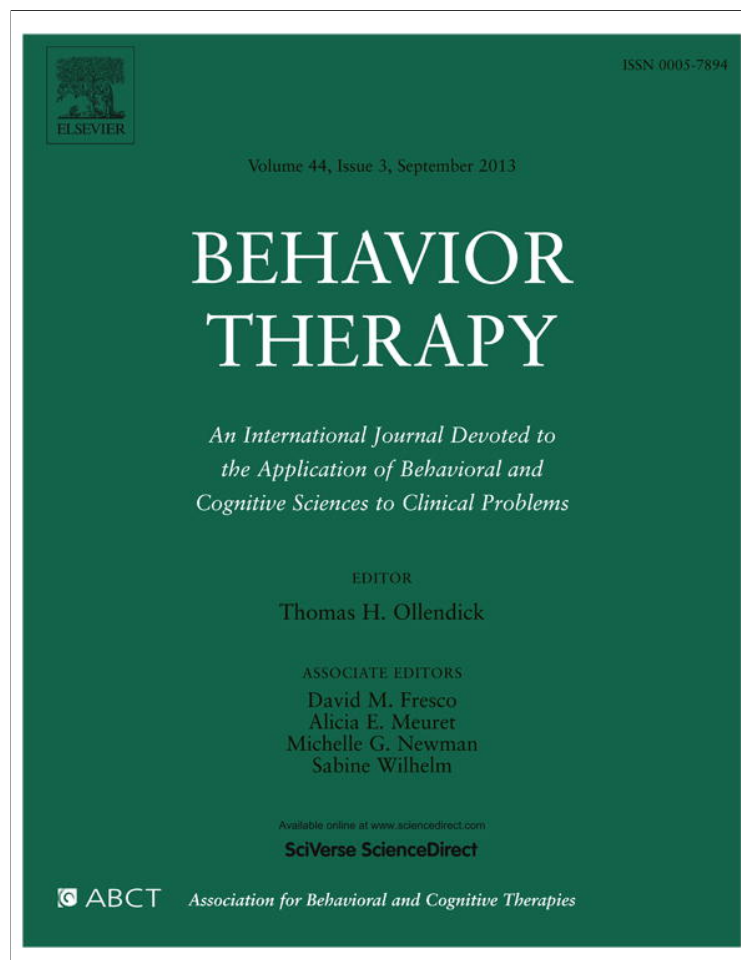


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Treating Obsessive-Compulsive Disorder in Intimate Relationships: A Pilot Study of Couple-Based Cognitive-Behavior Therapy

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Although cognitive-behavioral therapy (CBT) involving exposure and response prevention (ERP) is an established treatment for obsessive-compulsive disorder (OCD), not all patients respond optimally, and some show relapse upon discontinuation. Research suggests that for OCD patients in close relationships, targeting relationship dynamics enhances the effects of CBT. In the present study, we developed and pilot tested a 16-session couple-based CBT program for patients with OCD and their romantic partners. This program included (a) partner-assisted ERP, (b) techniques targeting maladaptive relationship patterns focal to OCD (e.g., symptom accommodation), and (c) techniques targeting non-OCD-related relationship stressors. OCD, related symptoms, and relationship functioning were assessed at baseline, immediately following treatment (posttest), and at 6- and 12-month follow-up. At posttest, substantial improvements in OCD symptoms, relationship functioning, and depression were observed. Improvements in OCD symptoms were maintained up to 1 year. Results are compared to findings from studies of individual CBT for OCD and discussed in

terms of the importance of addressing interpersonal processes that maintain OCD symptoms.

Keywords: obsessive-compulsive disorder; OCD; couple therapy; exposure; response prevention; cognitive-behavioral therapy

OBSESSIVE-COMPULSIVE DISORDER (OCD) involves (a) recurrent intrusive thoughts that evoke fear and distress (i.e., obsessions) and (b) excessive avoidance and compulsive rituals (or mental acts) to reduce the obsessional fear (American Psychiatric Association, 2000). For example, someone with obsessional fears of germs and contamination might spend hours washing and cleaning and also demand that family members avoid feared contaminants. Research indicates that avoidance and rituals usually result in short-term fear reduction, which negatively reinforces these behaviors, leading to their repetition (e.g., Rachman & Hodgson, 1980). In the long run, however, avoidance and rituals prevent the extinction of obsessional fear, thus completing a vicious cycle that maintains OCD symptoms.

The most effective psychological treatment for OCD is cognitive-behavioral therapy (CBT) involving exposure and response prevention (ERP; e.g., Kozak & Foa, 1997). Exposure involves repeated and prolonged confrontation with obsessional triggers; response prevention entails resisting urges to perform

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compulsive rituals. These procedures weaken the associations between (a) obsessional triggers and fear provocation, and (b) compulsive rituals and fear reduction, thus allowing the patient to learn that obsessional fears are unrealistic and that avoidance or rituals are not necessary to reduce fear. Cognitive therapy techniques (e.g., Wilhelm & Steketee, 2006) are also employed to weaken cognitive distortions associated with OCD symptoms (e.g., an inflated sense of responsibility). Although there is considerable evidence for the effectiveness of CBT (e.g., Eddy et al., 2004; Olatunji, Davis, Powers, & Smits, 2013), not everyone with OCD responds well to this treatment, and many patients discontinue treatment prematurely or show relapse upon finishing an adequate trial (Olatunji et al., 2013; Simpson et al., 2004). Thus, improving the acceptability and the short- and long-term effectiveness of this intervention remains a priority.

Research on predictors of outcome with CBT suggests that tending to patients' interpersonal relationships is one way to improve the prognosis for OCD (e.g., Chambless & Steketee, 1999; Steketee, 1993). Indeed, OCD symptoms often negatively impact interpersonal functioning, which in turn maintains OCD symptoms. One way this occurs is when avoidance and rituals create relationship conflict, which increases stress and anxiety. Second, nonaffected partners frequently (albeit inadvertently) maintain patients' OCD symptoms by "helping" with avoidance and rituals (e.g., providing reassurance for the patient; Calvocoressi et al., 1999; Shafran, Ralph, & Tallis, 1995). Such symptom accommodation can occur in happy as well as in relationally distressed couples, and might be performed to prevent the OCD sufferer from becoming anxious and hostile or simply to express care and concern within the relationship. Regardless, symptom accommodation is predictive of greater OCD severity and poorer treatment outcome (Boeding et al., *in press*; Calvocoressi et al.). Finally, couples might struggle with chronic relationship discord unrelated to OCD (e.g., financial concerns) that elevates stress, exacerbates OCD symptoms, and can also attenuate treatment response (Steketee & Chambless, 1999).

The bidirectional association between OCD symptoms and relationship functioning suggests that for patients in close relationships, the effects of CBT might be enhanced by involving the partner in treatment and addressing the ways in which relationship factors (as described above) maintain OCD. Only a few studies, however, have systematically examined "partner assisted" CBT for OCD, and the results of these investigations are mixed. Mehta (1990), for example, found that including a partner (or other family member) as a coach during ERP

was more effective than individual ERP without such a coach. In a similarly designed study, however, Emmelkamp, de Haan, and Hoogduin (1990) found no between-group differences. Finally, Emmelkamp and de Lange (1983) reported that partner-assisted ERP was more effective at posttest, but not at 1 month follow-up. It is difficult to draw strong conclusions from these early studies as they suffered from various methodological limitations such as small sample sizes and suboptimal implementation of ERP (e.g., no therapist-supervised exposure), often resulting in substandard outcomes study-wide.

Another issue is that while partner-assisted ERP might facilitate cooperation between partners when it comes to completing specific exposure tasks, it does not directly address other couple interaction patterns (e.g., accommodation, hostile communication) that maintain OCD, attenuate treatment response, and increase the risk of relapse following treatment. For example, it might be beneficial to incorporate techniques to teach couples healthier and more adaptive ways of showing mutual care and concern that are not focused on OCD symptoms. Given the lack of interventions for OCD that target such relationship dynamics in combination with ERP, we developed a 16-session couple-based CBT program that involves (a) psychoeducation, (b) partner-assisted ERP, (c) couple-based interventions focused on reducing OCD-specific accommodation behavior and increasing alternative strategies for couple engagement, and (d) general couple therapy focused on stressful aspects of the relationship not directly related to OCD (Abramowitz et al., 2013).

In the present study, we conducted an open trial of this treatment program for 21 adult couples in which one partner had OCD. The aim of this pilot study was to examine the feasibility and the immediate and long-term effectiveness of the intervention in a treatment-naïve sample. We assessed OCD and related symptoms (patients only) as well as relationship functioning (both partners) at baseline, post-treatment, 6-month, and 12-month (1 year) follow-up. We hypothesized statistically and clinically significant improvement in OCD, related symptoms (e.g., insight, depression), and relationship functioning at post-treatment; and that improvements would be maintained through 12-month follow-up. We also predicted that the long-term effects of our couple-based ERP program would appear superior when benchmarked with long-term follow-up results from comparable previous studies of individual CBT.

Method

PARTICIPANTS

Participants were 21 adult couples (age ≥ 18) who had been married or living together for at least

1 year and in which one partner had a principal diagnosis of OCD. Other inclusion criteria were (a) the OCD patient with a score of at least 16 on the Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Goodman et al., 1989a, 1989b), (b) both partners fluent in English, and (c) both partners willing to attend all treatment sessions together. Exclusion criteria were as follows: (a) previous CBT for OCD, (b) current suicidal ideation, (c) current substance abuse, (d) psychotic symptoms, and (e) physical abuse within the relationship. To maximize the generalizability of our sample, we did not exclude patients if they had comorbid mood or anxiety disorders, as long as OCD was the principal diagnosis. Patients using psychotropic medications were included as long as they had been on a stable dose for 3 months and agreed not to change this dosage during the study. Patients and partners could be of any gender and sexual orientation. Couples were excluded, however, if the patient reported that his or her partner had OCD or another psychological disorder.

Figure 1 depicts the flow of participants from the point of initial screening for eligibility. As can be seen, the overall study discontinuation rate of participants found to be eligible following an in-person study interview (described below) was 22.7%. The dropout rate among the 18 couples who began treatment was 11.1%. All 16 couples who completed treatment were heterosexual; 11 (69%) were married, and 5 (31%) were unmarried but cohabitating for at least 1 year. In 15 of the 16 couples, the female partner was the OCD sufferer. The OCD patients had a mean age of 33.13 ($SD = 10.39$) years, while partners had a mean age of 34.69 years ($SD = 10.04$). The sample was mainly Caucasian (90.6%). Eight patients had a single comorbid diagnosis, including generalized anxiety disorder ($n = 3$), dysthymic disorder ($n = 2$), panic disorder ($n = 2$), and social phobia ($n = 1$). Four patients were using medications (all serotonergic agents), and all kept their dose stable during the active phase of treatment (two patients reported increasing their dose during the follow-up period).

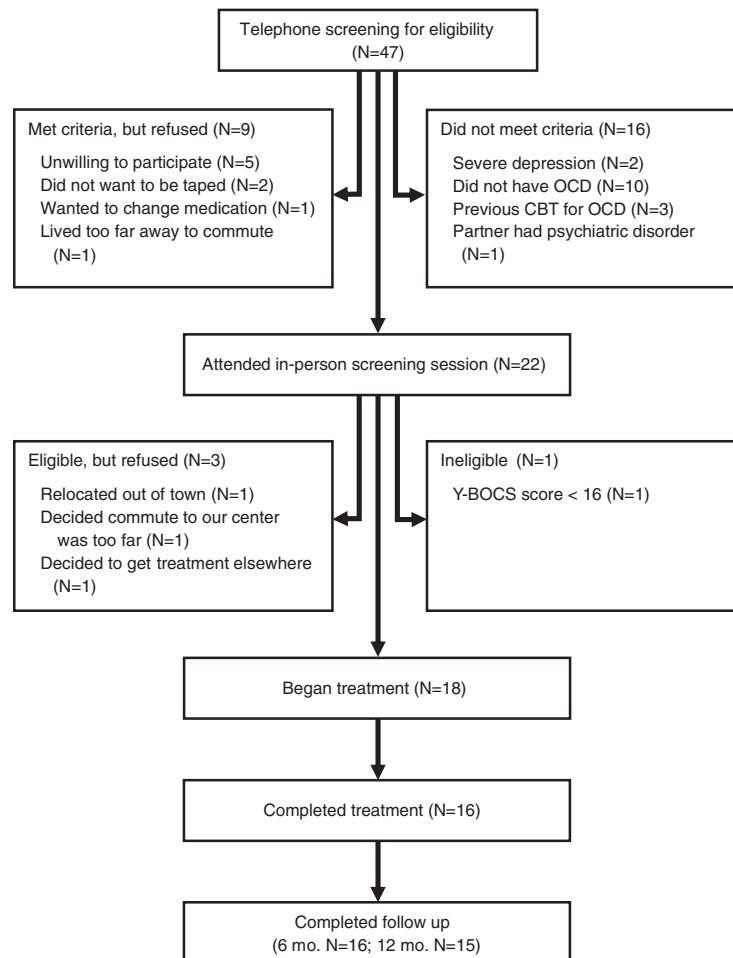


FIGURE 1 Flow of participants through the study.

PROCEDURE

The study was approved by the University of North Carolina—Chapel Hill (UNC-CH) IRB. Diagnostic evaluations, informed consent procedures, and all treatment took place in the UNC-CH Psychology Department anxiety disorders specialty clinic. Couples responding to our recruitment efforts (e.g., flyers, mass emails, etc.) were screened over the telephone by a study coordinator. If the patient met initial eligibility criteria, both the patient and partner attended a 2-hour baseline assessment interview during which a trained doctoral student administered the Mini-International Neuropsychiatric Interview (MINI; Sheehan et al., 1998) to establish DSM-IV-TR (American Psychiatric Association, 2000) diagnoses and the Y-BOCS to assess OCD symptom severity. The patient and partner also completed a battery of self-report measures (described below). If couples met all eligibility criteria and provided consent following this assessment, they were enrolled in the treatment phase of the study. Posttreatment, 6-month, and 12-month follow-up assessments were conducted by a trained independent evaluator not otherwise involved in the couple's treatment. These assessments were identical to the pretreatment assessment, except the diagnostic interview was not repeated.

TREATMENT

All couples received couple-based CBT for OCD, which was developed for the present study by the first two authors and drawn from empirically supported, cognitive-behavioral couple therapy (Epstein & Baucom, 2002) and individual ERP for OCD (Abramowitz, 2006).¹ The program involved 16 manual-driven sessions of 90 to 120 minutes, the first 8 of which were conducted twice-weekly, and the final 8, weekly. Couples attended all sessions together, and treatment involved a significant amount of between-session "homework practice," which the couple completed together.

During Sessions 1 through 3, the therapist conducted a detailed (functional) assessment of the patient's OCD symptoms and the couple's relationship history as it concerned OCD. The couple was also taught about the cognitive-behavioral model of OCD and the CBT techniques. These sessions

included development of the exposure hierarchy and teaching the couple how to manage the patient's anxiety during exposure. In Sessions 4 through 7, the couple learned and practiced partner-assisted ERP, including the use of emotional expressiveness techniques to enhance productive communication during exposures. In addition to continued partner-assisted exposure homework, Sessions 8 through 11 focused on learning strategies for making decisions about reducing symptom accommodation and implementing alternative non-OCD-focused behaviors. Sessions 12 through 16 focused on applying emotional expressiveness and decision-making skills to enhance general communication and address relationship stressors unrelated to OCD. Homework included continued partner-assisted exposure and reducing accommodation behavior. Additional details of the intervention protocol, along with illustrative case examples, are described in Abramowitz et al. (2013).

THERAPISTS

All treatment sessions were conducted by advanced clinical psychology doctoral students ($n = 7$) trained extensively by the faculty investigators who are experts in CBT for OCD (JA) and couple therapy (DB). Training included didactic sessions, viewing videotapes of the treatment being implemented, and attendance at weekly group supervision meetings to discuss study cases. All sessions were recorded and reviewed for treatment fidelity by the senior investigators, who also served as supervisors for the study therapists.

MEASURES

A multitrait-multimethod approach to assessment was taken, which included administration of the following measures at all time points:

Y-BOCS

Global OCD severity was measured using the Y-BOCS (Goodman et al., 1989a, 1989b), a semi-structured interview that includes a symptom checklist and 10-item severity scale. The checklist is first used to identify the patient's particular obsessions and compulsions. The severity scale then assesses the main obsessions (Items 1–5) and compulsions (Items 6–10) on the following five parameters: (a) time, (b) interference, (c) distress, (d) resistance, and (e) degree of control. The clinician rates each item from 0 (*no symptoms*) to 4 (*extreme*) based on the past week. Two subscales (obsessions and compulsions; range 0–20) can be added to produce a total severity score that ranges from 0 to 40. The Y-BOCS has satisfactory psychometric properties (Goodman et al., 1989b) and is considered the gold standard measure of OCD symptoms.

¹We would like to express our appreciation and acknowledgement of the contributions of Norman Epstein, Dianne Chambless, and Alan Goldstein to our thinking about couple-based interventions for OCD. They previously collaborated with Don Baucom on the development of a couple-based treatment manual for agoraphobia. Many of their ideas served as a springboard for the development of our current thoughts about treating OCD in a couple context.

Dimensional Obsessive-Compulsive Scale (DOCS; Abramowitz et al., 2010)

The DOCS is a 20-item self-report measure that assesses the severity of the four most consistently replicated OCD symptom dimensions, which correspond to the measure's four subscales: (a) contamination, (b) responsibility for harm and mistakes, (c) symmetry/ordering, and (d) unacceptable thoughts. Five items (rated 0 to 4) assess the following parameters of severity of each dimension: (a) time occupied by obsessions and rituals, (b) avoidance, (c) distress, (d) functional interference, and (e) difficulty disregarding the obsessions and refraining from rituals. The DOCS subscales have excellent reliability in clinical samples ($\alpha = .94-.96$), and the measure converges well with other measures of OCD symptoms (Abramowitz et al., 2010).

Brown Assessment of Beliefs Scale (BABS; Eisen et al., 1998)

Insight into the senselessness of obsessions and compulsions was assessed with the BABS, a 6-item interview measure of conviction in obsessional fears. First, one or two of the patient's obsessional fears (e.g., "I will get AIDS from using a public toilet") are identified. Next, the fears are rated on the following parameters: (a) conviction, (b) perception of others' views, (c) explanation of differing views, (d) fixity of the belief, (e) attempts to disprove, and (f) recognition of a psychological etiology. Item scores range from 0 (*normal*) to 4 (*pathological*) and are summed to produce a total score ranging from 0 to 24. The scale has good psychometric properties (Eisen et al., 1998).

Hamilton Rating Scale for Depression (HAM-D; Hamilton, 1960)

Depressive symptoms were assessed using the 17-item HAM-D, a widely used clinician rating scale for vegetative symptoms of depression. Scores on the HAM-D range from 0 (*no symptoms*) to 50 (*very severe symptoms*), and the sound psychometric properties of the scale are supported by an extensive literature (Hedlund & Vieweg, 1979).

Beck Depression Inventory (BDI; Beck, Steer, & Brown, 1996)

The BDI is a 21-item self-report scale that assesses the severity of affective, cognitive, motivational, vegetative, and psychomotor components of depression. Scores of 10 or less are considered normal; scores of 20 or greater suggest the presence of clinical depression. The BDI has excellent reliability and validity and is widely used in clinical research (Beck et al., 1996).

Dyadic Adjustment Scale (DAS; Spanier, 1976)

The DAS is a 32-item self-report scale assessing the patient's relationship satisfaction. Scores below 100

indicate relationship distress, whereas scores above 110 indicate relationship satisfaction (Spanier, 1976). The DAS is the most widely used measure of overall relationship satisfaction, has excellent reliability ($\alpha = .96$), and has been validated through its capacity to differentiate between relationally distressed and satisfied couples in a wide variety of community samples.

Communication Patterns Questionnaire (CPQ; Christensen & Sullaway, 1984)

The CPQ is a 23-item self-report measure of how a couple communicates before, during, and after discussion of a relationship problem. The measure was completed by the OCD patient. Scores on three CPQ subscales have been shown to differentiate between distressed and nondistressed couples: the Mutual Constructive Communication subscale (five items), the Avoidance/Withholding subscale (three items), and the Demand/Withdraw subscale (six items). These three subscales have alpha coefficients ranging from .86 to .62, with a mean of .71 (Christensen & Shenk, 1991).

Family Accommodation Scale (FAS; Calvocoressi et al., 1999)

The FAS is a 13-item measure that was completed by a family member of someone with OCD to assess the frequency of accommodating OCD symptoms over the course of a week. For the purposes of the present study, the wording of items was changed to refer to "your spouse or partner with OCD" rather than "the patient with OCD" (e.g., "How often did you participate in behaviors related to your spouse/partner's compulsions?"). The FAS assesses partners'/spouses' participation in symptom-related behavior, changes in routine due to OCD symptoms, and distress caused by symptom accommodation. The instrument is strongly correlated with relevant subscales of the Questionnaire on Resources and Stress for Families with Chronically Ill or Handicapped Members (Calvocoressi et al., 1999).

STATISTICAL ANALYSES

Our data analytic approach included four steps. First, we examined pretreatment means and standard deviations for all study variables. Second, we evaluated the effectiveness of treatment using multi-level modeling (MLM) following the guidelines by Raudenbush and Bryk (2002). SAS 9.2 was used to analyze several models, each of which predicted a given outcome from time. The fixed effects and significance values for posttest and both follow-up assessments, each compared to baseline, were examined. Additionally, contrast codes were utilized to determine whether pretest values were significantly different from the average of the three postintervention time points, as well as whether the three

Table 1
Mean Scores (Standard Deviations) on Treatment Outcome Variables at all Assessment Points

Measure	Pre-Treatment	Post-Treatment	6-month follow-up	12-month follow-up
OCD symptoms				
Y-BOCS	25.75 (5.11)	11.56 (5.48)	12.25 (5.40)	11.33 (6.47)
DOCS	30.00 (8.50)	12.00 (7.62)	12.00 (5.85)	10.46 (5.49)
BABS	7.56 (4.24)	3.88 (3.70)	3.63 (3.44)	2.53 (3.20)
Depressive symptoms				
HAM-D	7.75 (3.87)	4.63 (2.92)	5.75 (4.55)	5.53 (4.60)
BDI	15.06 (7.33)	6.73 (5.30)	8.50 (7.47)	7.23 (6.71)
Relationship functioning				
DAS	108.75 (17.44)	115.33 (16.33)	114.75 (16.00)	112.23 (21.21)
CPQ-Constructive communication	5.79 (13.51)	10.07 (10.81)	8.00 (12.58)	9.31 (10.31)
CPQ-Demand/Withdrawal	25.67 (6.95)	21.50 (10.04)	22.25 (10.52)	20.31 (6.69)
CPQ-Avoidance/Withholding	7.63 (2.60)	6.73 (4.17)	6.88 (3.34)	8.31 (3.54)
FAS (partner rated)	34.63 (12.79)	25.12 (13.19)	25.13 (12.76)	23.46 (10.76)

Note. Y-BOCS = Yale-Brown Obsessive Compulsive Scale; BABS = Brown Assessment of Belief Scale; DOCS = Dimensional Obsessive Compulsive Scale; HAM-D = Hamilton Rating Scale-Depression; BDI = Beck Depression Inventory; FAS = Family Accommodation Scale; CPQ = Communications Pattern Questionnaire.

postintervention time points were significantly different from one another. It was expected that each outcome measure would show improvement from pre- to posttest as indicated by (a) each of the three postintervention time points being significantly different from pretest and (b) the average of the three postintervention values being significantly different from pretest. Furthermore, it was expected that treatment effects would be maintained over time; that is, the three postintervention values would not be significantly different from one another. Results consistent with these expectations would support the hypothesis that participants improved from pre- to posttest, and then remained stable through the 6- and 12-month follow-up period.

Third, we used a benchmarking strategy to evaluate the effectiveness of couple-based CBT on measures of OCD symptoms and relationship adjustment. This involved computing and comparing effect sizes obtained in the present study with those from previous studies. Fourth, using the procedures outlined by Jacobson and Truax (1991), we examined the extent to which patients in our study achieved clinically significant changes in OCD symptoms.

Results

DESCRIPTIVES

Table 1 shows the group's mean scores on all study measures at each assessment point.² These scores

² One couple became unreachable and their 12-month follow-up was unable to be completed. In addition, for two assessments at 6-month follow-up, the interview-based measures were completed but the self-report packets were not returned or were lost in the mail. All other data were complete.

indicated that patients entered treatment with moderate to severe OCD symptoms and fair to good insight into the senselessness of these symptoms. Regarding OCD symptom presentation, the pattern of DOCS subscale scores indicated that contamination symptoms ($M = 9.33$, $SD = 6.32$), responsibility/checking symptoms ($M = 9.38$, $SD = 5.62$), and unacceptable obsessional thoughts ($M = 9.29$, $SD = 6.14$) were more prevalent than symmetry/incompleteness symptoms ($M = 3.00$, $SD = 4.17$) in the sample. The sample also reported moderate levels of depression. On average, patients reported that their relationships were neither particularly distressed nor particularly satisfying, yet they evidenced high levels of maladaptive communication styles and partner accommodation of OCD symptoms.

MAIN OUTCOME

OCD Symptoms

As shown in Table 1, there was a large reduction in OCD symptoms from pre- to posttest, which was maintained at follow-up. All postintervention Y-BOCS mean scores remained in the mild range (i.e., 8–15). Table 2 presents the fixed effects for the MLM models using time to predict postintervention scores on the various outcome measures. For the Y-BOCS, the effect of time was significant: compared to pretest, scores were lower at each posttreatment/follow-up time point (mean Y-BOCS reduction at posttreatment, 6-month, and 12-month follow-up was 55%, 52%, and 56%, respectively). There was also a significant difference between the pretest Y-BOCS mean and the mean of all postintervention scores, $B = -14.01$, $SE = 1.37$, $t(44.2) = -10.3$,

Table 2
Fixed Effects for Outcome Variables

Measure	Post-Treatment		6 Months		12 Months	
	Estimate (SE)	<i>t</i>	Estimate (SE)	<i>t</i>	Estimate (SE)	<i>t</i>
OCD and depression symptoms						
Y-BOCS	-14.19 (1.67)	-8.48***	-13.5 (1.67)	-8.07***	-14.36 (1.71)	-8.42**
DOCS	-18.16 (2.06)	-8.81***	-18.0 (2.02)	-8.82***	19.0 (2.16)	-8.78***
BABS	-3.69 (.84)	-4.38***	-3.94 (.84)	-4.68***	-5.07 (.86)	-5.89***
HAM-D	-3.13 (1.24)	-2.51*	-2.0 (1.24)	-1.61	-2.22 (1.27)	-1.75
BDI	-8.34 (1.61)	-5.18***	-6.56 (1.57)	-4.17***	-6.93 (1.69)	-4.1***
Relationship functioning						
Dyadic Adjustment Scale	7.10 (2.23)	3.18**	6.00 (2.18)	2.76**	4.74 (2.34)	2.02 ⁺
CPQ-Constructive Communication	4.48 (1.85)	2.42*	3.00 (1.81)	1.64	3.37 (1.92)	1.76
CPQ-Demand/Withdrawal	-5.31 (2.09)	-2.54*	-4.75 (2.00)	-2.38*	-5.77 (2.11)	-2.73**
CPQ-Avoidance/Withholding	-0.77 (.91)	-0.85	-0.75 (.88)	-0.85	1.03 (.95)	1.09
FAS	-9.54 (2.49)	-3.84***	-9.50 (2.43)	-3.91***	-9.53 (2.61)	-3.65***

Note. Y-BOCS = Yale-Brown Obsessive Compulsive Scale; BABS = Brown Assessment of Belief Scale; DOCS = Dimensional Obsessive Compulsive Scale; HAM-D = Hamilton Rating Scale-Depression; BDI = Beck Depression Inventory; CPQ = Communications Pattern Questionnaire; FAS = Family Accommodation Scale.

*** $p < .001$, ** $p < .01$, * $p < .05$, + $p = .053$.

$p < .001$; however, the difference between the three postintervention time points was nonsignificant, $F(2, 44.4) = 0.14$, $p = .86$. Thus, on average, Y-BOCS scores decreased significantly from pre- to posttest, and then remained stable.

A similar MLM analysis was conducted using the DOCS, and the results were identical: the contrast comparing the pretreatment mean and the mean of all postintervention scores was significant, $B = -18.37$, $SE = 1.67$, $t(40.6) = -11.0$, $p < .001$, but the difference between the three postintervention time points was nonsignificant, $F(2, 40.9) = 0.11$, $p = .90$. Thus, on average, DOCS scores decreased from pre- to posttest (60% reduction) and then remained stable (60% reduction at 6 months and 65% at 12 months).

As Table 1 also shows, OCD-related insight improved: the mean BABS reduction at posttest was 49%, and scores remained improved at 6-month (52% reduction) and 12-month (67% reduction) follow-up. As Table 2 shows, MLM revealed a significant effect of time at each postintervention assessment point. Additionally, there was a significant difference between pretest BABS scores and the mean of all postintervention scores, $B = -4.23$, $SE = .69$, $t(44.1) = -6.13$, $p < .001$. The difference between the three postintervention time points was nonsignificant, $F(2, 44.2) = 1.44$, $p = .25$. Thus, on average, BABS scores decreased (i.e., insight improved) from pre- to posttest and then remained stable.

Depression

As shown in Table 1, there was a moderate to large reduction in depressive symptoms at posttest. Yet

while improvement on the HAM-D appeared to diminish over the 1-year follow-up period (symptom reduction rates were 40%, 26%, and 29%, respectively), BDI symptom reduction rates remained more stable: 55%, 44%, and 52%, respectively.

As is shown in Table 2, MLM analyses support these observations. For the HAM-D, the effect of time was significant at posttest, but not at either follow-up assessment. There was, however, a significant difference between pretest HAM-D scores and the mean of all postintervention scores, $B = -2.45$, $SE = 1.02$, $t(44.3) = -2.4$, $p = .02$. The difference between the three postintervention time points was nonsignificant $F(2, 44.5) = 0.46$, $p = .64$.

For the BDI, however, the effect of time was significant at each postintervention time point. There was also a significant difference between pretest symptoms and the mean of the postintervention BDI scores, $B = -7.28$, $SE = 1.31$, $t(41.2) = -5.56$, $p < .001$, although the difference between the three postintervention time points was nonsignificant, $F(2, 41.4) = 0.67$, $p = .51$. Thus, whereas scores on both the HAM-D and BDI decreased from pre- to posttest, BDI scores remained stable during follow-up, but improvement on the HAM-D was not maintained.

Relationship Functioning

As Table 2 indicates, for the DAS, the effect of time was significant such that OCD patients experienced greater relationship satisfaction at posttest and at 6-months follow-up, as compared to pretest. However, the difference between pretest and 12-month follow-up satisfaction only trended

towards significance, $p = .05$. Additionally, there was a significant difference between pretest DAS scores and the mean of the postintervention DAS scores, $B = 5.95$, $SE = 1.81$, $t(41.1) = 3.28$, $p < .01$, yet the difference between the three postintervention time points was nonsignificant, $F(2, 41.2) = 0.50$, $p = .61$. Thus, the patient's relationship satisfaction was improved immediately after treatment, but had returned to baseline at 1-year follow-up.

For the CPQ Constructive Communication subscale, patients had higher scores at postintervention compared to at pretest. However, the differences between pretest and 6- and 12-month follow-up constructive communication were nonsignificant. There was also a significant difference between pretest scores and the average of all postintervention scores, $B = 3.61$, $SE = 1.53$, $t(39.2) = 2.36$, $p < .05$, yet the difference between the means at the three postintervention time points was nonsignificant, $F(2, 39.1) = .39$, $p = .68$. Thus, constructive communication was improved following treatment but had returned to baseline at 6-month follow-up.

For the CPQ Demand/Withdraw subscale, the effect of time was significant such that scores were lower at the three postintervention time points compared to pretest. Additionally, there was a significant difference between the mean pretest score and the mean of all postintervention scores, $B = -5.27$, $SE = 1.67$, $t(37.9) = -3.15$, $p < .01$, yet the difference between the three post-intervention mean scores was nonsignificant, $F(2, 38) = .12$, $p = .89$. Thus, on average, demand/withdraw communication decreased immediately following treatment and remained stable during follow-up.

For the CPQ Avoidance/Withholding subscale, the effect of time was nonsignificant for all three time points compared to pretest. Additionally, the overall difference between pretest scores and the mean of all postintervention scores was nonsignificant, $B = -.16$, $SE = .74$, $t(41.1) = -0.22$, $p = .83$, and the difference between the three postintervention time points was nonsignificant, $F(2, 41.3) = 2.29$, $p = .11$. These findings suggest that avoidant communication patterns had not improved following treatment or at follow-up.

Finally, Table 1 shows a large reduction in partner accommodation (FAS) behavior from pre- to posttest, which was maintained at follow-up. As shown in Table 2, the effect of time was significant: compared to pretest, FAS scores were lower at each posttreatment/follow-up time point. There was also a significant difference between the pretest FAS mean and the mean of all postintervention scores, $B = -9.52$, $SE = 2.02$, $t(41.2) = -4.71$, $p < .001$; however, the difference between the three postintervention time points was nonsignificant, $F(2, 41.3) = 0.00$,

$p = .99$. Thus, on average, FAS scores decreased significantly from pre- to posttest and then remained stable.

CLINICALLY SIGNIFICANT CHANGE

As indicated above, patients receiving couple-based CBT experienced highly significant reductions in OCD symptoms that were maintained up to at least 1 year following the end of treatment. Yet in addition to examining statistical significance, it is important to determine the clinical significance of the observed changes. Accordingly, we used the methods described by Jacobson and Truax (1991) to determine the extent to which our patients attained clinically significant improvement (i.e., high endstate functioning and reliable change). Normative (nonpatient) Y-BOCS data ($M = 7.2$, $SD = 4.5$) and test-retest reliability ($r_{xx} = .88$) reported by Steketee, Frost, and Bogert (1996) were used to calculate the empirically derived Y-BOCS cut score for high endstate functioning ($c = 15.9$), and the reliable change index, which indicates whether change is attributable to treatment or imprecision in Y-BOCS measurement. As can be seen in Table 3, the majority of patients achieved both high endstate functioning and reliable change, providing further evidence of clinically significant improvement. Only one patient evidenced reliable deterioration following the end of treatment.

BENCHMARK COMPARISONS ON OCD SYMPTOMS AND RELATIONSHIP ADJUSTMENT

OCD Symptoms

To examine the effectiveness of couple-based CBT relative to individual CBT for OCD, we first benchmarked our results with the meta-analytic findings for individual CBT reported by Eddy et al. (2004). These authors found a mean within-group, pre-post effect size (i.e., the difference between pre- and posttreatment means divided by the pooled standard deviation) of $d = 1.53$ across 16 studies. Using Y-BOCS data from the current study and the

Table 3
Number (and Percent) of OCD Patients Achieving Clinically Significant and Reliable Change on the Y-BOCS Following Couple-Based Treatment

Outcome	Post-treatment	6-month follow-up	12-month follow-up
High endstate functioning	11 (68)	11 (68)	11 (68)
Reliable improvement	15 (94)	13 (81)	13 (81)
Both	11 (69)	10 (63)	11 (69)
Reliable deterioration	0 (0)	1 (6) ^a	1 (6) ^b

Note. Y-BOCS = Yale-Brown Obsessive-Compulsive Scale.

^a From post-treatment to 6-month follow-up.

^b From post-treatment to 12-month follow-up.

same effect size formula, we obtained a notably larger effect size of $d = 2.68$ ($SE = .39$).

Because we expected couple-based CBT to improve particularly upon the long-term effects of individual CBT for OCD, we wanted to compare our 1-year follow-up results with those of previous studies. Eddy et al. (2004), however, did not report follow-up effect sizes in their meta-analysis; thus, we searched the literature for studies of individual CBT that used a treatment schedule similar to ours (i.e., twice or once-weekly sessions) and reported Y-BOCS scores (interview version) at 12-month follow-up. We found one study that met these criteria: Vogel, Stiles, and Gotestam (2004). These researchers compared twice-weekly CBT (ERP plus cognitive therapy [ERP + CT]) to ERP plus relaxation. We benchmarked our results to the ERP + CT group because it represented the closest match to our own treatment in which therapists sometimes used informal CT techniques, but not relaxation. Using Minami, Serlin, Wampold, Kircher, and Brown's (2008) formula for testing differences between effect sizes, we found that our pre-post Y-BOCS effect size of $d = 2.68$ was significantly greater than that reported in Vogel et al. (2004): $d = 1.57$, $t(15) = 8.47$, $p < .001$. Similarly, at 12-month follow-up, our Y-BOCS effect size of $d = 2.42$ ($SE = .37$) was significantly greater than the 12-month follow-up effect size reported in Vogel et al. of $d = 2.06$, $t(15) = 7.98$, $p < .001$. At 6-month follow-up, however, the difference in effect sizes [$d = 2.57$ in the present study vs. $d = 2.66$ in Vogel et al. (2004)] was not significant ($p > .05$). Thus, the current treatment program produced immediate and long-term changes in OCD symptoms that were more substantial than those observed with individual CBT.³

Finally, we benchmarked our clinical significance findings with those of (a) Abramowitz, Foa, and Franklin (2003), who compared 15 twice-weekly sessions of individual ERP to 15 daily sessions; and (b) Whittal, Robichaud, Thordarson, and McLean (2008), who examined the long-term follow-up of individual ERP. In Abramowitz et al., 55% of the 20 patients receiving twice-weekly ERP achieved clinically significant and reliable change at posttest, and 60% achieved this status at 3-month follow-up. Similarly, Whittal et al. (2008) reported that 55% achieved this status at 2-year follow-up. These rates for individual therapy were less than what we found for couple-based ERP in the present study (see Table 3).

³The corresponding pre-post Y-BOCS effect sizes for the ERP plus relaxation group in Vogel et al. (2004) were $d = 3.20$ at posttest and $d = 3.18$ at 12-month follow-up, which were significantly larger than our own effect sizes.

Relationship Adjustment

We used similar benchmarking procedures to compare effect sizes as derived from the DAS. Because there are no previous investigations of couple-based interventions for OCD, we compared our effects to treatment gains observed for relationally distressed couples receiving cognitive-behavioral couple therapy. Significance tests revealed that our pre-post effect size ($d = 0.43$; $SE = .12$) was not significantly different from the meta-analysis benchmark of $d = .82$ reported by Baucom, Hahlweg, and Kuschel (2003), $t(15) = -2.33$, $p = .197$. For comparison of follow-up DAS effect sizes, we used a study that examined couple therapy effects for relationally distressed couples and included 1-year follow-up: Christensen, Atkins, Yi, Baucom, and George (2006). This investigation was selected because it is the largest and most recent study of a behaviorally oriented couple therapy (integrative behavioral couple therapy; IBCT) and is generally viewed as one of the most methodologically rigorous. Significance tests revealed that neither our pre-post, 6-month follow-up ($d = 0.33$, $SE = .12$), nor our 12-month follow-up effect sizes ($d = 0.11$; $SE = .10$) were significantly different from the corresponding effect sizes calculated from Christensen et al.: posttreatment $d = 0.70$, $t(15) = -1.75$, $p = 1.90$; 6-month follow-up $d = 0.40$, $t(15) = -0.47$, $p = 1.36$; 12-month follow-up $d = 0.56$, $t(15) = 3.13$, $p = 1.99$. Thus, the current investigation produced changes in relationship functioning comparable to couple therapy that focused exclusively on improving relationship functioning.

Discussion

Cognitive-behavioral therapy involving ERP is an empirically supported treatment for OCD. For patients in close relationships, however, certain patterns of interpersonal interaction regarding OCD symptoms (e.g., symptom accommodation) can attenuate outcome (e.g., Steketee & Chambless, 1999). Accordingly, tending to patients' relationships might improve the prognosis for individuals with OCD who are in long-term relationships. The aim of the present study was to evaluate in an open trial the effectiveness of a couple-based CBT program for OCD that addressed interpersonal functioning along with OCD symptoms.

Our hypotheses regarding improvement in OCD, other psychological symptoms, and relationship functioning were generally supported. In particular, interview and self-report measures indicated clinically meaningful decreases in OCD symptoms (and improvement in OCD-related insight), with posttest functioning in the mild range of OCD symptoms. Moreover, improvement was maintained through

1-year follow-up. In comparison with individual ERP for OCD, the long-term effects of this program were also notable. Indeed, the effect size we obtained was more than one standard deviation larger than the meta-analytic effect size reported by Eddy et al. (2004) for individual CBT (2.68 vs. 1.53).

We also found substantial improvement in depressive symptoms at posttest, although the results were more equivocal with regard to follow-up given inconsistent findings across our two indices of depression. Likewise, with regard to changes in relationship functioning, findings were somewhat mixed. Although all measures of relationship functioning improved at posttest, some indicated maintenance of therapeutic gains at follow-up, whereas others did not. Importantly, at posttest, partners had reduced their accommodation of loved ones' OCD symptoms, and this was sustained through the follow-up period.

The levels of improvement in OCD functioning and relationship improvements at posttest are noteworthy when compared to the findings of other investigations evaluating couple therapy for another important psychological disorder—depression. Similar to the logic of the current study, several treatment trials have provided couple therapy when one partner presents with diagnosable depression. In a meta-analysis of eight controlled trials comparing the effectiveness of couple-based interventions and individual therapy in the treatment of depression (Barbato & D'Avanzo, 2008), couple therapy appeared comparable to individual treatment in reducing depressive symptoms ($d = -.12$) and more effective than individual treatment in improving relationship satisfaction ($d = -.60$). Similar to couple therapy for depression, in the current investigation, couples also improved in relationship functioning at posttest. However, whereas couple therapy and individual therapy seem to promote comparable symptom changes when depression is the focal point of treatment, our findings provide initial indications that for OCD, a couple-based intervention might be more effective in terms of symptom reduction than individual interventions.

Although the open trial design of the present study precludes us from drawing strong conclusions about precise mechanisms of change, previous controlled studies have demonstrated the specific effects of ERP (e.g., Lindsay, Crino, & Andrews, 1997; for a meta-analytic review, see Olatunji et al., 2013). It is therefore possible that tending more closely to patients' interpersonal relationships than is routine in individual ERP contributed to the improved outcome we observed at posttest by enhancing patients' ability to make use of ERP techniques. Teaching couples empirically based strategies for

enhancing communication, for example, might have contributed to increases in relationship satisfaction. Perhaps this improved communication and relationship functioning engendered a sense of collaboration between partners so that planning and implementing ERP became "teamwork" and enhanced the patient's motivation for change and adherence to the ERP treatment plan. The low dropout rate in our study might be explained by nonaffected partners learning skills for assisting with ERP practice productively. When patients experienced high anxiety or reduced motivation, for example, his or her partner might have been able to keep the patient on task by using effective communication strategies. Additional research is warranted to more closely test these potential explanations.

Our finding that partner accommodation of the patient's OCD symptoms was reduced following treatment is also consistent with the notion that training couples to use communication and problem-solving techniques to adopt a lifestyle of ERP (i.e., being opportunistic about confronting rather than avoiding obsessional cues on a regular basis) helps to optimize treatment response. Focusing on reducing these maladaptive relationship patterns might not only help reduce OCD symptoms, but also broaden a couple's repertoire so that they are able to engage in more activities together and enjoy the rewards of life without avoidance or compulsive rituals. More research is also necessary here to better understand how couple interaction patterns might relate to OCD symptom reduction.

There are a number of factors that might have promoted the maintenance of treatment gains we observed at 1-year follow-up, and which deserve further study. First, couple-based CBT focused on shifting the patient's social environment in ways that might have fostered maintenance. For example, we worked with couples to build informal ERP into their daily routine even after the active phase of treatment terminated. Non-OCD partners were helped to recognize and decrease their accommodation of their loved ones' OCD symptoms, which might have contributed to long-term maintenance of the patients' treatment gains. Finally, teaching couples effective communication skills might have helped to lower the ambient stress level within their relationships, which could have an effect on the severity of OCD symptoms and perhaps affect relapse. Consistent with this interpretation, in the NIMH Treatment of Depression Collaborative Research Project, poorer marital adjustment at post-treatment predicted higher relapse rates at follow-up (Whisman, 2001).

At the same time, the pattern of long-term effects raises questions that merit further investigation.

Whereas improvements in OCD were maintained at 1-year follow-up, overall relationship adjustment returned to baseline levels by 1 year. On the one hand, this pattern of change could mean that OCD and relationship functioning are independent of each other. More likely, however, the findings demonstrate that the long-term changes are proportionate to the focus of the intervention. The great majority of the treatment focused upon the couple working together around OCD, and those gains were maintained over time. However, the couple's broader relationship functioning was only of secondary emphasis in the treatment. The gains in relationship functioning at posttest and 6-month follow-up likely resulted from some combination of working together as a team on the OCD, a decrease in stress resulting from OCD, and some focus on non-OCD aspects of the couple's relationship. However, without a broader, more sustained focus on general relationship functioning, improvements in this domain were not sustained. It is important to recall, however, that on average, the couples in our study began treatment in the satisfied range on the DAS and were still in the satisfied range at 1-year follow-up. This interpretation is only suggestive, and it will be important to understand how to alter the treatment, particularly for couples demonstrating significant relationship distress when entering treatment.

It is important to note that the conceptualization and development of our treatment program benefited greatly from a joint team of OCD and couple specialists. As a result, unlike in some previous studies (e.g., Mehta, 1990), our intervention was truly couple-based and involved more than just partner assistance with exposures. Couples learned empirically supported techniques for effective communication and problem solving and were taught how to apply these to (a) conducting ERP, (b) changing relationship patterns that were maintaining OCD symptoms, and (c) broader (non-OCD related) relationship issues.

Drawbacks of the present study that limit its generalizability include the relatively small sample size and the fact that the patients were naïve to CBT. Although our sample size of 16 couples completing treatment was somewhat small, it should be noted that in the meta-analysis by Eddy et al. (2004), the average sample size in the studies used to calculate within-group effect sizes for individual ERP was identical to our sample size, $n = 16$. Thus, conclusions regarding the effectiveness of individual ERP are based on similarly sized samples. Likewise, our investigation included 16 treatment sessions; again, on average, individual ERP in the Eddy et al. study included 16 sessions. Furthermore, our sample afforded ample power to detect the typically large

effects of CBT for OCD. The fact that our sample was treatment naïve could account for the large improvement in symptom scores, especially relative to other studies in which patients were not excluded because of previous treatment failure.

As noted previously, the specific effects of CBT techniques for OCD (e.g., ERP) are well established in randomized controlled trials (e.g., Foa et al., 2005; Lindsay et al., 1997). Yet the design of the present study does not allow us to ascertain any other potentially effective components of this intervention. As a next step, direct comparisons to individual CBT, or even to couple therapy substituting an inactive control intervention for the empirically supported couple-based techniques, would be necessary to more clearly isolate active ingredients and the extent to which adding couple-based techniques enhances individual CBT.

Another factor in the current investigation that limits the generalizability of the findings is that all but one of the patients were female. Given that approximately half of adults with OCD are males, this raises questions regarding what types of treatments the two genders might seek or respond to favorably. For example, are females more likely to seek treatment that includes a partner supporting them than males, who might find it personally or socially inappropriate to ask for the help of a partner in overcoming their disorder? Likewise, even if both genders were to seek treatment in a couple-based intervention, would female patients be more responsive to this couple-based intervention? Given the very early stages of research on this form of intervention, it will be important to explore gender issues and how they relate to seeking and responding to treatment in couple versus individual formats.

Within the context of these limitations, the current findings are encouraging and serve to remind us of the need for continued exploration of how to make highly efficacious interventions even stronger. A prevailing belief is that to a large extent, we have learned how to treat OCD and that the effect sizes that result from individual ERP are one of the major successes of CBT. Indeed, within psychotherapy outcome research in which an effect size of 0.80 is considered large, an average effect size of 1.53 for individual ERP across studies is quite strong (Eddy et al., 2004). Yet, not all patients receiving individual ERP achieve high endstate functioning or maintain improvement over time. The intervention described in the current investigation is an attempt to build on the strength of ERP by including a partner in treatment so that the patient's intimate social environment supports the treatment goals, contributes to generalization of exposure in the real world on an ongoing basis, and promotes long-term

maintenance through reinforcing healthy patient behaviors and decreasing relationship distress as a diffuse stressor. Rather than designing totally new interventions, our hope is that such augmentation efforts can serve as a model of one strategy for fine tuning our already existing efficacious treatments.

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