessions (i.e., four or fewer).

**Consumer satisfaction.** The Therapy Attitude Inventory (TAI; Brestan, Jacobs, Rayfield, & Eyberg, 1999) is a valid index of consumer satisfaction for participants in parent training. Items are rated on a scale of 1 (indicating *treatment dissatisfaction or lack of improvement*) to 5 (indicating *satisfaction with treatment and improvement*). Factor analysis of the scale indicates that it is comprised of two factors: satisfaction with treatment outcome and satisfaction with treatment process. Mothers completed this form after the last session of the STEPP program.

**Focus group.** As part of ongoing refinement of the STEPP program, participants were invited to a semi-structured, posttreatment focus group to provide additional suggestions regarding the content, delivery, format, and process of the program.

## Results

Data were analyzed using a series of paired sample *t*-tests to measure pre- and posttreatment improvement. In addition, effect size was computed to display the magnitude of treatment effect for each outcome measure. Effect sizes were calculated by subtracting the mean of the outcome measure at pretreatment minus the mean of outcome measure at posttreatment and dividing by the posttreatment standard deviation (see Table 2 for means, standard deviations, and effect size calculations).

### Main Outcome Measures

At posttreatment, paired sample *t*-tests indicated that single mothers reported reduction in ADHD inattentive



**Table 2.** Means and Standard Deviations for Mother Ratings in the Strategies to Enhance Positive Parenting (STEPP) Program

	Pretreatment	Posttreatment	Effect Size
DBD I factor	1.94 (.44)	1.84 (.41)*	.24
DBD H-I factor	1.73 (.35)	1.70 (.35)*	.09
DBD ODD factor	1.65 (.39)	1.57 (.39)*	.21
IRS—overall	5.58 (.67)	5.41 (.67)	.24
PSI-SF total	109. (22.9)	103. (19.0)*	.31
BDI-total	14.75 (6.50)	13.17 (5.83)*	.27
Percentage of session attended by family	83.4 (27.4)		
Percentage of session attended by family on time	48.1 (29.3)		
Percentage of homework completed by mother	45. (25)		
TAI-SWO		24.10 (2.30)	
TAI-SWP		16.59 (1.98)	

DBD-I = Disruptive Behavior Disorders Rating Scale, Inattentive Factor; DBD-H/I = Disruptive Behavior Disorders Rating Scale, Hyperactive-Impulsive Factor; DBD-ODD = Disruptive Behavior Disorders Rating Scale, Oppositional Defiant Disorder Factor; IRS = Impairment Rating Scale; PSI-SF = Parenting Stress Index-Short Form; BDI = Beck Depression Inventory; TAI-SWO = Therapy Attitude Inventory-Satisfaction With Outcome; TAI-SWP = Therapy Attitude Inventory-Satisfaction With Process; STEPP = Strategies to Enhance Positive Parenting. Effect size was calculated by subtracting the pretreatment mean score minus the post-treatment mean score divided by the standard deviation of the posttreatment mean.

\*  $p < .05$ .

symptoms on the DBD rating scale ( $p = .04$ ) and reduction of ADHD H/I symptoms on the DBD rating scale ( $p = .04$ ). At posttreatment, single mothers also reported reductions in ODD symptoms on the DBD rating scale ( $p = .003$ ). Furthermore, parental stress was reduced as indicated by the PSI-SF total score ( $p = .003$ ). Maternal depressive symptoms were reduced as evidenced by significant reductions in the BDI ( $p = .002$ ). Improvement in overall child functional impairment was not observed ( $p = .34$ ).

#### Effect Sizes

Effect size calculations were determined for each of the six outcome measures. As detailed in Table 2, effect sizes ranged from .09 to .31, indicating scores were within the no effect to small effect of treatment. Moreover, the overall mean effect size for child symptoms was .19 and that for parental psychosocial adjustment was .29. These effect sizes indicated a small effect of treatment in these domains of functioning.

#### Engagement and Satisfaction

Out of the 12 parents enrolled in the program, 2 did not complete treatment. Furthermore, out of the 10 single mothers who completed treatment, all completed at least seven out of nine sessions with 8 attending all

nine sessions. When attending treatment, single mothers were on time for approximately half of the treatment sessions (see Table 2). Single mothers also completed half of the assigned homework over the course of the treatment program. Treatment satisfaction ratings were very positive. Data from the TAI indicated that single mothers were pleased with both the process and outcomes following the STEPP program (see Table 2).

#### Focus Group

Following the completion of the STEPP program, single mothers who participated in the pilot study were invited to participate in a follow-up focus group. This focus group provided an opportunity to incorporate participant feedback with the ongoing development of the intervention. Several key difficulties were noted by the focus group that assisted in the refinement of the STEPP program; however, three suggestions were consistently noted. First, although single mothers understood the concepts and techniques taught during treatment through discussions, modeling, and role-play, it was often difficult to apply them with their children. Many parents either could not find the time or did not feel comfortable attempting the skill at home. Second, for those parents who implemented the skills, the lack of feedback about their performance hindered their continued use of the skill between BPT sessions. Third, al-

though parents found motivational systems (e.g., incentive charts, daily report cards) to be worth implementing, many of the parents noted difficulties in setting up these systems at home because of their busy schedules. Given that motivational systems such as the daily report card are considered essential interventions for children with ADHD (Kelley & McCain, 1995; Pelham, Greiner, & Gnagy, 1997), the lack of implementation by single mothers in this study was concerning.

## Discussion

Although researchers have long determined the need to target and tailor BPT for single mothers (Dumas & Whaler, 1983), there are very few treatment outcome studies for this population. To our knowledge, this was the first study to assess the efficacy of BPT for single mothers of children diagnosed with ADHD. This study addressed three specific aims: (a) to determine the feasibility and acceptability of the STEPP program, (b) to determine the acute benefit of the STEPP program across several domains of child and parent functioning, and (c) to determine necessary modifications to the STEPP program prior to conducting a randomized clinical trial of the intervention. The intent-to-treat analyses provided some limited empirical support for the efficacy of the STEPP program as an intervention for single mothers of children with ADHD. Paired sample t-tests demonstrated that ADHD and ODD symptoms, parental stress, and maternal depression improved following treatment, which is in-line with findings from other BPT studies of ADHD (e.g., Anastopoulos et al., 1993; Sonuga-Barke et al., 2001). Effect size calculations indicated that the treatment had an overall small effect on outcomes measured. This finding must be considered in light of the multiple risk factors typically experienced within this population of families. Specifically, in terms of risk factors within this study, all families were headed by a single mother, approximately half of these mothers were within clinical levels of depression based on the BDI (i.e., greater or equal to a total score of 14), and 83% of the children were comorbid for ODD/CD (see Table 1). Given the multiple risks within this sample, the small effect sizes are encouraging but suggestive of changes. Thus, it is clear that modifications need to be made to the STEPP program to enhance the potential benefits of the intervention.

Arguably, the most marked and significant finding in this study relates to the effects of the STEPP program on attendance, completion, engagement, and satisfaction with treatment. Although limited by a small sample, the finding that 86% of the sample completed

a therapeutic dose of treatment is encouraging. This is particularly notable considering the multiple risks that these single-mother families have. Collectively, the attendance and completion rates in the STEPP program group are far better than those documented in the child therapy literature in general, which indicates a 40–60% attrition rate (Kazdin, 1996). These findings also compare favorably to other BPT studies that have focused on enhancing attendance and completion in lower risk samples (e.g., Nock & Kazdin, 2005) and surpass others (Prinz & Miller, 1994). Moreover, single mothers were very satisfied with the STEPP program. Consumer satisfaction with treatment, similar to the social validity of the program, is an important outcome. Parents must obtain meaningful benefits from the intervention they are enrolled in and must also be satisfied with the methods used to obtain these benefits. More importantly, the data on consumer satisfaction using the Treatment Attitude Inventory are similar to that of other evidence-based, widely recognized BPT programs (i.e., Parent-Child Interaction Therapy; Brestan et al., 1999; Eyberg, Boggs, & Algina, 1995). In summary, the finding that the process and outcomes of the STEPP program were achieved by a method which was satisfactory to parents is essential to the dissemination of this intervention.

## Future Directions

The pilot study of the STEPP program was encouraging yet requires thoughtful modifications to enhance the beneficial effects of the intervention. Based on both the quantitative and qualitative data provided by single mothers, changes were proposed to the intensity, content, and activities of the STEPP program, which may lead to further improvements in outcomes. Specifically, it was hypothesized that the intensity of the STEPP program was too low, particularly considering the difficulties commonly experienced by the target population. Conducting 90-min sessions once a week for 9 weeks is less intensive than other BPT programs. For example, recent studies that have demonstrated benefits of enhancements to BPT have involved up to 21 individually administered sessions (e.g., Kazdin & Whitely, 2003). Although extending the length of treatment was an option, an alternative and a more acceptable method to single mothers in the focus group was to increase the duration of each session. Single mothers stated that extending the length of treatment would increase the burden to the family and would require families to make a large commitment to treatment. Alternatively, they noted that once families were attending treatment, increasing the length of the session would be a more con-

venient and practical manner to increase the intensity of the STEPP program. Thus, the STEPP program will be extended from 1.5- to 2.5-hr sessions, thereby increasing the total therapeutic contact for single mothers within the STEPP program by 9 hr.

Additional modifications were made to the content and the activities of the STEPP program. Importantly, single mothers in the focus group indicated needing additional support in implementing parenting techniques and strategies covered during the treatment sessions. First, to enhance parenting skill acquisition, modifications were made to the concurrent children's social skills program. During certain sessions, single mothers observe paraprofessionals modeling the use of the parenting skills with their child in the children's social skills program. Subsequently, single mothers would implement the parenting skills with their child in the social skills group with feedback provided by the therapist and other members of the parent's subgroup when the interaction is completed. This form of skill acquisition is similar to that implemented in individually based BPT for young children with oppositional and conduct problems (e.g., Foote, Schuhmann, Jones, & Eyberg, 1998). Finally, given the feedback regarding the difficulty in developing and implementing an incentive system at home, a within treatment incentive system was developed that focused on children earning incentives based on meeting both within-session and weekly, home-based behavioral goals. This would provide an opportunity for single mothers to observe how these motivational systems worked with their child, to have a consistent means of delivering rewards during the course of the STEPP program, and also allow children in the STEPP program an opportunity to be consistently rewarded for attaining treatment goals at home and within-session. Collectively, several modifications to be implemented to the STEPP program will increase therapeutic contact and enhance the ability for parents to learn critical parenting skills more readily, and implement critical parenting skills more consistently, thereby augmenting the effects of the STEPP program on outcomes.

In summary, the STEPP pilot study provided useful information on how best to conceptualize enhancements to traditional BPT to meet the needs of single mothers of children with ADHD. This pilot study provided some preliminary support for the STEPP program on child and parental functioning as well as encouraging data on treatment engagement and satisfaction. Based on these findings, modifications to the STEPP program were made that were hypothesized to increase the potency of the intervention. A randomized clinical trial of this up-

dated STEPP program intervention compared to traditional BPT is currently underway.

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