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Effects of Coping-Oriented Couples Therapy on Depression: A Randomized Clinical Trial

Guy Bodenmann and Bernard Plancherel
University of Zurich

Steven R. H. Beach
University of Georgia

Kathrin Widmer
University of Zurich

Barbara Gabriel
University of Georgia

Nathalie Meuwly
University of Zurich

Linda Charvoz
University of Lausanne

Martin Hautzinger
University of Tübingen

Elisabeth Schramm
University of Freiburg

The aim of this study was to evaluate the effectiveness of treating depression with coping-oriented couples therapy (COCT) as compared with cognitive–behavioral therapy (CBT; A. T. Beck, C. Ward, & M. Mendelson, 1961) and interpersonal psychotherapy (IPT; M. M. Weissman, J. C. Markowitz, & G. L. Klerman, 2000). Sixty couples, including 1 clinically depressed partner, completed pre- and posttest questionnaires as well as follow-up assessments at 6-month intervals over the subsequent 1.5 years. Effects of the 3 treatments on depressive symptomatology assessed by the Beck Depression Inventory (A. T. Beck, A. J. Rush, B. L. Shaw, & G. Emery, 1979) and Hamilton Rating Scale for Depression (M. Hamilton, 1960); recovery rates; and relapse rates were examined. Additionally, changes in relationship quality were evaluated. Results suggest that the COCT is as effective in improving depressive symptomatology as are the well-established, evidenced-based CBT and IPT approaches. The COCT did not demonstrate a significantly better outcome with regard to self-reported relationship satisfaction or dyadic coping; however, it did produce significant improvements in partners' expressed emotion, changes that were not seen in other treatment conditions.

Keywords: depression, treatment, marital therapy, relapse, dyadic coping

A large body of research has focused on the relationship between depression and marital distress, suggesting that, for those who are married, there is a considerable and significant association between relationship distress and the onset and course of depression (e.g., Beach, Jones & Franklin, in press; Coyne, Thompson, & Palmer, 2002; Joiner, Brown, & Kistner, 2006), as well as the likelihood of relapse after remission (Hinrichsen & Hernandez, 1993; Hooley, 2007). In addition to (a) moderate correlations between depressed mood and marital quality for both women ($r = -.42$) and men ($r = -.37$; Whisman, 2001) and (b) a strong association between diagnosed depression and relationship quality ($r = -.66$ for both genders), the presence of marital problems also predicts subsequent depressive episodes (e.g., Whisman & Bruce, 1999). Furthermore, depressed couples are also characterized by more negativity (criticism, hostility, and overprotection) in their representation of the partner (expressed emotion). Expressed emotion (EE) has been shown to be a significant predictor of negative outcomes in depression (and other psychiatric disorders; e.g., Butzlaff & Hooley, 1998; Hooley, 2007) and may be particularly important in understanding relapse following treatment. These studies and others support the likely utility of integrating close relationship partners into the treatment of patients suffering from depression (Beach et al., in press) and suggest two different foci for effective intervention targeting intimate partners: overall relationship quality and the partner's level of EE.

Guy Bodenmann, Bernard Plancherel, Kathrin Widmer, and Nathalie Meuwly, Department of Clinical Psychology, University of Zurich, Zurich, Switzerland; Steven R. H. Beach and Barbara Gabriel, Institute for Behavioral Research, University of Georgia; Linda Charvoz, Institute of Psychology, University of Lausanne, Lausanne, Switzerland; Martin Hautzinger, Department of Clinical Psychology, University of Tübingen, Tübingen, Germany; Elisabeth Schramm, Department of Psychiatry and Psychotherapy, University of Freiburg, Freiburg, Germany.

Barbara Gabriel is now at the Department of Clinical Psychology, University of Zurich.

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Correspondence concerning this article should be addressed to Guy Bodenmann, University of Zurich, Binzmühlestrasse 14/23, CH-8050 Zurich, Switzerland. E-mail: guy.bodenmann@psychologie.uzh.ch

Couples therapy has been examined previously as a treatment for depression (e.g., Beach & O'Leary, 1992; Jacobson, Dobson, Fruzzetti, Schmaling, & Salusky, 1991) and has been recommended as an adjunct to pharmacological treatment of depression because medication often adversely affects sexual relationships (e.g., Denton, Golden, & Walsh, 2003). Reviews of the treatment literature suggest that couples treatment of depression provides an efficacious treatment modality (Craighead, Craighead, & Ilardi, 1998; Gollan, Friedman, & Miller, 2002). However, standard behavioral marital therapy (BMT) is as efficacious as other empirically supported treatments only for those depressed patients who are in distressed relationships (Beach & O'Leary, 1992; Foley, Rounsaville, Weissman, Sholomaskas, & Chevron, 1989) and is not as efficacious as other approaches for depressed patients who are not in currently distressed relationships (Jacobson et al., 1991).

The coping-oriented couples therapy (COCT) used in this study represents a new approach that is based, in part, on cognitive BMT (working with behavioral exchange techniques and training in communication and problem solving) but also incorporates new techniques derived from the stress and coping literature (Bodenmann, 2005, 2007; Bodenmann & Shantinath, 2004). Because of its focus on dyadic coping, the COCT is applicable to all couples with a depressed partner and not just to those who are currently maritally distressed. In addition, the model can be readily expanded to nonmarital relationships.

The present study examines the efficacy of the COCT in treating depressed patients in the context of their close relationships. This is the first study to compare couples therapy with both cognitive–behavioral therapy (CBT; Beck, Rush, Shaw, & Emery, 1979) and interpersonal psychotherapy (IPT; Weissman, Markowitz, & Klerman, 2000) simultaneously. We chose these two approaches as the CBT is purely individual-oriented, while the IPT also offers some couples sessions during treatment. Furthermore, both the CBT and the IPT have been extensively evaluated and have shown treatment efficacy in comparison with wait-list control conditions and pharmacotherapy in the United States (e.g., Elkin et al., 1989; Wampold, Minami, Baskin, & Tierney, 2002) as well as in Europe (e.g., CBT: Hautzinger, de Jong-Meyer, Treiber, Rudolf, Thien, & Bailer, 1996; IPT: Schramm, van Calker, & Berger, 2004). Thus, both approaches represent well-established treatments for depression and set a standard that has to be reached by alternative approaches such as the COCT.

First, we hypothesized that on the basis of previous findings (e.g., Beach & O'Leary, 1992; Jacobson et al., 1991), the COCT would be as efficacious as the CBT and the IPT in reducing depressive symptomatology, both in self-report, as with the Beck Depression Inventory (BDI; Beck et al., 1961), and in clinical observation, as with the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960). Second, we hypothesized that all three approaches would lead to reductions in marital distress, with the greatest improvement in relationship variables (e.g., relationship quality, dyadic coping, and EE) being seen in the COCT approach. Third, we hypothesized that the COCT would lead to superior maintenance of gains relative to the IPT and the CBT over the 1.5-year follow-up period. We further expected that changes in relationship variables would mediate treatment effects on relapse rates.

Method

Design

The present study was based on data collected in a Swiss multicenter study (enrolling depressed outpatients treated by therapists in private practice in five major cities in Switzerland: Basel, Berne, Fribourg, Lucerne, and Zurich). Study subjects were recruited by means of information flyers, personal information by treating psychotherapists, and public talks in the clinics. The randomized controlled trial compared the effectiveness of three approaches to the treatment of depression: the CBT (Beck et al., 1979), the IPT (Weissman et al., 2000), and the COCT (Bodenmann, 2004). As current knowledge on the efficacy of psychological treatment for depression suggests that the CBT and the IPT are superior to a waiting-list or untreated control group, we did not assign any subjects to placebo or no-treatment control and focused instead on the comparison between the novel COCT and the other two treatments. Both depressed patients and their partners were assessed with questionnaires at five times of measurement: pretest (before treatment), posttest (2 weeks after treatment), and follow-ups after 6 months, 1 year, and 1.5 years.

Clients

Sixty depressed outpatients (20 for each group) completed treatment. All patients had to meet the research diagnostic criteria (Spitzer, Endicott, & Robins, 1979) for major depressive disorder (F 296) or dysthymia (F 300) according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM–IV;* American Psychiatric Association, 1994) and had to score 18 or above on the BDI. Another inclusion criterion was that patients had to be in a close and stable relationship for at least 1 year. Patients were excluded from the study if they had a bipolar disorder, psychotic or manic symptoms, or secondary depression or if they were highly suicidal. Demographics of the sample are presented in Table 1.

Over the 2.5-year recruitment period, a total of 496 subjects requested information about the study. Of these, 428 subjects were not invited for a full screening for the following reasons: 27% did not reach inclusion criteria with regard to symptomatology, 39% were singles who did not have a close relationship, 18% had a partner who was not willing to participate in the study, 13% were older than 60 years, and 3% were not able to understand German sufficiently. Finally, 68 depressed partners were screened by means of the German version of the Structured Clinical Interview for *DSM–IV* Axis I Disorders (SCID-I; Wittchen, Wunderlich, Gruschwitz, & Zaudig, 1997) for consideration for participation in the study. Of the 68 patients invited for assessment, 60 attended the intervention (see Figure 1). An experienced clinical psychologist used the SCID-I to diagnose the following types of depression among the 60 patients in the three treatment conditions: In the CBT group, 17 patients fulfilled criteria for major depression and 3 for dysthymia; in the IPT group, 13 patients fulfilled criteria for major depression and 7 for dysthymia; and in the COCT group, 15 patients fulfilled criteria for major depression and 5 for dysthymia.

Due to monthly phone contacts with the depressed patients and other ways of keeping in contact (i.e., sending out reminders), dropout rates were generally low (see Figure 1). Two patients in the IPT group did not complete the treatment because of hospitalization (one after four treatment sessions and the other after eight).

Table 1
Demographics of the Sample in the Three Treatment Conditions

	Depressed patient			Partner			Group differences	
	CBT	IPT	COCT	CBT	IPT	COCT		
Variable	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	Depressed patient	Partner
Gender (% women)	65.0	60.0	50.0	35.0	40.0	50.0	$\chi^2(2, N = 60) = 0.96$	$\chi^2(2, N = 60) = 0.96$
Age (in years)	44.35 (11.31)	47.33 (10.60)	44.35 (10.20)	44.95 (11.38)	49.85 (10.26)	41.85 (10.66)	$F(2, 57) = 0.51$	$F(2, 57) = 2.80$
Number of children	1.33 (1.14)	1.65 (1.04)	1.42 (1.43)	1.42 (1.17)	1.80 (1.11)	1.47 (1.39)	$F(2, 54) = 0.35$	$F(2, 55) = 0.55$
Relationship quality[a]	55.26 (19.12)	52.14 (15.34)	50.08 (17.69)	56.78 (18.37)	54.58 (16.45)	49.86 (13.07)	$F(2, 57) = 0.45$	$F(2, 57) = 0.96$
Length of relationship (in years)	18.23 (11.66)	17.6 (10.78)	14.39 (10.30)	18.23 (11.66)	17.6 (10.78)	14.39 (10.30)	$F(2, 57) = 0.71$	$F(2, 57) = 0.71$
Low to medium education (%)	60.0	55.0	50.0	65.0	45.0	50.0	$\chi^2(8, N = 60) = 5.60$	$\chi^2(6, N = 60) = 3.00$
Income level (%)							$\chi^2(4, N = 58) = 2.21$	$\chi^2(4, N = 57) = 6.37$
Low (< $17,000)	40.0	35.0	27.8	20.0	10.5	5.6		
Medium ($17,100 to $67,000)	50.0	40.0	55.5	40.0	68.4	77.7		
High ($67,100 or more)	10.0	25.0	16.7	40.0	21.1	16.7		
At least one previous depressive episode (%)	38.5	71.4	46.2	—	—	—	$\chi^2(2, N = 40) = 3.25$	—
Taking medicaments (%)	52.6	60.0	55.0	—	—	—	$\chi^2(2, N = 59) = 0.23$	—

Note. $n = 20$ for each of the three treatment groups. For all demographic variables, there was no statistical difference between the three treatment groups. Dashes indicate that data were not gathered for these variables in the partner. CBT = cognitive–behavioral therapy; IPT = interpersonal psychotherapy; COCT = coping-oriented couples therapy.
[a] Data are based on the Partnerschaftsfragebogen (PFB; Partnership Questionnaire).

One couple did not complete the COCT intervention because the partner decided to separate, and so treatment was ended after seven sessions. After the intervention, another 4 couples separated (2 in the CBT group, 1 in the IPT group, and 1 in the COCT group). In addition, 3 patients in the CBT group and 1 patient in the IPT group did not participate in the follow-up measurements. One patient per group missed one or more follow-up assessments because of a personal crisis.

Therapists

In total, 19 experienced therapists (9 for CBT, 6 for IPT, and 4 for COCT) provided treatment in this study. All therapists had initially been trained in the therapy approach that they were asked to deliver and were provided an additional 2 days of intensive training prior to the beginning of the study. Throughout the treatment phase, they also received regular supervision by qualified and experienced trainers with a strong background in the appropriate treatment approach to ensure maximal professional performance and adherence to their approach. Supervision was based on verbal reports by the therapists as well as videotaped sessions.

Treatments

The objectives and methods as well as the content of each therapy session followed unpublished, standardized manuals in German that were developed for each approach specifically for this study. The CBT and the IPT were delivered in 20 one-hr sessions on a weekly basis, while the COCT was delivered in 10 two-hr sessions every 2 weeks (the standard couples therapy format developed by Bodenmann, 2004). In total, each approach had a duration of 20 hr, and the whole intervention phase had a duration of 20 weeks.

Cognitive–behavioral therapy (CBT). The CBT approach was conducted according to the guidelines described by Beck et al. (1979), focusing on the identification and modification of dysfunctional cognitive assumptions about the self, the world, and the future (cognitive triad). Therapy included psychoeducation regarding depression, instigation of activity, and cognitive restructuring. The focus of this approach was the depressed individual. Interventions in this treatment condition were not delivered to the partner of the depressed patient.

Interpersonal psychotherapy (IPT). The IPT consists of elements of psychodynamically oriented therapies that make use of exploration and clarification of affect as well as cognitive–behavioral elements such as behavior change techniques and reality testing of perceptions. These techniques were used to address four areas of conflicts: unresolved grief, role transitions, interpersonal role disputes, and interpersonal social deficits. Techniques such as interpersonal analysis, psychoeducation, symptom management, analysis of communication, and training in communication (adequate emotional expression, social competence, etc.) were also used. This intervention was mainly individually oriented; however, in one to three sessions the partner of the depressed patient could be integrated. In these joint IPT sessions, psychoeducative issues about depression of potential interest to the partner were addressed. However, these sessions did not represent skill- and training-oriented marital therapy sessions. It was up to the therapist to decide whether such sessions should take place.

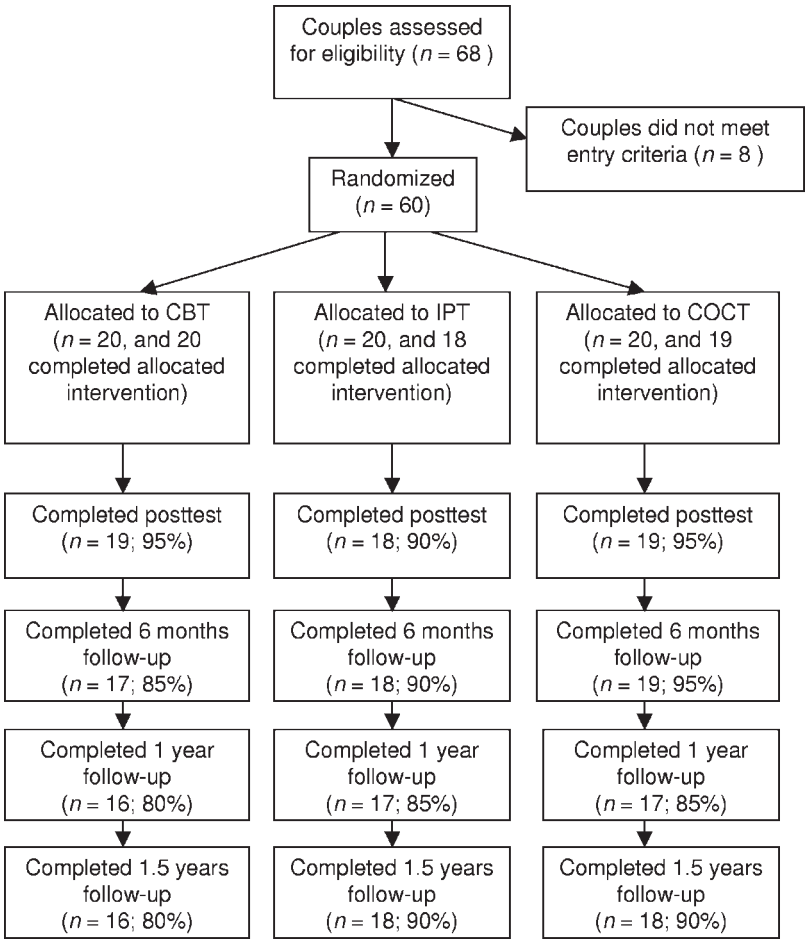

Figure 1. Flow chart of subjects in the study. CBT = cognitive–behavioral therapy; IPT = interpersonal psychotherapy; COCT = coping-oriented couples therapy.

Coping-oriented couples therapy (COCT). This approach is based upon cognitive–behavioral couples therapy (e.g., Baucom & Epstein, 1990; Beach, Fincham, & Katz, 1998; Beach, Sandeen, & O'Leary, 1990; Schindler, Hahlweg, & Revenstorf, 1998) as well as techniques derived from research on stress and coping in couples (Bodenmann, 2004, 2007). While the COCT employs the classical elements of the CBT (i.e., behavior exchange techniques as well as training in communication and problem solving), it focuses mainly on promotion of better dyadic stress communication (i.e., self-disclosure with regard to stressful experience in concrete situations) by using speaker and listener rules (three rules for each partner) and adhering to a three-phase method that has the following aims: (a) to enhance each partner's ability to communicate explicitly his or her stress to the other (Phase 1), (b) to adapt each partner's support to the specific needs of the other (Phase 2), and (c) to refine the support that each offers based on the partner's feedback (Phase 3; Bodenmann, 2007). The three-phase method helps partners to learn how to more effectively communicate with each other about their personal stress and how to mutually support each other in dealing with negative stress experiences in an appropriate and helpful way (dyadic coping). Two primary goals of this approach are to enhance mutual understanding of emotional stress experiences for both partners and to promote adequate emotion- and problem-focused support (dyadic coping) that fits the needs of the stressed partner while reducing criticism or overinvolvement. Partners of the depressed patient were taught to distinguish between beneficial support (e.g., encouraging the partner to actively influence the situation, helping the partner to deal with the problem) and support that could reinforce depressed symptomatology (e.g., protection, reduction of social obligations, taking over the partner's tasks). Partners were encouraged to engage in dyadic coping reciprocally; in other words, with each providing support to the other. All sessions involved both partners, and no individual treatment of depression took place in this treatment condition.

Treatment adherence. All therapists providing treatment strictly adhered to treatment protocols. Adherence was reported by each therapist for each therapy session based on the description provided for that session. In addition, each fourth session was videotaped. These videotapes were examined by the supervising trainers with regard to treatment adherence and the therapists' competence. The evaluation of these protocols and the ratings by the supervisors indicated that treatment adherence was quite good for all three treatments. Based on the therapist reports of adherence

completed for each therapy session, treatment adherence was rated as 2.57 for the CBT, 2.45 for the IPT, and 2.75 for the COCT (on a 3-point Likert scale where 1 = *low treatment adherence,* 2 = *medium treatment adherence,* and 3 = *high treatment adherence*). There was no significant difference in adherence between conditions ($p > .10$). Supervisors' evaluations of therapists' treatment adherence and competence (based on selected videotaped therapy sessions and verbal descriptions of how therapists were treating their patients) yielded a similar picture (2.74 for the CBT, 2.94 for the IPT, and 2.96 for the COCT). Thus, adherence analyses demonstrate appropriate delivery of the three treatments, therapists' adherence to the therapy manuals, and the required content of each session. Both treatment adherence measures made sure that therapists did correctly provide the treatment approaches and did not include other treatment elements (treatment contamination or blurring).

Procedure

Subjects were recruited through the media and medical practices. Patients who passed an initial diagnostic screening by phone were scheduled for an on-site clinical evaluation to ascertain study eligibility and provide informed consent. Both partners had to agree to participate in the study for a duration of 1.5 years and had to agree to be videotaped in their home engaging in dyadic interaction at each assessment (observational data are not reported in this article). Informed consent was presented to all patients and their partner in terms of a quasi-contractual exchange of therapy for research participation. After receiving signed contracts from both partners, we mailed the first set of questionnaires to the couple.

Among the patients, 53%–60% had only recently been started on medication prior to their referral. In these cases, they had to complete 4 weeks of medication before beginning treatment in the study. At that time, a set of questionnaires were filled out again. To ensure timely completion of the questionnaires, we called all couples with a friendly reminder. All questionnaires were completed independently by each partner and mailed to our institute in separate envelopes. At each session as well as at each time of measurement (pre- and posttreatment and follow-ups), the type and dose of medications taken by the patient, as well as any changes of medication, were evaluated by therapists.

Patients were assigned to one of the three treatment conditions (CBT, IPT, COCT) through block randomization to ensure an equal allocation of 10 couples to each group. The collaborator responsible for the random allocation was not involved in the administration of interventions or in the assessment of outcomes. Within each approach, subjects were assigned to the first available therapist and were seen within 2–3 weeks of assignment to condition.

Outcome Measures

Beck Depression Inventory (BDI; Beck, Steer, & Garbing, 1988; German version by Hautzinger, Bailer, Worall, & Keller, 1994). The BDI is a widely used 21-item self-report measure of depression with well-established reliability and validity.

Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960). The HRSD is a 17-item, clinician-administered, semistructured interview designed to assess depression over recent and extended time intervals. It is one of the most often used rating scales assessing depression in research because of its good reliability and validity (Bagby, Ryder, Schuller, & Marshall, 2004). It adds an external perspective to self-report measures such as the BDI. The HRSD was conducted by a trained clinical psychologist at pre- and posttest at patients' homes. Eighty percent of these interviews were rerated by a second interviewer to obtain interrater reliability. Mean interrater reliability (kappa) was .80 in this study.

Partnership Questionnaire (Partnerschaftsfragebogen; PFB; Hahlweg, 1996). The PFB is a 30-item instrument used to measure marital quality ($\alpha = .95$), with scores below 54 designating low levels of relationship quality, scores between 55 and 72 corresponding to medium levels of satisfaction, and scores 73 and above indicating high levels of marital satisfaction. The PFB discriminates reliably between distressed and nondistressed couples, is sensitive to changes in marital therapy, and has adequate reliability and validity (Hahlweg, 1996).

Dyadic Coping Inventory (DCI; Bodenmann, 2008). This 37-item questionnaire assesses stress communication and dyadic coping as perceived by each partner about his or her own coping, each partner's perception of the other's coping, and each partner's view of how they cope as a couple. Although there are nine potential subscales, we used the total score for this study ($\alpha = .92$). The psychometrics of the questionnaire have been examined in prior research (Bodenmann, 2008).

Five-minute speech sample (FMSS; Magaña et al., 1986). The FMSS represents an uninterrupted speech by the partner about the patient. In our study, the partner was invited to talk about his or her feelings and thoughts about the patient, and the speech was audio-recorded and subsequently coded for the number of positive and negative remarks concerning the depressed patient and two types of criticism (open vs. hidden). The two coders were blind with regard to timing of the recorded sequence (i.e., before or after treatment) and condition assignment. The kappa for agreement between the two coders was .82 to .89 for the different categories. In this study we used the coding of open criticism (amount of open criticism toward the depressive partner) from the FMSS as an index of EE.

Statistical Analyses

Dyadic data from the patient and partner were analyzed with hierarchical linear modeling (HLM 6 software; Raudenbush, Bryk, Cheong, & Congdon, 2004) to account for the nonindependence of partner scores. We chose to analyze our data with a two-level model based on the model proposed by Raudenbush, Brennan, and Barnett (1995) and theoretical reflections by Atkins (2005) and Laurenceau and Bolger (2005). The Level 1 model combines the longitudinal model for persons with the cross-sectional model for matched pairs (Raudenbush et al., 1995). On Level 1, depressed patient's and partner's growth curves are modeled simultaneously, and there is a separate intercept and slope for each partner. On Level 2, the COCT was contrasted with the CBT and the IPT using dummy coding. Although gender was perfectly balanced in the COCT group, there were more female depressed patients than male patients in the CBT and IPT groups. For this reason, we controlled for gender by adding it as a predictor on Level 1 during preliminary analyses. As these analyses did not reveal any significant

gender effect, gender was again excluded in the final Level 2 model. The final model with two levels is presented as follows:

Level 1 model:

$$\text{Satisfaction} = \beta_1(\text{time})\,[\text{Slope\_depressed}] + \beta_2(\text{time})\,[\text{Slope\_partner}] + \beta_3(\text{time})\,[\text{Intercept\_depressed}] + \beta_4(\text{time})\,[\text{Intercept\_partner}] + r$$

Level 2 model:

$$\beta_1 = \gamma_{10} + \gamma_{11}(\text{CBT}) + \gamma_{12}(\text{IPT}) + u_1$$

$$\beta_2 = \gamma_{20} + \gamma_{21}(\text{CBT}) + \gamma_{22}(\text{IPT}) + u_2$$

$$\beta_3 = \gamma_{30} + \gamma_{31}(\text{CBT}) + \gamma_{32}(\text{IPT}) + u_3$$

$$\beta_4 = \gamma_{40} + \gamma_{41}(\text{CBT}) + \gamma_{42}(\text{IPT}) + u_4$$

In the above equations, β_1, β_2, β_3, and β_4 are the slopes and intercepts of the lines describing the linear evolution of the depressed person and the partner; r is the Level 1 error or random effect (it describes the variability of data points around the lines); γ_{10}, γ_{20}, γ_{30}, and γ_{40} are the average intercepts and slopes for the depressed person and the partner; γ_{11}, γ_{21}, γ_{31}, γ_{41}, γ_{12}, γ_{22}, γ_{32}, and γ_{42} are the slopes that describe the effects of therapies on the slopes and intercepts β_1, β_2, β_3, and β_4; and u_1, u_2, u_3, and u_4 are the Level 2 random effects (they describe the variability of the individual intercepts and slopes around the average intercepts and slopes for the depressed person and the partner separately). Note that γ_{10}, γ_{20}, γ_{30}, and γ_{40} represent the effects of the COCT group.

For the variable measuring depression on the BDI, the linearity of change cannot be assumed. Examination of the means over time indicates that there is a hockey-stick pattern (a large change from pre- to posttreatment and a slight change thereafter). To better capture this pattern of change, we include a time-varying dummy variable that identifies whether a repeated measure is a premeasure. That strategy decomposes the time slope into two parts (the difference from pre- to posttreatment and the linear trend from posttreatment through 1.5 years) and provides a better fit to the observed pattern of change across time. For EE and the PFB and DCI tests, no such pattern of change was found, and so for these we assumed linearity of change. When the variable was a count, as was the case for the FMSS (the number of positive and negative remarks), we chose the Poisson distribution in the HLM model.

Because the focus of the investigation was on establishing equivalence between a new treatment approach and two established treatments, we also computed tests of equivalence according to the method proposed by Rogers, Howard, and Vessey (1993). In addition, we examined clinically significant change with the method proposed by Jacobson, Follette, and Revenstorf (1984) and Jacobson and Truax (1991).

Results

Table 2 shows the BDI and HRSD scores at all assessments for depressed patients and partners. Pretreatment BDI mean scores for depressed patients were between 24.7 and 26 points, indicating a medium level of depression. A similar picture was found for pretreatment HRSD. There was no difference in the severity of depressive symptomatology between the three treatment groups ($p = .76$ for the BDI, and $p = .95$ for the HRSD). Partners of depressed patients reported BDI scores well below 11 points, indicating low levels of depressive symptomatology. Depressed patients and partners receiving the IPT and the COCT scored below the cutoff of 54 for distress on the PFB (Hahlweg, 1996), whereas in the CBT the mean PFB score was slightly above the critical cutoff. Again, no difference between the three treatment conditions in pretest PFB scores was found ($p = .44$ for patients, and $p = .96$ for partners).

Changes in Self-Reported Depression in the Three Treatment Conditions

There was a significant decrease in depressive symptomatology (BDI score) across time in all three treatment conditions. This change is particularly evident between pre- and postmeasurement ($\gamma_{50} = 11.51$; $p < .001$), and this was also the case for the two other treatment conditions. In neither case was the slope of change in the BDI significantly different from that for the COCT. In line

Table 2
Means and Standard Deviations of Depression Variables (BDI, HRSD) for Depressed Patients and Partners

Variable, condition, and main effect	Pretreatment		Posttreatment		Follow-up 1		Follow-up 2		Follow-up 3	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
BDI										
CBT	26.05	8.18	14.50	10.04	14.35	12.37	16.66	13.68	16.40	14.23
IPT	24.75	6.03	15.55	11.58	17.10	10.78	15.00	10.06	13.77	10.29
COCT	24.70	7.18	14.91	11.02	13.75	10.01	12.68	9.30	15.33	11.09
F(2, 57)	0.227		0.043		0.518		0.640		0.244	
p	.756		.954		.558		.531		.784	
HRSD										
CBT	14.15	6.39	9.81	8.21						
IPT	13.95	3.36	9.34	5.82						
COCT	16.2	6.88	9.25	8.49						
F(2, 57)	0.937		0.031							
p	.398		.970							

Note. BDI = Beck Depression Inventory; HRSD = Hamilton Rating Scale for Depression; CBT = cognitive–behavioral therapy; IPT = interpersonal psychotherapy; COCT = coping-oriented couples therapy.

with expectations, in all three treatment conditions there was a substantial decline in depression from pre- to posttest. BDI scores remained at this low level during the 1.5-year follow-up period ($\gamma_{10} = 0.10$; $p = .89$).

Table 3 summarizes the results for the BDI and shows that there was no significant difference between the three treatment conditions. This was true for both the intercepts and the slopes, suggesting that all three treatment groups improved in similar ways. This result was similarly found when the PFB total score (at pretest) was integrated in HLM analyses either as a covariate or as a moderator.

One question that arises in this context is whether the lack of significant differences is the result of "no difference" or merely reflects lack of power to permit detection of differences. In an attempt to respond to this question, we conducted tests of equivalence by Rogers et al. (1993). This method focuses on statistical and clinical significance, utilizing a criterion of 20% of the parameter of reference to construct an "interval of indifference" ($\delta_1 = .20 \times M_1$).[1] That is, an *interval of indifference* was defined according to $M_1 - \delta_1$ and $M_1 + \delta_1$. Subsequently we calculated an interval of confidence of the differences $M_1 - M_2$ (the difference between the COCT and the two other treatment conditions, the CBT and the IPT). According to Rogers et al. (1993), if the confidence interval of 90% is within the interval of indifference, then this provides evidence of statistical equivalence at $\alpha = .5$. This provides a more stringent test of lack of difference between groups than simply showing lack of significant difference.

Table 3
Level 2 Effects on Intercepts and Slopes for the BDI

Slope/intercept and condition	Coefficient	*SE*	*t*	*p*
β_1 Slope_depressed				
γ_{10} INT(COCT)	0.10	0.71	0.13	.89
γ_{11} CBT	0.94	1.16	0.81	.42
γ_{12} IPT	–0.72	0.88	–0.82	.41
β_2 Slope_partner				
γ_{20} INT(COCT)	0.49	0.37	1.34	.19
γ_{21} CBT	–0.57	0.41	–1.38	.17
γ_{22} IPT	–0.40	0.56	–0.72	.48
β_3 Intercept_depressed				
γ_{30} INT(COCT)	13.19	2.64	4.99	.00
γ_{31} CBT	–0.34	3.58	–0.10	.93
γ_{32} IPT	2.94	3.78	0.78	.44
β_4 Intercept_partner				
γ_{40} INT(COCT)	4.80	1.13	4.24	.00
γ_{41} CBT	0.14	1.39	0.10	.92
γ_{42} IPT	0.52	1.51	0.34	.73
β_5 Dummy_depressed				
γ_{50} INT(COCT)	11.51	2.28	5.06	.00
γ_{51} CBT	1.69	3.40	0.50	.62
γ_{52} IPT	–2.89	3.63	–0.80	.43
β_6 Dummy_partner				
γ_{60} INT(COCT)	2.88	1.40	2.05	.04
γ_{61} CBT	–2.09	1.59	–1.31	.20
γ_{62} IPT	–3.09	1.61	–1.93	.06

Note. BDI = Beck Depression Inventory; INT(COCT) = coping-oriented couples therapy intercept; CBT = cognitive–behavioral therapy; IPT = interpersonal psychotherapy; Dummy_depressed and Dummy_partner = time-varying dummy variables that identify whether a repeated measure is a premeasure for either the depressed patient or the partner, respectively.

Using this procedure, we tested the equivalence of the means of the three groups at each of the five times of measurement. Additionally, we computed pre- and posttest differences and tested these for equivalence and difference. Using a criterion of 0.20 to define the region of indifference, we found equivalence between the three groups regarding the total BDI score in depressed patients by comparing pre- and posttest data or pretest and follow-up data. Thus, there were no statistically significant differences in BDI scores between the COCT and the CBT or the COCT and the IPT at any point in time (all ps $> .30$). There was also equivalence between the three groups at each point in time, with the COCT intermediate between the other two treatments in its effect.

Changes in Depression Rated by Experts in the Three Treatment Conditions

The Hamilton ratings (HRSD) were completed with only the depressed patients and not with their partners, so HLM methodology was not utilized for the analysis of treatment effects on the HRSD. Instead we used univariate analysis of variance with repeated measures. Trained observers also found a significant decrease in depression in patients, which converged with findings based on self-report data (BDI). The pre- and posttest main effect for time was found to be statistically significant, $F(1, 106) = 18.54$; $p < .01$. However, no significant main effect for treatment group, $F(2, 106) = 0.27$; $p = .76$, or any Therapy Group $\times$ Time interaction effect was observed, $F(2, 106) = 0.45$; $p = .64$, which confirmed results with the BDI. Again, these findings suggest no difference between the three treatment conditions on change in depression.

Changes in Relationship Measures in the Three Treatment Conditions

In the next set of analyses (HLM was used with two levels, as described above), the effects of the three treatment conditions on relationship quality (PFB total score), dyadic coping (DCI score), and EE were analyzed. Interestingly, there were no significant differences between the three treatment conditions on the overall measure of relationship quality ($\gamma_{10} = –.48$; $p = .38$).

As the relationship quality is only one possible measure to address relationship functioning, we conducted additional analyses with dyadic coping (social support in couples). HLM analysis on dyadic coping, however, showed a similar picture. The slope for change in dyadic coping (total DCI score) was not significantly different for the COCT couples ($\gamma_{10} = .62$; $p = .58$) compared with couples participating in the CBT or the IPT. Neither the depressed patients nor their partners scored higher in dyadic coping in the COCT condition compared with the two other treatment conditions. Thus, no differences between the three treatment conditions were found in self-reported relationship measures.

Finally, a set of analyses were run with EE measures (rated with the FMSS). The FMSS assesses attitudes toward the partners by coding positive and negative statements. Of particular interest with regard to the effect on relapse was the extent to which the intervention reduced open criticism from the partner to the patient. Partners of depressed patients participating in the COCT condition

[1] M_1 represents the COCT, and M_2 represents either the CBT or the IPT.

significantly decreased their open criticism of the depressed patient ($\gamma_{20} = -.40$; $p < .001$), while there was no such effect in the CBT or IPT group or in depressed patients themselves (see Table 4). As these differences suggest, the impact of the couples treatment could be seen more clearly with the interview data (EE) than with self-reports. This suggests that change in EE is not merely another index of relationship satisfaction and that the COCT may have exerted its primary effect on a dimension specific to social support rather than by enhancing couples satisfaction. Of particular importance, partner criticism of the depressed patient was influenced more in the COCT than in the other two treatments, setting the stage for the expectation that the COCT might enhance maintenance of gains (Hooley, 2007).

Recovery From Depression and Relapse Rates in the Three Treatment Conditions

Finally, we evaluated not only statistical improvement of depressed symptomatology in depressed patients but also clinical improvement and recovery. First, using the criterion of clinical significance according to Jacobson et al. (1991, 1984), we operationalized *recovery* as (a) a posttest score of below 11 on the BDI according to German norms (Hautzinger et al., 1994) and (b) no longer meeting *DSM–IV* criteria for major depression or dysthymia at posttest (Jacobson et al., 1991, 1984; Jacobson & Truax, 1991). While in U.S. studies a cutoff score of 15 on the BDI is typical of defining *relapse*, in Germany and Switzerland the score is 11. Second, *improvement* was defined as a statistically reliable improvement from pre- to posttest on the basis of the reliable change index, which is calculated as $(x_2 - x_1)/S_{diff}$, where x_1 = BDI pretest, x_2 = BDI posttest, and $S_{diff} = [2(SE)^2]^{1/2}$. In addition, subjects were considered as improved only if they also failed to meet *DSM–IV* criteria for major depression or dysthymia at posttest but scored 11 or higher on the BDI (Jacobson et al., 1991, 1984). Third, *relapse rates* at Follow-up 3 (1.5 years after the treatment) were operationalized as follows: Subjects who met criteria for recovered at posttest (according to the above-cited criteria) and had a total BDI score of 11 points or higher were considered as relapsed (using the cutoff of Jacobson, Fruzzetti, Dobson, Whisman, & Hops, 1993, adapted to German norms).

We found that, according to these criteria, in the CBT condition 36.8% of depressed patients (7 subjects out of 19) had recovered and another 36.8% (7 subjects) had improved, while 26.4% (5 subjects) had deteriorated or showed no change. In the IPT condition 47.1% had recovered (8 subjects out of 17), 23.5% (4 subjects) had improved, and 29.4% (5 subjects) showed either no change or deterioration. Depressed patients who had participated in the COCT showed a recovery rate of 36.8% (7 subjects out of 19), an improvement rate of 26.4% (5 subjects), and either no change or deterioration in 36.8% (7 subjects) of the cases. Among the recovered patients, 42.9% experienced a relapse in the CBT condition (3 subjects at Follow-up 2); 62.5% did in the IPT condition (2 subjects at Follow-up 1, 2 subjects at Follow-up 2, and 1 subject at Follow-up 3); and 28.6% did in the COCT (1 subject at Follow-up 1 and 1 subject at Follow-up 3). Thus, among those who experienced recovery, couples therapy showed numerically lower relapse rates than did the CBT and the IPT, although these differences were statistically not significant, $\chi^2(1, N = 14) = 0.31$, $p = .58$, and $\chi^2(1, N = 15) = 1.73$, $p = .18$, respectively, as the groups were too small.

In order to understand the role of EE in relapse prediction, we computed a mediation model with AMOS. Because there was no difference in relapse between the COCT and the CBT, we focus here on the comparison of the COCT and the IPT. In this model we used relapse (criterion) as a dichotomous variable (*yes/no*), the COCT versus the IPT as the predictor, and criticism by the partner (EE) as the mediator. This model indicated that the COCT had a positive influence on the difference between pre- and posttest partner criticism (.58; $p < .10$) that in turn was associated with a lower relapse (–.18). The direct association between the COCT and relapse was –.16 once the role of EE was accounted for, which supports the notion of mediation, $\chi^2(1, N = 36) = 1.4$, $p = .24$. Although the two coefficients (.58 and –.18) were not statistically significant due to the small sample size, the results are heuristic in highlighting the potential importance of EE as a mediator of treatment impact on relapse. However, these findings are even more striking and supportive of the notion that the COCT has a positive effect on relapse rates by means of changes in EE when a mediation model comparing the CBT with the IPT is computed. In this model we find no mediation of the effect of the CBT through criticism by the partner. Path coefficients are .10 between the CBT and EE, .03 between EE and the relapse rate, and –.25 between the CBT and the relapse rate, indicating that the direct path is stronger than the mediated paths. Thus, the CBT seems to lead to more stable recovery through other mechanisms (e.g., cognitive restructuring) than through an improvement in EE.

Recovery rates based on posttest HRSD (Hamilton ratings), with the criterion of a score between 0 and 7 as proposed by Bech (1988), showed the following picture: 40% recovery in the CBT, 45% in the IPT, and 55% in the COCT.

Table 4
Level 2 Effects on Intercepts and Slopes for Expressed Emotion (Open Criticism)

Slope/intercept and condition	Coefficient	*SE*	*t*	*p*
β_1 Slope_depressed				
γ_{10} INT(COCT)	–0.01	0.06	–0.15	.883
γ_{11} CBT	0.09	0.14	0.67	.507
γ_{12} IPT	–0.10	0.17	–0.58	.562
β_2 Slope_partner				
γ_{20} INT(COCT)	–0.40	0.05	–7.41	.000
γ_{21} CBT	0.15	0.10	1.58	.121
γ_{22} IPT	0.49	0.21	2.36	.022
β_3 Intercept_depressed				
γ_{30} INT(COCT)	–0.10	0.31	–0.32	.749
γ_{31} CBT	–0.55	0.37	–1.48	.145
γ_{32} IPT	–0.26	0.44	–0.59	.556
β_4 Intercept_partner				
γ_{40} INT(COCT)	–0.03	0.16	–0.20	.841
γ_{41} CBT	–0.51	0.59	–0.86	.392
γ_{42} IPT	–0.70	0.50	–1.40	.168

Note. INT(COCT) = coping-oriented couples therapy intercept; CBT = cognitive–behavioral therapy; IPT = interpersonal psychotherapy.

Discussion

The current study compared a coping-oriented form of couples therapy, the COCT, as a treatment for depression with two well-established evidence-based treatments and showed that the couples therapy format was as effective in reducing depressive symptomatology in depressed patients as was the CBT and the IPT. These

findings are consistent with previous findings on the effects of couples therapy for the treatment of depression (e.g., Beach & O'Leary, 1992; Foley et al., 1989; Emanuels-Zuurveen & Emmelkamp, 1996; Jacobson et al., 1991, 1996; Teichman, Bar-El, Shor, Sirota, & Elizur, 1995; Waring, Chamberlaine, Carver, Stalker, & Schaefer, 1995), indicating that couples formats can be efficacious in the treatment of depression. Positive outcomes were evident on self-report (the BDI) over a 1.5-year period, and data from clinical rating scales (the HRSD) corroborated the effects.

Recovery rates ranged from 37% to 47% in the current investigation (mean recovery rate was 40%; recovery rate for couples therapy was 37%). Again, this is in line with previous reports of outcome in the treatment of depression. Elkin et al. (1989) reported recovery rates of 55% for IPT and 51% for CBT (also see Jacobson et al., 1996). Similarly, Teichman et al. (1995) reported recovery rates of 42% in marital therapy compared with 55% in the cognitive therapy group at 6-month follow-up. Summarizing work in this area, Gortner, Gollan, Dobson, and Jacobson (1998) reported that treatments of depression appear to result in long-term recovery for only about one half of treated depressed patients. Our findings support this notion: Nearly half of all formerly depressed patients showed recovery after having received the CBT, the IPT, or the COCT treatments.

In this study, relapse rates (mean relapse rate over all three treatment conditions = 44.6%) were similar to the 30%–50% rates reported in previous studies (e.g., Belsher & Costello, 1988). The COCT showed a nonsignificantly better relapse rate (28.6%) than did the CBT (42.9%) and the IPT (62.5%) over a 1.5-year follow-up. Although the relapse rate in this study was somewhat higher for couples therapy than in the Jacobson et al. study (1993), where a relapse rate between 10% and 15% for BMT was reported, patients treated by marital therapy in our study showed lower relapse rates than did patients from the other treatment conditions.

The question of how couples therapy improves depression and leads to a more stable recovery was addressed by examining effects of the COCT on relationship variables. It is noteworthy that we did not find, as expected, a significantly better outcome with regard to relationship quality (the PFB score) or dyadic coping (the DCI score) in the couples-oriented condition than in the two more individually oriented conditions (in all three treatment conditions the slopes indicated an improvement, but there were no differences between treatment conditions). This was a surprise because in previous research the effect of couples therapy for the treatment of depression was mediated by its impact on increasing couples' satisfaction or decreasing couples' distress, whereas this was not the case for cognitive therapy (Beach & O'Leary, 1992; Jacobson et al., 1991). As couples in this sample did not represent highly distressed couples but reported moderate relationship quality scores (barely below the cutoff score on the PFB), it is possible that the treatment effects on relationship quality were less pronounced than in other studies where maritally distressed couples were examined. On the other hand, 20 hr may not have been enough time to provide comprehensive intervention concerning all the problems confronting the depressed couples. Thus, it is possible that this duration of couples therapy was able to improve depressive symptomatology but was not sufficient enough to durably enhance relationship quality. In this study, where the duration of the intervention of couples therapy was matched with individual treatments (20 hr), in the COCT less time was spent for classical communication training and problem solving. Thus, it may be that this time-limited version of the COCT (the mean duration of the COCT in the context of treatment of marital distress is 40 hr) shows reduced effect on marital distress even though it has an effect on other aspects of couples' functioning. Possibly, additional sessions focused on problem solving and increasing positive joint activities in the dyad could boost the effect on marital satisfaction, as was found in previous studies (Bodenmann, 2004).

Although we did not find significantly better improvements in relationship functioning in self-reported relationship satisfaction in couples therapy compared with the individually oriented approaches, significant positive effects of the COCT were found with regard to EE. In particular, we found that the COCT reduced the amount of criticism directed from partners toward their depressed spouses, a variable that has demonstrated prognostic power for negative outcomes in the context of depression (e.g., Butzlaff & Hooley, 1998; Hooley, 2007). Supporting this hypothesis, EE was associated with relapse in this sample.

Our findings reveal (a) a significant reduction in depressive symptomatology similar to that seen in previous trials and (b) positive changes in EE (but not in self-report measures on relationship variables), which together suggest that couples therapy did produce change in an important aspect of relationship functioning and that this change in EE may also be associated with the relatively low relapse rate in the COCT group, replicating previous work (Hooley, 2007). It is possible that reductions in EE are the active ingredient of the COCT that led to the observed reduction of depression and a more stable recovery. Given its impact on EE, the COCT may also be associated with a reduction in negative interaction behavior (Hahlweg et al., 1989). However, the analysis of these mechanisms needs further investigation through direct observation.

This study evaluated a novel coping-oriented cognitive–behavioral couples therapy in which the enhancement of dyadic coping plays a crucial role. This focus on mutual partner support has the practical advantage of rendering a couples approach palatable and appropriate for all couples with a depressed partner and not just for those couples who indicate that they are maritally distressed. In addition, the importance of stress and coping in depression has gained increased attention in the last decade (e.g., Bodenmann, Widmer, Charvoz, & Bradbury, 2004; Pasch, Bradbury, & Sullivan, 1997), suggesting that effective support provision by the partner may be a new promising way to expand options for spouse involvement in the treatment of depression.

This study has several limitations. One major limitation concerns the relatively small sample ($N = 60$ couples) and the resulting limitation in our power to detect differences between active treatments. However, the observed effect sizes are similar to those in previous reports, and differences in effect sizes across treatment conditions are not large enough to be significant even with a much larger sample size. Furthermore, the small sample size does not allow any generalization of our findings. Another limitation relates to the duration of the study (1.5 years) and the prediction of relapse. A longer time frame in addition to larger groups would have been desirable and would have allowed more sophisticated analysis of relapse rates. In addition, longer follow-up would have provided greater power to examine group differences in the likelihood of relapse over time.

With respect to data collection, one important limitation of this study was that the HRSD was used only at pre- and posttest and not at the other times of measurement. At those times when the HRSD was available, it provided strong corroboration of the picture obtained from the BDI. However, there are indications it may have been more sensitive to group differences in outcome. Another limitation concerns our decision to nest therapists under treatment condition, creating the potential for variability in quality of therapists to obscure treatment effects. It will be important in future research to cross therapists with treatment condition to fully control the impact of therapist characteristics. Likewise, it will be important to replicate the effect of the COCT in the United States and other countries to examine its generalizability. However, previous findings for BMT (Hahlweg & Markman, 1988) and other approaches (Teichman et al., 1995; Emanuels-Zuurveen & Emmelkamp, 1996) suggest that many effects of psychotherapy are generalizable, at least within Western societies.

Strengths of this study include the rigor of the training of the therapists, regular supervision by experienced trainers in each approach, the use of highly structured manuals to guide each therapy session, and comparable time frame for all treatments (20 weeks). In addition, treatment adherence was evaluated during the study, ensuring high treatment fidelity. Other strengths of this study were that multimethod data were collected and the data were collected from both members of the couple.

The current study is intriguing in several aspects and points to the need for future research on the various ways that spouses and romantic partners can be incorporated into therapy for depression. It will be of particular interest in the future to examine differential mechanisms of change across different types of therapy, as little is known about these processes. The current findings suggest that reduction of EE may be a useful target of therapeutic change in couples approaches to the treatment of depression, particularly in relation to maintenance of gains. Because the CBT and the IPT had little impact on EE, this also suggests an interesting avenue for studying combination treatment in the future. That is, it may be possible to increase the stability of gains from the CBT or the IPT by adding couples interventions. Future research on standard BMT for depression may also benefit from greater consideration of social support provision and a direct focus on the reduction of EE among partners of depressed couples.

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