

## Brief Treatment of Mild-to-Moderate Child Depression Using Primary and Secondary Control Enhancement Training

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Elementary school children with mild-to-moderate depressive symptoms were randomly assigned to a control group or an 8-session Primary and Secondary Control Enhancement Training program. The program focused on (a) primary control (changing objective conditions to fit one's wishes; e.g., through activity selection and goal attainment) and (b) secondary control (changing oneself to buffer the impact of objective conditions; e.g., altering depressogenic thinking, practicing mood-enhancing cognitions). At immediate posttreatment and 9-month follow-up, the treatment group showed greater reductions than the control group in depressive symptomatology on the Children's Depression Inventory and the Revised Children's Depression Rating Scale, and treated children, more than controls, shifted from above to within the normal range on both measures. Future research is needed to test treatment effects with severely depressed youths.

Over the past few years, the American Psychological Association (APA) Task Force on Promotion and Dissemination of Psychological Procedures, Division of Clinical Psychology (1995) has sought to develop a list of empirically supported treatments and to encourage their use in clinical training and practice. This objective is worthwhile, but to attain it we may need to address several differences between clinical practice and the research that produces empirically supported treatments (see Weisz, Donenberg, Han, & Weiss, 1995). One such difference in the child treatment area involves treatment duration.

Empirically supported treatment programs for the most common targets of child intervention (reviewed in Weisz & Weiss, 1993) typically involve 12 or more sessions. For example, there are at least nine empirically supported child depression treatments, and these range from 12 to 27 sessions (see Stark, 1995; Weisz, Rudolph, Granger, & Sweeney, 1992).<sup>1</sup> By contrast, recent research on conventional treatment in outpatient child clin-

ics (e.g., Weisz & Weiss, 1989) found that most referred children attended fewer than 10 treatment sessions before terminating or simply dropping out. Beyond such voluntary processes, number of sessions in clinical practice may be limited by cost-containment policies and by managed care. In addition, although child treatment may now take place in schools, policies and personnel limitations usually make school-based treatment very brief. Thus, clinic and school realities may often mean that the average referred child will not be in treatment long enough to complete the average empirically supported child treatment program.

Given this state of affairs, we need tests of whether brief interventions for various child problems can produce significant benefit. Such tests may reveal that significant shortening cannot be accomplished without loss of therapeutic benefit. For some treated problems, though, it may be possible to compress key therapeutic lessons into a reduced time frame and still generate beneficial treatment effects. Findings in either direction have important implications for the future direction of treatment research.

To address this issue, we developed an eight-session child depression treatment program. It grew out of the literature on perceived control and child depression, and it was based, in particular, on the two-process model of control (Rothbaum, Weisz, & Snyder, 1982; Weisz, Rothbaum, & Blackburn, 1984). In this model, *primary control* involves enhancing reward or

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<sup>1</sup> The briefest child depression treatment program we have found in the published literature is an eight-session depression intervention (social skills, problem solving, and cognitive restructuring) developed by Liddle and Spence (1990). Unfortunately, this program failed to outperform either attention placebo or no-treatment control conditions. This illustrates the potential difficulty of producing significant treatment effects with brief interventions.

reducing punishment by making objective conditions (e.g., outcome of a sports event, one's standing or acceptance in a group) conform to one's wishes. In contrast, *secondary control* involves enhancing reward or reducing punishment by adjusting oneself (e.g., one's beliefs or interpretations) in response to objective conditions; in this way, one may influence the subjective impact of those conditions without altering them. We reasoned that depression may be addressed, in part, by learning to apply primary control to distressing conditions that are modifiable and secondary control to those conditions that are not.

These principles were combined with techniques adapted from extant treatments to produce the Primary and Secondary Control Enhancement Training (PASCET) program. In this, the initial test, we sought to learn whether the program could help ameliorate the mild-to-moderate levels of depression seen in elementary school settings. Thus, we drew our sample from schools, and we did not require that children show severe clinical depression to be included in the study.

### Method

Participant selection and outcome assessment involved two measures. One was the self-report Children's Depression Inventory (CDI; Kovacs, 1992), "the most widely used and researched measure of childhood depression" (Kendall, Cantwell, & Kazdin, 1989, p. 121). The CDI shows acceptable internal consistency and test-retest reliability and considerable evidence of validity (see, e.g., Kovacs, 1992; Smucker, Craighead, Craighead, & Green, 1986; see also Kendall et al., 1989, regarding psychometrics and interpretation). We omitted one of the 27 CDI items—on suicidal ideation—because school staff felt that it might upset children. To permit comparison with previous studies, we prorated CDI scores (adding the rounded item mean to the raw sum) in all analyses reported below.

The second measure was the Revised Children's Depression Rating Scale (CDRS-R; Poznanski & Mokros, 1996), a semistructured clinical interview that covers such symptoms as unhappiness, guilt, and low self-esteem. Scores, based on ratings by interviewers have shown acceptable internal consistency and test-retest reliability, and evidence of validity (see Poznanski & Mokros, 1996). We employed three CDRS-R interviewers (uninformed at all times as to child group assignment), with interrater agreement assessed against three additional trained interviewers. Across pairs, intraclass correlation coefficients ranged from .50 to .80. Of the full 17 CDRS-R items, 2 dealing with morbid and suicidal ideation were omitted (school staff feared that children might be upset). To facilitate comparison with previous CDRS-R research, we used prorated scores (adding twice the rounded mean item score to the raw sum) in all analyses.

The sample was drawn from three elementary schools with a total population in Grades 3–6 of about 500. A three-step selection procedure was used. First, all children for whom we had consent completed the CDI. Second, school teachers and counselors were asked to identify any children on our parent permission list whom they believed had significant problems involving depression. Third, children who were thus nominated by their teachers or counselors, or scored 10 or higher on the CDI, received individual CDRS-R interviews. Children included in the ultimate sample for the study met one or both of the following criteria: CDI scores of 11 or higher (cf. Kovacs's [1992] means of 11.8 for major depressive disorder and 9.5 for adjustment disorder with depressed mood) and CDRS-R scores of 34 or higher (i.e., above the 80th percentile for elementary-school-age children in norms reported by Poznanski & Mokros [1996]). A total of 51 children met these criteria; 3 chose not to participate.

The resulting sample ( $n = 48$ ) included 26 boys and 22 girls, with

30 Caucasian and 18 ethnic minority (primarily African American) children. The mean age was 9.6 years, the mean CDI score was 18.1 (91st percentile of norm group, from Smucker et al., 1986), and the mean CDRS-R rating was 40.7 (93rd percentile of norm group, from Poznanski & Mokros, 1996). Within each school, the number of children who could be accommodated in treatment (given available therapists, school space, and scheduling constraints) were randomly selected from the pool of all who met study criteria, with the remainder assigned to the control condition; in this way, 16 were assigned to treatment, and the remaining 32 were assigned to the no-treatment control condition. At pretreatment, the treatment and control groups did not differ reliably in gender (treatment = 56% male; control = 53% male;  $p = .84$ ), ethnic composition (treatment = 75% Caucasian; control = 56% Caucasian;  $p = .21$ ), age (treatment  $M = 9.4$  years; control  $M = 9.7$  years;  $p = .49$ ), CDRS-R rating ( $p = .09$ ), or CDI score ( $p = .76$ ). Table 1 shows CDI and CDRS-R mean scores.

Treatment took place during school hours in rooms in, or adjacent to, the school. Children were treated in four small groups of fewer than 6 children, with each group led by two cotherapists. Six therapists participated (five doctoral-level students in clinical psychology, all having clinical training and supervision before this study, and a licensed faculty member).

The PASCET program is an eight-session cognitive-behavioral intervention guided by a detailed therapist's manual. In-session activities (e.g., role play, game, video) and weekly homework for children are structured in part by a child's practice book containing concrete illustrations and reminders of key points. A number of the specific techniques were adapted from previous treatment programs (e.g., Reynolds & Coats, 1986; Stark, Reynolds, & Kaslow, 1987). Sessions lasted about 50 min each. Sessions 1–6 focused on learning and practicing primary and secondary control coping methods designed to address central concerns frequently associated with depression in children (see Stark, 1990; Weisz et al., 1992). Two primary control skills were emphasized: (a) identifying and conscientiously engaging in activities that the child finds mood enhancing and (b) skill building through goal setting and practice in activities that the child values. Three secondary control skills were emphasized: (a) identifying and modifying depressogenic thoughts, (b)

Table 1  
Means, Standard Deviations, and Change (vs. Pretreatment)  
Scores for the Children's Depression Inventory and Revised  
Children's Depression Rating Scale

Group and measure	Pre	Post	9-month follow-up
Treatment group			
CDI			
<i>M</i>	18.63	7.06/6.83	5.77/4.58
<i>SD</i>	5.32	6.12	5.15
CDRS-R			
<i>M</i>	45.25	33.19/31.96	28.08/26.05
<i>SD</i>	16.01	10.86	7.15
Control group			
CDI			
<i>M</i>	17.81	11.81/12.04	10.25/11.44
<i>SD</i>	10.05	10.00	8.48
CDRS-R			
<i>M</i>	38.38	34.94/36.17	28.59/30.61
<i>SD</i>	11.15	10.93	8.75

Note. Posttreatment and 9-month follow-up means are shown in raw form and with adjustment for pretreatment scores. Pre = pretreatment; Post = posttreatment; CDI = Children's Depression Inventory; CDRS-R = Revised Children's Depression Rating Scale.

cognitive techniques for mood enhancement (e.g., finding a "silver lining" in an otherwise bad experience), and (c) relaxation and positive imagery. In Session 7, one of the cotherapists met with the child individually to discuss themes of the therapy program in relation to specific characteristics of the child and his or her situation. In Session 8, a "quiz show," with the children as contestants, reviewed the lessons of the program.

To ensure treatment integrity, (a) we detailed each session's contents in the treatment manual and child practice book; (b) therapists were trained in the treatment program before seeing any child; (c) in meetings before each session, therapists role played the session using the manual, practice book, and a written list of specific session objectives; and (d) during each session, one therapist served as group leader and the other played a supporting role, monitored adherence, and ensured that each section of the manual material was covered by the session's end. As a check, five sessions were audiotaped and later reviewed by a coder (not one of the therapists) using a 34-item treatment integrity checklist. This check showed 100% concurrence between session and manual content.

For posttreatment assessment, the CDI and CDRS-R were readministered over the 18 days after the last treatment session. For the 9-month follow-up, the two measures were readministered 261–275 days after the last treatment session. Assessors at both times were not informed of the children's group assignments.

## Results

Group  $\times$  Time  $\times$  Moderator multivariate and univariate analyses of variance (MANOVAs and ANOVAs, respectively) revealed no interaction that would indicate a moderating role of gender, age, ethnicity, or therapist pair.

### Treatment Effect Tests

A  $2 \times 2$  (Group  $\times$  Time [Time 1 vs. Time 2]) MANOVA, with CDI and CDRS-R scores as dependent variables, revealed a significant main effect of Time,  $F(2, 44) = 27.25, p < .001$ , and a significant Group  $\times$  Time interaction,  $F(2, 44) = 5.97, p < .05$ . Univariate tests showed significant Time main effects for both CDI and CDRS-R (both  $ps < .001$ ), indicating that scores declined over time, averaging across the groups. Univariate tests also showed a significant Group  $\times$  Time interaction for both CDI,  $F(1, 45) = 4.56, p < .05$ , and CDRS-R,  $F(1, 45) = 4.44, p < .05$ . We examined component effects of the interaction for the two measures separately.

Two kinds of component effect tests are presented here and elsewhere: (a) comparisons of treatment group versus control group change scores for pre- versus posttreatment and pretreatment versus follow-up, and (b) comparisons of treatment group versus control group means at posttreatment and follow-up, with pretreatment scores covaried. According to Norusis (1993) and Hays (1994), the comparison of change scores may be the more informative of the two approaches in this case, because (a) the same measures were used at pretreatment, posttreatment, and follow-up; (b) group assignment was random; and (c) treatment versus control group differences in CDI and CDRS-R at pretreatment were not significant. However, to fully test the interactions, we report both kinds of component effects tests, because pretreatment means for both CDI and CDRS-R were nonsignificantly higher in the treatment group than in the control group.

Component effects tests for the CDI showed that means dropped about twice as much in the treatment group as in the

control group (mean change, 11.56 vs. 5.97, respectively) and that the change from pretreatment to follow-up was significantly greater for the treatment group than the control group,  $t(45) = 2.14, p < .05$ . Comparisons of the posttreatment CDI means, with pretreatment means covaried, showed that mean posttreatment CDI was significantly lower in the treatment group than in the control group,  $F(1, 44) = 4.99, p < .05$  (adjusted posttreatment means for treatment and control, 6.83 vs. 12.04, respectively). The effect sizes (control group mean–treatment group mean/control group *SD*) for raw and adjusted means were 0.48 and 0.52, respectively.

Component effects tests for the CDRS-R interaction revealed that the treatment group decline of 12.06 from pre- to posttreatment was larger than the control group decline of 3.94,  $t(45) = 2.11, p < .05$  (see Figure 1). Comparison of treatment and control group posttreatment CDRS-R means, with pretreatment means covaried, showed that although the ratings were lower for treated children than for control-group children (adjusted means, 31.96 vs. 36.16, respectively), the difference was not significant ( $p = .18$ ). Effect sizes for raw and adjusted scores were 0.16 and 0.39, respectively.

### Follow-Up Tests

Nine-month follow-ups were possible for 29 (60.4%) children from the original sample. (One new principal declined to approve the follow-up contact, some children had moved away, and a few opted not to be reassessed.) We tested whether the children for whom we had follow-up assessments differed from those for whom we did not in gender, ethnicity, or pretreatment age, CDI, or CDRS-R scores. These analyses revealed no significant differences between groups on any of these variables, suggesting that the group for whom we had follow-up data was representative of the full original sample.

In general, treatment effects held up well over the 9 months following posttest. A  $2 \times 2$  (Group  $\times$  Time [Time 1 vs. Time 3]) MANOVA, with CDI and CDRS-R as dependent variables, revealed a main effect of Time,  $F(2, 25) = 29.53, p < .001$ ; and a significant Group  $\times$  Time interaction,  $F(2, 25) = 10.02, p < .001$ . Univariate tests showed Time main effects for both CDI and CDRS-R (both  $ps < .001$ ), indicating decline over time across the groups. Univariate tests also showed a Group  $\times$  Time interaction for both CDI,  $F(1, 26) = 11.17, p < .01$ , and CDRS-R,  $F(1, 26) = 13.20, p < .001$ .

Component effects tests for the CDI showed that means dropped about three times as much over time in the treatment group as in the control group (mean change, 13.38 vs. 4.38, respectively), and this difference was significant,  $t(27) = 3.41, p < .01$ . Comparisons of posttreatment CDI means, with pretreatment means covaried, showed that mean posttreatment CDI score was significantly lower in the treatment group than in the control group,  $F(1, 26) = 6.50, p < .05$  (see Table 1). The effect sizes for raw and adjusted scores were 0.39 and 0.81, respectively.

Component effects tests for the CDRS-R interaction showed that the treatment group decline of 16.92 was significantly larger than the control group decline of only 4.88,  $t(28) = 3.27, p < .01$  (see Figure 1). Comparisons of the treatment and control group follow-up CDRS-R means, with pretreatment means co-

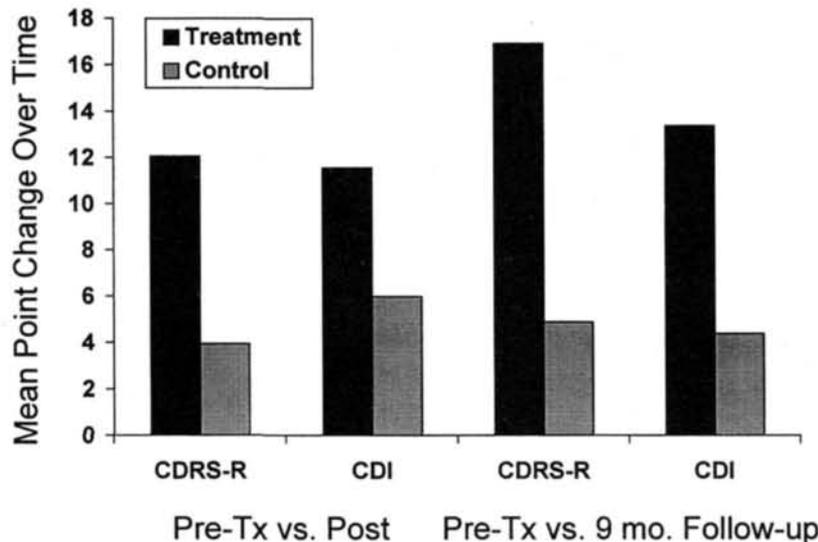


Figure 1. Treatment group and control group change in Revised Children's Depression Rating Scale (CDRS-R) and Children's Depression Inventory (CDI) scores from pretreatment (Pre-Tx) to posttreatment (Post) and from pretreatment to follow-up assessment 9 months after the end of treatment (9 mo. Follow-up).

varied, showed that the mean difference involving lower scores for the treatment group (adjusted means, 26.05 vs. 30.61, respectively) was not significant,  $p = .15$ . The effect sizes for raw and adjusted scores were 0.06 and 0.52, respectively.

#### Clinical Significance Tested Through Normative Comparisons

The nature of our sample precluded diagnosis-based tests of clinical significance, so we used normative comparisons, testing the extent to which the children moved from above the normal range on CDI and CDRS-R at pretreatment to within the normal range after treatment (Kendall & Grove, 1988). Cutoffs for the normal range were set at 1 standard deviation above means for nonclinical elementary school norm groups for the CDI (from Smucker et al., 1986) and CDRS-R (from Poznanski & Mokros, 1996). Wilcoxon rank-sum  $W$  tests revealed that the treatment-control group difference was significant for both the posttreatment and follow-up CDI, and for the follow-up CDRS-R (all  $ps < .05$ ). The treatment group and control group percentages moving from above to within the normal range were as follows: 50% versus 16%, respectively, for CDI at posttreatment; 62% versus 31%, respectively, for CDI at follow-up; and 69% versus 24%, respectively, for CDRS-R at follow-up.<sup>2</sup>

#### Discussion

Can childhood depressive symptoms be significantly reduced by means of short-term treatment? The findings suggest a cautious yes, but with important qualifications. Children who received the eight-session PASCET program showed significantly greater reductions in depressive symptoms than children in the control group did, on both measures of depressive symptomatology.

From pre- to posttreatment, CDRS-R scores declined about three times as much among treated children as in the control group; treated children showed about twice as large a decline as the control group on the CDI. The treatment group-control group difference held at the 9-month follow-up, and normative comparisons showed that treated children were markedly more likely than control children to move into the normal range on the depression measures.

On the other hand, the sample was, by design, not severely depressed to begin with. Thus, it would not be appropriate to claim that the intervention "cured" clinical levels of depression. Furthermore, although adjusted posttreatment and follow-up scores on the CDI (with pretreatment scores covaried) were significantly lower for treated than untreated children, corresponding group differences for the CDRS-R fell a bit short of statistical significance. This may reflect, in part, the narrow 2-week reporting time frame for the CDI and, thus, its greater sensitivity to change. However, it also suggests one way effects could have been stronger.

Our focus on mild-to-moderate depression was appropriate to our interest in school-based intervention, with the levels of child depression typically seen in schools. However, the modest initial levels of depression limited the extent to which symptom change could be produced by the intervention. Here, as in most treatment studies, change in CDI and CDRS-R scores was positively correlated with pretreatment scores, and this suggests that more severe cases might show stronger treatment effects. Thus, in future research it will be useful to test the PASCET program with seriously depressed youths. Also, because the group format

<sup>2</sup>The nonsignificant treatment versus control group difference for CDRS-R pre- versus posttreatment was 38% versus 23%.

limits therapists' ability to fit the program to individual child needs, future research may need to include tests of individually administered treatment. Finally, the brevity of PASCET may have limited its impact. Effect sizes were generally smaller than those of lengthier programs (e.g., Lewinsohn, Clarke, Hops, & Andrews, 1990; for a review and effect size summary, see Weisz et al., 1992).

The present study falls within a genre that has been labeled "research therapy" (see Weisz et al., 1995), that is, treatment carried out as a research test, using nonreferred children who have modest symptom levels, with treatment conducted in a school setting by therapists from a university. These characteristics help to define the study, but they should not be seen as compromising its contribution or relevance. After all, a great deal of mental health care in the United States is directed to children who have mild-to-moderate problems, much of this takes place in a school setting, and masters-level practitioners or graduate-level trainees are often the therapists. Treatment programs can be of real value even if they serve only part of the severity spectrum and even if they work only under specific conditions. However, it is important to identify the relevant range of client groups and conditions and to seek, where possible, to broaden that range. These are the complementary objectives to which future research on the PASCET program will be directed.

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