INTERPERSONAL PROBLEMS AND THE OUTCOME OF INTERPERSONALLY ORIENTED PSYCHODYNAMIC TREATMENT OF GAD

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The present study tested hypotheses concerning interpersonal problems and the course of brief psychodynamic treatment of generalized anxiety disorder (GAD). The authors found that the largest changes from pre- to post-therapy were evident for the Nonassertive, Exploitable, and Intrusive subscales of the Inventory of Interpersonal Problems. Relatively small changes were seen on the Overly Nurturant subscale, which was hypothesized to be most relevant to GAD. Changes in interpersonal problems were significantly associated with improvement in symptoms and worry. Brief dynamic therapy was not found to uniquely improve interpersonal problems compared with supportive therapy, although the psychodynamic approach was statistically and clinically superior to supportive therapy on symptomatic remission rates.

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Whereas an emphasis on interpersonal issues is the hallmark of psychodynamic and interpersonal therapies such as Klerman, Weissman, Rounsaville, and Chevron's (1984) interpersonal psychotherapy and Luborsky's (1984) supportive–expressive psychodynamic therapy, interpersonal issues and problems also play an important role in many other forms of psychotherapy, such as experiential therapy, variants of cognitive therapy (e.g., Safran & Segal, 1990), and family and marital therapies. Regardless of the form of therapy, improvement in social relationships and interpersonal problems is often one of the central goals of treatment.

Several studies of various short-term psychotherapies have reported that interpersonal problems improve significantly from pre- to posttreatment (Cloitre, Koenen, Cohen, & Han, 2002; Muran et al., 1995; Rosenthal, Muran, Pinsker, Hellerstein, & Winston, 1999; Shapiro et al., 1994; Vittengl, Clark, & Jarrett, 2003), although recovery from interpersonal problems clearly takes longer than does symptomatic recovery (Barkham et al., 2002). The literature, however, is less consistent about the types of interpersonal changes that occur over the course of psychotherapy (Borkovec, Newman, Pincus, & Lytle, 2002; Horowitz, Rosenberg, Baer, Ureno, & Villaseñor, 1988; Horowitz, Rosenberg, & Bartholomew, 1993; Maling, Gurtman, & Howard, 1995; Vittengl et al., 2003).

Interpersonal problems are not only a focus of treatment outcome but also can serve to identify, at treatment onset, those patients who benefit relatively more or less from brief psychotherapy, in part because interpersonal problems are often a marker for personality disturbances (Pilkonis, Yookyung, Proietti, & Barkham, 1996; Stern, Yookyung, Trull, Scarpa, & Pilkonis, 2000). For example, Alden and Capreol (1993) reported bet-

ter outcomes from a graded exposure treatment, but not a skills training therapy, among patients who also had interpersonal problems related to distrustful and angry behavior.

We have been developing a short-term interpersonally oriented psychodynamic treatment for generalized anxiety disorder (GAD). This approach builds on Luborsky's (1984) general supportive–expressive psychodynamic model and relies on the core conflictual relationship theme (CCRT) method to identify and interpret central interpersonal themes (Luborsky & Crits-Christoph, 1990). The development of our interpersonally oriented psychodynamic therapy for GAD is supported by several lines of research suggesting that interpersonal factors may be involved in the etiology or maintenance of GAD symptoms. For example, the content of worry for patients with GAD more frequently involves interpersonal fears than other topics (Breitholtz, Johansson, & Öst, 1995; Roemer, Molina, & Borkovec, 1997). In addition, a bias to social threat cues is evident in GAD (MacLeod, Matthews, & Tata, 1986; Mathews & MacLeod, 1985; Mogg, Matthews, & Eysenck, 1992), as well as greater vigilance for, and orientation to, threatening faces relative to neutral faces compared with controls (Bradley, Mogg, White, Groom, & de Bono, 1999) and with depressed participants (Mogg, Millar, & Bradley, 2000). Furthermore, GAD is more strongly related to marital conflict or dissatisfaction than are other anxiety or affective disorders (Friedman, 1990; McLeod, 1994; Whisman, Sheldon, & Goering, 2000). As to the specific form of interpersonal difficulties, it has been found that individuals with GAD, compared with those without GAD, are more likely to show role-reversed (i.e., a child/adolescent/young adult taking on a parental role in the family) and enmeshed relationships (Cassidy, 1995; Cassidy & Shaver, 1999). The theoretical connection here is that some individuals with GAD may have been placed in an interpersonal context in which they prematurely needed to do the planning and caretaking. Without the maturity, resources, and appropriate context needed for healthy caretaking, some individuals (perhaps because of the severity of the stress or preexisting biological or psychosocial vulnerabilities) might develop pathological worry about taking care of others and respond with excessive nurturance to cope with these worries.

An initial study (Crits-Christoph, Connolly, Azarian, Crits-Christoph, & Shappell, 1996) examined the outcomes of 26 patients with GAD who received our supportive–expressive (SE) treatment approach and found that treatment produced significant improvements on a range of outcome measures. The present investigation combines data from this first study with additional cases excluded from the original study and data from a new pilot study comparing SE to supportive therapy for GAD. In this pooled database, we test several hypotheses related to the role of interpersonal problems in SE treatment of GAD. On the basis of the SE treatment model and the literature reviewed above, we expected that (a) interpersonal problems thought to be most relevant to the interpersonal theory of GAD (i.e., overly nurturant) would demonstrate moderate changes over the course of GAD treatment; (b) change in the overly nurturant domain from baseline to termination would be significantly associated with change in symptomatic outcomes, both from baseline to termination and from termination to follow-up (i.e., such interpersonal change would drive subsequent symptomatic change); (c) SE therapy, because of its major focus on interpersonal issues, would produce greater change in interpersonal problems (Inventory of Interpersonal Problems [IIP] total score) than would a treatment that did not focus explicitly on interpersonal issues (supportive therapy); and (d) baseline severity of interpersonal problems (IIP total score) would predict treatment outcome.

Method

Participants

Patients used for analyses in the present report were obtained from two studies conducted on interpersonally oriented psychodynamic therapy for generalized anxiety disorder. The first study was an evaluation of 26 patients receiving brief interpersonally oriented psychodynamic treatment for GAD. Results from this study have been reported previously (Crits-Christoph et al., 1996). In addition to the 26 patients who were the focus of the published report, data were collected concurrently on an additional 20 patients treated with the SE model at that time but not included in the published report because they did not fully meet the inclusion/exclusion criteria of that protocol. These included 13 patients who had major depressive disorder (MDD) comorbid with their

GAD and 7 patients who had a *DSM–III–R* (revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders*; American Psychiatric Association, 1987) anxiety disorder not otherwise specified (NOS) diagnosis and met all criteria for the diagnosis of *DSM–IV* (4th edition of the *DSM*; American Psychiatric Association, 1994) GAD except that their worry was only in one sphere rather than two. In addition to the above 46 patients, data were available from a recent randomized pilot study that compared the relative efficacy of SE and supportive therapy in the treatment of patients with a principal diagnosis of *DSM–IV* GAD. In this second study, 31 patients were randomized to one of the two treatment conditions (15 to SE, 16 to supportive therapy). An additional 7 patients were SE therapist-training cases treated in preparation for Study 2. These training cases are excluded in analyses that examine the outcome of SE therapy but are included in analyses that examine the relation between variables. Thus, in total, there were 68 patients who received SE treatment (46 from the first study, including the ones with comorbid MDD and Anxiety NOS, and 22 from the second study, including the 7 training cases). The methods used for the two studies were nearly identical and are summarized below.

Patients for both studies were recruited through the outpatient psychiatric referral line at a major medical center, newspaper advertisements, professional referrals, and personal referrals from friends treated in the department. When patients first contacted the treatment program, they received a 20–30-min semistructured telephone screening evaluation to determine the likelihood of their eligibility for the study. If they were anxious and did not appear to meet any of the medical or psychiatric exclusion criteria, they were scheduled for a diagnostic evaluation.

Patient diagnosis and selection for the first study began with the use of *DSM–III–R,* but with knowledge of the proposed *DSM–IV* criteria for GAD. Two major changes that were made to *DSM–IV* in regard to GAD involved reducing the criteria for somatic symptoms from 6 out of a list of 18 to 3 out of a list of 6 and eliminating the criteria of two separate spheres of worry. The initial evaluation for the first project consisted of the Structured Clinical Interview for *DSM–III–R*, but patients were accepted into the study if they met criteria for GAD as a primary diagnosis as defined by *DSM–IV*. This involved accepting both *DSM–III–R* GAD patients and *DSM–III–R* Anxiety NOS patients (who only had one sphere of worry and therefore did not meet *DSM–III–R* criteria but did meet *DSM–IV* criteria). Patients who met *DSM–IV* criteria for GAD were included in the second study. Abel and Borkovec (1995) have examined the changes in GAD criteria from *DSM–III–R* to *DSM–IV* in patients who met both *DSM–III–R* GAD criteria and *DSM–IV* criteria. They concluded that changes in criteria had little impact on selection in GAD patients for research.

Other inclusion criteria for both studies were (a) patients had to be available for the 16 weeks of study therapy; (b) patients had to understand the nature of the study and provide written, informed consent; and (c) patients who were on psychotropic medication for more than 3 months had to agree not to increase dosage for the duration of the study. Patients in the first study were between the ages of 18 and 65. Patients in the second study were between the ages of 18 and 60.

The exclusion criteria for both studies were the same. Patients who had begun a psychotropic medication within the previous 3 months or who had any acute, unstable, or severe Axis III medical disorder that might interfere with either the safe conduct of the study or the interpretation of the study results were excluded. Patients with any current or past history of bipolar disorder, schizophrenic disorders, or Cluster "A" Axis II personality disorders (schizoid, schizotypal, or paranoid), and patients with any current or past history of seizure disorder (other than febrile seizure as an infant), were also excluded. In addition, patients with a clinically significant organic pathology and patients who, in the previous 12 months, met criteria for alcohol or substance dependence or abuse, obsessive–compulsive disorder, eating disorder, or borderline personality disorder were referred elsewhere.

Treatment

Treatment for the first study consisted of 16 weekly sessions of SE focal psychodynamic psychotherapy followed by three monthly booster sessions. The second study consisted of 16 weekly sessions of either SE therapy or supportive, nondirective therapy for GAD. The SE treatment approach is described in greater detail elsewhere (Crits-Christoph et al., 1997, 1998). In brief, SE treatment was conducted as described

by Luborsky's (1984) general SE treatment manual, supplemented with the SE for GAD specific manual (Crits-Christoph et al., 1995). The goal in SE treatment for GAD is to understand the anxiety symptoms of the patient in the context of interpersonal conflicts. The therapist formulates the interpersonal conflicts by using the CCRT method, which serves as the focus of the therapists' interventions throughout treatment. Through uncovering the patients' relationship pattern, as manifested in current and past relationships and the relationship with the therapist, the conflicts contributing to anxiety symptoms are worked through, and better ways of coping with feelings, expressing one's needs, and responding to others are explored.

Developing and maintaining a positive therapeutic alliance is seen as a crucial aspect of treatment for SE therapy for GAD. Early and frequent interventions related to impending termination of treatment and how termination feelings relate to the patients' CCRT are also key aspects of the treatment model. Modifications of standard SE described in the SE therapy for GAD manual included the interpretation of primitive wishes common in GAD patients, interpretation of resistances and defenses common in GAD patients, and working with issues related to past traumas. The manual also specifies more details of the phases of SE therapy when applied in a 16-session (with boosters) format.

Supportive therapy for GAD in the second study was conducted using the treatment manual for nondirective therapy used by Borkovec and Matthews (1988) and Borkovec and Costello (1993). This treatment approach is based on percent-centered therapy and is oriented toward creating an accepting, nonjudgmental, and empathic environment and directing patients' attention to feelings. Direct suggestion or coping methods are prohibited. Although interpersonal relationships are often discussed by patients in this form of therapy, the treatment manual did not specify that therapists ask about interpersonal relationships, encourage patients to elaborate on their stories about interactions with other people (as SE therapy does), or direct therapists to interpret the content of interpersonal interactions.

Therapists

Details of the procedures for selection, training, certification, and competence evaluation of therapists from the first study have been described elsewhere (Crits-Christoph et al., 1996). For the second study, three therapists who had been trained for 2 years in the use of SE therapy with GAD patients were used. Two therapists were PhD-level psychologists, and one was an MSW who has advanced psychoanalytic training. These three therapists each had a minimum of 10 years of postdegree experience, and each treated 2–3 GAD patients during a preliminary training phase. All three therapists consistently displayed high ratings of adherence and competence, as rated by their supervisor and an independent judge who rated tapes of their sessions. Each of these therapists was also trained in the use of supportive (nondirective) therapy (i.e., the same therapists conducted both forms of treatment in Study 2). Training consisted of didactic presentation of the treatment manual, training cases, and training discussions.

Assessment Measures

A variety of measures were used to capture both interviewer and self-report assessment of anxiety, diagnostic status, other psychiatric symptoms (e.g., depression), interpersonal problems, and general functioning. The outcome measure battery was the same for both studies, with the exception of different versions of the Structured Clinical Interview (SCID) diagnostic measure to assess a principal diagnosis of GAD.

SCID. The SCID for the *DSM–III–R* (Spitzer, Williams, Gibbon, & First, 1990) was used in the first study, and the SCID for *DSM–IV* was used in the second study, (First, Spitzer, Gibbon, & Williams, 1994), to assess Axis I diagnostic status. SCID interviews were conducted by trained independent evaluators and reviewed in a consensus case conference. A principal diagnosis of GAD was required for study entry. *Principal diagnosis* was operationally defined as the disorder associated with the most severe current impairment and/or stress, with the 0–8 distress/impairment severity scale of the Anxiety Disorders Interview Schedule–Revised (ADIS-R; DiNardo, Moras, Barlow, Rapee, & Brown, 1993) used to identify the principal diagnosis.

Hamilton Anxiety Rating Scale (HAM-A). The HAM-A (Hamilton, 1959) is a well-known 14-item inventory that assesses the severity of common symptoms of anxiety. The HAM-A was

administered by trained interviewers who utilized a Structured Interview Guide for the HAM-A (SIGH-A; Bruss, Gruenberg, Goldstein, & Barber, 1994). We conducted a reliability study of the SIGH-A using audiotaped interviews (three raters, each rating nine tapes) and found a per judge (random effect) intraclass correlation coefficient (ICC) of 0.87 for the HAM-A.

Hamilton Depression Rating Scale (HAM-D). The HAM-D (Hamilton, 1960) is a widely used measure that evaluates the severity of depression. A 17-item version of the HAM-D was administered by applying the Structured Interview Guide (SIGH-D; Williams, 1988). A reliability study of the SIGH-D using audiotaped interviews (three raters, each rating nine tapes) yielded a per judge intraclass correlation coefficient of 0.91.

Beck Anxiety Inventory (BAI). The BAI (Beck, Epstein, Brown, & Steer, 1988) is a widely used self-report instrument that assesses common features of anxiety, with a focus on cognitions, on a 4-point severity scale. Beck, Epstein, et al. (1988) reported high internal consistency (Cronbach's alpha = .92), test–retest reliability (0.75), and good discrimination of anxiety disorders from nonanxiety disorders over 1 week.

Beck Depression Inventory (BDI). The BDI (Beck, Steer, & Garbin, 1988) is a 21-item self-report measure that assesses common features of depression on a 4-point severity scale. The BDI is widely used in both drug and psychosocial treatment studies of depression and has demonstrated good internal consistency (mean Cronbach's alpha = .86 across seven studies of psychiatric patients) and adequate concurrent validity (0.72) (Beck, Steer, et al., 1988). The BAI and BDI were administered at baseline, before every treatment session, termination, and 6-month follow-up.

Penn State Worry Questionnaire (PSWQ). The PSWQ (Meyer, Miller, Metzger, & Borkovec, 1990), a patient-rated instrument, assesses largely psychic components of anxiety. This questionnaire has shown high test–retest (0.92), internal consistency (0.97), and reliability (Meyer et al., 1990). The questionnaire appears to yield scores that are not influenced by social desirability and has been shown to differentiate among subjects meeting differing levels of criteria for GAD (all, some, or no *DSM–III–R* criteria) as well as to differentiate GAD from posttraumatic stress disorder (Meyer et al., 1990). The PSWQ

was administered at baseline, termination, and at the 6-month follow-up.

Inventory of Interpersonal Problems (IIP). The IIP (Horowitz et al., 1988) is a self-report instrument that assesses interpersonal problems in eight domains across two dimensions representing affiliation (Love) and control (Dominance). There are two main versions of the IIP, one with 64 items (used here) and one with 32 items. Items ask about "things you find hard to do with other people" or "things that you do too much," with response options ranging from "not at all" to "extremely." Each of the eight subscales (Dominance, Vindictive, Cold, Nonassertive, Overly Nurturant, Socially Avoidant, Exploitable, Intrusive) is the sum of eight items, and a total score is calculated by summing the eight subscales. The internal consistency of the subscales has been reported to be in the range of 0.82 to 0.94, and 10-week test–retest reliability was 0.80 to 0.90 (Horowitz et al., 1988). The total score test–retest reliability during the same period of time was 0.98. In addition to the total score for the IIP and eight subscales, two additional scores reflecting the two major dimensions of the instrument (Dominance and Love) were calculated using the method described by Alden, Wiggins, and Pincus (1990). The IIP was administered at baseline and at termination.

Diagnosticians

Four diagnosticians for the first study and five diagnosticians for the second study were recruited and trained to conduct diagnostic interviews and clinical ratings. All diagnosticians were PhD-level psychologists or near-PhD clinical psychologists. Diagnostic training included reviewing SCID master training tapes, reviewing audiotapes for the Hamilton Depression and Anxiety scales, rating audiotapes of diagnostic interviews conducted by experienced diagnosticians, and participating in joint interviews with expert diagnosticians.

The diagnosticians performed ongoing interviews for a number of projects simultaneously and were kept blind to the specific study for which they were recruited. The interjudge reliability was assessed by having audiotapes of interviews conducted by each diagnostician rated by other diagnosticians. Interrater reliability for the diagnosis of GAD was excellent (kappa coefficient of 0.75).

Results

Characteristics of Samples

Table 1 provides demographic information on the full sample of 84 patients that participated in either Study 1 or Study 2 (either SE training cases or SE supportive therapy main trial cases). The sample was 54% women, and about half were married. The average age was 42.4 ± 10.2 years (range = 22–64). Table 2 presents additional concurrent psychiatric diagnoses. An additional Axis I diagnosis was present in 86% of the patients, and an Axis II diagnosis was evident in 46% of the patients. There were no significant differences (by Fisher's exact test for categorical variables and analysis of variance for continuous scores) at baseline on demographic and clinical variables among the patients in Study 1 compared with those in Study 2, with the exception of a significantly ($p = .027$ by Fisher's exact test) greater percentage of married patients in the first study (65%) compared with the second study (40%) and a significantly greater number of patients with comorbid MDD in the first study compared with the second ($p = .004$ by Fisher's exact

TABLE 1. Demographic Characteristics of Patient Sample ($N = 84$)

Characteristic	Study 1 ($N = 46$) n (%) or $M \pm SD$	Study 2 ($N = 38$) n (%) or $M \pm SD$
Age (years)	41.8 ± 10.2	42.7 ± 10.3
Gender		
Male	20 (44%)	19 (50%)
Female	26 (56%)	19 (50%)
Race		
Caucasian	39 (85%)	34 (89%)
African American	3 (6%)	2 (5%)
Hispanic	2 (4%)	1 (3%)
Native American	0 (0%)	0 (0%)
Asian	1 (2%)	1 (3%)
Other/unknown	1 (1%)	0 (0%)
Married	30 (65%)	14 (37%)
Education		
Less than high school degree	0 (0%)	0 (0%)
High school degree	12 (26%)	3 (8%)
Some college	14 (30%)	15 (39%)
College graduate	12 (26%)	9 (26%)
Postgraduate training	8 (17%)	11 (29%)
Employed full time	29 (63%)	21 (60%)

Note. Study 1 sample includes 46 patients assigned to supportive–expressive treatment. Study 2 sample includes 31 patients randomly assigned to SE or supportive therapy plus 7 SE training cases.

TABLE 2. Comorbid Diagnoses in Generalized Anxiety Disorder Patients at Intake

Diagnosis	Study 1 ($N = 46$) n	%	Study 2 ($N = 38$) n	%
Panic disorder with agoraphobia	5	11	5	13
Posttraumatic stress disorder	0	0	1	3
Social anxiety disorder	6	13	9	24
Dysthymia	2	4	1	3
Major depressive disorder	13	28	23	61
Depression—NOS	6	13	2	5
Any comorbid Axis I disorder	40	87	32	84
Any Axis II disorder	21	46	18	47

Note. Study 1 sample includes 46 patients treated with supportive–expressive (SE) treatment. Study 2 sample includes 31 patients randomly assigned to SE or supportive therapy plus 7 SE training cases.
NOS = not otherwise specified.

test). Within Study 2, there were no significant differences between the 15 patients who received SE compared with the 16 patients who received supportive therapy.

Treatment Retention

For all patients who received SE (combining all SE nontraining cases; $N = 61$), the average number of treatment sessions attended (out of 16) was 13.9 ($SD = 2.8$; range = 4–16). For those patients in the supportive therapy group in Study 2 ($N = 16$), the average number of treatment sessions attended was 14.2 ($SD = 3.9$; range = 4–16). The percentage of patients that completed treatment was similar for SE (both studies pooled) compared with supportive therapy (SE: 97%; supportive therapy: 88%).

Changes in Interpersonal Problems Across SE Treatment

To assess the overall magnitude of change in interpersonal problems over the course of SE therapy, we combined data from the nontraining case SE treatment groups in Study 1 and Study 2, yielding a sample size of 61. Table 3 presents the baseline and end-of-treatment means, *SD*s, paired *t* tests, pre–post correlations, and effect sizes (the difference between the baseline and endpoint means divided by baseline *SD*).

Our specific hypothesis that moderate changes would be evident on the IIP dimension most relevant to GAD, namely, the overly nurturant

TABLE 3. Mean IIP Scores Before and After SE Treatment ($N = 61$)

Scale	Pretreatment		Posttreatment		Paired t test		Pre–post r	Effect size (d)
	M	SD	M	SD	t	p		
Hamilton Anxiety	17.0	6.3	9.5	7.3	−8.45	<.0001	.52	1.18
Hamilton Depression	12.4	5.8	7.3	5.7	−5.76	<.0001	.28	0.89
Beck Anxiety Inventory	21.3	9.7	9.1	10.1	−8.54	<.0001	.40	1.25
Beck Depression Inventory	19.7	9.5	9.6	8.8	−8.56	<.0001	.46	1.07
IIP Total score	79.0	36.8	69.3	37.7	−3.66	.001	.84	0.26
IIP Dominance dimension	−0.14	0.62	−0.05	0.54	1.61	.11	.69	0.15
IIP Love dimension	0.09	0.54	−0.02	0.46	−1.81	.08	.57	0.22
IIP Circumplex subscales								
Dominance	5.2	5.8	5.3	5.6	0.20	.84	.58	0.02
Vindictive	9.7	5.7	8.8	5.8	1.67	.10	.76	0.16
Cold	8.3	4.6	7.5	5.3	1.44	.15	.63	0.19
Socially Avoidant	9.2	6.8	8.3	6.4	2.64	.011	.89	0.14
Nonassertive	11.8	6.1	10.2	6.7	3.22	.002	.76	0.27
Exploitable	13.5	7.4	11.1	6.4	2.94	.005	.67	0.33
Overly Nurturant	11.0	8.5	9.6	7.4	2.41	.019	.81	0.17
Intrusive	9.6	7.0	7.7	6.5	2.79	.007	.72	0.27

Note. $dfs = 56$–59 for t tests. Sample includes 46 cases from Study 1 and 14 from Study 2 treated with supportive–expressive (SE) therapy. All pre–post correlations are significant at $p < .001$. Effect sizes are pre M minus post M, divided by pre SD. IIP = Inventory of Interpersonal Problems.

domain, was not confirmed; only small changes were evident on this scale (effect size = 0.17). However, on the total IIP score, a large (and statistically significant by paired t test) pre to post change was evident. The Dominance and Love dimensions did not show statistically significant changes from pre to post. Among the IIP circumplex subscales, the largest changes were evident for the Nonassertive, Exploitable, and Intrusive subscales. Relatively small changes were seen on the Vindictive, Cold, and Socially Avoidant subscales. No statistically significant mean change was seen on the Dominance subscale.

Pre–post correlations were very high for several of the IIP scores. In particular, high pre–post correlations were evident for the IIP total score ($r = .84$), the Socially Avoidant subscale ($r = .89$), and the Overly Nurturant subscale ($r = .81$). Pre–post correlations for symptom measures were considerably lower (ranging from 0.28 to 0.52).

Because of the high level of comorbidity, especially with mood disorders, that may have led to high levels of other types of interpersonal problems not particularly associated with GAD, we examined only those patients without a concurrent Axis I or Axis II diagnosis ($N = 6$). Among this subgroup, the highest scores at baseline were found for the following IIP subscales: Nonassertive ($M = 13.0$, $SD = 8.7$), Exploitable ($M = 15.5$, $SD = 7.0$), Overly Nurturant ($M =$ 15.3, $SD = 10.3$), and Socially Avoidant ($M = 14.0$, $SD = 7.5$). Pre–post effect sizes for the IIP subscales within this subgroup were 0.16 (Dominance), 0.24 (Vindictive), 0.24 (Cold), 0.30 (Socially Avoidant), 0.33 (Nonassertive), 0.96 (Exploitable), 0.54 (Overly Nurturant), and 0.53 (Intrusive). Thus, there was some evidence for our hypothesis of moderate change on the GAD-relevant interpersonal domain (overly nurturant) when "pure" GAD patients were examined, although the sample size was very small.

Change in Interpersonal Problems in Relation to Change in Anxiety and Worry

For analyses examining changes in interpersonal problems in relation to changes in other outcomes, we used data from all SE cases from both Study 1 ($N = 46$) and Study 2 ($N = 15$), plus SE training cases from Study 2 ($N = 7$), for a total sample of 68 (missing data reduced the sample size to 63 for the HAM-A and HAM-D and to 58 for the PSWQ). Table 4 presents correlations between residual (corrected for baseline level) change in the IIP scales from baseline to end of treatment (16 weeks) and residual change on the HAM-A, HAM-D, and PSWQ (from baseline to end of treatment). In regard to our specific hypothesis, we found that improvement in interpersonal problems in the overly nurturant domain was significantly associated with improvement in

TABLE 4. Correlations Between Change in IIP Scales and Change in Symptom Measures

IIP Scales	Hamilton Anxiety (N = 63)	Hamilton Depression (N = 63)	Penn State Worry (N = 58)
Total score	.47***	.33**	.27*
Dominance dimension	−.06	−.16	−.01
Love dimension	.01	.04	.17
Circumplex subscales			
Dominance	.12	.02	.14
Vindictive	.24	.16	.19
Cold	.39**	.25*	.10
Socially Avoidant	.28*	.16	.35**
Non-Assertive	.33**	.28*	.20
Exploitable	.39***	.41**	.18
Overly Nurturant	.11	.01	.26*
Intrusive	.46**	.26*	.33*

Note. Sample includes 46 patients treated with supportive–expressive (SE) therapy in Study 1 and 22 patients treated with SE during Study 2 (including training cases). Residual change scores from pre- to posttherapy were used on all measures. IIP = Inventory of Interpersonal Problems.
* $p < .05$.   ** $p < .01$.   *** $p < .001$.

the core feature (worry) of GAD, as measured by the PSWQ ($r = .26$, $p < .05$). In addition, change in the IIP total score was significantly associated with improvement in the HAM-A ($r = .47$, $p < .001$), HAM-D ($r = .33$, $p < .01$), and PSWQ ($r = .27$, $p < .05$). Among the IIP subscales, changes on the Cold, Nonassertive, Exploitable, and Intrusive scales were significantly associated with improvement on the HAM-A and HAM-D. Improvement in interpersonal problems in the socially avoidant and intrusive domains were significantly associated with improvement on the PSWQ.

Change in Interpersonal Problems From Pre to Post in Relation to Change in Symptoms From Termination to Follow-up

To see whether change in interpersonal problems over the course of treatment led to subsequent improvement in symptoms (i.e., further improvements or lack of relapse), we examined correlations between residual change in interpersonal problems from baseline to treatment termination (adjusting for baseline) in relation to residual change in symptoms from termination to 6-month follow-up (adjusting for termination). At the follow-up assessments, only the self-report instruments (BDI, BAI, and PSWQ) were available for analysis of change in symptoms. Change in the interpersonal sphere postulated to be most relevant to GAD (overly nurturant) was not significantly associated with subsequent change in the BAI ($r = .12$), BDI ($r = .22$), or PSWQ ($r =$

.08). Across all measures, of the 33 correlations examined, only 5 were statistically significant at the 0.05 level. The strongest associations were between change in the IIP Love dimension and subsequent change in the BAI ($r = .33$, $p < .05$, $N = 55$) and BDI ($r = .40$, $p < .01$, $N = 56$). Fewer problems with affiliation/love in interpersonal relationships by the end of treatment was associated with a further improvement (or lack of relapse) in regard to depressive and anxiety symptoms. Among the IIP individual subscales, a decrease in problems in the vindictive domain was associated with subsequent improvement in the PSWQ ($r = .28$, $N = 51$, $p < .05$), a decrease in the Cold subscale was associated with a subsequent improvement in the BDI ($r = .30$, $N = 56$, $p < .05$), and a decrease in the Intrusive subscale was associated with a subsequent improvement on the BAI ($r = .28$, $N = 55$, $p < .05$).

Does SE Therapy Improve Interpersonal Problems More Than Supportive Therapy?

Study 2 was a pilot randomized trial of SE therapy ($N = 15$) compared with supportive therapy ($N = 16$). Although the study was designed as a pilot-feasibility project with limited statistical power, we examined treatment differences in outcome on a preliminary/exploratory basis. Of the 31 patients randomized to treatment, posttreatment assessments were available on 28 patients (3 patients, 1 in *SE* and 2 in supportive therapy, dropped out and did not provide any

postbaseline assessments). Analyses of covariance, using baseline scores as the covariate and therapy termination (4-month assessment or earlier assessment if patient dropped out) outcomes as the dependent variable, failed to reveal significant differences between SE and supportive therapy on the HAM-A, HAM-D, PSWQ, IIP total score, or any of the IIP subscales. The interpersonal dimension thought to be most relevant to GAD, the Overly Nurturant subscale, showed no difference between the treatment groups, $F(1, 25) = 0.10$, $p = .78$; effect size defined as difference in adjusted termination means divided by pooled $SD = 0.12$). Hierarchical linear modeling analyses that examined linear changes (slope differences) between the SE and supportive therapy groups on the BAI and BDI session scores over the course of the 16 treatment sessions also failed to detect any significant treatment differences: BAI, $F(1, 29) = 1.2$, $p = .28$; BDI, $F(1, 29) = 0.01$, $p = .94$.

However, examination of the proportion of randomized patients who achieved symptomatic remission (defined as a termination HAM-A of $<$ 7; 3 patients who produced no postbaseline data coded as nonremitters), revealed a statistically significant difference between the treatment groups, with 46.0% (7 of 15) of the SE group versus 12.5% (2 of 16) of the supportive group achieving remission, $\chi^2(1) = 4.39$, $p = .036$. If only patients who produced postbaseline data were examined, the difference in remission rates remained significant (14.3% [2 of 14] vs. 50.0% [7 of 14], $\chi^2(1) = 4.09$, $p = .043$. Also of note is the fact that there was a substantial difference in variability in outcomes scores at termination. In particular, the *SD* for the SE group was over 50% larger than the *SD* for the supportive group on the HAM-A (6.7 vs. 4.3).

Prediction of Outcome From Baseline Interpersonal Problems

Using the full sample of all cases that received SE therapy ($N = 68$), we examined baseline IIP scales as predictors of residual change in the HAM-A, HAM-D, and PSWQ from intake to termination. Correlations of the total IIP score at baseline with these three outcomes failed to reach statistical significance ($p > .05$) (HAM-A, $r = .22$; HAM-D, $r = .13$; PSWQ, $r = .23$). In general, of the 33 correlations examined, only 3 reached statistical significance. However, two of

these were with the theoretically important Overly Nurturant subscale. Greater problems in this domain at baseline were associated with less change in anxiety symptoms ($r = .27$, $p < .05$, with the HAM-A) and less change in worry symptoms ($r = .33$, $p < .01$, with the PSWQ). In addition, higher levels of problems related to love and affiliation at baseline were associated with less change on the PSWQ ($r = .26$, $p < .05$).

Discussion

The present study examined interpersonal problems at baseline, and changes in such problems over the course of 16 weeks of interpersonally oriented psychodynamic psychotherapy for GAD, in relation to symptomatic change. As expected, interpersonal problems changed only modestly over the course of a brief SE therapy. The pre–post effect size for the IIP total score was 0.26, and effect sizes for the subscales ranged from 0.02 (Dominance) to 0.33 (Exploitable). Effect sizes for the symptom-based measures were all substantially higher (these ranged from 0.89 for the HAM-D to 1.25 for the BAI). Furthermore, high pre–post correlations on the IIP scales suggested that individual patients ranked similarly on this instrument before and after therapy. The small changes seen on the IIP in the present study of 16 sessions of SE therapy were larger than those reported for a very brief (average of 7.8 sessions) naturalistic psychodynamic therapy (effect size for IIP total score = 0.07) (Schauenburg, Kuda, Sammet, & Strack, 2000) but smaller than those reported for 20 sessions of cognitive therapy for recurrent major depressive disorder (effect size = 1.04; Vittengl et al., 2003). This latter study, however, had a HAM-D severity inclusion criterion, which led to generally higher baseline mean IIP scores (leaving more room for change) and small baseline standard deviations (the denominator of the effect size).

We hypothesized that relatively larger pre–post changes would be evident for interpersonal problems thought to be most relevant to the interpersonal theory of GAD. There was no evidence to support this hypothesis for the GAD sample as a whole (pre–post effect size for the Overly Nurturant subscale = 0.17). Other IIP subscales, notably the Nonassertive and Exploitable subscales, appeared more amenable to change. Our findings are highly consistent with

Horowitz et al. (1988) and Horowitz et al. (1993), who also found that problems in the nonassertion and exploitable domains changed the most in brief psychodynamic therapy. In addition, both the present study and Horowitz et al.'s (1993) study found that problems in the dominating, cold, and vindictive domains changed the least. However, among patients who had GAD but no other Axis I or Axis II disorders, pre–post changes in the Overly Nurturant subscale were substantially larger (effect size = 0.54), and only the Nonassertion subscale showed a larger effect.

Despite the fact that average improvement in interpersonal problems from pre- to posttherapy was small, there was evidence that such changes in interpersonal problems are an important aspect of recovery from GAD symptoms. Improvement in interpersonal problems from pre- to posttherapy was modestly ($r = .47$) associated with improvement in anxiety symptoms as measured on the HAM-A. Interpersonal problems and conflicts have previously been found to be significantly related to improvements in symptoms and functioning in naturalistic studies of psychodynamic treatment for general outpatients (e.g., Crits-Christoph & Luborsky, 1998; Howowitz et al., 1988), but the present study documents this relation within the context of a specific manual-guided interpersonally oriented psychodynamic therapy for GAD. Regarding the specific interpersonal domain thought to be most relevant to GAD, there was evidence that change on this dimension was associated with improvements in the core feature of GAD, namely, worry. However, there was no evidence that change from pre- to posttherapy in problems in the overly nurturant domain led to subsequent change (from posttherapy to 6-month follow-up) in worry, anxiety symptoms, or depressive symptoms.

Study 2 failed to provide any support that SE therapy, because of its major focus on interpersonal issues, would produce greater change in interpersonal problems than a treatment that did not focus explicitly on interpersonal issues (supportive therapy). However, sampling error due to the small sample size must be considered in evaluating these findings. A possible interesting lead for future research did emerge from this pilot study: The remission rate (as measured by a HAM-A < 7) for SE therapy was significantly lower than that for supportive therapy (50% vs. 14.3%, respectively). This large difference in remission rates between the two groups, but lack of difference in means and high variability in outcomes in the SE therapy group, suggests the possibility that SE therapy works well for a subset of GAD patients but does little for other GAD patients. Supportive therapy provides some minimal benefit to all patients, producing less variability in outcomes for this treatment, but few remitters.

Predictive analyses relating baseline IIP scores to symptom outcomes revealed that greater problems in the overly nurturant domain at baseline were significantly associated with less change in anxiety symptoms and less change in worry symptoms over the course of treatment. No significant predictive findings were evident for the IIP total score or for most of the subscales. As such, these findings are not consistent with the hypothesis that high IIP scores in general (i.e., the total score and multiple subscales) would be associated with negative outcomes because of the documented relation between the IIP and measures of Axis II personality pathology and the link between Axis II and poor outcomes from brief therapies (Reich & Green, 1991; Reich & Vasile, 1993). Rather, the present study suggests that patients with a specific type of interpersonal problem thought to be most relevant to GAD fare relatively poorly in brief SE treatment.

The set of findings across all analyses reported here suggests a number of directions for future clinical innovation and treatment development. The first is the possible role of an integrative treatment that incorporates several approaches that address the multiple cognitive, affective, interpersonal, behavioral, and physiological aspects of GAD. It may be that addressing any one element of GAD, such as the interpersonal domain addressed by SE therapy, is likely to have only limited success. Along these lines, an integrative treatment that builds interpersonal and experiential techniques into a cognitive–behavioral approach has been proposed and appears promising as a treatment for GAD (Newman, 2000; Newman, Castonguay, Borkovec, & Molnar, 2004). Combining medication with psychotherapy might be another practical approach to addressing the multiple elements of GAD.

A second possibility is to extend the length of treatment. Reviews of the GAD literature (e.g., Chambless & Gillis, 1993; Westen & Morrison, 2001) have concluded that existing short-term cognitive and behavioral treatments for GAD show only limited effects, with only

about half of patients ending treatment with high end-state functioning. It may be that any form of therapy, whether psychodynamic or cognitive–behavioral, needs to be longer than the typical 12–16-session format of brief therapy for GAD. To the extent that interpersonal problems are part of the etiology or maintenance of GAD symptoms, and such interpersonal problems change slowly, longer term therapy might be necessary to more successfully get at these underlying factors. This might especially be true if such interpersonal problems are related to, or part of, long-standing Axis II pathology. Far from the "worried well," recent studies have documented that GAD is often a chronic condition, with more than 60% of individuals diagnosed with GAD continuing to have moderate-to-severe symptoms after 5 years (Yonkers, Bruce, Dyck, & Keller, 2003). Moreover, GAD is associated with substantial impairment in functioning (Kessler, Dupont, Berglund, & Wittchen, 1999; Wittchen, Carter, Pfister, Montgomery, & Kessler, 2000). Because of the chronicity and lack of high rates of response to short-term treatment, pharmacological treatment research on GAD has begun to examine efficacy over longer time periods, such as 6 months rather than 2–3 months (e.g., Gelenberg et al., 2000). Longer term therapy might produce greater changes in interpersonal problems, which in turn might lead to greater, and lasting, improvements in GAD symptoms.

A third possibility is to refine treatment approaches to more directly target the particular interpersonal issues that are most salient to GAD. The present study provides some suggestions that problems in the overly nurturant domain are relevant to GAD, as improvement in interpersonal problems related to being overly nurturant was significantly related to improvement in the core feature of GAD (i.e., worry) However, those patients with more problems in the overly nurturant domain improved less in SE therapy than did patients with fewer problems in this domain. This suggests either that SE therapists did not adequately recognize interpersonal problems related to overnurturance or perhaps that the standard interpretive approach to interpersonal issues is not the most successful way to change this particular type of interpersonal problem. Treatment approaches (e.g., Benjamin, 1996) that articulate a more detailed interpersonal model than does the SE approach and tailor the nature of interventions to the specific interpersonal dynamic might be

needed to address the types of interpersonal problems in GAD patients.

Until such new treatment models are developed and tested, the practicing clinician can still be guided by the existing empirical data on treatment of GAD. The present study suggests that if an interpersonal psychodynamic approach is pursued with GAD patients, expectations for changing interpersonal problems over the course of brief therapy should be modest. In addition, patients who have problems in being overly nurturant are not good candidates for this form of treatment, and other approaches should probably be considered (e.g., longer term therapy, treatments that focus on specific personality pathology, medication).

A number of limitations of the present study are important to mention. Whereas the high level of comorbidity of GAD with other disorders in the present samples is consistent with that found in epidemiological studies (Judd et al., 1998), and therefore increases the generalizability of our findings, such comorbidity makes it difficult to test hypotheses about GAD-specific interpersonal issues. There was a suggestion that, among the small group of patients with "pure" GAD, the hypothesized larger changes on the Overly Nurturant subscale were apparent. However, it is important to acknowledge that "pure" GAD patients are rare, and therefore, any psychotherapy approach that has relevance to the broad range of GAD patients found in clinical practice must address the comorbidities, and interpersonal issues connected to such comorbidities, that occur in real-world practice settings.

Another limitation was the small sample size for the randomized comparison of SE therapy to supportive therapy. A third limitation is that Type II error rate was increased due to the number of IIP scales examined. However, the examination of the different scales was conducted on an exploratory basis to generate hypotheses to be tested in further research. A final limitation is that we relied on the IIP to measure interpersonal problems. Whereas the IIP is a well-validated instrument, other forms of interpersonal problems, particularly those that may be less accessible to consciousness for many patients and therefore not captured by a self-report instrument, may be important to the process and outcome of interpersonally oriented psychodynamic therapy for GAD.

Despite these limitations, the present data sug-

gest that change in interpersonal problems is associated with symptom change over the course of SE treatment for GAD, but the amount of change in interpersonal problems is limited. Other ways of enhancing improvement in interpersonal problems should be explored.

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