

BRIEF REPORTS

Effectiveness of Collaborative Problem Solving in Affectively Dysregulated Children With Oppositional-Defiant Disorder: Initial Findings

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Oppositional-defiant disorder (ODD) refers to a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior toward authority figures. Research has shown that children with ODD and comorbid mood disorders may be at particular risk for long-term adverse outcomes, including conduct disorder. In this study, the authors examined the effectiveness of a cognitive-behavioral model of intervention—called collaborative problem solving (CPS)—in comparison with parent training (PT) in 47 affectively dysregulated children with ODD. Results indicate that CPS produced significant improvements across multiple domains of functioning at posttreatment and at 4-month follow-up. These improvements were in all instances equivalent, and in many instances superior, to the improvements produced by PT. Implications of these findings for further research on and treatment selection in children with ODD are discussed.

According to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994), *oppositional-defiant disorder* (ODD) refers to a recurrent childhood pattern of developmentally inappropriate levels of negativistic, defiant, disobedient, and hostile behavior toward authority figures. ODD-related behaviors have been shown to have

extremely deleterious effects on interactions between children who exhibit such behaviors and their adult caretakers (Stormshak, Speltz, DeKlyen, & Greenberg, 1997). Children with ODD with comorbid mood disorders (major depression and bipolar disorder) are at particular risk for adverse outcomes, including the development of conduct disorder (CD; Greene, Biederman, et al., 2002). To our knowledge, researchers have yet to examine differential effects of psychosocial treatment in samples of ODD children with and without comorbid mood disorders.

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However, diverse psychosocial treatment approaches have been applied to children's ODD-related behaviors. Models known alternatively as parent training (PT) and behavioral family therapy have focused primarily on altering patterns of parental discipline that contribute to the development of oppositional behavior and problematic parent-child exchanges. Skills typically taught to parents in such programs include positive attending, use of appropriate commands, contingent attention and reinforcement, and use of a time-out procedure (McMahon & Wells, 1998). In general, research has documented the efficacy of these procedures (see Brestan & Eyberg, 1998), and several intervention programs emanating from these models have been identified as either well established or as probably efficacious.

Alternative models of intervention have placed relatively greater emphasis on cognitive factors underlying ODD rather than on behavior per se (Crick & Dodge, 1996; Kendall, 1985, 1991). These models have focused on addressing the cognitive deficiencies (a lack or insufficient amount of cognitive activity in situations requiring such activity) and/or cognitive distortions (active but inaccurate or maladaptive cognitive processing) of oppositional or aggressive children. Several such intervention models have been identified as probably efficacious.

However, it has been argued that neither of the above categories of intervention directly addresses the reciprocal adult-child processes giving rise to oppositional behavior in a child (Greene, Ablon, & Goring, 2002). PT programs, by concentrating on altering patterns of inept parental discipline, focus primarily on only one component (the parent) of parent-child transactions. Similarly, in their emphasis on addressing the cognitive distortions and deficiencies of oppositional children, cognitive-behavioral models focus on only one component (the child) of parent-child transactions.

A cognitive-behavioral model of intervention known as *collaborative problem solving* (CPS; Greene, Ablon, & Goring, 2002) differs from many PT programs in its emphasis on facilitating adult-child problem solving (rather than on teaching and motivating children to comply with adult directives) and differs from other cognitive-behavioral models of intervention in its emphasis on training skills proximally to points of performance and helping adults and children develop the skills to resolve issues of disagreement collaboratively.

The present study represents the first examination of the effectiveness of the CPS approach. In this study, CPS was compared with PT in affectively dysregulated children meeting *DSM-IV* diagnostic criteria for ODD. We defined *affectively dysregulated* as those children with ODD who had at least subthreshold features of either severe major depression or juvenile bipolar disorder. As noted above, this population of children with ODD has been shown to be at heightened risk for adverse outcomes.

Method

Participants

The 50 children with ODD between the ages of 4 and 12 years who began treatment were randomly assigned (with a 3:2 randomization scheme) to CPS or PT. Three children (2 in the CPS condition and 1 in the PT condition) did not complete treatment. Thus, 28 children completed treatment in the CPS condition, and 19 children completed treatment in the PT condition. All children were clinically referred (to an outpatient mental health clinic specializing in the treatment of disruptive behavior disorders at a university teaching hospital); all met full diagnostic criteria for ODD; none met full diagnostic criteria for CD at the time of enrollment in the study (many had subthreshold features of CD). All children also had at least subthreshold features of either juvenile bipolar disorder or major depression (defined as more than half of the symptoms needed to meet criteria for the diagnosis). Although bipolar disorder remains a controversial diagnosis in children (the lack of universally accepted criteria for this disorder in children and the use of adult criteria to make the diagnosis in children continue to constrain its validity), researchers have found that using adapted adult criteria for bipolar disorder does identify a group of children who are affectively dysregulated, significantly impaired, and at significant risk for adverse long-term outcomes (e.g., Wozniak et al., 1995).

Children were ineligible to participate if they had an estimated full-scale IQ below 80 or were actively suicidal or homicidal on entry into the study. The final sample included 5 children of minority ethnicity (4 African Americans and 1 Asian American). Of the children who completed treatment, 87% (PT, $n = 16$; CPS, $n = 25$) were available for follow-up assessment at 4-month posttreatment.

Procedure

Diagnostic eligibility was established with a two-stage assessment process that involved a telephone diagnostic screening followed by a full diagnostic interview for those who met initial entry criteria. If (a) criteria for ODD were met, (b) criteria for CD were not fully met, (c) criteria for severe major depression or bipolar disorder were at least partially met, and (d) no exclusion criteria were met, then children and their parents were enrolled in the active-treatment phase of the study.

Treatment Conditions

Those families assigned to the PT condition received Barkley's (1997) 10-week behavior management program, consisting of the following treatment components: (a) discussing and educating parents about the causes of children's defiant behavior, (b) instructing parents on positive attending through use of special time, (c) training parents to use attending skills to increase compliant behavior, (d) increasing the effectiveness of parental commands, (e) implementing a contingency management program, (f) using the time-out procedure, (g) managing children's behavior in public places, and (h) using a daily school-home report card. This treatment program is manualized, with specified weekly session content. Families in this treatment condition received 10 weeks of treatment, as prescribed by the treatment manual. Treatment sessions in this condition were attended primarily by parents, with identified children included as indicated by the training manual.

Those families assigned to the CPS condition received a model of psychosocial treatment delineated by Greene and colleagues (Greene, Ablon, & Goring, 2002; Greene, Ablon, Goring, Fazio, & Morse, 2003). The CPS approach aims to help adults achieve the following treatment goals: (a) understand the cognitive factors that may contribute to aggressive outbursts, most notably in the domains of emotion regulation, frustration tolerance, problem solving, and adaptability skills; (b) become cognizant of three basic strategies (known as the baskets framework) for handling unmet expectations, including imposition of adult will, CPS, and removing the expectation; (c) recognize the impact of each of these three strategies on adult-child interactions; and (d) become proficient, along with their children, at CPS as a means of resolving disagreements and defusing potentially conflictual situations so as to reduce the likelihood of aggressive outbursts. CPS is also manualized, but session content and duration are not circumscribed. Rather, in keeping with calls for greater matching of therapeutic ingredients to the needs of individual children and families (Kendall, Chu, Gifford, Hayes, & Nauta, 1998), therapists chose from among six treatment dimensions in determining the specific content of each session. These dimensions—which are neither delivered in a mutually exclusive or stepwise fashion nor viewed as stand-alone treatment ingredients—include (a) identification of pathways (cognitive-skill deficits) contributing to the development of noncompliant behavior, (b) creation of a user-friendlier environment, (c) description and implementation of the baskets framework, (d) medication education, (e) family communication, and (f) cognitive-skills training. The range of treatment sessions in the CPS condition was 7–16 weeks, and the mean length of treatment in this condition was 11 weeks. Treatment sessions in this condition were attended primarily by parents, with identified children included at the discretion of the therapist.

All clinicians were experienced doctoral-level clinical psychologists. Two clinicians delivered PT; four different clinicians delivered CPS.

Therapists in the PT condition identified behavior therapy as their primary therapeutic modality and had considerable experience in providing PT; therapists in the CPS condition identified cognitive-behavioral therapy as their primary therapeutic orientation. Therapists in both treatment modalities received weekly supervision from the primary investigator to ensure adherence to treatment manuals. Although the primary investigator's supervision of both treatment conditions represented a potential methodological problem (i.e., possible disparate levels of expertise in the two treatments or greater investment in one of the two conditions), having different supervisors for the two groups of therapists might have simply pitted one supervisor's skill against another's. The adherence-integrity data reported below help alleviate concerns along these lines.

No medication was prescribed or administered as a component of either treatment condition. However, to enhance the ecological validity of the study (and to take into account the volatility and high level of aggressiveness of the population of children under study), we permitted children to remain on existing pharmacologic regimens upon entry into the study, and the study did not mandate that medication regimens remain unaltered during active treatment. Parents provided information about each child's medication regimens on a weekly basis to document initial regimen at the commencement of active treatment and any changes (removing or adding medications or switching from one medication to another within the same class of medications) that occurred during treatment.

Structured Diagnostic Interview

The Kiddie Schedule for Affective Disorders and Schizophrenia for School-Age Children—Epidemiologic version (K-SADS-E; Orvaschel, 1994) was used to assess children's diagnostic status prior to enrollment in the active-treatment phase of the study. The K-SADS-E establishes *DSM-IV* diagnoses, and it has established psychometric properties (see Edelbrock & Costello, 1988). Diagnoses were based on interviews with mothers and were considered positive if criteria were unequivocally met. All interviews were reviewed, and diagnostic uncertainties resolved, by a committee of board-certified child psychiatrists and licensed child psychologists who were unaware of the study in which the participant was involved and all nondiagnostic data (e.g., estimated level of cognitive functioning, socioeconomic status).

The K-SADS-E was administered by raters who were unaware of each child's screening results. All raters had undergraduate degrees in psychology and were trained to high levels of interrater reliability. Kappa agreement coefficients were computed by having three experienced, board-certified child psychiatrists render diagnoses on the basis of audiotaped interviews made by assessment staff in this and other studies within the same research laboratory. On the basis of 173 interviews, the mean kappa was .86, and all disorders had kappa values higher than .80, including .99 for attention-deficit/hyperactivity disorder, .93 for CD, .96 for ODD, .83 for major depression, and .94 for bipolar disorder. In regard to entry criteria, all children in the final sample met diagnostic criteria for ODD, 70% met at least subthreshold criteria for bipolar disorder, and 62% met at least subthreshold criteria for severe major depression.

Adaptive Functioning, Socioeconomic Status, and Estimated Cognitive Ability

Interviewers who administered the K-SADS-E also assigned a *DSM-IV* Global Assessment of Functioning (GAF) score to each child on the basis of information obtained in the diagnostic interview. The GAF score summarizes a child's global functioning and psychopathology with a scale ranging from 1 (*worst*) to 90 (*best*). Socioeconomic status was determined with Hollingshead's (1975) four-factor scale. Using methods described by Sattler (1988), we estimated cognitive ability with age-corrected scaled

scores in the Block Design and Vocabulary subtests from the Wechsler Intelligence Scale for Children—Revised (Wechsler, 1974).

Treatment Integrity

All therapy sessions were audiotaped to assess treatment integrity. A rater who was unaware of the nature of the two treatment conditions (and therefore was also unaware of the treatment being provided by specific therapists) listened to 20% of the tapes (randomly selected, with equal proportions of the two treatment conditions) and rated the degree to which various content consistent with the two treatment approaches was present during each session using a treatment adherence scale developed for this study. This scale consists of two subscales: The PT subscale contains four items describing essential distinguishing features of PT (and not CPS); the CPS subscale contains four items describing essential distinguishing features of CPS (and not PT). Each item was rated on a 5-point scale ranging from 0 (*was not focused on or mentioned in this session*) to 4 (*was a major focus of this session*). Mean subscale scores were calculated for each treatment group.

Parent-Child Relationship Inventory (PCRI; Gerard, 1994). This instrument was completed by parents at pretreatment and posttreatment and was used to assess the general quality of parent-child interactions. The PCRI contains seven subscales: Parental Support (the practical help and emotional support the parent receives from others), Satisfaction With Parenting (the degree to which parenting is experienced as enjoyable), Involvement (the degree to which a parent seeks out his or her children and is interested in their activities), Communication (the degree to which a parent feels he or she communicates with his or her child), Limit Setting (parent perceptions of the effectiveness of his or her discipline techniques), Autonomy (the willingness of the parent to promote independence in his or her child), and Role Orientation (parents' notions regarding the roles of mothers and fathers). Items are rated on a scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). The PCRI has been shown to have satisfactory psychometric properties (Gerard, 1994). There is no PCRI total score; because correlations among PCRI subscales are generally low (the vast majority of correlations are well below .50), the subscales are thought to measure fairly independent domains of parent-child interactions.

Parenting Stress Index (PSI; Abidin, 1995). This instrument was completed by parents at pretreatment and posttreatment. The PSI is a 101-item instrument consisting of 13 subscales grouped into a child domain and parent domain; these are summed to constitute a total score. The parent domain reflects parents' views of their own functioning in the parenting role and comprises seven subscales (Competence, Isolation, Attachment, Health, Role Restriction, Depression, and Spouse). The child domain measures child behavior problems that lead to frustration in trying to develop a relationship with the child and comprises six subscales (Distractibility-Hyperactivity, Adaptability, Reinforces Parent, Demandingness, Mood, and Acceptability). The majority of items are rated on a 5-point scale ranging from *strongly agree* to *strongly disagree*. The reliability and validity of the PSI are well established (Abidin, 1995).

ODD Rating Scale (ODDRS). The ODDRS, which is an unpublished instrument created by Ross W. Greene, lists the *DSM-IV* diagnostic criteria for ODD and is rated for frequency and severity on a 5-point Likert scale ranging from 1 (*false/never*) to 5 (*always true/very often*). This measure has been productively used to gauge ODD-related behaviors in studies of similar populations of children (e.g., Spencer et al., 2001). The ODDRS was completed by parents at pretreatment, posttreatment, and 4-month follow-up.

Clinical Global Impression (CGI; National Institute of Mental Health, 1985). This instrument was completed by the therapist at posttreatment and by parents at 4-month follow-up. The CGI includes, on a 7-point Likert scale, a rating of the degree to which the child's behavior has improved since the beginning of treatment (ranging from *very much improved* to *very much worse*).

Statistical Analysis

For the majority of outcomes, we used generalized estimating equation models and modeled outcomes as a function of treatment group (CPS or PT), time (pretreatment, posttreatment, and, when applicable, 4-month follow-up), and their interaction. The statistical significance of each covariate in these regression models was determined by Wald's test. To assess group differences on the CGI at posttreatment and follow-up, we used regression analyses. Effect sizes (see Cohen, 1988) were calculated with $d = \text{Mean Group 1} - \text{Mean Group 2}$ divided by the pooled standard deviation and were categorized as small ($d = .2$), moderate ($d = .5$) and large ($d = .8$). All relevant analyses were two-tailed; statistical significance was defined at the .05 level. Because data from fathers were frequently incomplete, data from parent ratings reported below refer to mothers' ratings.

Results

Child and Family Characteristics

At pretreatment, there were no significant differences between the two treatment groups in any demographic variables, past or current GAF scores, or rates of diagnostic comorbidity (see Table 1). The two groups also did not differ significantly (on the basis of generalized estimating equation models) on any measures of treatment outcome. There were also no significant differences between the two treatment groups in rates of children who were receiving psychotropic medication at pretreatment (PT, 53%; CPS, 64%), $\chi^2(1, N = 47) = 0.64, p < .42$, or at posttreatment (PT, 53%; CPS 74%), $\chi^2(1, N = 47) = 2.52, p < .11$. However, children in the CPS condition had significantly more adjustments to their medication regimens during active treatment compared with children in the PT condition (CPS, $M = 1.71$; PT, $M = 0.21$), $t(45) = -3.28, p < .01$. Further analyses showed that the vast majority of the children in both conditions had two or fewer changes to medication regimen during active treatment (PT = 100%; CPS = 71.4%) and that the number of changes in the CPS condition was inflated by 8 participants who had three or more medication changes during active treatment. Nonetheless, this difference between the two treatment groups is presumably also due to the presence of the

medication–education module in the CPS condition. Although it can be argued that controlling for medication changes can constitute a premature dismantling of the CPS treatment modules, we accounted for differences in medication changes by running analyses that compared treatment outcomes in three separate ways: (a) including medication changes as a covariate, (b) not including medication changes as a covariate, and (c) not including medication changes as a covariate but removing the 8 participants in the CPS condition with three or more medication changes. Our findings do not differ across these three methodologies. However, because we wanted to ensure that our findings were not confounded by differences in medication changes between the two groups, results reported below are those in which the medication-changes variable was included as a covariate, when applicable.

As noted above, duration of treatment was constant in the PT condition but variable in the CPS condition. To protect against the potential confounds this presented, we assessed the degree to which treatment duration was a significant predictor of outcome for all outcome variables; it was not.

Treatment Integrity

Children assigned to PT had a mean PT subscale score of 6.59 per session and a mean CPS subscale score of 1.57 per session, $t(44) = 8.10, p < .01$. Children assigned to CPS had a mean CPS subscale score of 8.94 per session and a mean PT subscale score of 0 per session, $t(49) = -22.90, p < .01$. These data indicate that the PT condition was characterized largely by PT-specific interventions, with very little inclusion of content relevant to CPS, and that CPS was characterized exclusively by CPS-specific interventions, with no inclusion of content relevant to PT.

Effects of Psychosocial Treatment

On the ODDRS, the CPS condition produced significant improvement from pretreatment to posttreatment ($Z = -6.41, p < .01$) and from pretreatment to 4-month follow-up ($Z = -5.98, p < .01$; see Figure 1). Time \times Group interactions from pretreatment to

Table 1
Participant Demographic Characteristics, Adaptive Functioning, and Psychiatric Comorbidity at Pretreatment

Variable	PT ($n = 19$)	CPS ($n = 28$)	Test
Demographic information			
Boy	14 (73.7)	18 (64.3)	$\chi^2(1, N = 47) = 0.46^a, p = .50$
Girl	5 (26.3)	10 (35.7)	$\chi^2(1, N = 47) = 0.46^a, p = .50$
Socioeconomic status	2.0 ± 1.00	1.5 ± 0.70	$Z(47) = 1.74^b$
Age (years)	6.8 ± 0.45	7.4 ± 0.40	$t(45) = -0.90^c$
Estimated full-scale IQ	106.7 ± 3.91	105.7 ± 2.53	$t(44) = 0.18^c$
DSM-IV Global Assessment of Functioning (current)	50.9 ± 0.98	51.3 ± 0.81	$t(45) = -0.29^c$
DSM-IV Global Assessment of Functioning (lifetime)	48.9 ± 1.13	47.4 ± 0.82	$t(45) = 0.95^c$
Comorbid disorders			
Subthreshold or full major depression	12 (63.2)	17 (60.7)	$\chi^2(1, N = 47) = 0.03^a, p = .87$
Subthreshold or full bipolar disorder	15 (78.9)	18 (64.3)	$\chi^2(1, N = 47) = 1.16^a, p = .28$
Attention-deficit/hyperactivity disorder	13 (68.4)	18 (64.3)	$\chi^2(1, N = 47) = 0.09^a, p = .77$
Anxiety disorder (1 or more)	8 (42.1)	11 (39.3)	$\chi^2(1, N = 47) = 0.03^a, p = .84$

Note. Means \pm standard deviations are reported for continuous variables; frequency and percentages (in parentheses) are reported for categorical data. There were no significant between-group differences (.05 level of significance). PT = parent training; CPS = collaborative problem solving.

^a Chi-square test. ^b Wilcoxon signed-ranks (Mann-Whitney U) test. ^c t test.

posttreatment and from pretreatment to 4-month follow-up were nonsignificant. As noted above, data for 6 children (3 in each treatment condition) could not be collected at 4-month follow-up. We used last-observation-carried-forward methodology to account for these missing participants; means for each relevant variable were virtually unchanged, and comparisons of group differences were unaltered.

The ODDRS was also used to calculate effect sizes for both treatment conditions. Large effect sizes were found for both CPS (1.19) and PT (0.80) from pretreatment to posttreatment. From pretreatment to 4-month follow-up, a large effect size was found for CPS (1.19), and a moderate effect size was found for PT (0.48).

On the total score of the PSI, the CPS condition produced significant improvement from pretreatment to posttreatment ($Z = -2.29, p < .05$). The Time \times Group interaction was nonsignificant. Examination of PSI subscales shows that the CPS condition produced significant improvement in one parent domain (Competence, $Z = -4.04, p < .01$) and three child domains (Distractibility-Hyperactivity, $Z = -2.36, p < .05$; Adaptability, $Z = -2.07, p < .05$; and Reinforces Parent, $Z = -2.30, p < .05$). The CPS condition also produced borderline significant improvement in the mood domain ($Z = -1.93, p < .05$). The Time \times Group interaction was not significant on any subscale. Medication changes were not a significant predictor on any subscales of the PSI, with the exception of the Mood subscale ($Z = 2.53, p < .05$).

On the PCRI, the CPS condition produced significant improvement on both the Limit Setting subscale ($Z = 3.52, p < .01$) and the Communication subscale ($Z = 2.27, p < .05$). There was a borderline significant Time \times Group interaction on the Autonomy subscale ($Z = -1.93, p < .06$), with children in the PT condition evidencing deterioration and children in the CPS condition evidencing improvement from pretreatment to posttreatment. Medication changes were not a significant predictor on any subscales of the PCRI.

We next examined ratings of the two treatment conditions on the therapist-completed (at posttreatment) and parent-completed (at 4-month follow-up) CGI, entering treatment group and changes in medication regimen as predictors in regression models. Treatment group emerged as a significant predictor at posttreatment, $t(46) = -4.26, p < .01$, and at 4-month follow-up, $t(41) = -3.04, p < .01$, with the behavior of children in the CPS condition rated as having improved to a significantly greater degree as compared with children in the PT condition (see Figures 2 and 3).

We identified children who evidenced an excellent response to treatment as those whose behavior was, at posttreatment (rated by therapists) and at 4-month follow-up (rated by mothers), *very much improved* or *much improved* on the CGI. We used logistic regression models and entered treatment group and medication changes as predictors. At 4-month follow-up, treatment group was a significant predictor of excellent response to treatment, $Z(43) = 2.15, p < .05$; 80% of children in the CPS condition evidenced an excellent response to treatment at this data point, as compared with 44% of those in the PT condition (see Figure 4).

Because normative data for the ODDRS are not available, we defined *clinical significance* as an improvement of 25% or greater in ODD-related behaviors (as measured by the ODDRS) between pretreatment and posttreatment and between pretreatment and 4-month follow-up (using methods for defining clinical significance articulated by Jacobson & Truax, 1991). No significant differences were found between the two groups in rates of children who evidenced clinically significant change. At posttreatment, 46% of children in the CPS condition evidenced clinically significant improvement, as compared with 37% of those in the PT condition, $\chi^2(1, N = 47) = 0.42, p < .52$. At 4-month follow-up, 60% ($n = 15$ of 25) of children in the CPS condition evidenced clinically significant improvement, as compared with 37% ($n = 6$ of 16) of those in the PT condition, $\chi^2(1, N = 41) = 1.98, p < .16$.

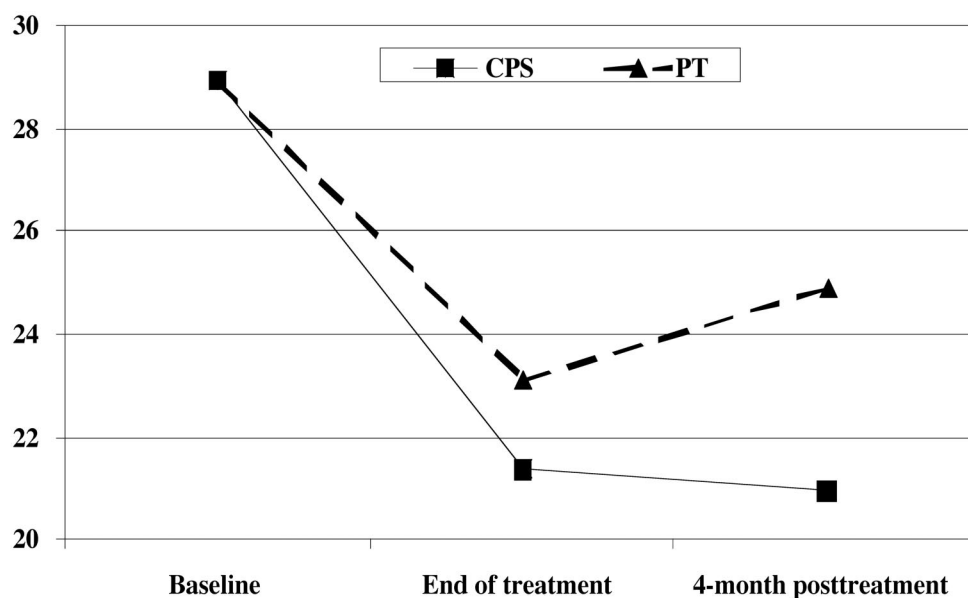


Figure 1. Maternal ratings on the Oppositional-Defiant Disorder Rating Scale (ODDRS) at pretreatment, posttreatment, and 4-month follow-up. Values in the vertical column indicate scores on the ODDRS. CPS = collaborative problem solving; PT = parent training.

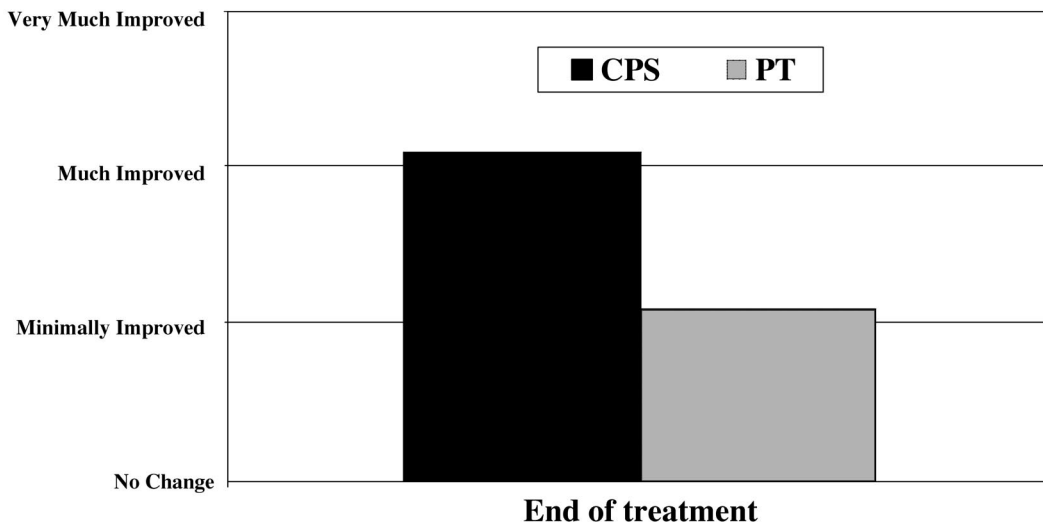


Figure 2. Therapist ratings on the Clinical Global Impression at posttreatment. CPS = collaborative problem solving; PT = parent training.

Discussion

We found that a cognitive-behavioral model of intervention emphasizing collaborative parent-child problem solving produced significant improvements in multiple domains of functioning and across multiple informants at several different data points. These improvements were in all instances equivalent, and in some instances superior, to the improvements produced in a comparison group receiving PT.

Several strengths of the present study are noteworthy, including a clinically referred, highly comorbid sample; random assignment to treatment condition; adherence testing; use of a well-established comparison treatment; and collection of follow-up data at 4-month posttreatment (see Chambless et al., 1996). However, the results

would have been further enhanced with an informant external to the study or outcome information such as direct observation.

One particular aspect of the CPS model is worthy of further discussion, especially in regard to the present study. Although the number of children beginning and ending the study on medication did not significantly differ between the two groups, children in the CPS condition had a significantly greater number of changes in their medication regimens compared with children in the PT condition, presumably because of the medication-education module of the CPS approach. This module is included in the CPS model because some of the factors contributing to the development of ODD—most notably, attention-deficit/hyperactivity disorder and mood disorders—may be well addressed by pharmacotherapy. As

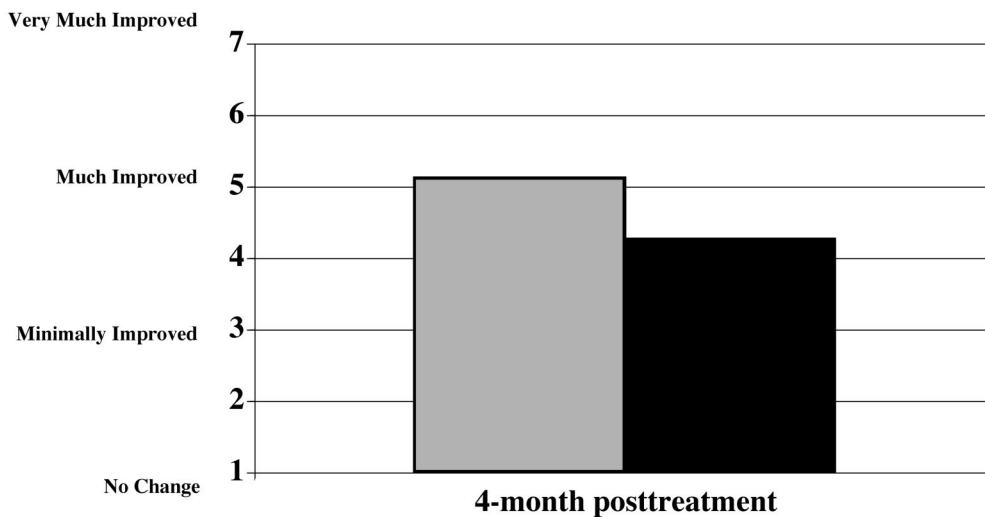


Figure 3. Maternal ratings on the Clinical Global Impression at posttreatment. Shaded bar = parent training; solid bar = collaborative problem solving.

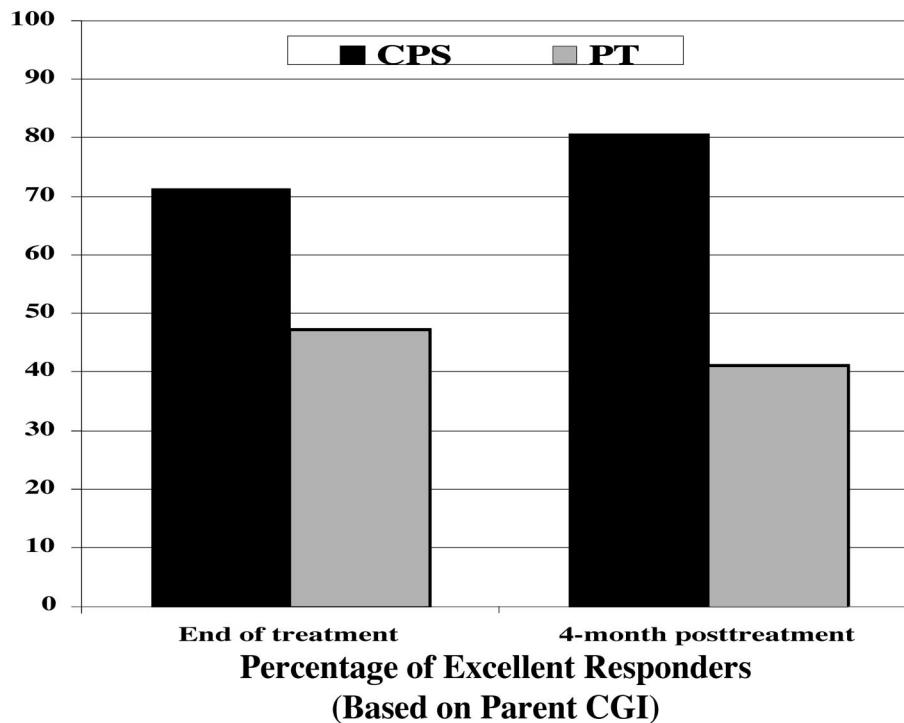


Figure 4. Excellent response to treatment at posttreatment and 4-month follow-up. Values in the vertical column indicate percentage. CPS = collaborative problem solving; PT = parent training; CGI = Clinical Global Impression.

noted above, the vast majority of the children in both conditions had two or fewer changes to medication regimen during active treatment. Although it can be argued that controlling for medication changes can constitute a premature dismantling of the CPS treatment modules, we accounted for differences in medication changes by examining treatment outcomes while (a) including medication changes as a covariate, (b) not including medication changes as a covariate, and (c) not including medication changes as a covariate but removing the participants in the CPS condition with a high number of medication changes. It is noteworthy that the CPS condition produced significant improvements across multiple domains regardless of which statistical strategy was used.

Another design aspect of the present study is also worthy of mention. The CPS condition, although manualized, did not involve application of circumscribed treatment content in specific sessions. Rather, in keeping with calls for greater matching of treatment ingredients to the needs of individual children and their families (Greene & Ablon, 2001) and greater flexibility in the application of manualized treatments (e.g., Kendall et al., 1998), therapists who provided CPS determined session content on the basis of their assessment of the clinical needs of each child and family from week to week and chose from six treatment modules. Moreover, treatment duration was not circumscribed, although a limit of 16 sessions per child and family was imposed. We believe that this high level of individualization enhances the ecological validity of the CPS model. Indeed, given the complex and heterogeneous parent and child characteristics thought to contribute to the development of ODD, we view individualization of treatment as indispensable. In addition, this flexibility may improve treatment com-

pliance and enhance the transportability of this treatment approach (Kendall & Southam-Gerow, 1995). However, although it is likely that specific ingredients of the CPS model contributed to the treatment gains shown by participants in this condition, it is possible that these gains were also a reflection of the emphasis on individualized treatment. Along these lines, it is also possible that differences between groups were not based on discrepant improvement but rather on differential satisfaction with the format of the CPS model.

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