ORIGINAL ARTICLE

Efficacy of Interpersonal Psychotherapy for Postpartum Depression

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Background: Postpartum depression causes women great suffering and has negative consequences for their social relationships and for the development of their infants. Research is needed to evaluate the efficacy of psychotherapy for postpartum depression.

Methods: A total of 120 postpartum women meeting *DSM-IV* criteria for major depression were recruited from the community and randomly assigned to 12 weeks of interpersonal psychotherapy (IPT) or to a waiting list condition (WLC) control group. Subjects completed interview and self-report assessments of depressive symptoms and social adjustment every 4 weeks.

Results: Ninety-nine of the 120 patients completed the protocol. Hamilton Rating Scale for Depression (HRSD) scores of women receiving IPT declined from 19.4 to 8.3, a significantly greater decrease than occurred in the WLC group (19.8 to 16.8). The Beck Depression Inventory (BDI) scores of women who received IPT declined from 23.6 to 10.6 over 12 weeks, a significantly greater decrease than occurred in the WLC group (23.0 to 19.2). A significantly greater proportion of women who received IPT recovered from their depressive episode based on HRSD scores of 6 or lower (37.5%) and BDI scores of 9 or lower (43.8%) compared with women in the WLC group (13.7% and 13.7%, respectively). Women receiving IPT also had significant improvement on the Postpartum Adjustment Questionnaire and the Social Adjustment Scale–Self-Report relative to women in the WLC group.

Conclusions: These findings suggest that IPT is an efficacious treatment for postpartum depression. Interpersonal psychotherapy reduced depressive symptoms and improved social adjustment, and represents an alternative to pharmacotherapy, particularly for women who are breastfeeding.

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WOMEN of childbearing age are at high risk for depression.[1,2] Depression after childbirth is particularly problematic because of the social role adjustments required of women during this time.[3] For example, women must provide immediate and constant care for their infants. Women also face challenges in their relationships with spouses or partners, and often find that they must redefine their relationships with their family members and friends. Finally, women frequently need to make adjustments in their work roles to accommodate the care required by their infants.

There is good evidence that mother-infant bonding is impaired by maternal depression.[4-6] Moreover, several studies have documented a link between postpartum depression and later problems in children's cognitive and social-emotional development.[4-6] Effective treatment of postpartum depression is needed to prevent these problems.

Antidepressant medications, cognitive behavioral therapy, and interpersonal psychotherapy (IPT) have been validated as effective treatments for major depression.[7] Concerns about the possible effects of antidepressant medications on the developing fetus and the breastfed infant have often led to the exclusion of pregnant and breastfeeding postpartum women from depression treatment trials. Such women may also exclude themselves because of a desire to avoid medication.[8-10] Although there is evidence that antidepressants are relatively safe for nursing infants,[11,12] the American Academy of Pediatrics[13(p139)] classifies most antidepressants as "drugs whose effect on nursing infants is unknown but may be of concern." Given these considerations, it is important that nonpharmacologic interventions be evaluated for use with postpartum women.

Although previous studies of psychotherapy for postpartum depression

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PATIENTS AND METHODS

PATIENTS

Potential subjects were identified using a multistage process of community screening. Women delivering in 4 Iowa counties (Polk, Johnson, Linn, and Scott) between October 1995 and July 1997 were sent letters inviting them to participate in a study of postpartum emotional adjustment. Women were eligible if they were at least 18 years old and were married or living with a partner for at least 6 months. Women who formally consented to participate completed the Inventory to Diagnose Depression (IDD).[23] Those meeting criteria for depression on the IDD were interviewed by telephone using a modified version of the Structured Clinical Interview for *DSM-IV* (SCID)[24,25] and the Hamilton Rating Scale for Depression (HRSD).[26] Women who met *DSM-IV*[27] criteria for a major depressive episode and had a minimum score of 12 on the amended 17-item version of the HRSD[7] were asked to participate in the treatment phase of the study.

Following Elkin et al,[7] exclusion criteria included (1) a lifetime history of bipolar disorder, schizophrenia, organic brain syndrome, mental retardation, or antisocial personality disorder; or (2) a current diagnosis of alcohol or substance abuse, panic disorder, somatization disorder, or 3 or more schizotypal features. Antisocial personality and schizotypal features were assessed using relevant items from the Structured Interview for *DSM-IV* Personality (SIDP).[28] Women with psychotic depression were excluded as well as women with serious eating disorders or obsessive-compulsive disorders.

Women who formally consented to participate were reinterviewed in their homes using the current major depressive episode module of the SCID and HRSD. A total of 120 women who continued to meet *DSM-IV* criteria for a major depressive episode and had an HRSD total score of at least 12 were randomly assigned (using a random number table) to the IPT or WLC groups. Rerandomization occurred after the 77th and 108th patients to achieve equal numbers in the 2 groups. Randomization was conducted separately for patients with and without a history of major depression, resulting in an equal representation of these patients in each group.

TREATMENTS

Therapists and Training

Ten therapists in private practice in the 4 communities from which study subjects were recruited conducted the IPT treatment. All were experienced psychotherapists who had PhD or PsyD degrees in clinical or counseling psychology. Their average age was 42 years (range, 29-51 years) and their mean level of postdoctoral experience was 14 years (range, 3-24 years). Five of the therapists were men and 5 were women. Each therapist treated between 1 and 11 patients (median, 6.5).

Prior to the study, therapists read and became familiar with the Interpersonal Psychotherapy of Depression manual[18] and the manual for Interpersonal Psychotherapy for Postpartum Depression (unpublished manual, 1993, available from M.W.O. on request). Each therapist attended 40 hours of didactic lectures and videotape presentations, meeting the standard for training of IPT therapists used in extramural research projects.[29] The training was designed to foster competence in IPT and included a detailed review of the treatment manual, using videotaped sessions to illustrate each of the interpersonal problem areas and the strategies used to address them. Therapists were required to complete a 12-session course of IPT with a postpartum depressed woman at a satisfactory level of competence and adherence prior to entering the treatment phase of the study. During the treatment phase, therapists were continually monitored for adherence to the IPT treatment manuals.[18] Therapists were required to videotape or audiotape all of their IPT sessions for use in supervision with the authors.

Interpersonal Psychotherapy

Interpersonal psychotherapy was administered in 12 hour-long individual sessions during a 12-week period in standard fashion according to the manual of Klerman et al[18] with some modifications to accommodate the postpartum context of these depressions. The initial sessions were concerned with identifying depression as a medical disorder afflicting the patient, placing the depression in an interpersonal context, reviewing the patient's current and past interpersonal relationships, and relating problematic aspects of these relationships to the patient's depression.[18] Finally, the therapist and patient collaboratively identified the IPT problem area(s) most related to the episode and set treatment goals.[18]

During the intermediate sessions the therapist focused on the interpersonal difficulties identified by the patient. Common postpartum and IPT problem areas included conflict with partner or extended family (interpersonal disputes), loss of social/work relationships (role transition), and losses associated with the birth, such as previous perinatal loss or the death of significant others (grief). In the final sessions the therapist reinforced the patient's sense of competence in overcoming depression, discussed plans for termination of therapy, and worked with the patient to develop plans should the depression recur.[18]

have been favorable,[9,14-16] the results of these studies have been compromised by design limitations.[17] For example, studies have included patients with minor depression as well as major depression,[9,14,15] used "nonmanualized" or "nonstandard" therapies,[9,14,15] used therapists who were not professionally prepared (eg, health visitors, nurses),[14,15] or used therapies that were principally aimed at improving the mother-infant relationship rather than treating depression.[16] These limitations suggest the importance of evaluating a well-defined standard psychotherapy for the treatment of postpartum depression.

We selected IPT[18] for evaluation because of its demonstrated efficacy for major depression,[7,17,19,20] and because its focus on interpersonal relationships directly addresses problems experienced by depressed postpartum women.[21,22] We report the results of a controlled study of the efficacy of 12 weeks of treatment with IPT compared with a waiting list condition (WLC) in the treatment of postpartum depression.

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Waiting List Condition

Patients assigned to the WLC group waited 12 weeks before receiving treatment. Although no therapy was provided during this time, clinical assessments using the HRSD were conducted by telephone at 4, 8, and 12 weeks after assignment to the WLC group. Brief telephone contacts also were made at 2, 6, and 10 weeks to evaluate the patient's suicide risk and ability to wait for treatment.

We elected to use a WLC condition for 2 reasons. First, there remains substantial controversy in psychotherapy treatment trials regarding what constitutes an appropriate psychotherapy "placebo" condition.[30-32] Problems are inherent in virtually all psychotherapy placebo models. The use of a no-treatment comparison in psychotherapy trials is acknowledged as a valid comparison condition,[30] and is considered to meet accepted scientific standards for efficacy, ie, that the effects of a specific treatment be better than no treatment, or equal to or better than an effective alternative treatment.[33] Second, a WLC reflects the typical experience of the women in the treatment trial. We used community screening to recruit women for the study and none of the women randomized to the WLC was actively seeking treatment. A WLC thus reflected what would have happened to these women had their depressive episodes remained unidentified.

MEASURES

Interview Assessment

A modified version of the SCID, nonpatient edition, for *DSM-IV*,[25] in combination with the schizotypal and antisocial modules from the SIDP,[28] was used to screen women prior to treatment assignment. The modified SCID included the following sections in order: past periods of psychopathological symptoms, psychopathological symptoms during the past month, current social functioning, and the mood episodes module (current major depressive episode, past depressive episode, and dysthymia). Time of onset, melancholic features, and atypical features also were evaluated. In addition, the SCID was modified to screen for alcohol/substance abuse, panic disorder, obsessive-compulsive disorder, anorexia nervosa, and bulimia nervosa during the past month. Screening questions for previous manic episodes or somatization disorder were also included. Finally, the SCID psychotic screening module, the SIDP schizotypal module, and the SIDP antisocial module were included. A shortened version of the modified SCID, which focused on the current major depressive episode, was used during the in-home pretreatment and posttreatment interviews.

The amended 17-item version of the HRSD (adding items on hypersomnia, hyperphagia, and weight gain)[7] was used as one of the principal outcome measures. The HRSD was administered by an independent clinician during the in-home pretreatment and posttreatment assessments and at 4 and 8 weeks after group assignment. During telephone assessments (4- and 8-week and 30% of posttreatment assessments), direct questioning of subjects elicited information that usually was obtained through direct observation (retardation and agitation). The clinical interviewers who administered the HRSD were not blinded to treatment status. Our decision to use nonblinded raters was based on our desire to minimize attrition and our concern that we would have a high drop-out rate, particularly in the WLC group. Hence, we elected to use clinical interviewers who worked with the same subject throughout the treatment trial.

Using intraclass correlation to account for consistency and absolute level differences, we obtained an intraclass correlation of 0.93 for the 17-item HRSD total score based on 192 interviews (48 interviews from each assessment period) and 7 separate interviewer-blind rater pairs.

Self-report Assessments

Subjects completed the IDD[23] during the screening phase of the study. Patients randomized to a treatment condition completed the BDI,[34] the Social Adjustment Scale–Self-Report (SAS-SR),[35] the Dyadic Adjustment Scale (DAS),[36] and the Postpartum Adjustment Questionnaire (PPAQ).[3] Excepting the IDD, these measures were administered before therapy and after 4, 8, and 12 weeks following assignment to treatment group.

STATISTICAL ANALYSES

An independent samples 2-tailed *t* test was used to compare the IPT and WLC groups on initial demographic and clinical characteristics. For most outcome measures (including the BDI, HRSD, PPAQ, SAS-SR, and DAS), a 2 groups (IPT vs WLC) × 4 assessment occasions (pretherapy, 4 weeks, 8 weeks, 12 weeks) repeated-measures analysis of variance was conducted using an α of .05. These analyses yielded a multivariate "exact F" for the group × assessment occasion interaction. For categorical variables, a χ^2 test was employed, using an α level of .05. All statistical tests were 2 tailed. Sample size was determined on the basis of a power analysis and was increased from 108 to 120 about two thirds of the way through the study.

RESULTS

PATIENT CHARACTERISTICS

Recruiting letters were sent to 20 620 women recently delivered of an infant. Following several screening steps, 345 women met criteria for major depressive episode on the SCID. A total of 77 women met exclusion criteria, 132 women declined participation, and 16 women were treated as training cases, leaving 120 depressed women who participated in the study.

Table 1 presents the demographic and clinical characteristics of study subjects. Almost all study subjects were white and tended to be well educated, which is generally consistent with the populations of the Iowa counties from which the subjects were recruited. Excluding 3 patients who were experiencing a chronic depression (episode length >2.5 years), the average episode length for study subjects was approximately 7 months.

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Table 1. Demographic and Clinical Characteristics of Study Subjects*

	IPT Group (n = 60)	WLC Group (n = 60)
Age, y	29.4 ± 4.9	29.7 ± 4.5
Partner age, y	30.7 ± 5.8	31.1 ± 5.2
Education, y	14.5 ± 2.0	14.9 ± 1.8
Partner education, y	14.8 ± 2.2	14.8 ± 2.1
Working, % yes	63.3	63.3
Marriage length, y	5.2 ± 3.7	5.4 ± 3.2
Parity, % primiparous	26.7	23.3
Breastfeeding†, % yes	50.0	31.5
Past major depressive episode, % yes	66.7	68.3
Postpartum onset, % yes	68.3	63.3
Episode length, mo	8.9 ± 12.9	7.5 ± 7.2
Entry into protocol, mo	6.1 ± 0.79	6.2 ± 0.70

*Data are presented as mean ± SD unless otherwise indicated. IPT indicates interpersonal psychotherapy; WLC, waiting list condition. None of these differences was statistically significant. All P>.20 except breastfeeding (P = .08). There was no interaction between breastfeeding and treatment assignment for either the Hamilton Rating Scale for Depression or the Beck Depression Inventory (both P>.60).

†In the IPT and WLC conditions breastfeeding data were missing for 10 and 6 subjects because of retrospective collection.

Table 2. Depression Outcomes for Completer Subjects*

Outcome Variable	Mean ± SD: IPT Group (N = 48)	Mean ± SD: WLC Group (N = 51)	Statistics	P
HRSD (Exact $F_{3,95}$ = 10.0, P<.001)				
Initial	19.4 ± 4.6	19.8 ± 5.3	. . .	. . .
4 weeks	15.0 ± 6.5	18.3 ± 5.2	t_{97} = 2.75	.007
8 weeks	12.6 ± 7.0	16.4 ± 6.5	t_{97} = 2.81	.006
12 weeks	8.3 ± 5.3	16.8 ± 8.4	t_{97} = 5.98	<.001
BDI (Exact $F_{3,95}$ = 8.53, P<.001)				
Initial	23.6 ± 7.2	23.0 ± 6.9	. . .	. . .
4 weeks	17.7 ± 8.0	21.6 ± 8.1	t_{97} = 2.41	.02
8 weeks	13.6 ± 7.5	19.1 ± 8.9	t_{97} = 3.29	.001
12 weeks	10.6 ± 6.8	19.2 ± 8.7	t_{97} = 5.46	<.001

*IPT indicates interpersonal psychotherapy; WLC, waiting list condition; HRSD, Hamilton Rating Scale for Depression; BDI, Beck Depression Inventory; and ellipses, not applicable.

ATTRITION

Twelve (20%) of 60 patients withdrew from the IPT group and 9 (15%) of 60 patients withdrew from the WLC group, a nonsignificant difference (χ^2_1 <1, P=.47). Overall, 42.9% of the attrition occurred within the first 4 weeks, 23.8% occurred between 4 and 8 weeks, and the rest occurred between 8 and 12 weeks after treatment assignment. There were no significant differences between dropouts and completers on any demographic or clinical variables.

OUTCOME ANALYSES: DEPRESSION

The original design called for a repeated-measures (pretherapy and 4, 8, and 12 weeks after beginning of therapy) analysis of covariance using the presence/absence of prior major depressive episode as a covariate. Because this factor had no effect on BDI or HRSD outcomes (*t* in both cases <.35, P>.7), it was not used as a covariate in the analyses.

Intention-to-Treat Analyses

Intention-to-treat analyses, which included all subjects assigned to the IPT or the WLC group, were conducted for all measures of depression. A repeated-measures analysis of variance using the HRSD revealed a significant group × assessment occasion interaction in favor of IPT (exact $F_{3,116}$=5.00, P=.003). There was a significant group × assessment occasion interaction in favor of IPT based on BDI scores (exact $F_{3,116}$=6.45, P < .001). Recovery was defined a priori as an HRSD score of 6 or lower or a BDI score of 9 or lower.[7] Recovery rates based on HRSD scores favored treatment with IPT (31.7%) over the WLC (15%) (χ^2_1=4.66, P=.03). Based on BDI scores (BDI ≤9), patients treated with IPT had a significantly greater rate of recovery (38.3%) than did women assigned to the WLC group (18.3%) (χ^2_1=5.91, P=.02).

Completer Analyses

A repeated-measures analyses of variance for both the HRSD and the BDI revealed a significant group × assessment occasion interaction in favor of IPT (**Table 2**). Follow-up *t* tests comparing the IPT and the WLC groups revealed that significant differences on the HRSD and BDI were already apparent at the 4-week assessment (Table 2).

Patients receiving treatment with IPT were significantly more likely to meet recovery criteria on the HRSD (37.5%) than patients in the WLC group (13.7%) (χ^2_1=7.40, P=.007). In addition, a significantly greater proportion of patients treated with IPT recovered based on BDI criteria (43.8%) than patients assigned to the WLC group (13.7%) (χ^2_1=10.99, P=.001). Finally, significantly fewer women in the IPT group met criteria for *DSM-IV* major depressive episode at the 12-week assessment (12.5%) compared with women in the WLC group (68.6%) (χ^2_1=32.1, P<.001).

We also evaluated response to treatment (defined a priori as ≥50% reduction in symptoms). Based on HRSD scores, a significantly greater proportion of patients treated with IPT responded to treatment (62.5%) than patients assigned to the WLC group (17.6%) (χ^2_1=20.84, P<.001). Similarly, based on BDI scores, a significantly greater proportion of patients receiving treatment with IPT responded to treatment (60.4%) than patients in the WLC group (15.7%) (χ^2_1=21.14, P<.001).

OUTCOME ANALYSES: PSYCHOSOCIAL ADJUSTMENT

For the SAS-SR, there was a significant group × assessment occasion interaction in favor of IPT (**Table 3**). Follow-up *t* tests revealed that significant differences in the predicted direction emerged at the 4-week assessment (Table 3). Each of the relevant subscales showed significant group × assessment occasion effects in favor of IPT including "work in the home" (exact $F_{3,92}$=4.12, P=.009),

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"work outside of the home" (exact $F_{3,44}=7.41$, $P<.001$), "relationship with spouse" (exact $F_{3,90}=7.22$, $P<.001$), "relationship with children older than 2 years" (exact $F_{3,64}=2.78$, $P<.05$), "relationship with immediate family" (exact $F_{3,89}=5.15$, $P=.002$), and "relationships with friends" (exact $F_{3,93}=4.88$, $P=.003$).

On the specific measure of postpartum adjustment, the PPAQ, there was a significant group × assessment occasion effect in favor of IPT (Table 3). Follow-up *t* tests revealed that significant differences in the predicted direction emerged at the 8-week assessment (Table 3). Several subscales showed similar significant group × assessment occasion effects in favor of IPT including "work in the home" (exact $F_{3,93}=4.61$, $P=.005$), "relationship with spouse" (exact $F_{3,91}=4.87$, $P=.003$), "relationships with children other than the baby" (exact $F_{3,70}=4.67$, $P=.005$), and "relationships with friends" (exact $F_{3,94}=2.72$, $P=.05$). In contrast to the case for the SAS-SR, there was not a significant effect for "work outside of the home" (exact $F_{3,42}=1.54$, $P=.22$), or "relationships with other family members" (exact $F_{3,93}=2.43$, $P=.07$). Also, there was not a significant difference between the 2 groups on the "relationship with new baby" subscale (exact $F_{3,93}=1.90$, $P=.13$). This may be due to the fact that even prior to therapy, women in both conditions were reporting very little dissatisfaction/disturbance in their relationship with their infants.

The final psychosocial measure that was obtained at each of the 4 therapy assessments was the DAS, a specific measure of adjustment in relationship with partner. There was not a significant group × assessment occasion effect for this measure (Table 3). However, there was a significant group × assessment occasion effect for the Dyadic Satisfaction subscale of the DAS in favor of IPT (exact $F_{3,95}=3.13$, $P=.03$). The interaction effects for the 3 other subscales, Dyadic Consensus, Dyadic Cohesion, and Affectional Expression, were not significant.

Table 3. Psychosocial Outcomes for Completer Subjects*

Outcome Variable	Mean ± SD: IPT Group (N = 48)	Mean ± SD: WLC Group (N = 51)	Statistics	*P*
Social Adjustment Scale–Self-Report (Exact $F_{3,95}$ = 9.21, $P<.001$)				
Initial	2.44 ± .31	2.48 ± .37	. . .	. . .
4 weeks	2.26 ± .35	2.47 ± .40	t_{97} = 2.73	.008
8 weeks	2.05 ± .33	2.36 ± .42	t_{97} = 4.01	<.001
12 weeks	1.93 ± .34	2.35 ± .45	t_{97} = 5.16	<.001
Postpartum Adjustment Questionnaire (Exact $F_{3,95}$ = 9.10, $P<.001$)				
Initial	2.74 ± .34	2.69 ± .33	. . .	. . .
4 weeks	2.59 ± .36	2.66 ± .32	t_{97} = 0.96	NS
8 weeks	2.44 ± .31	2.62 ± .36	t_{97} = 2.59	.01
12 weeks	2.33 ± .29	2.57 ± .38	t_{97} = 3.54	.001
Dyadic Adjustment Scale (Exact $F_{3,95}$ = 1.89, P = .14)				
Initial	93.36 ± 19.15	87.60 ± 24.66	. . .	. . .
4 weeks	97.34 ± 20.34	87.04 ± 24.99	t_{97} = 2.24	.03
8 weeks	100.37 ± 19.34	88.65 ± 25.62	t_{97} = 2.55	.01
12 weeks	101.19 ± 20.73	88.69 ± 27.57	t_{97} = 2.54	.01

**IPT indicates interpersonal psychotherapy; WLC, waiting list condition; ellipses, not applicable; and NS, nonsignificant.*

COMMENT

Interpersonal psychotherapy resulted in significant improvement in depressive symptoms relative to the WLC based on (1) the absolute reduction in symptom levels as measured by the HRSD and the BDI; (2) the proportion of women who responded to treatment (ie, ≥50% reduction in symptom severity as measured by the HRSD and the BDI); (3) the proportion of women who met HRSD and BDI criteria for recovery; and (4) the proportion of women who no longer met *DSM-IV* criteria for major depression. Women assigned to the WLC group experienced little improvement over 12 weeks (15% and 17% reduction in symptoms based on the HRSD and BDI, respectively), suggesting that recovery without treatment occurs slowly. Moreover, these women had already been depressed for an average of about 7 months prior to the beginning of the waiting period. The efficacy of the treatment with IPT, the lack of improvement in the WLC group, and the long duration of these episodes all point to the importance of beginning treatment with postpartum depressed women as soon as possible.

Patients receiving IPT for postpartum depression had significant improvement in their psychosocial functioning based on the SAS-SR and the PPAQ compared with women in the WLC group. Findings from both measures converged to suggest that women's adjustment in managing their households, as well as their relationships with their partners and children (other than their infants) improved as a consequence of treatment with IPT. However, these patients did not reach normative levels on either measure.[3,37] Women did not report much disturbance in their relationship with their new infants even before therapy, leaving relatively little room for improvement.

In contrast to scores reflecting patients' relationship with their infants, the pretreatment DAS total scores (mean=90.4) easily met the criterion for marital distress (score <100) used in other treatment studies.[38,39] Treatment with IPT resulted in an increase of about one third of an SD in overall marital adjustment compared with no change in the marital adjustment of the women in the WLC group, though this difference was not statistically significant. However, the Dyadic Satisfaction subscale did show a significant change associated with treatment. This subscale includes critical items reflecting contemplation of divorce, arguing, thinking positively about the relationship, overall happiness, and commitment to the relationship, among others.[36] These types of items may reflect characteristics of the relationship that are dependent on the woman's personal perspective more than the partner's behavior. Change in other aspects of the relationship may require the participation in therapy of both members of the dyad.

During the treatment phase of the study, we used clinical evaluators who were not blinded to the subject's treatment status. There were 2 reasons we chose not to use blinded clinical evaluators. First, we believed that keeping interviewers blind to treatment status when one group was receiving treatment and one group was not would have been nearly impossible. We were concerned that subjects could too easily (or inadvertently) reveal whether or not they were receiving treatment. Sec-

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ond (and more importantly), we believed that establishing a relationship between the clinical evaluators and the study subjects would serve to reduce attrition, particularly for the women assigned to the WLC group. The low overall attrition rate of 17.5% suggests that addressing this potential problem was helpful, particularly given the low rate of attrition in the WLC group.

There are several streams of evidence suggesting that the HRSD scores obtained in our study were not compromised by the lack of independent evaluators. First, BDI and HRSD scores were highly correlated and gave essentially the same results. Both the proportion of patients who were recovered and the proportion of patients who responded to treatment were similar when BDI and HRSD scores were compared. Moreover, there was a high level of agreement, both with respect to consistency and absolute level of rating, between a fully blinded clinical evaluator who rated tapes of the clinical interviews and the clinical evaluators who conducted the interviews.

To assess bias on the part of the clinical interviewers, who were not blind to the experimental condition of subjects, we also determined the absolute differences in HRSD scores for the clinical interviewer and blind rater between the IPT and WLC groups. We examined this question statistically with 3-way analysis of variance. The 3-way interaction, 2 groups (IPT, WLC) $\times$ 4 assessment occasions (pretherapy, 4 weeks, 8 weeks, 12 weeks) $\times$ 2 raters (blind, nonblind), that would suggest bias in favor of the IPT group, was not significant (exact $F_{3,184}=1.56$; $P=.20$). In addition, the absolute differences between the blind and the nonblind raters were quite small, particularly at the initial and 12-week assessments (initial and 12-week assessment differences both 0.1 on the HRSD). These findings converge to suggest that biases in the HRSD ratings, if they occurred, were negligible.

Study participants were mostly white, in a relatively stable relationship with a partner, and on average were relatively well educated. Participants also had few comorbid diagnoses and had relatively long episodes of depression prior to entry into the study. As a consequence, future research on IPT for postpartum depression should include patients from more urban settings that have larger populations of minority women and women who have comorbid diagnoses such as panic disorder.

The findings of this study have several important implications. First, women suffering from postpartum depression should be treated as quickly as possible. The long duration of episodes prior to enrollment in our study and the minimal change in symptoms in women who did not receive treatment both suggest that nothing is to be gained by delaying treatment. Second, IPT is an effective treatment that can be offered to depressed postpartum women with confidence. The availability of an efficacious nonpharmacologic treatment is important because many women may wish to avoid taking psychotropic medications if they are breastfeeding (more than 40% in our sample), and because there is a relative paucity of controlled research on the efficacy of antidepressant medication for depression in the postpartum period.[9] These findings should give clinicians confidence that IPT is an effective and acceptable treatment for postpartum depression.

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