

Relation of Patient and Therapist Interpersonal Impact Messages to Outcome in Interpersonal Therapy for Depression

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Interpersonal depression theories posit that excessive submissiveness in social interactions perpetuates negative mood. Correspondingly, many psychotherapies postulate that improvement can be facilitated by patient–therapist interactions. However, few studies have tested in-session patient and therapist behaviors that should, in theory, associate with depression reduction. Addressing this gap, the present study examined such associations in interpersonal psychotherapy (IPT). We hypothesized that decreases in patients’ submissive interpersonal impacts on their therapist would be associated with greater depression reduction, as would increases in therapists’ friendly submissive impacts on their patient; theoretically, such therapist behavior would pull for patients to complement it with adaptive assertiveness, thereby disrupting their submissive tendencies. Data derived from an open trial of 16 IPT sessions for adults with major depression. Patients ($N = 119$) and therapists ($N = 39$) rated the others’ interpersonal impacts at Sessions 3 and 16 via the Impact Message Inventory. Patients rated their depression on the Beck Depression Inventory—Second Edition after each session. As predicted, multilevel modeling revealed that decreases in patients’ submissive impacts were associated with greater concurrent depression reduction ($p = .03$) and lower posttreatment depression level ($p = .03$). Also, although therapists did not differ in their change in friendly submissive impacts, thus precluding a test of the influence of such change on outcome, a greater average level of therapist friendly submissiveness related to lower posttreatment depression ($p = .008$). Results support interpersonal depression theories and the therapeutic benefit of specific patient and therapist change processes in IPT.

Keywords: interpersonal impact messages, interpersonal psychotherapy, depression, psychotherapy process, treatment outcome

Interpersonal functioning is implicated in depressive disorders, both conceptually and em-

pirically. Broadly speaking, interpersonal theories of depression posit that maladaptive

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relational styles and behaviors can both cause (at least partially) and perpetuate negative mood through a problematic cycle in which maladaptive interpersonal functioning promotes depressive symptoms, which in turn compound relational difficulties, which in turn prompt even more severe mood disturbance (Coyne, 1976; Haeffel, Voelz, & Joiner, 2007; Horowitz & Vitkus, 1986; McCullough, 2000). More specifically, depression formulations have emphasized, among other variables, the interpersonal risk factor of extreme submissiveness in relation to other people (e.g., Coyne, 1976; Joiner & Timmons, 2009; McCullough, 2000). Empirically supporting this perspective, several studies have demonstrated that submissiveness is depressed persons' prototypical self-reported interpersonal problem (grosse Holtforth et al., 2014; Quilty, Mainland, McBride, & Bagby, 2013; Ravitz, Maunder, & McBride, 2008; Vittegl, Clark, & Jarrett, 2003) and that such submissiveness is more prevalent in depressed individuals than in other psychiatric (grosse Holtforth et al., 2014) and nonpsychiatric (Barrett & Barber, 2007; grosse Holtforth et al., 2014) samples.

Complementing the self-report findings, in a sample of psychiatric outpatients, depressed individuals were rated as more submissive by their relationship partners than were individuals with other psychiatric disorders (grosse Holtforth, Altenstein, Ansell, Schneider, & Caspar, 2012). Moreover, another study found that depressed patients were perceived by their therapist (early in treatment) as more hostile submissive than nonpsychiatric, non-treatment-seeking individuals were perceived by a rating other (Constantino et al., 2008). In sum, the composite research has suggested that excessive interpersonal submissiveness appears characteristic of and, in some cases, specific to depression. Thus, such submissiveness may represent an important treatment target, perhaps irrespective of the specific treatment being delivered. It would follow, then, that the reduction of this interpersonal trait during the course of treatment should contribute to improved mood.

Although the research on this interpersonal change process has been fairly limited, several studies have shown support. For example, in a naturalistic study of depressed patients who were treated with varied psychotherapies following an integrative case formulation, greater

reductions in patients' submissiveness and hostile submissiveness, as perceived by significant others outside of treatment, related to more positive outcomes (grosse Holtforth et al., 2012). Similarly, in a study examining the efficacy of cognitive-behavioral analysis system of psychotherapy (CBASP), an integrative treatment for chronic depression, greater reductions in patients' hostile submissiveness, as perceived by their therapist, related to better outcomes (Constantino et al., 2012).

In both of these studies, the researchers assessed patients' interpersonal functioning according to the impacts that the patient had on a rating other. Specifically, the rating other completed the Impact Message Inventory (IMI; Kiesler & Schmidt, 1993), which forms a circumplex around the two primary interpersonal dimensions of control (ranging from dominant to submissive) and affiliation (ranging from friendliness to hostility). The IMI assumes that interactants can classify the interpersonal messages received from others based on the feelings and experiences that others evoke in them. The measure draws on the principle of *complementarity*, which states that interpersonal behaviors tend to pull for specific (and predictable) responses from others; namely, complementary behaviors tend to be opposite in terms of control (e.g., dominance pulls for submission) and similar in terms of affiliation (e.g., friendliness pulls for friendliness; Kiesler, 1996). For example, if a therapist endorses feeling as though he or she constantly needs to take charge (i.e., dominate) when interacting with a patient, then the patient's impact message would have been one of excessive submissiveness. And, as noted, both of the immediately aforementioned IMI studies point to the therapeutic value of patients becoming less submissive in their relationships with important others. However, more research is needed to further substantiate this effect, including across different therapy contexts.

Additionally, it is notable that despite interpersonal depression theories' focus on negative interactional patterns, research to date has centered almost exclusively on the interpersonal styles of depressed *patients*, without examining the behaviors of their interaction partners. This gap may be particularly problematic regarding the therapist, who is often attempting to affect change at least partially through the therapeutic relationship (e.g., see Muran & Barber, 2010).

For example, the interpersonal complementarity metaprinciple would have high conceptual relevance to therapist behavior when treating depressed patients from varied approaches (or perhaps any approach). When interacting with such persons who tend toward excessiveness submissiveness, therapists would be continually pulled to behave in the complementary dominant (perhaps even excessively so) manner (Kiesler, 1996). If this complementary exchange persisted, it may unintentionally recapitulate the most characteristic interpersonal problem of depression. In theory, this persistent pattern would maintain depressed persons' sense of having little agency over meeting their own relational needs, as well as overreliance on others to meet such needs, which could ultimately drive the other person away. Such experiences and outcomes, respectively, could perpetuate patients' depressive symptoms, thereby completing the aforementioned self-fulfilling problematic cycle (e.g., Coyne, 1976; McCullough, 2000).

Alternatively, theory suggests that if therapists resist the pull of this maladaptive complementarity, they could use their own interpersonal behaviors to facilitate adaptive changes in patients' interpersonal functioning and, ultimately, their depression. Still based on the principle of complementarity, when therapists adopt a friendly submissive stance vis-à-vis their patients, it should pull for patients to respond with complementary friendly dominant behaviors (or at least to begin a movement away from the typical maladaptively submissive stance). Over time, replacing patients' characteristic submissiveness with a movement toward assertiveness and the capacity to take agency in relationships should improve relationships and decrease interpersonally driven depressive symptoms (Benjamin, 2003; Kiesler, 1996).

As noted, the IMI may be a good match for examining such complementary exchanges, because it can assess not only patient behavior from the therapist's perspective but also therapist behavior from the patient's perspective. However, few studies have used the IMI to examine therapist interpersonal behavior in relation to outcome (for one exception see Zuroff et al., 2017), and we are unaware of any that have examined the specific therapist interpersonal style of friendly submissiveness as a predictor of treatment outcome. Addressing these gaps, the present study examined the relation of

theory-specific changes in patients' submissive behaviors and therapists' friendly submissive behaviors to changes in patients' depressive symptoms in an interpersonal therapy for depressed adults. We hypothesized that decreases in patients' submissive interpersonal impacts on their therapist and increases in therapists' friendly submissive impacts on their patient would both predict greater depression reduction.¹

Method

Data for the present study derive from a naturalistic trial of individual, outpatient IPT conducted at a mood disorders clinic in Southern Ontario, which has been described previously (Constantino, Coyne, et al., 2017; McBride et al., 2010).

Participants

Patients ($N = 119$) were adults ($M_{\text{age}} = 38.64$ years, $SD = 11.44$) who (a) met *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000) criteria for major depressive disorder based on a structured clinical interview (i.e., the Structured Clinical Interview for *DSM-IV* Axis I Disorders; First, Spitzer, Gibbon, & Williams, 1995) administered by a trained graduate assessor and (b) scored >15 on the Beck Depression Inventory—Second Edition (BDI-II; described in the Measures section). Individuals were excluded if they were at high risk for suicide; had an active medical condition that contributed to their depression; or met criteria for seasonal affective disorder, a substance use disorder, a specific eating disorder (i.e., either anorexia or bulimia nervosa), bipolar disorder, schizophrenia or schizoaffective disorder, antisocial personality

¹ Note that although the logical extension of the complementarity principle would suggest that patients are simultaneously becoming more dominant as they decrease their characteristic submissiveness, past research has indicated that it is the movement away from submissiveness (i.e., reduction of this depressogenic interpersonal style) that predicts symptomatic improvement in brief treatments, as opposed to the increase in dominance (Constantino et al., 2012; Constantino, Romano, Coyne, Westra, & Antony, 2017; grosse Holtforth, Altenstein, Ansell, Schneider, & Caspar, 2012). Hence, we focus here on only the reduction of submissiveness as the outcome predictor.

disorder, and/or borderline personality disorder (see Table 1 for additional patient demographic and clinical characteristics). Therapists ($N = 39$) were doctoral-level psychologists, psychology graduate students, and psychiatry residents who saw between one and nine patients each ($M = 3.03$, $SD = 2.43$).

Treatment

Patients received 16 sessions of manualized interpersonal psychotherapy (IPT; Weissman, Markowitz, & Klerman, 2000; see also the update in Weissman, Markowitz, & Klerman, 2018) delivered by therapists who were trained and supervised by IPT-certified clinicians (Paula Ravitz and Carolina McBride). IPT consisted of three phases. In Phase 1, therapists provided psychoeducation about the link between depression and interpersonal factors, selected an interpersonal problem domain (i.e., grief, relational disputes, social role transitions, or interpersonal sensitivity), instilled hope for recovery, created a comprehensive historical

and contextual assessment, and completed an interpersonal inventory of the patients' close relationships. In Phase 2, therapists focused on improving patients' social supports and interpersonal functioning, especially in the patients' problem domain (e.g., grief). In Phase 3, therapists focused on consolidating gains and preventing relapse.

Measures

Beck Depression Inventory—Second Edition. Outcome was assessed using the BDI-II (Beck, Steer, & Brown, 1996), a widely used self-report measure of depressive symptoms. The BDI-II consists of 21 items each ranging from 0 to 3, with higher scores reflecting greater depression (total score range = 0–63). In the current study, internal consistency (Cronbach's alpha) was high throughout treatment, ranging from .90 to .94.

Impact Message Inventory. To assess each other's interpersonal styles, patients and therapists completed the IMI (Kiesler & Schmidt, 1993). As noted, the IMI draws on the principle of complementarity (Kiesler, 1996) by asking individuals to rate their interaction partner's interpersonal functioning based on the impact messages received. The IMI consists of 56 items that are rated on a scale ranging from 1 to 4. It divides into eight vectors (each consisting of seven items) that form a circumplex that reflects the interpersonal dimensions of affiliation (ranging from hostility to friendliness) and control (submission to dominance) and their various combinations: hostile, hostile dominant, dominant, friendly dominant, friendly, friendly submissive, submissive, and hostile submissive. For therapist-rated patient impacts, the present study focused on submissiveness (e.g., a style of deference to the therapist), the vector most commonly associated with depressive symptomatology. For example, a therapist rating a high level of agreement with items such as "I should tell him/her to stand up for him/herself" and "I want him/her to disagree with me sometimes" would indicate a highly submissive patient interpersonal style. For patient-rated therapist impacts, the present study focused on friendly submissiveness (e.g., a style of friendly deference to patients' views), the therapist interpersonal stance that interpersonal theory suggests would help patients reduce submissiveness and move

Table 1
Patients' ($N = 119$) Sociodemographic and Clinical Characteristics and Descriptive Statistics for All Study Variables

Variable	<i>M</i>	<i>SD</i>	<i>n</i>	%
Age (years)	38.64	11.44		
Gender (female)			84	71
Marital status (unmarried) ^a			77	68
Education (beyond high school) ^b			99	85
On antidepressant medication ^c			66	64
Primary diagnosis				
Single-episode MDD			42	35
Recurrent MDD			77	65
Secondary diagnoses				
Dysthymia			16	13
Anxiety disorder			13	11
Substance use disorder			4	3
Eating disorder NOS			4	3
Patient IMI S change	−.28	2.02		
Patient IMI S at Session 3	33.26	6.02		
Therapist average IMI FS	38.54	4.56		
Baseline BDI-II	27.86	8.62		
Prior BDI-II change	−2.53	1.56		

Note. MDD = major depressive disorder; NOS = not otherwise specified; IMI = Impact Message Inventory; S = submissiveness; FS = friendly submissiveness; BDI-II = Beck Depression Inventory—Second Edition.

^a Of the 114 people who reported marital status. ^b Of the 116 who reported education level. ^c Of the 104 who reported medication status.

toward a friendlier dominant stance. For example, a patient rating a high level of agreement with items such as it “appears that whatever I did would be okay with him/her” and “appears that he/she trusts me” would indicate a friendly submissive therapist interpersonal style.

The IMI has been shown to have adequate internal consistency and temporal stability and good convergent and discriminant validity across eight validation studies (Schmidt, Wagner, & Kiesler, 1999). Additionally, psychometric research has supported the two interpersonal dimensions of control and affiliation and has suggested that the IMI conforms to a quasicircumplex structure (Schmidt et al., 1999). For the present study, we calculated quadrant scores that take into account information from adjacent vectors using the formulas $\text{submissiveness} + .707$ (friendly submissiveness + hostile submissiveness) and $\text{friendly submissiveness} + .707$ (friendly + submissiveness) for the therapist-rated submissive and patient-rated friendly submissive quadrants, respectively. Weighted quadrant scores can range from 16.90 to 67.59, with higher scores representing more of the relevant interpersonal behavior. For the current sample, alphas were .80 and .74 for therapist-rated patient submissive impacts and .70 and .53 for patient-rated therapist friendly submissive impacts at Session 3 and posttreatment, respectively.

Procedure

Relevant to the present study, patients completed the BDI–II at baseline, after every session, and at posttreatment. The IMI was completed by patients and therapists after Session 3 and after their final session.

Data Analyses

First, to create our primary predictor variables of change in patient and therapist interpersonal behaviors during treatment, we used hierarchical linear modeling (HLM) to output empirical Bayes (EB) estimates representing change in the relevant weighted IMI vector from Session 3 to Session 16 (Raudenbush & Bryk, 2002).² HLM weights EB scores by their reliability, which means that, in the present case, when one measurement occasion was missing, the change score for a particular dyad was weighted toward the group mean, enabling

HLM to mimic a modified intent-to-treat approach. Thus, we used these EB estimates rather than simple difference scores because they allowed us to retain a larger portion of the sample in our primary analyses.³ These scores also have the advantage of being more reliable than are simple difference scores because measurement error is removed (Raudenbush & Bryk, 2002; Rowe, Raudenbush, & Goldin-Meadow, 2012). Given that the initial measurement occasion for the IMI was at Session 3, we also used HLM to output EB scores representing each patient’s depression change from baseline to Session 2 to control for improvement that occurred prior to the assessment of our primary predictor variable. Second, we examined descriptive statistics, distributions, and intercorrelations for all study variables.

Third, to test our primary research questions, we fit two-level HLM models examining within-patient change in depression at Level 1 and between-patients differences at Level 2.⁴ Because our primary predictor variables were change in IMI from Session 3 to posttreatment, we examined concurrent change in depression (from Session 3 to posttreatment), controlling for initial depression severity at baseline and change in depression that occurred prior to Session 3 (i.e., depression change from baseline to Session 2). Additionally, we centered time in these models at posttreatment to allow the ex-

² Given that the Impact Message Inventory (IMI) was completed at only two time points, there were too few degrees of freedom to use the standard hierarchical linear modeling method for estimating change. Thus, we used the known variance procedure in which the error variance for each IMI vector at each time point was calculated using the formula $(1 - \text{Cronbach's } \alpha) \times \text{variance}$. We then constrained the variances for these models to the calculated values for each time point.

³ Of the 119 patients in the sample, eight were missing therapist-rated Impact Message Inventory (IMI) submissiveness at both Session 3 and posttreatment, four were missing IMI submissiveness data at Session 3 only, and 27 were missing IMI submissiveness data at posttreatment only. Of the 119 patients in the sample, 20 were missing patient-rated IMI friendly submissiveness at both Session 3 and posttreatment, 14 were missing IMI friendly submissiveness at Session 3 only, and 22 were missing IMI friendly submissiveness at posttreatment only.

⁴ Previous research using this data set found that therapists accounted for less than 1% of the variability in patients’ depression (Constantino, Coyne, et al., 2017). Thus, we did not fit three-level models controlling for therapist effects.

amination of whether IMI change predicted posttreatment depression level. Prior to fitting our predictor models, we first compared the fit of an unconditional linear model to an unconditional quadratic model to determine which was a better fit to patients' depression change. Consistent with a previous analysis of this data set (Constantino, Coyne, et al., 2017), we found that a quadratic model was indeed a better fit to the data than a linear model, $\chi^2(4) = 26.57, p < .001$. Thus, we retained a quadratic model for the depression data in all subsequent conditional (predictor) models. The model equation for each of the primary models examining change in the relevant IMI vectors as a predictor of outcome were as follows:

Level 1 model:

$$\text{BDI}_{ij} = \beta_{0j} + \beta_{1j} * (\text{Time}_{ij}) + \beta_{2j} * (\text{TimeQ}_{ij}) + r_{ij}$$

Level 2 model:

$$\begin{aligned} \beta_{0j} = & \gamma_{00} + \gamma_{01} * (\text{S3 IMI}_j) \\ & + \gamma_{02} * (\text{IMI Change}_j) \\ & + \gamma_{03} * (\text{Prior Change}_j) \\ & + \gamma_{04} * (\text{Baseline BDI}_j) + u_{0j} \end{aligned}$$

$$\begin{aligned} \beta_{1j} = & \gamma_{10} + \gamma_{11} * (\text{S3 IMI}_j) \\ & + \gamma_{12} * (\text{IMI Change}_j) \\ & + \gamma_{13} * (\text{Prior Change}_j) \\ & + \gamma_{14} * (\text{Baseline BDI}_j) + u_{1j} \end{aligned}$$

$$\begin{aligned} \beta_{2j} = & \gamma_{20} + \gamma_{21} * (\text{S3 IMI}_j) \\ & + \gamma_{22} * (\text{IMI Change}_j) \\ & + \gamma_{23} * (\text{Prior Change}_j) \\ & + \gamma_{24} * (\text{Baseline BDI}_j) + u_{2j} \end{aligned}$$

At Level 1, BDI at time i for patient j is predicted from patient j 's depression at posttreatment (β_{0j}), rate of change in depression at posttreatment (β_{1j}), and the weekly change in the rate of depression change (acceleration/deceleration; β_{2j}). At Level 2, these parameters

drop down to become the outcomes. Our primary interest was in the fixed effects for our primary predictor variable (i.e., change in the relevant IMI vector), which represent the average association between IMI change and posttreatment depression (γ_{02}), rate of change in depression at posttreatment (γ_{12}), and weekly acceleration–deceleration in depression change (γ_{22}), controlling for initial level of the relevant IMI variable (at Session 3), prior depression change, and baseline depression severity. Random effects (u_{0j} , u_{1j} , u_{2j}) were included on posttreatment depression (β_{0j}), posttreatment depression change (β_{1j}), and the quadratic depression slope (β_{2j}) and reflect each patient's deviation from the sample averages. Additionally, all Level 2 predictors were grand-mean-centered to increase the interpretability of the model intercepts (γ_{00} , γ_{10} , γ_{20}), which reflect the value of the relevant depression outcome when all other predictors are equal to 0 (or in this case at their mean value). To assess effect size, we calculated estimates of pseudo- r^2 (i.e., proportion reduction in unexplained variance) for associations that were significant over and above the covariates. Finally, we also tested whether the model with our predictor of interest (i.e., submissiveness change or friendly submissiveness change) was a significantly better fit to the data than was the model with the relevant covariates (i.e., prior depression change, baseline depression severity, and initial level of the relevant IMI vector).

Results

Preliminary Analyses and Descriptive Statistics

For the patient submissiveness change model, there was no average pattern of increasing or decreasing submissiveness from Session 3 to 16 ($\gamma_{10} = -.28, SE = .64, p = .66$). However, there was significant between-patients variability in submissiveness change ($\tau_{11} = 11.70$), $\chi^2(79) = 117.47, p = .003$, suggesting that such differences could predict variability in treatment outcome. In terms of friendly submissiveness change, on average, therapists' friendly submissiveness significantly increased by 2.08 points from Session 3 to 16 ($\gamma_{10} = 2.08, SE = .71, p = .004$). However, the amount of friendly submissiveness change therapists evidenced did not vary

across patients ($\tau_{11} = 1.18$), $\chi^2(62) = 56.90$, $p > .50$.

Given that patients were nested within therapists, we also replicated the friendly submissive change model in a three-level model with repeated measures at Level 1, nested within patients at Level 2, nested within therapists at Level 3 to determine whether friendly submissive change varied across therapists; that is, it was possible that individual therapists evidenced similar change in friendly submissiveness with each of their patients but differed in their average level of friendly submissive change compared to other therapists. However, this model yielded results similar to those for the original two-level model; the average therapists' friendly submissiveness increased 2.05 units ($p = .003$), but the degree of friendly submissive change did not vary across therapists ($p > .50$). Additionally, there was no significant between-therapist variability in the level of therapist friendly submissiveness ($p > .50$), whereas there was significant within-therapist (between-patient) variability in level of friendly submissiveness ($p < .001$), suggesting that the degree to which therapists' interpersonal behavior was characterized by friendly submissiveness was most strongly determined by characteristics of the patient or dyad (rather than by characteristics of the therapist). Thus, given the findings across these models, we chose to output EB estimates reflecting the average level of therapist friendly submissiveness across both time points for each unique patient-therapist dyad for use as a predictor in our primary model.

Descriptive statistics for our primary predictors and covariates are presented in Table 1. All variables were acceptably normally distributed (all skewness values were > -1 and < 1 , and all kurtosis values were > -2 and < 2). Correlations between the two primary predictor variables (i.e., therapist friendly submissiveness and patient submissiveness change) and the covariates of baseline depression and prior depression change were low (r s ranged from $-.13$ to $.06$), indicating no problematic collinearity. However, as is typical with change scores, patient submissiveness change was highly related to initial patient submissiveness at Session 3 ($r = -.65$, $p < .001$), and baseline depression level

was highly correlated with prior depression change ($r = .62$, $p < .001$).⁵

Primary Analyses

See Table 2 for the full results of all primary predictor models. In our model examining patient submissiveness change, results indicated that as expected, greater reductions in patient submissiveness related to lower posttreatment depression ($\gamma_{02} = 1.38$, $SE = .61$, $p = .03$) and steeper depression reduction at posttreatment ($\gamma_{12} = .24$, $SE = .11$, $p = .03$), controlling for patients' initial level of submissiveness, prior depression change, and baseline depression severity (see Figure 1). However, submissiveness change did not relate to patients' weekly rate of acceleration-deceleration in depression change ($\gamma_{22} = .01$, $SE = .007$, $p = .11$). Compared to a model containing only the covariates, patient submissiveness accounted for an additional 6.33% of unexplained variance in posttreatment depression and an additional 9.02% of the variability in posttreatment depression change. However, this model only approached significance as a better fit to the data than the covariates-only model, $\chi^2(3) = 6.61$, $p = .08$.

In our model examining average level of therapist friendly submissiveness across treatment, as expected, results indicated that greater therapist friendly submissiveness related to lower posttreatment depression ($\gamma_{01} = -.59$, $SE = .22$, $p = .008$; see Figure 2), controlling for prior depression change and baseline depression severity. However, average therapist friendly submissiveness was unrelated to depression reduction at posttreatment ($\gamma_{11} = -.03$, $SE = .04$, $p = .37$) and patients' weekly rate of acceleration-deceleration in depression change ($\gamma_{21} = .0004$, $SE = .002$, $p = .86$), controlling for prior depression change and baseline depression severity. Compared to the covariates-only model, therapist friendly submissiveness accounted for 8.73% of the unexplained variance in posttreatment depression. Additionally, the friendly sub-

⁵ Given the high correlation between these two sets of variables, we replicated our primary models without patient submissiveness at Session 3 and baseline depression in the model as covariates and the pattern of results remained the same; that is, greater reductions in submissiveness still related to lower posttreatment depression ($p = .01$) and greater posttreatment depression reduction ($p = .02$), controlling for prior depression change.

Table 2
Change in Depression as Predicted by Change in Patient Submissiveness and Average Therapist Friendly Submissiveness

Measure	Patient S change ^a			Average therapist FS ^b		
	Coefficient (SE)	Variance component	<i>p</i>	Coefficient (SE)	Variance component	<i>p</i>
Fixed effects						
Posttreatment BDI-II (intercept), γ_{00}	13.21 (.91)		<.001	13.26 (.98)		<.001
Session 3 S-FS average, γ_{01}	.06 (.20)		.77	-.59 (.22)		.008
IMI change, γ_{02}	1.38 (.61)		.03			
Prior BDI-II change, γ_{03}	3.12 (.79)		<.001	3.52 (.86)		<.001
Baseline BDI-II, γ_{04}	.21 (.13)		.12	.10 (.15)		.49
Posttreatment BDI-II change (slope), γ_{10}	-.45 (.16)		.006	-.51 (.17)		.005
Session 3 IMI-FS average, γ_{11}	.03 (.03)		.43	-.03 (.04)		.37
IMI change, γ_{12}	.24 (.11)		.03			
Prior BDI-II change, γ_{13}	-.06 (.14)		.66	.04 (.15)		.80
Baseline BDI-II, γ_{14}	-.01 (.02)		.54	-.03 (.03)		.32
Acceleration-deceleration rate (curvature), γ_{20}	.008 (.01)		.42	.004 (.01)		.71
Session 3 S-FS average, γ_{21}	.002 (.002)		.35	.0004 (.002)		.86
IMI change, γ_{22}	.01 (.007)		.11			
Prior BDI-II change, γ_{23}	.004 (.009)		.66	.009 (.009)		.32
Baseline BDI-II, γ_{24}	-.001 (.01)		.51	-.001 (.002)		.53
Random effects						
BDI-II intercept, τ_{00}		71.75	<.001		76.86	<.001
BDI-II slope, τ_{11}		1.35	<.001		1.57	<.001
BDI-II curvature, τ_{22}		.005	<.001		.005	<.001
Level 1, σ^2		20.39			20.33	
Model deviance (<i>df</i>)		8,813.78 (22)			7,994.43 (19)	

Note. S = submissiveness; FS = friendly submissiveness; BDI-II = Beck Depression Inventory—Second Edition; IMI = Impact Message Inventory.

^a Due to missing data, $N = 110$. ^b Due to missing data, $N = 98$.

missiveness model was a significantly better fit to the data than was the covariates-only model, $\chi^2(3) = 7.68, p = .05$.⁶

Discussion

This study examined whether theory-consistent changes in depressed patients' submissiveness and therapists' friendly submissiveness related to outcome in IPT. As predicted, a greater decrease in patients' submissive interpersonal impacts on their therapist was associated with greater depression reduction and lower depression level at posttreatment. Also, although we were unable to examine *change* in therapists' friendly submissiveness impacts on their patient because of limited variability in such change, greater *average* therapist friendly submissiveness across treatment related to lower depression level at posttreatment.

Consistent with the assertion of interpersonal depression theories, the present results add to

the growing body of research suggesting that the reduction of a prototypic risk factor (i.e., submissiveness in interactions with important others) is associated with improved mood. It is important to note that the present study extends this finding to the context of IPT, whereas previous research centered on CBASP (Constantino et al., 2012) and case formulation-driven naturalistic psychotherapy (Grosse Holtforth et al., 2012). Although our findings are still preliminary, the consistency of the association between decreased submissiveness and reduced depression suggests that such interpersonal

⁶ To test whether the association between average friendly submissiveness and posttreatment depression was driven by patient perceptions of therapists as friendly (vs. neutral or hostile), we also examined average patient-rated therapist friendliness as a predictor of outcome. Average therapist friendliness was unrelated to any of the depression outcomes (all $ps > .40$), suggesting that differences in friendliness did not account for our findings.

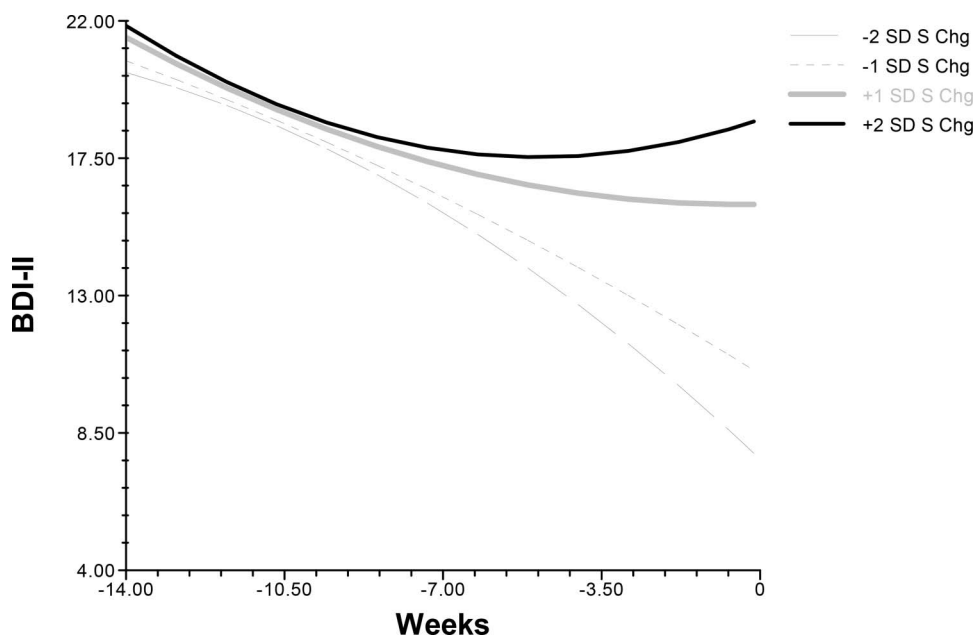


Figure 1. Patient depression change as a function of change in patient submissiveness across treatment. S = submissiveness; Chg = Chang; BDI-II = Beck Depression Inventory—Second Edition.

change may be a common therapeutic ingredient that transcends treatment approaches. Further supporting this notion, in two studies comparing IPT and cognitive-behavioral therapy, the authors found that patients who exhibited less submissiveness (i.e., more overall agency) in their interactions with their therapists during treatment (also as reported by therapists according to the IMI) had lower depression across both treatments (Dermody, Quilty, & Bagby, 2016; Quilty et al., 2013). Of importance, though, these two studies treated patient-therapist interpersonal transactions as more “traitlike” processes than “statelike” processes that can change over time (as per the current study). To us, more research is needed on interpersonal change in psychotherapy as it relates to theory-predicted depression reduction.

Despite the potential transtheoretical importance of change in patient interpersonal submissiveness, it may be the case that different treatments vary in how much they capitalize on this change factor. For example, in the previous Constantino et al. (2012) and grosse Holtforth et al. (2012) studies, submissiveness significantly decreased for most patients, suggesting that the

interventions were doing something to systematically affect this interpersonal trait. However, in the present study, there was no discernable change pattern in IPT patients’ submissiveness. Rather, it was the case that when reductions in submissiveness did occur, they were associated with mood improvement. Thus, IPT, relative to other approaches, may do less well in promoting a reduction in patients’ submissiveness across the board. This makes sense, though, considering IPT’s varied foci (i.e., grief, disputes, role transitions, and skill deficits) and lack of explicit training of therapists to intentionally target, and attempt to change, patients’ excessive deference to others (unless it arises as a clear element of IPT’s four interpersonal domains). For example, were a therapist to center treatment on grief over the loss of a loved one, it is quite possible that a pattern of maladaptive submissiveness may not be relevant to a given depressed person, or perhaps more likely, this pattern would simply not reveal itself as relevant in the therapy work. Thus, IPT might benefit from capitalizing more fully on the therapeutic potential of targeting decreased patient submissiveness. Hence, future IPT adaptations

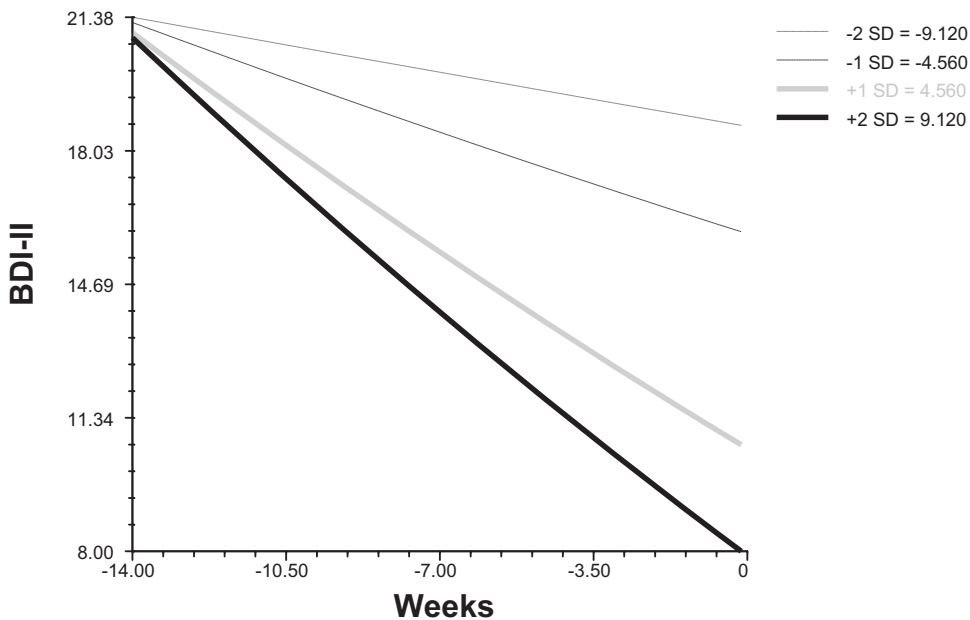


Figure 2. Patient depression change as a function of average therapist friendly submissiveness across treatment. BDI-II = Beck Depression Inventory—Second Edition.

could perhaps include a “metamodule” that centers on submissive traits, even if the main interpersonal content focus remains one of IPT’s traditional four domains. In this sense, IPT could work toward including decreased submissiveness as a targeted mechanism on which clinicians are trained (as is the case in CBASP; e.g., McCullough, 2000). Of course, testing whether this adaptation improves overall efficacy requires additional research, including in comparison to current IPT proper (which has already been established as a generally effective intervention for depression; Cuijpers, Donker, Weissman, Ravitz, & Cristea, 2016).

Despite the present results, it remains unknown exactly how decreases in patient submissiveness yield more positive treatment outcomes. As noted, interpersonal theory would suggest that helping depressed patients shift away from their characteristic submissiveness and toward adaptive assertiveness should facilitate both a felt sense of agency and less maladaptively enmeshed reliance on others to meet their relational and emotional needs—two experiences that should reduce central risks for depressed mood and disrupt the maladaptive feedback loop between depression and interper-

sonal functioning (Benjamin, 2003; Kiesler, 1996). Future research should test these putative mechanisms more explicitly, including by determining whether patients’ in-session behaviors with their therapists (i.e., reduced submissiveness) precede adaptive changes in their extratherapeutic relationships (i.e., more friendly assertion of needs), which in turn relate to improvements in mood (i.e., more positive affect associated with enhanced agency-taking, need-fulfillment, and affiliative connection with others).

Also consistent with interpersonal theories of depression, the present results suggest that one way in which therapists can promote reductions in their patients’ depression is through taking a friendly submissive stance throughout treatment. Although it is currently unknown how this specific stance relates to better patient outcomes, it is possible that for depressed patients who present as overly submissive, engaging with a therapist who continuously encourages them to assert their needs in session may represent a corrective interpersonal experience (Constantino & Westra, 2012). In other words, through the principle of complementarity, when therapists grant depressed patients’ autonomy

rather than complementing patients' excessive submissiveness by constantly taking charge (as most others in these patients' lives likely do), it may help patients become more adaptively assertive. Over time, patients may be able to generalize such interactions to other important relationships, helping them break the problematic relational pattern that interpersonal theories posit is at the heart of depression (e.g., Coyne, 1976; McCullough, 2000). In contrast, therapists who exhibit less friendly submissiveness, perhaps by giving in to the pull to complement their patient's submissiveness by being highly directive in-session, may unintentionally recapitulate the interpersonal problem most prototypic of, and likely to perpetuate, depression. It will be important for future research to test this mediational pathway of a specific therapist behavior pulling for subsequent, and more adaptive, patient response—behavior, which in turn promotes better generalized relationship patterns and positive mood.

Regardless of the exact mechanism, the present results suggest that when working with depressed patients, IPT therapists may benefit from attending to the principle of complementarity as one means of shifting their patients' characteristic submissiveness. Specifically, when interacting with a patient with whom the therapist feels constantly pulled to take charge (i.e., dominate), therapists may want to consider resisting the pull of complementarity and adopting a friendly submissive stance instead. Although it is presently unknown whether the positive impact of therapist friendly submissiveness will generalize to other treatments for depression, to the extent that complementarity represents a general interpersonal principle that can be relevant for all interactions, it seems likely that attending to this principle may be beneficial in any treatment for depression.

It is important to note, though, and despite our hypothesis, that the present study was unable to examine change in therapist friendly submissiveness as a predictor of depression, because of limited variability in such change; that is, all IPT therapists demonstrated the same slight increase in friendly submissiveness from early to late treatment. It is possible that this nonvarying behavior pattern simply reflects the reality of IPT (or perhaps any) therapist behavior (and, without variability, this behavior pattern cannot explain variance in outcome). If this

were indeed the case, the clinical implication is that a therapist's average level of friendly submissiveness across the entirety of treatment, which did vary in the present study, represents a more important predictor of patient improvement than does change in this behavior. Alternatively, it is possible that therapists do shift their friendly submissiveness across treatment to differing degrees but patients have difficulty noticing and accurately reporting such changes as per the IMI. If true, future studies should investigate the impact of therapist interpersonal behavior change on outcome using observer-coding systems that may better capture small, but potentially important, behavior shifts and variability around them.

The present study had several limitations. First, our limited number of IMI measurement occasions prevented us from establishing temporal precedence between changes in interpersonal styles and symptomatic improvement. Thus, at present, it is unclear whether interpersonal changes precede depression change, are a consequence of it, or both. In a related vein, given that we measured interpersonal behaviors at only two time points, we were unable to test whether shifts in therapists' interpersonal impacts preceded adaptive changes in patients' interpersonal impacts. Future research should measure patient and therapist interpersonal impacts on a session-by-session basis to allow more precise tests of the temporal relations among therapist friendly submissiveness, patient submissiveness—assertiveness, and treatment outcomes. Future work should also assess interpersonal change from different vantage points from the interacting other; for example, via patient self-report (e.g., Ravitz et al., 2008).

Second, there was some indication that patients' ratings of their therapists' interpersonal impacts were less reliable than were therapists' ratings of their patients' impacts, which may have rendered estimates of therapist behavior less accurate. Third, not having a comparison group precluded us from examining in this trial whether improving patients' interpersonal functioning is a process of change specific to IPT versus a more general change mechanism, though past research has suggested that this process correlates with improvement in multiple treatments for depression (e.g., grosse Holtforth et al., 2012). Fourth, the present trial did not collect information about whether patients

met diagnostic criteria for certain personality disorders that are associated with high degrees of submissiveness (i.e., dependent and avoidant personality disorder). Thus, we were unable to examine whether the associations found in the present study would also generalize to these patients, who may have more entrenched interpersonal difficulties. Fifth, the present trial did not collect demographic information about therapists, which limited our ability to examine therapist characteristics, or dyadic match variables, as predictors of participant interpersonal style. Finally, the present results may have limited generalizability beyond mostly Caucasian patients with depression being treated with time-limited IPT.

Limitations notwithstanding, the present findings suggest that depressed patients achieve better outcomes in IPT when they become less submissive over the course of treatment. Given that this finding is consistent with findings in past research conducted on other treatment approaches (Constantino et al., 2012; grosse Holtforth et al., 2012), reductions in patient submissiveness may represent an important cross-cutting target across many (or all) psychosocial depression treatments. Additionally, the results suggest that patients achieve better outcomes when their IPT therapist adopts and maintains a friendly submissive stance throughout therapy. Such a stance may disrupt depressed patients' characteristic pattern of interpersonal deference and encourage them to shift their interpersonal styles toward greater assertiveness. Over time, this shift may translate into more positive extratherapeutic relationships, which, consistent with interpersonal theory, could lessen depressive symptomatology.

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Relación de los mensajes de impacto interpersonal de pacientes y terapeutas con los resultados en la terapia interpersonal para la depresión

Las teorías de depresión interpersonal postulan que la sumisión excesiva en las interacciones sociales perpetúa el estado de ánimo negativo. En consecuencia, muchas psicoterapias postulan que la mejora puede ser facilitada por las interacciones del terapeuta del paciente. Sin embargo, pocos estudios han probado comportamientos de paciente y terapeuta durante la sesión que, en teoría, deberían asociarse con la reducción de la depresión. Al abordar esta brecha, el presente estudio examinó tales asociaciones en la psicoterapia interpersonal (IPT). Presumimos que las disminuciones en los impactos interpersonales

sumisos de los pacientes en su terapeuta se asociarían con una mayor reducción de la depresión, al igual que los aumentos en el impacto sumiso amistoso de los terapeutas en sus pacientes; teóricamente, tal comportamiento terapeuta haría que los pacientes lo complementarían con asertividad adaptativa, lo que interrumpiría sus tendencias sumisas. Datos derivados de una prueba abierta de 16 sesiones de IPT para adultos con depresión mayor. Los pacientes ($N = 119$) y los terapeutas ($N = 39$) evaluaron los impactos interpersonales de los demás en las Sesiones 3 y 16 a través del Inventario de mensajes de impacto. Los pacientes clasificaron su depresión en el Inventario de Depresión de Beck-Segunda Edición después de cada sesión. Como se predijo, la modelización multinivel reveló que las disminuciones en los impactos sumisos de los pacientes se asociaron con una mayor reducción concurrente de la depresión ($p < 0.03$) y un menor nivel de depresión post-tratamiento ($p < 0.03$). Además, aunque los terapeutas no difieren en su cambio en los impactos de sumisión amistosa, lo que impide una prueba de la influencia de tales cambio en el resultado, un mayor nivel promedio de sumisión amistosa del terapeuta relacionado con una depresión postratamiento más baja ($p = 0.008$). Los resultados respaldan las teorías de depresión interpersonal y el beneficio terapéutico de los procesos de cambio específicos de pacientes y terapeutas en IPT.

mensajes de impacto interpersonal, psicoterapia interpersonal, depresión, proceso de psicoterapia, resultado del tratamiento

在针对抑郁的人际间心理治疗中，个案和治疗师人际关系间影响和效果之间的关系

人际关系型的抑郁理论认为在社交互动中过度的顺从会使负面情绪持续下去。相应地，许多心理治疗都假定患者治疗师的相互作用可以带来改善。但是，很少的研究证实了在晤谈中个案和治疗师的互动行为像理论中所说的和抑郁减少有关。为解决这一差距，本研究在人际间心理治疗（IPT）中测试了这种关联。我们假设个案对治疗师减少的人际间的顺从和他们的明显的抑郁减轻相关联，同样的也和治疗师的友好的顺从性影响相关联。从理论上讲，治疗师的这种行为会推动个案用适应性的自信果敢的表达自我来作为补充，从而破坏他们的顺从性倾向。数据源于对有重症抑郁的成人的16次IPT晤谈的开放性试验。个案（ $N = 119$ ）和治疗师（ $N = 39$ ）通过影响信息量表来对第3次和第16次的晤谈中其他人的人际间影响力进行评分。个案在每一次晤谈后用第二版的贝克抑郁量表对自己的抑郁进行评估。如预测，多层次模型显示个案的顺从性减少与明显的多次出现的抑郁症减少相关（第03页），也与较低的治疗后抑郁水平相关（第03页）。此外，虽然治疗师在他们友好性顺从上的改变并没有不同，排除这种改变对结果影响的测试，治疗师友好性顺从的更高的平均水平和低水平的治疗后抑郁相关联（第008页）。试验结果支持人际关系型的抑郁理论以及在IPT中个案和治疗师特定的改变过程所带来的治疗性益处。

人际间影响信息, 人际间心理治疗, 抑郁, 心理治疗过程, 治疗效果

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