

## Parent Training for Attention-Deficit Hyperactivity Disorder: Its Impact on Parent Functioning

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### **Abstract:**

This study examined changes in parent functioning resulting from parental participation in a behavioral parent training (PT) program specifically designed for school-aged children with attention-deficit hyperactivity disorder (ADHD). Relative to wait list controls, subjects who completed the nine-session PT program showed significant posttreatment gains in both child and parent functioning, which were maintained 2 months after treatment. In particular, there were PT-induced reductions in parenting stress and increases in parenting self-esteem, which accompanied parent-reported improvements in the overall severity of their child's ADHD symptoms. In addition to their statistical importance, these findings are discussed in terms of their clinical significance, utilizing methods developed by Jacobson and Truax (1991).

### **Article:**

Behavioral parent training (PT), either alone or in combination with other intervention strategies (e.g., stimulant medication), is often employed in the clinical management of children with attention-deficit hyperactivity disorder (ADHD). In this form of treatment, parents routinely receive ongoing clinical supervision in the use of specialized child management tactics, primarily involving contingency management techniques. In some applications of PT, counseling parents about ADHD is included as well (Barkley, 1990). When such training is successful, parents are better equipped to manage their child's behavior, especially at times when the effects of medication or other treatments are diminishing or absent. These changes in parenting style presumably provide children with opportunities for acquiring greater self-control over their own behavior.

While there certainly is evidence attesting to the efficacy of PT for bringing about improvements in the home behavior of children with ADHD (Dubey, O'Leary, & Kaufman, 1983; Gittelman *et al.*, 1980; Horn, Ialongo, Popovich, & Peradotto, 1987; Pelham *et al.*, 1988; Pisterman, McGrath, Firestone, & Goodman, 1989; Pollard, Ward, & Barkley, 1983), many questions remain as to its broader psychosocial impact. Of particular concern is that, in the vast majority of PT studies, outcome has been defined almost exclusively in terms of changes in child functioning, with attention to treatment-induced changes in parent and family functioning being the rare exception rather than the rule. What little evidence is available suggests that PT can have a therapeutic impact on parents, at least in terms of self-reported increases in parenting self-esteem and reductions in overall parenting stress (Pisterman *et al.*, 1992).

The rationale for expecting such changes stems in part from a consideration of the fact that children with ADHD impose increased caretaking demands on their parents throughout childhood (Cunningham & Barkley, 1979) and into adolescence as well (Barkley, Anastopoulos, Guevremont, & Fletcher, 1992). Although a direct causal link has yet to be established, there is ample correlational evidence to suggest that

this disruption in the normal parenting process may adversely affect parental functioning in many ways. For example, recent studies have shown that parents of children with ADHD commonly experience considerable stress in their parenting roles (Anastopoulos, Guevremont, Shelton, & DuPaul, 1992; Fischer, 1990). Moreover, they often view themselves as less skilled and less knowledgeable as parents, and derive less value and comfort from their parenting efforts (Mash & Johnston, 1983). Of additional significance is that they are at increased risk for depression and other types of personal distress, and for marital discord as well (Cunningham, Benness, & Siegel, 1988).

To the extent that these parental difficulties are a direct consequence of raising a child with ADHD, it provides a basis for understanding why PT might indeed improve parental functioning. More specifically, as parents use recommended PT strategies, they gain greater control over their child's home behavior. This in turn presumably serves to alleviate parental distress.

The intuitive appeal of this rationale notwithstanding, relatively little empirical attention has been directed to this facet of treating ADHD. In response to this situation, the purpose of the current investigation was to examine further the extent to which PT affects parent functioning. In an extension of Pisterman *et al.*'s (1992) research, which involved preschool children with ADHD, this study examined PT-induced changes in parenting self-esteem and parenting stress within a school-aged ADHD population. Based on the assumption that PT might impact other areas of parental functioning known to be problematic within the ADHD population, this study also incorporated measures of personal distress and marital satisfaction. Anticipated changes in the perceived severity and pervasiveness of the child's ADHD symptoms were assessed as well. It was predicted that PT would indeed lead to significant changes in parent perceptions of their child's ADHD and that these changes would be accompanied by significant improvements in parenting stress, parenting self-esteem, personal distress, and marital satisfaction. In addition to assessing these changes through traditional statistical comparisons at a group level, this study evaluated outcome in terms of its clinical significance at an individual level, utilizing methods recently developed by Jacobson and Truax (1991).

## **METHOD**

### *Subjects*

The subjects were drawn from a pool of consecutive referrals to a university medical center clinic, specializing in the assessment and treatment of ADHD. Over a 2-year period, a total of 36 children and their mothers met the study's eligibility requirements and served as subjects. All of the children met DSM-R criteria for an ADHD diagnosis (American Psychiatric Association, 1987), based on parent responses to interview questioning. Each child also had a T score of 67 or above (i.e.,  $\geq$  95th percentile) on the Hyperactive dimension of the parent-completed Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983). All of the children were between 6 and 11 years of age. Each possessed at least low average intelligence, as determined either from previously reported intelligence test findings or from screening results obtained during the intake assessment—that is, a subtest-scaled score of 8 or above on the Vocabulary subtest of the Wechsler Intelligence Scale for Children-Revised (Wechsler, 1974). An additional eligibility requirement was that the child could not have any evidence of deafness, blindness, severe language delay, cerebral palsy, pervasive developmental disorder, or psychosis.

Two subjects dropped out of the project during the middle of treatment, leaving a final sample of 34 subjects, which included 25 boys and 9 girls, ranging in age from 75 to 123 months ( $M = 97.7$ ,  $SD = 12.7$ ). Although all were in regular kindergarten through fifth-grade classrooms for their primary school placement, 24 were also receiving some type of part-time special education assistance. Three were adopted within 12 months of birth; the remainder were the biological offspring of their parents. All but six came from two parent families. Sixteen children met DSM III-R criteria for a secondary diagnosis: Of these, 14 had oppositional-defiant disorder, 1 had overanxious disorder, and 1 had functional enuresis. Seven

children were on stimulant medication regimens at the start of treatment.

The overall composition of the sample was predominantly Caucasian and middle class, as estimated by Hollingshead (1975) occupational index scores ( $M = 58.8$ ,  $SD = 23.1$ ). Generally speaking, this distribution paralleled that found in the surrounding community.

### *Diagnostic Procedures*

*Parent Interview.* Information about the child's diagnostic status was obtained in part from maternal responses to a semistructured psychiatric interview, similar to one that was designed specifically for use with ADHD populations (Barkley, 1990). This interview also provided clinically relevant information pertaining to the child's developmental, health, school, peer, and family history.

*Child Behavior Rating Scales.*  $T$  scores from the Hyperactive dimensions of the Child Behavior Checklist (Achenbach & Edelbrock, 1983) were used to assess the degree to which reported ADHD symptoms deviated from developmental expectations.  $T$  scores from the Aggressive and Internalizing dimensions were also utilized to monitor these comorbid features across the comparison groups.

### *Child ADHD Outcome Measures*

*Severity of ADHD.* The overall frequency and severity of ADHD symptomatology was assessed via the Inattention and Impulsivity—Hyperactivity factor scores, as well as the Total score, from the ADHD Rating Scale (ADHDRS; DuPaul, 1991). This scale contains the 14 ADHD behaviors listed in DSM III-R. Each item is rated on a 4-point scale, ranging from 0 (not at all descriptive of the child) to 3 (very much descriptive of the child).

*Cross-Situational Pervasiveness of ADHD.* The total number score from the Home Situations Questionnaire-Revised (HSQ-R; DuPaul & Barkley, 1992) was used to assess the degree to which inattention concerns were problematic across 14 commonly encountered home situations (e.g., getting dressed, mealtimes).

### *Parent Self-Report Outcome Measures*

*Parenting Stress.* The Child Domain, Parent Domain, and Total scores from the Parenting Stress Index (PSI; Abidin, 1986) served as indices of stress within the parent—child system.

*Parenting Efficacy and Satisfaction.* Parenting self-esteem was measured in terms of the Total score from the Parenting Sense of Competence Scale (PSCS; Johnston & Mash, 1989).

*Parental Personal Distress.*  $T$  scores from the Global Severity Index (GSI) of the Symptom Checklist 90-Revised (SCL 90-R; Derogatis, 1983) were used to estimate overall levels of personal distress or psychopathology among mothers.

*Marital Satisfaction.* The Locke-Wallace Marital Adjustment Scale (LWMAS; Locke & Wallace, 1959) was employed as a measure of overall marital satisfaction for intact families in the project.

*Knowledge of ADHD.* The total correct score from the original version of the Test of ADHD Knowledge (TOAK; Anastopoulos, Shelton, DuPaul, & Guevremont, 1992) served as a measure of how much factual information about ADHD parents possessed. Based on a multiple-choice response format, the original TOAK contains 26 items tapping knowledge of its primary and comorbid features, its situational variability, and so forth. Its 3-month test—retest reliability is satisfactory,  $r = .85$ .

### *Additional Measures*

To reduce the effects of confounding with respect to the outcome measures of primary interest, additional measures were obtained over the duration of the project.

*Child Medication and Psychotherapy Status.* Maternal responses to interview questioning were used for determining whether their child was taking stimulant medication or receiving psychotherapy services.

*Parent Psychotherapy Status.* Mothers also provided information as to whether or not they themselves were receiving individual or marital therapy services.

*Psychosocial Stress.* The Life Stress scale from the PSI provided an estimate of the amount of stress that mothers were experiencing, outside of the parent—child relationship. The 19 items (e.g., legal problems) that make up this optional subscale are not included in the PSI's Total Stress Score.

### *General Procedure and Design*

Each child initially underwent a comprehensive multimethod assessment (Barkley, 1990), consisting of parent and teacher-completed child behavior rating scales, parent self-report rating scales, parent and child interviews, observational assessment, psychological testing, and school and medical record reviews. All phases of this intake evaluation were conducted by Ph.D. level psychologists, each of whom possessed several years of postdoctoral experience working with ADHD populations.

Those who had been referred to the clinic's parent training program for further treatment were screened to determine their eligibility for this study. Potential subjects were contacted to discuss the research project and to obtain written informed consent for their participation. As part of this process, subjects were apprised of the possibility of being assigned to a 2-month waiting list, due to the extremely high volume of cases referred to the clinic's parent training program. Thereafter, subjects were assigned either to PT ( $n = 19$ ) or to the wait list control condition ( $n = 15$ ), depending on clinic caseload limitations at the time they entered the project. For ethical reasons, wait list subjects were given information about alternative ADHD treatments and advised to seek them out as needed, without fear of being removed from the research project.

Prior to beginning either PT or the corresponding wait list period, all subjects completed additional child and parent—self report measures specific to the research project, which had not been collected routinely during the intake assessment. For the PT group, all dependent measures were collected again within 1 week following the active portion of treatment, and once more, approximately 2 months later as a followup assessment. For the wait list group, the dependent measures were collected a second time, approximately 2 months after the initial assessment, roughly corresponding to the amount of time spent in treatment by PT subjects. For ethical reasons, the wait list subjects did not complete a third assessment. Instead, they were placed into PT as soon as possible after the second testing. Because completion of these additional assessment procedures was not part of the standard clinic treatment program, all subjects were paid a \$30 stipend as compensation for each assessment that they completed.

### *Treatment Program*

*Parent Training.* The nine-session PT program developed by Barkley (1987, 1990) was employed, due to the availability of a treatment manual, the program's inclusion of a parent counseling component, and the fact that its behavioral procedures target not only child noncompliance but also primary ADHD symptomatology. Treatment sessions were generally conducted on a consecutive weekly basis. Thus, most PT subjects completed the program within 2 months. Mothers and fathers were encouraged to attend PT, but for practical reasons this was not always possible. To remain eligible for the project, mothers were required to attend all treatment sessions.

In Session 1 parents were given an overview of ADHD. In Session 2 there was further discussion of ADHD as needed, as well as a review of a four-factor model for understanding child behavior problems and a discussion of general behavior management principles. Beginning with Session 2, between session homework was assigned to parents at the end of each session and reviewed at the start of the next. Sessions 3, 4, and 5 focused on teaching parents specialized positive reinforcement skills, including the use of positive attending and ignoring skills during "special time" play; attending positively to appropriate independent play and/or compliance with simple requests; and using a comprehensive, reward-oriented home token/point system. Sessions 6 and 7 focused on the use of punishment strategies, beginning with the addition of a response cost component for minor noncompliance and rule violations, followed by instruction in using time out from reinforcement for more serious rule violations. Having developed some expertise in using such strategies at home, parents next received instruction (Session 8) in how to modify these strategies for use in public places (e.g., stores). In the final session, parents were given suggestions for handling future problems and for working cooperatively with school personnel, including advice about setting up daily report card systems.

### *Therapists*

Three licensed Ph.D. level male psychologists implemented the PT program. Each had received intensive training in the use of this treatment approach from its developer. Of additional significance is that each possessed several years of experience in employing it with clinic-referred ADHD populations.

### *Treatment Integrity*

To increase the consistency with which the PT program was implemented across subjects, each therapist followed the specific session-by-session steps outlined by Barkley (1987, 1990).

**Table I.** Dependent Measure Means and Standard Deviations (in Parentheses) by Group<sup>a</sup>

Dependent measure	Parent training			Wait list	
	Pre	Post	F-U	Pre	Post
ADHDRS Inattention	20.1 (4.1)	15.9 (5.6)	15.4 (5.2)	19.3 (4.2)	19.5 (3.2)
ADHDRS Impulsivity	16.2 (4.2)	13.0 (4.8)	12.5 (4.3)	15.9 (2.6)	16.2 (2.8)
ADHDRS Total	30.5 (5.6)	23.9 (8.1)	23.5 (7.2)	29.7 (5.4)	29.9 (4.8)
HSQ-R Number	10.7 (2.8)	9.7 (2.4)	9.4 (2.6)	11.3 (1.8)	11.2 (1.9)
PSCS Total	59.0 (8.7)	71.1 (7.6)	69.3 (8.0)	60.0 (12.1)	59.2 (12.8)
PSI Child	152.2 (14.1)	134.4 (14.1)	138.4 (14.2)	140.1 (21.0)	141.4 (18.6)
PSI Parent	137.4 (20.7)	123.2 (13.0)	126.3 (15.0)	137.5 (21.9)	142.5 (29.9)
PSI Total	289.6 (29.3)	257.6 (19.1)	264.7 (24.6)	277.6 (37.1)	283.9 (41.2)
SCL90-R GSI	54.6 (9.5)	48.7 (9.0)	45.8 (10.9)	53.7 (11.7)	53.1 (11.5)
LWMAS Total	102.2 (25.0)	106.2 (23.6)	106.5 (25.7)	93.1 (18.8)	83.4 (26.5)
TOAK Total	21.1 (3.2)	24.3 (1.5)	24.3 (1.7)	19.2 (3.1)	20.7 (2.6)

<sup>a</sup>Note: Pre = pretreatment, Post = posttreatment, F-U = followup; ADHDRS = ADHD Rating Scale; HSQ-R = Home Situations Questionnaire-Revised; PSCS = Parenting Sense of Competence Scale; PSI = Parenting Stress Index; SCL90-R GSI = Symptom Checklist 90-Revised General Severity Index; LWMAS = Locke-Wallace Marital Adjustment Scale; TOAK = Test of ADHD Knowledge.

## RESULTS

### *Pretreatment Comparability of Comparison Groups*

$X^2$  and  $t$ -test analyses were performed to examine the pretreatment comparability of the PT and wait list groups. Nonsignificant findings emerged with respect to all of the dependent measures (see Table I), as well as for age, gender, CBCL Hyperactive  $T$  scores, CBCL Aggressive  $T$  scores, CBCL Internalizing  $T$  scores, secondary DSM III-R diagnoses, special education status, socioeconomic status, and family intactness. Hence, the two groups were statistically equivalent prior to treatment.

### *Treatment Effects—Statistical Significance*

Appearing in Table I is a summary of the dependent measure means and standard deviations for the PT and wait list groups. Two (Comparison Group)  $\times$  2 (Time Period) repeated-measures ANOVAs were conducted on all of these measures to assess the therapeutic impact of PT. Given the large number of comparisons under consideration, an alpha level of  $p < .01$  was employed to reduce the likelihood of chance findings. Significant interaction effects were found for two of the three ADHD Rating Scale indices: Inattention,  $F(1, 32) = 8.32, p < .01$ ; Total ADHD,  $F(1, 32) = 8.36, p < .01$ . Significant interaction effects were also found for the following parent functioning measures: the PSCS Total,  $F(1, 32) = 27.44, p < .001$ ; the PSI Child Domain,  $F(1, 32) = 18.98, p < .001$ ; the PSI Parent Domain,  $F(1, 32) = 10.53, p < .01$ ; and the PSI Total,  $F(1, 32) = 20.58, p < .001$ . Although not reaching  $p < .01$ , two additional measures approached this level of significance: the ADHD Rating Scale Impulsivity–Hyperactivity,  $F(1, 32) = 6.78, p < .02$ ; LWMAS Total,  $F(1, 27) = 4.59, p < .05$ . Nonsignificant trends were also detected for the interactions on the SCL 90-R GSI,  $F(1, 32) = 3.03, p < .10$ , and on the TOAK Total,  $F(1, 32) = 2.81, p < .15$ .

Additional  $t$ -test analyses were performed to examine further the six significant interactions that emerged. In particular, potential posttreatment group differences were assessed. For the ADHD Rating Scale Inattention factor, this yielded a  $t(32) = 2.22, p < .03$ ; for the ADHD Rating Scale Total,  $t(32) = 2.54, p < .02$ . Similar analyses were conducted on the parent functioning measures. For the PSCS Total, this yielded a  $t(32) = 3.38, p < .01$ ; for the PSI Child Domain,  $t(32) = 1.26$  (ns); for the PSI Parent Domain,  $t(32) = 2.52, p < .02$ ; and for the PSI Total,  $t(32) = 2.47, p < .02$ . Taken together, these results indicated that the two groups were significantly different at posttreatment. In terms of child functioning, these differences were seen in terms of relatively less severe ADHD symptomatology among the PT group. PT subjects also displayed considerably more parenting self-esteem and less overall parenting stress.

Potential posttreatment differences between the groups were also examined with respect to child medication and psychotherapy status, maternal psychotherapy status, and the PSI Life Stress scale.  $X^2$  analyses of the medication and psychotherapy data yielded nonsignificant findings, as did the 2 (Comparison Group)  $\times$  2 (Time Period) repeated-measures ANOVA of the Life Stress Scale data. Such results therefore increase the likelihood that the above noted group differences stemmed from the effects of PT, rather than from extraneous factors.

To assess the temporal stability of the five PT-induced improvements that were detected at posttreatment, the PT group data were first entered into one-factor repeated-measures ANOVAs. Significant time period effects ( $p < .001$ ) were found for the Inattention and Total scores from the ADHD Rating Scale, for the PSCS Total, and for PSI Parent Domain and Total indices. These significant within-subjects effects were analyzed further by means of pairwise  $t$ -test comparisons of the pretreatment, posttreatment, and followup results. All of the comparisons from pretreatment to posttreatment and from pretreatment to followup were highly significant ( $p < .01$ ). With the exception of a trend for the PSI Total ( $p < .10$ ), all of the posttreatment to followup comparisons were nonsignificant. Hence, the PT group displayed significantly less severe ADHD symptomatology, less parenting stress, and higher levels of parenting self-esteem at posttreatment. Moreover, these improvements remained stable over the 2-month followup period.

### *Treatment Effects—Clinical Significance*

The clinical significance of these same data was addressed using the Jacobson and Truax (1991) methodology. In particular, percentages of subjects showing reliable change and reliable change with recovery were calculated, as were percentages of subjects showing minimal change or no change/deterioration. As conceptualized by Jacobson and Truax, reliable change refers to a magnitude of change, displayed by an individual, that is more likely due to actual change, rather than imprecise measurement. Recovery refers to individual change scores that lie more within the normal distribution than the abnormal distribution from which they came; hence, recovery reflects some degree of normalization.

A summary of the percentages of PT and wait list subjects showing clinically significant gains at posttreatment appears in Table II.

**Table II. Percentages of Subjects Showing Clinically Significant Gains at Posttreatment<sup>a</sup>**

Dependent measure	Group	Clinical significance			
		No change or worse	Minimal change	Reliable change	RC with recovery
ADHDRS Total	PT	15	21	32	32
	WL	60	13	27	0
HSQ-R Number	PT	43	47	0	10
	WL	67	20	13	0
PSCS Total	PT	6	68	0	26
	WL	53	47	0	0
PSI Total	PT	5	37	32	26
	WL	67	13	13	7
SCL90-R GSI	PT	16	63	0	21
	WL	47	47	0	6
LWMAS Total	PT	35	59	0	6
	WL	67	33	0	0

<sup>a</sup>Note: RC = reliable change; PT = parent training; WL = wait list; ADHDRS = ADHD Rating Scale; HSQ-R = Home Situations Questionnaire-Revised; PSCS = Parenting Sense of Competence Scale; PSI = Parenting Stress Index; SCL90-R GSI = Symptom Checklist 90-Revised General Severity Index; LWMAS = Locke-Wallace Marital Adjustment Scale.

$X^2$  analyses of these 2 (Comparison Group) x 2 (Clinical Significance) distributions revealed significant findings for the ADHD Rating Scale Total score  $be (3) = 9.73, p < .03$ , as well as for the PSCS Total [ $x^2(2) = 11.94, p < .01$ ] and the PSI Total [ $x^2(3) = 14.54, p < .01$ ]. As may be seen from an inspection of Table II, relatively higher percentages of PT subjects displayed evidence of reliable change and/or reliable change with recovery on these measures, whereas more of the wait list subjects exhibited no change or became worse.

Appearing in Table III is a summary of the percentages of PT subjects showing clinically significant gains 2 months following completion of treatment. Generally speaking, these results were highly similar to those observed at posttreatment. Thus, the PT-induced improvements in perceived severity of ADHD, parenting self-esteem, and parenting stress were maintained over time.

## **DISCUSSION**

Relative to those in the wait list condition, subjects receiving PT displayed significant changes in several areas of psychosocial functioning immediately following treatment. PT parents reported, for example, improvements in the overall severity of their child's ADHD symptomatology. These reported changes in

child behavior were accompanied by improvements in parent functioning, in terms of reduced parenting stress and enhanced parenting self-esteem. Such changes remained stable over a 2-month followup period in which no therapeutic contact was provided. Moreover, they did not appear to be due to extraneous factors (e.g., child medication status, life stress).

**Table III. Percentages of Parent Training Subjects Showing Clinically Significant Gains at 2-Month Followup<sup>a</sup>**

Dependent measure	Clinical significance			
	No change or worse	Minimal change	Reliable change	RC with recovery
ADHDRS Total	10	21	21	47
HSQ-R Number	37	42	0	21
PSCS Total	16	47	0	37
PSI Total	22	26	26	26
SCL90-R GSI	16	58	5	21
LWMAS Total	24	76	0	0

<sup>a</sup>Note: RC = reliable change; ADHDRS = ADHD Rating Scale; HSQ-R = Home Situations Questionnaire-Revised; PSCS = Parenting Sense of Competence Scale; PSI = Parenting Stress Index; SCL90-R GSI = Symptom Checklist 90-Revised General Severity Index; LWMAS = Locke-Wallace Marital Adjustment Scale.

When viewed in the context of their clinical significance---That is, at an individual level--the obtained data once again revealed that PT was superior to the wait list condition at posttreatment, especially in terms of the ADHD Rating Scale, PSCS, and PSI results. On these measures, 26% to 64% of the PT subjects displayed reliable change and/or achieved reliable change with recovery (i.e., normalization); only 0% to 27% of the wait list subjects fell into these same categories. Of additional clinical significance are the differences that emerged at the other end of the treatment outcome continuum--that is, with respect to the percentages of subjects showing no change or deterioration. Depending on the posttreatment measure under consideration, anywhere from 47% to 67% of the wait list subjects remained the same or regressed, whereas this occurred in no more than 5% to 43% of the PT subjects. Hence, even if PT subjects did not improve significantly immediately following treatment, their participation in PT may have prevented an intensification of their referral concerns.

The mechanisms for these reported improvements in child and parent functioning are not entirely clear. Because this study did not include direct observations of parent--child interactions, one can not ascertain, for example, whether there were meaningful changes in child behavior or in parenting style resulting from PT. To the extent that ADHD is indeed a chronic disability (Barldey, 1990), it is unlikely that any of the child's ADHD symptoms were actually eliminated. A more likely explanation for the reported changes in child ADHD symptomatology is that parents learned to manage these symptoms more successfully and therefore perceived them as less severe, which in turn was reflected in their child ratings.

The intuitive appeal of this rationale notwithstanding, future PT researchers would be well advised to include direct observations of parent--child interactions among their outcome measures, to help sort out such matters. The availability of such data would also shed light on the underlying mechanisms for the observed changes in parent functioning. Although it remains entirely possible that PT-induced improvements in child behavior set the stage for this to occur, such changes may very well be independent of any real improvements in child behavior (Pisterman *et al.*, 1992). Assuming this to be valid, it is reasonable to consider that they may instead stem from increased parental understanding and acceptance of their child's ADHD and from their increased ability to cope with their child's difficult home behavior, both of which are major therapeutic goals of this particular PT program. Partial support for this contention



comes from a consideration of the obtained PSI findings, which showed significant posttreatment group differences for the Parent Domain but not for the Child Domain. Regardless of the exact etiology of these changes, what remains important is that parents themselves felt better after receiving PT. Thus, in addition to serving as cotherapists on behalf of their child, parents who participated in PT would also seem to have been beneficiaries of this form of treatment.

Although the percentages of subjects reporting clinically significant improvements are comparable to those reported in other ADHD treatment studies (Barkley, Guevremont, Anastopoulos, & Fletcher, 1992; DuPaul, & Rapport, 1993), the fact that some subjects did not benefit from PT nevertheless attests to limitations inherent in this form of treatment, especially when used alone. In view of such findings, one issue that needs to be clarified is whether or not there are certain child or parent characteristics that allow for predicting for whom PT might be best suited. Additional consideration needs to be given to whether or not the overall effectiveness of PT can be enhanced by combining it with other forms of treatment, both for identified children with ADHD (e.g., stimulant medication therapy) *and* their parents (e.g., stress management training, marital counseling). Given that there seems to be an emerging consensus within the field that no one treatment by itself is sufficient for addressing all the clinical management needs of children with ADHD (Barkley, 1990), perhaps the best way to view the potential therapeutic value of PT is in the context of the role that it might play in multimodal interventions. Additional research in this area, therefore, is clearly indicated.

Prior to concluding, certain limitations in this study should be addressed. For example, the use of a wait list control group leaves open the possibility that the obtained group differences resulted from ongoing contact with a therapist, rather than from PT per se. While this cannot be ruled out definitively, one argument against this possibility is the fact that the PT subjects generally maintained their improved functioning after a 2-month period in which there was no contact with therapists. Additional limitations exist with respect to the narrow range of outcome measures employed. For example, all outcome measures were based on maternal report in the absence of any cross-validation, such as that available from fathers or from direct observations of parent–child interactions.

Contrary to expectations, there were no significant posttreatment group differences in parent-reported levels of personal distress and marital satisfaction. The observed differences among these measures, however, were in the predicted direction, and they did reflect a statistical trend. The HSQ-R results also failed to reveal significant posttreatment group differences, which was in contrast with the ADHD Rating Scale findings. At face value this may suggest an inconsistency across these outcome measures. An alternative explanation stems from a consideration of the fact the cross-situational pervasiveness of ADHD remains highly stable over time. Thus, even though the child's ADHD continued to surface across numerous home settings, the overall severity of such symptomatology presumably lessened within those settings.

Also requiring clarification is a somewhat unexpected finding—namely, that the wait list subjects showed increases in their knowledge of ADHD comparable to the anticipated increases in ADHD knowledge displayed by PT subjects at posttreatment. One possible explanation for this stems from a consideration of the fact that both the wait list and PT subjects received diagnostic feedback, treatment recommendations, and a two-page fact sheet on ADHD at the time of the intake evaluation, prior to their group assignment. Another possibility is that the wait list parents may have acquired additional information about ADHD on their own after the intake, as do many parents after being informed of their child's ADHD diagnosis. In any case, this increased knowledge of ADHD apparently did not lead to improvements in functioning commensurate with those of the PT group. This raises the possibility that the contingency management portion of the PT program, more so than the ADHD counseling component, is responsible for the observed posttreatment changes.

Bearing these limitations in mind, the results from this study nevertheless lend support to the contention that PT can have therapeutic benefits not only for targeted school-aged children with ADHD, but also for their parents. This finding, taken together with Pisterman *et al.*'s (1992) results, hopefully can serve as an impetus for investigating other ways in which PT may indirectly affect parent and family functioning within the ADHD population.

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