Effectiveness of Behavioral Parent Training for Children With ADHD in Routine Clinical Practice: A Randomized Controlled Study

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ABSTRACT

Objective: To investigate the effectiveness of behavioral parent training (BPT) as adjunct to routine clinical care (RCC). **Method:** After a first phase of RCC, 94 children with attention-deficit/hyperactivity disorder (ADHD) ages 4–12, all referred to a Dutch outpatient mental health clinic, were randomly assigned to 5 months of BPT plus concurrent RCC ($n = 47$) or to 5 months of RCC ($n = 47$) alone. BPT consisted of 12 sessions in group format; RCC included family support and pharmacotherapy when appropriate. Exclusionary criteria were minimized, and children with and without medication could participate. Parent-reported behavioral problems, ADHD symptoms, internalizing problems, and parenting stress were assessed before and after treatment. Follow-up assessment of the BPT + RCC group was completed 25 weeks post-BPT intervention. Repeated-measures analyses of variance were carried out on an intention-to-treat basis. **Results:** Both groups showed improvements over time on all measures. BPT + RCC was superior to RCC alone in reducing behavioral ($p = .017$) and internalizing ($p = .042$) problems. No outcome differences were found in ADHD symptoms ($p = .161$) and parenting stress ($p = .643$). These results were equal for children with and without medication. Children allocated to RCC alone received more polypharmaceutical treatment. **Conclusions:** Adjunctive BPT enhances the effectiveness of routine treatment of children with ADHD, particularly in decreasing behavioral and internalizing problems, but not in reducing ADHD symptoms or parenting stress. Furthermore, adjunctive BPT may limit the prescription of polypharmaceutical treatment. *J. Am. Acad. Child Adolesc. Psychiatry*, 2007;46(10):1263–1271. **Key Words:** attention-deficit/hyperactivity disorder, parent training, randomized controlled trial. Clinical trial registration information—URL: http://*www.trialregister.nl*. Unique identifier: ISRCTN00662276.

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Stimulant medication and behavioral therapies are evidence-based interventions in the treatment of children with attention-deficit/hyperactivity disorder (ADHD; e.g., The MTA Cooperative Group, 1999). Among the behavioral therapies, behavioral parent training (BPT) is a well-established treatment (Pelham et al., 1998). The efficacy of BPT has been widely studied, but as far as we know, not its effectiveness in routine clinical care. Until now, ADHD treatment research has focused on examining the efficacy of pharmacological and behavioral treatments in formal randomized controlled trials (RCTs), mostly with recruited children. Only a few studies have assessed the effectiveness of such treatments in real-world clinical settings. Effectiveness studies are needed to

determine the transfer of empirically supported treatments to clinical practice.

BPT was found to be efficacious in several areas of child and family functioning, compared with a waitlist control group. The findings included improvements in parental ratings of ADHD symptoms (e.g., Anastopoulos et al., 1993; Sonuga-Barke et al., 2002) and of associated behavior problems (e.g., Bor et al., 2002; Pisterman et al., 1992). Furthermore, BPT was found to be efficacious in alleviating parenting stress (Anastopoulos et al., 1993; Pisterman et al., 1992). To the best of our knowledge, no studies have been published that examine the effects of BPT on internalizing problems, even though BPT may affect symptoms of anxiety and depression in children with ADHD.

Despite its demonstrated efficacy as a stand-alone treatment, BPT does not seem to enhance the effects achieved with medication (e.g., Abikoff et al., 2004; Firestone et al., 1981). In addition, medication management strategies for ADHD symptoms and associated behavior problems have been found to be superior overall. The large Multimodal Treatment Study of Children With ADHD (MTA study; The MTA Cooperative Group, 1999) yielded the most striking evidence of this conclusion, when comparing pharmacotherapy, behavioral treatment (including intensive BPT), a combination of both treatments, and community care. Furthermore, the MTA study revealed no differences between treatment groups on measures of parenting stress (Wells et al., 2000).

In clinical practice BPT is widely used to treat children with ADHD (Anastopoulos and Farley, 2003). This is also reflected in a general guideline for clinicians that considers behavioral interventions as additional second-line treatments, after first-line pharmacotherapy and assessment of residual problems (Biederman and Faraone, 2005). In clinical practice BPT is not limited to the treatment of children with residual problems alone (Anastopoulos and Farley, 2003), but is also administered to children who have stopped taking medication because of nonresponse or side effects and to children who did not receive pharmacotherapy because of parental preference. No research has been performed to determine whether BPT may be effective after families have noticed the limitations of medication. Also, we know nothing about the effectiveness of BPT in families who prefer behavioral treatment to medication because these families will not participate in randomized trials that include obligatory pharmacotherapy in one or more treatment arms.

The aim of the present study was to investigate the effectiveness of BPT in clinical practice as an adjunct to ongoing routine clinical care (RCC) from a child and adolescent psychiatrist, including family support and pharmacotherapy for the child when appropriate. We offered BPT to a representative referred sample of children with ADHD, in which exclusionary criteria were minimized. Inclusion took place after a first phase of RCC that consisted of a diagnostic examination of the child, psychoeducation for the parents, and advice about treatment options. Children who did not respond sufficiently to a first-line pharmacological intervention could participate in the study. Children who were not treated with medication because of either parental preference, nonresponse, or side effects could participate as well. The randomization procedure was designed to exert minimal influence on the parents' decision to participate because the waitlist for the study was shorter than the waitlist for regular parent training. To the best of our knowledge, the present study is the first RCT in children with ADHD that allowed patient selection in a naturalistic way. We expected that this approach would strengthen parental commitment and therefore enhance the potential effects of BPT. Second, by offering BPT to parents of referred children who already completed a first phase of RCC, we anticipated that our sample would include more children with comorbid disorders compared with most RCTs. RCTs generally include children directly after a first screening and often involve advertisement-recruited children rather than referred children.

We explored the effects of BPT as an adjunct to RCC compared with RCC alone in reducing ADHD symptoms, behavioral problems, internalizing problems, and parenting stress. Furthermore, we investigated differential effects for children with and without medication at study entry. Finally, we analyzed whether the two treatment conditions differed with regard to the frequency of RCC contacts or the prescription of multiple medications (polypharmaceutical treatment) during RCC.

METHOD

Participants and Procedure

All of the children had been referred to an outpatient mental health clinic by their general practitioners. They first received a

regular diagnostic evaluation conducted by a child and adolescent psychiatrist or a supervised trainee. After an initial diagnosis, the parents received regular counseling and psychoeducation, which included information about treatment options. Medication and BPT were offered as first- and second-choice treatments, respectively. The possibility of adding BPT if the medication was (partially) ineffective was mentioned. If behavioral problems continued after pharmacotherapy or if parents preferred BPT as a first-line intervention, then they were informed about the research project by their clinicians and invited to participate. The clinicians were instructed not to recommend BPT if the parents had already received intensive BPT the year before or if there were problems with the child and/or family that required immediate intervention (e.g., crisis in the family). Parents who expressed an interest received a telephone call from one of the researchers.

Eligibility was determined by the following criteria: meet *DSM-IV* criteria for ADHD; IQ >80 (Full Scale IQ of the WISC-III-R, for children under the age of 6 years; the Full Scale IQ of the WPPSI-R); age between 4 and 12 years; and both parents (if present) were willing to participate in the BPT program. The flow of subjects from initial recruitment through final analysis is presented in Figure 1. Child and family characteristics are shown in Table 1.

All of the parents gave their written informed consent to the study before randomization. Subjects were randomly assigned (randomized block design) to one of two treatment arms: 5 months of BPT (12 sessions in group format) plus uncontrolled RCC provided by a child and adolescent psychiatrist (n = 47) or 5 months of uncontrolled RCC alone (n = 47). Parents in the latter group were put on a waitlist for BPT. Assessments were conducted before the start of the training or the waitlist (T1) and directly after the intervention or the waitlist (T2). For the BPT + RCC group, a follow-up assessment (T3) was carried out 6 months after T2. Practical and ethical reasons prevented a follow-up assessment for the RCC alone group. Parents in this group had been waiting 22 weeks and had to start BPT immediately afterward.

Measures

The Dutch version of the Diagnostic Interview Schedule for Children-IV, parent interview (Shaffer et al., 2000) was used to determine whether the children met the *DSM-IV* criteria (American Psychiatric Association, 1994) for ADHD and to assess comorbid conditions. Individual target problems were assessed using a list of 34 possible target behaviors, which were derived from target problems mentioned by parents in earlier BPT groups in the same clinic. Examples of target behaviors are being noncompliant, arguing/discussing, displaying aggression against others, being easily and often angry, not finishing tasks, not playing on his or her own,

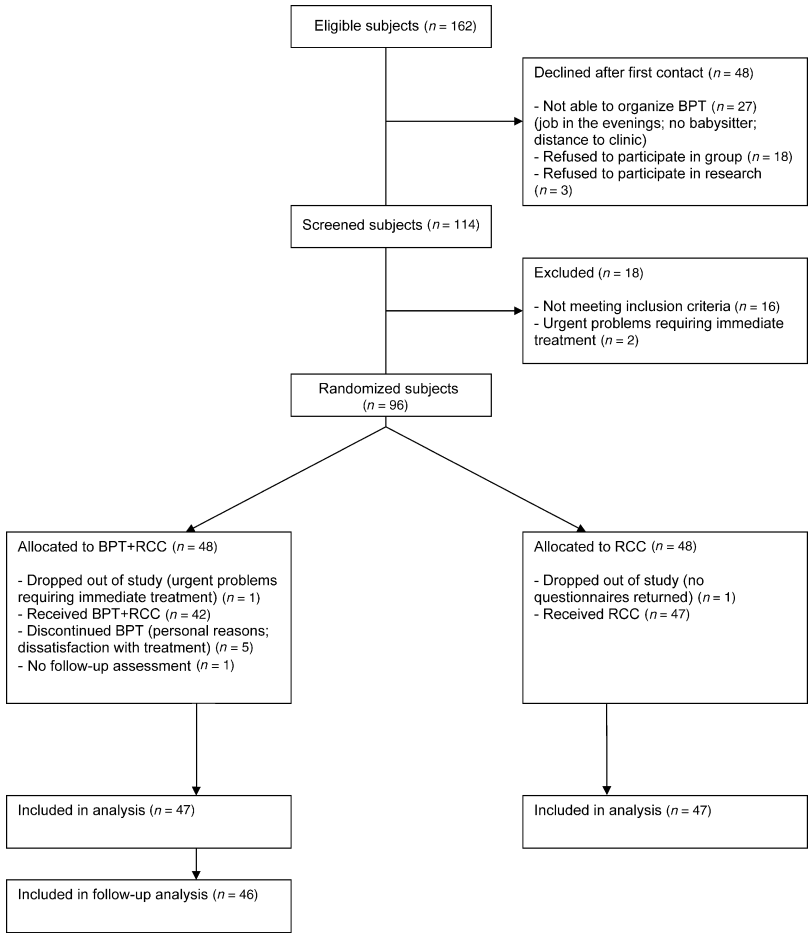

Fig. 1 Flow of subjects from initial recruitment through final analysis. BPT = behavioral parent training; RCC = routine clinical care.

TABLE 1

Child and Family Characteristics (N = 94)

Age, y (mean [SD]), range	7.4 (1.9), 4–12
Total IQ (mean [SD]), range	97.5 (11.5), 80–125
Male, no. (%)	76 (80.9)
Ethnicity, no. (%)	
White	89 (94.7)
African	2 (2.1)
Asian	2 (2.1)
Unknown	1 (1.1)
Comorbid disorders,[a] no. (%)	
ODD	71 (75.5)
CD	15 (16.0)
Anxiety disorder	41 (43.6)
Depressive disorder	8 (8.5)
Tic disorder	17 (18.1)
Elimination disorder	21 (22.3)
Comorbidity subgroups,[b] no. (%)	
ADHD only	18 (19.1)
ADHD with ODD/CD	33 (35.1)
ADHD with internalizing disorder (anxiety/depression)	5 (5.3)
ADHD with ODD/CD and internalizing disorder	38 (40.4)
Family composition	
Two biological parents	73 (77.7)
One biological, one stepparent	11 (11.7)
Single parent	10 (10.6)
Education level mothers, no. (%)	
Low	32 (34.0)
Middle	38 (40.4)
High	23 (24.5)
Unknown	1 (1.1)
Education level fathers (n = 84), no. (%)	
Low	26 (31.0)
Middle	34 (40.5)
High	21 (25.0)
Unknown	3 (3.5)
Prior treatment at clinic, no. (%)	
Diagnostic evaluation only	46 (48.9)
Pharmacotherapy	38 (40.4)
Parent counseling	2 (2.1)
Combination of pharmacotherapy and parent counseling	8 (8.5)
Prior diagnosis or treatment at other mental health center	
None	35 (37.2)
Received diagnostic evaluation or treatment elsewhere	59 (62.8)
Medication at study entry, no. (%)	
Taking medication[c]	47 (50)
Not taking medication[d]	47 (50)

Note: ODD = oppositional defiant disorder; CD = conduct disorder; ADHD = attention-deficit/hyperactivity disorder.

[a] Assessed by the Diagnostic Interview Schedule for Children-IV.

[b] In accordance with the Multimodal Treatment Study of Children With ADHD classification in categories (Jensen et al., 2001a).

[c] Primarily (78.7%) stimulants, with an average dose of methylphenidate of 19.9 mg/day.

[d] Five children without medication had previously been treated with drugs.

and crying easily. Parents had to select up to five target behaviors that they wanted the BPT to address. These individual behaviors were evaluated in both study groups at T1, T2, and T3 by telephone on 10 consecutive days, except for school holidays and weekends. In 1- to 2-minute telephone calls by trained psychologists, parents were asked, in a neutral way, if any of the target behaviors had occurred during the past 24 hours. If yes, then they were asked to rate the severity of each observed target behavior on a 5-point scale ranging from 1 (not severe) to 5 (exceptionally severe). A mean total score was derived on the basis of the parental responses over the 10 days. The psychologists that did the ratings by telephone were not blind with regard to treatment condition, but the structured interview procedure did not allow for interpretation of parental answers. Furthermore, the raters were not involved as BPT therapists in the study.

The Externalizing and Internalizing subscales of the Dutch version of the Child Behavior Checklist (CBCL; Achenbach, 1991) were used to assess and evaluate externalizing and internalizing problems reported by the parents.

The short form of the Conners Parent Rating Scale-Revised: Short Form (CPRS-R:S; Conners, 2001) was administered. The CPRS-R:S is a 28-item rating scale that consists of four subscales: Oppositional, Cognitive Problems/Inattention, Hyperactivity, and the ADHD Index (a global screening measure for ADHD). We used the ADHD Index subscale to assess and evaluate core ADHD symptoms.

To measure parenting stress, we used a Dutch version of the Parenting Stress Index (Abidin, 1983). The Parenting Stress Index consists of two main subscales: Parent Domain and Child Domain.

All of the outcome measures, except the individual target behaviors, were completed by both parents separately. In this study we analyzed the data from the mothers.

Treatment Setting, Therapists, and Treatment Integrity

The RCC was carried out by four experienced senior child and adolescent psychiatrists. All of the treatments were carried out at the mental health outpatient clinic to which the children were referred. The BPT was performed by seven experienced psychologists who had received extensive postgraduate training in behavior therapy as well as additional training in the BPT program. The therapists were experienced in performing the BPT program before becoming involved in the study.

During the study the therapists and researchers held meetings every 2 weeks to monitor treatment integrity. After each BPT session, the therapists completed a treatment integrity checklist in which they were asked which topics were covered. Topics that were not covered were rescheduled for the next session.

Treatments

BPT. The manual-based BPT consisted of twelve 120-minute sessions of group parent training led by two psychologists. Six children's parents could participate in each group. Specific target behaviors were established for each child. The BPT program drew most of its techniques from the programs of Barkley (1987) and Forehand and McMahon (1981). A brief description of our BPT manual is available on the *Journal's* Web site at *www.jaacap.com* through the Article Plus feature. The parenting skills dealt with in the program were structuring the environment, setting rules, giving instructions, anticipating misbehaviors, communicating, reinforcing positive behavior, ignoring, employing punishment,

and implementing token systems. Psychoeducation and cognitive restructuring of parental cognitions were also important elements. Compared with other typical ADHD parent training programs, the first phase of the training focused strongly on teaching parents to anticipate misbehaviors and to manipulate the antecedents.

Homework assignments played a central role in the program. For each session, parents read a chapter of a book especially written for this purpose (van der Veen-Mulders et al., 2001). In addition, parents practiced each week the parenting skill that was introduced in the preceding session. All of the exercises were tailored to the specific target behaviors of each child. The parents wrote reports after the exercises. Each session started with a discussion of the homework assignments and the parental reports. Then a new topic was introduced. The sessions ended with the preparations for new homework assignments.

RCC. The psychiatrists were instructed to provide care as usual, including supportive counseling, psychoeducation, pharmacotherapy, and crisis management whenever necessary. Contact could take place by telephone or in a face-to-face appointment. Parents were free to get in touch with their child and adolescent psychiatrist whenever necessary, in addition to the routine medication checkups that were usually scheduled every 3 to 6 months.

Statistical Analysis

The subjects were analyzed on an intention-to-treat basis. For 10 subjects, data at T2 or T3 were partially missing, distributed approximately equally between the two groups. We used the last observation carried forward technique to replace missing data at T2 and T3.

We assessed the statistical significance of the effect of the interventions by examining the interaction Fs, using the SPSS repeated-measures (mixed) analyses of variance. The same set of analyses was used to compare the effects of the treatments in children with and children without medication at study entry, now with medication status included as a second between-subject factor.

To evaluate the magnitude of the changes in both study groups, effect sizes (according to Cohen, 1988) were calculated by dividing the difference in the mean scores at T1 and T2 by the pooled SD (Rosnow and Rosenthal, 1996).

RESULTS

T1 Comparisons

No statistically significant differences in child or family characteristics between the two groups were present with the exception of tics, a comorbid condition with a significantly higher frequency in the RCC alone group ($\chi^2 = 8.7$; $p = .006$). There were no statistically significant differences for any outcome measures at T1.

Overall Treatment Effects

Table 2 presents a summary of the means, SDs, and effect sizes of all of the outcome measures at T1, T2, and T3.

Multivariate analysis of the behavioral problems (measures: individual target behaviors and CBCL Externalizing) showed a significant time effect ($F_{2,91} = 33.736$; $p < .001$) and a significant interaction effect between time and groups in favor of the BPT + RCC group ($F_{2,91} = 4.245$; $p = .017$). Univariate tests yielded significant interaction effects for both measures (individual target behaviors: $F_{1,92} = 4.707$; $p = .033$, and CBCL Externalizing: $F_{1,92} = 5.498$; $p = .021$), indicating that adjunctive BPT was effective in reducing these behavior problems more than RCC alone.

With respect to ADHD symptoms (measure: ADHD Index of the CPRS-R:S), our analysis revealed

TABLE 2
Means, SDs, and Effect Sizes of Outcome Measures in Two Treatment Groups

Outcome Domain	Measures	Treatment Group	Pre ($n = 94$), Mean (SD)	Post ($n = 94$), Mean (SD)	Effect Size Cohen's *d*, Pre to Post	FU ($n = 46$), Mean (SD)	Effect Size Cohen's *d*, Pre to FU
Behavior reinforcing	Individualized target behaviors	BPT + RCC	7.5 (3.5)	4.8 (2.1)	0.93	4.5 (2.1)	1.04
		RCC	7.6 (2.5)	6.1 (3.0)	0.54		
	CBCL Externalizing	BPT + RCC	71.7 (7.5)	67.1 (8.8)	0.56	67.7 (8.9)	0.49
		RCC	69.2 (8.2)	67.6 (9.3)	0.18		
ADHD symptoms	CPRS-R:S ADHD-index	BPT + RCC	22.4 (7.1)	19.0 (6.2)	0.51	19.8 (7.7)	0.35
		RCC	20.3 (6.4)	18.7 (7.7)	0.23		
Internalizing problems	CBCL Internalizing	BPT + RCC	63.7 (10.4)	60.3 (10.2)	0.33	59.7 (10.7)	0.38
		RCC	64.4 (10.1)	64.0 (10.5)	0.04		
Parenting stress	PSI PD	BPT + RCC	151.6 (46.7)	138.8 (54.0)	0.25	135.5 (48.0)	0.34
		RCC	143.8 (37.9)	137.0 (47.6)	0.16		
	PSI CD	BPT + RCC	222.9 (42.0)	205.4 (47.7)	0.39	205.2 (48.6)	0.39
		RCC	223.4 (43.2)	209.1 (46.0)	0.32		

Note: CBCL = Child Behavior Checklist; PSI = Parenting Stress Index; CD = child domain; PD = parent domain; CPRS-R:S = Conners Parent Rating Scale-Revised: Short Form; BPT = behavioral parent training; RCC = routine clinical care; FU = follow-up.

a significant time effect ($F_{1,92}$ = 15.333; p < .001) but no significant interaction effect between time and groups ($F_{1,92}$ = 1.996; p = .161). This indicates that both groups improved, but the adjunctive BPT was not significantly better than RCC alone.

The analysis of internalizing problems (measure: CBCL Internalizing) yielded a significant time effect ($F_{1,92}$ = 6.348; p = .013) and a significant interaction effect between time and groups ($F_{1,92}$ = 4.260; p = .042), in favor of the BPT + RCC group, again indicating that adjunctive BPT was more effective than RCC alone.

Regarding parenting stress (measures: Parenting Stress Index-Parent Domain and Parenting Stress Index-Child Domain), the multivariate analysis revealed a significant time effect ($F_{2,91}$ = 12.846; p < .001), but no significant interaction effect between time and groups ($F_{1,92}$ = .443; p = .643). Therefore, we do not report univariate tests.

Treatment Effects in Children With and Without Medication

T1 comparisons were conducted for all outcome measures in two subgroups: children who took medication at study entry and children who did not. This analysis did not show any statistically significant differences at T1. Four 2 (time) × 2 (treatment group) × 2 (medication status) repeated-measures analyses of variance showed no significant interaction effects between time, treatment, and medication status: behavioral problems ($F_{2,91}$ = .561; p = .573); ADHD symptoms ($F_{1,92}$ = 1.344; p = .249); internalizing problems ($F_{1,92}$ = 0.050; p = .823); and parenting stress ($F_{2,91}$ = .010; p = .990). These analyses indicate that medication status at study entry did not affect treatment effects.

Medication Status

In the BPT + RCC group 21 children were taking medication at T1 and 26 at T2. In the RCC group 26 children were taking medication at T1 and 28 at T2. Chi-square tests on these data yielded no significant differences between the study groups at T1 and T2. At T3, 33 children in the BPT + RCC group were taking medication.

In the group of children taking medication (n = 47 at T1 and n = 54 at T2), no statistical differences between the two study groups in monopharmacotherapy and multiple pharmacotherapy were present at T1 (χ^2 = 0.17; p = 1.00). At T2, however, significantly more children in the RCC alone group received polypharmaceutical treatment than did children in the BPT + RCC group (χ^2 = 4.8; p = .026). Polypharmacy in the RCC alone group at T1 included stimulant + clonidine (n = 2) and at T2, stimulant + risperidone (n = 3), stimulant + clonidine (n = 3), and stimulant + citalopram (n = 1).

Analysis of variance on daily doses of methylphenidate revealed no statistical differences between the study groups at T1 and T2. Mean daily doses for all of the methylphenidate users (children receiving polypharmaceutical treatment excluded) were 19.5 mg/day at T1, 20.1 mg/day at T2, and 22.8 mg/day at T3.

Consumption of Routine Care

The mean number of contacts between families and child and adolescent psychiatrists in the BPT + RCC group was 0.9 (SD 1.0, range 0–3), the mean number of contacts in the RCC alone group was 1.8 (SD 2.0, range 0–7). Analysis of variance revealed that families in the RCC alone group had significantly more contacts ($F_{1,92}$ = 6.93; p = .010).

DISCUSSION

The present study examined the effectiveness of BPT as an adjunct to RCC in a referred sample of children with ADHD and their parents. We minimized exclusionary criteria, and patient selection was carried out in a naturalistic way. By offering BPT in addition to RCC, we tried to enlarge the generalizability of the results to clinical practice and to enhance the potential effects of BPT.

We expected the study to include more children with comorbid disorders than other outcome studies in this area. We therefore compared our comorbidity data with the data from the MTA study (Jensen et al., 2001a). Comorbidity rates were higher for most comorbid disorders in our sample. More specifically, the subgroup ADHD with oppositional defiant disorder/conduct disorder and internalizing disorder was larger (40.4% in our study versus 24.7% in the MTA study). In addition, the proportion of children with ADHD only was smaller in our sample (19.1% in our study versus 31.8% in the MTA study). These findings may be explained by the timing of our intervention. As BPT was offered after a first phase of RCC, often including pharmacotherapy, a more complex and

needy group of children may have been referred to BPT. Less complex, mildly impaired children probably responded satisfactorily to the treatments in the first phase. Furthermore, the fact that our sample included only referred children may account for the relatively higher comorbidity rates. This group may differ from the children in the MTA study, who were recruited with different strategies. Finally, the differences in rates of comorbidity may also be related to the broader age range in our study.

We anticipated that fewer parents would refuse to participate in the study because of dissatisfaction with randomization. In this respect, no comparisons with the MTA study could be made; however, in our sample only 2% of eligible families opted for regular treatment and refused to participate in the research project.

The first question addressed in this study related to the effectiveness of BPT in clinical practice. The results show that parents in both groups reported improvements over time on all measures. For children in the BPT + RCC group, these improvements remained stable at follow-up assessment. The BPT + RCC group had a better outcome than the RCC alone group in reducing behavioral problems, but BPT provided no added value in reducing ADHD symptoms. This pattern of results was the same for children with and without medication at study entry. We hypothesize that parents and therapists in the BPT groups have focused primarily on reducing the behavioral problems rather than the ADHD symptoms. We found evidence of this explanation in a subsequent analysis of the chosen target behaviors. Parents mainly chose to target behavioral problems (78%), whereas only 14% of all target behaviors related to pure ADHD symptoms. Furthermore, the rates of comorbid oppositional defiant disorder (75.5%) and conduct disorder (16.0%) were high in our sample, which again may indicate that the behavioral problems have been the major concern for the parents.

The BPT + RCC group also did better than the RCC alone group in reducing internalizing problems. The medication status at study entry did not affect these results. Although internalizing problems were not frequently addressed (8% of all target behaviors), the BPT interventions as such may have had indirect effects on internalizing symptoms. Structuring the environment, being clear and direct, and providing more positive reinforcement are examples of parenting skills that can affect depressive and anxious symptoms in children as well as externalizing problems.

The expected added value of BPT in reducing parenting stress was not found. Reductions in parenting stress were comparable in both treatment groups, with only trivial to small effect sizes, and again no differences in treatment effects were present between children with and without medication at study entry. This finding is in line with the MTA study, which also failed to find differences between the treatment groups on measures of parenting stress (Wells et al., 2000), but it is in contrast with studies that compare BPT with a waitlist (e.g., Anastopoulos et al., 1993; Pisterman et al., 1992). It is unclear how these differences (and similarities) among various studies should be understood. In both our study and the MTA study, the control group received clinical care, in contrast to the waitlist-controlled studies of Anastopoulos et al. (1993) and Pisterman et al. (1992). Furthermore, in the latter studies, children and parents were treated immediately after referral, when stress levels were probably still high. In our study, parents were treated after a first phase of RCC. The stress levels of (referred) parents may have declined substantially during the first phase, leaving less room for improvement (floor effect). Further research may provide clearer insight into these issues. To enhance the potential effects of BPT, interventions that directly target parenting stress may be of value in the development and evaluation of treatment in the future.

The second question addressed in this study was whether BPT influences RCC, including pharmacotherapy. First, children and parents receiving RCC alone differed in their consumption of RCC: they had significantly more RCC contacts than families in the BPT + RCC group. However, the clinical significance of this finding is questionable, although the mean number of contacts between families and child and adolescent psychiatrists in the BPT + RCC group was 0.9 versus 1.8 in the RCC alone group. Furthermore, children in the RCC alone group received more polypharmaceutical treatment than children in the BPT + RCC group. This finding may be clearly relevant for clinical practice and warrants replication in future research. Finally, the BPT + RCC group showed an increase in pharmacotherapy at T3. It is unclear how this elevation can be understood, but future studies should investigate possible underlying mechanisms.

This study has also gained some insight into interventions in routine treatment. The stimulant medication treatment in our RCC showed relatively low daily medication doses and a low frequency of RCC visits. The methylphenidate doses were stable in both treatment groups, with averages of 19.5 mg/day (T1), 20.1 mg/day (T2), and 22.8 mg/day (T3). These are comparable with doses in the community care group in the MTA study, but apparently lower than doses in the effective MTA medication management group (37.7 mg/day at endpoint) and MTA combined treatment group (31.2 mg/day at endpoint; Jensen et al., 2001b). Furthermore, the frequency of (medication) visits in our study was comparable with the frequency of visits in the MTA Community Care group, but again lower than in the effective medication management group of the MTA study (Jensen et al., 2001b). Dosing, as well as frequency of contacts, have been hypothesized to enhance treatment effects of medication management (Jensen et al., 2001b). Therefore, optimizing stimulant pharmacotherapy in the first phase of RCC may lead to an even more restricted group of children and parents who require BPT. Studies addressing the effectiveness of stimulant medication in clinical practice, using more optimal strategies (comparable with the interventions in the MTA medication management group) are needed to clarify which families will still need adjunctive BPT. Benchmark designs (Weersing, 2005) will therefore be helpful in future ADHD treatment research.

Limitations

Despite the high external validity of the present study, there may be some limitations regarding the generalizability of the findings. First, 16.7% of all eligible families declined before randomization because they did not expect they would be able to arrange their schedule to participate in BPT. This group probably needs more flexible individualized parent training. Second, another 11.1% of the eligible families refused to participate in group training. These families probably feel more comfortable in individualized parent training. Third, when one of the parents (generally fathers) was not able or refused to participate in BPT, the family was not referred to the BPT research project. However, our efforts to motivate parents to participate together in BPT may be one of the factors that enhanced the effectiveness of the intervention. Finally, it should be noted that 94.7% of our subjects were of white origin, and 89.4% came from two-parent families. Both sample characteristics were representative of the region and clinic in which our study was performed, but they may limit the generalizability of the results to other clinical groups and settings.

It should be mentioned that we evaluated the intervention as a package, although some specific components of the program were evidence based (e.g., token systems), and others were not (e.g., restructuring of parental cognitions). Further research is needed to distinguish between the effective and ineffective components of the program.

Our study relied heavily on parents' reports of symptoms, and findings may therefore have been influenced by expectancy effects. We recommend the inclusion of different informants and assessment methods in future research, such as child and teacher reports and direct observation.

Clinical Implications

This study supports the hypothesis that BPT in clinical practice adds to the effectiveness of routine treatment, particularly in reducing behavioral problems and internalizing symptoms. This finding is relevant for a clinically representative group of children with ADHD. Children already receiving pharmacotherapy, children who have stopped pharmacotherapy, and children whose parents prefer BPT to medication can benefit from adjunctive BPT. For the latter group, BPT can be an effective first-line intervention. Children from a broad age range (4–12 years) and with different comorbidity profiles can be referred to BPT. Also, the study supports the guideline that behavioral interventions should be implemented as second-line interventions (Biederman and Faraone, 2005). This seems to be particularly relevant if parents want to target behavioral or internalizing problems in addition to ADHD symptoms. If ADHD symptoms or parenting stress are the main focus of treatment, then RCC may be as effective as BPT.

Finally, adjunctive BPT may limit the number of children with ADHD receiving polypharmaceutical treatment, whereas treatment with RCC alone may lead to an increase in the prescription of multiple medications. Future research is needed to evaluate these treatment choices and to serve as input for official guidelines and practice parameters.

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Maltreatment of Children With Disabilities Roberta A. Hibbard, MD, Larry W. Desch, MD, and the Committee on Child Abuse and Neglect and Council on Children With Disabilities

Widespread efforts are being made to increase awareness and provide education to pediatricians regarding risk factors of child abuse and neglect. The purpose of this clinical report is to ensure that children with disabilities are recognized as a population that is also at risk of maltreatment. Some conditions related to a disability can be confused with maltreatment. The need for early recognition and intervention of child abuse and neglect in this population, as well as the ways that a medical home can facilitate the prevention and early detection of child maltreatment, are the subject of this report. **Pediatrics** 2007;119:1018–1025.