Journal of Affective Disorders 151 (2013) 800–803

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Brief report

Interpersonal problems as predictors of alliance, symptomatic improvement and premature termination in treatment of depression

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ARTICLE INFO

Article history:
Received 1 May 2013
Received in revised form
3 July 2013
Accepted 4 July 2013
Available online 7 August 2013

Keywords:
Interpersonal problems
Depression
Psychotherapy

ABSTRACT

Background: Previous studies reported inconsistent findings regarding the association of interpersonal problems with therapy outcome. The current study investigates if interpersonal problems predict process and outcome of three different treatments for depression.
Methods: The data originate from a randomized clinical trial comparing supportive–expressive psychotherapy, antidepressant medication and pill-placebo for treatment of depression. Interpersonal problems were used as predictors of alliance, symptomatic improvement and premature termination of treatment.
Results: Interpersonal problems related to communion predicted better alliances, but slower symptomatic improvement. Low agency predicted slower symptomatic improvement in supportive–expressive psychotherapy, but not in the medication or placebo condition. Lower interpersonal distress was associated with an increased likelihood to terminate treatment prematurely.
Limitations: The sample size did not allow the detection of small effects within the treatment groups.
Conclusions: Interpersonal problems are influential for the treatment of depression, but parts of their effects depend on the type of treatment.

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1. Background

Interpersonal problems are common in depression. Not only do depressed patients report high interpersonal distress, they also describe specific problems related to low assertiveness such as social avoidance, submissiveness and exploitation (Barrett and Barber, 2007). But how do these issues relate to the process and outcome of treatment for depression?

Previous research examining the influence of interpersonal distress on outcome has failed to provide definitive answers. For example, Renner et al. (2012) showed that high distress negatively influenced symptomatic improvement in cognitive therapy for depression. In non-depressed or mixed samples, overall interpersonal distress predicted negative outcome in some, but not all studies (e.g. Crits-Christoph et al., 2005; Hardy et al., 2011; Ruiz et al., 2004). The specific nature of patients' interpersonal problems can be conceptualized on a circumplex created by the orthogonal dimensions *agency* (dominance–submissiveness) and *communion* (friendliness–coldness). Research findings have been mixed regarding the influence of agency and communion on treatment outcome. However, these studies utilized different patient populations and different treatment modalities (e.g. Dinger et al., 2007; Schauenburg et al., 2000; Vinnars et al., 2007). For example, Puschner et al. (2004) found a negative effect of communion on outcome for psychodynamic, but not for cognitive-behavioral or analytic psychotherapy and suggested that treatment type might be a relevant moderator.

Whereas most studies on interpersonal problems and outcome in depression have focused on cognitive therapy, less is known about their effects in psychopharmacological treatment and other psychotherapies. In addition, few studies have investigated the influence of interpersonal problems on attrition. This is particularly relevant for psychopharmacologic treatments where dropout is more frequent than in psychotherapy (Cuijpers et al., 2010).

Using data from a randomized controlled trial of supportive–expressive dynamic psychotherapy (SET) versus SSRI/SNRI treatment for depression (Barber et al., 2012), the aim of the current study was twofold: (1) to investigate whether interpersonal problems predict symptomatic improvement, alliance or premature

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http://dx.doi.org/10.1016/j.jad.2013.07.003

termination, and (2) to explore whether type of treatment moderates the effect of interpersonal problems on outcome. In the original study, symptomatic improvement did not differ between treatment groups.

2. Methods

2.1. Participants and procedure

Details about inclusion criteria and study procedures are reported by Barber et al. (2012). The current sample consisted of 151 patients, mean age was 37.5 years ($SD=12.12$), 60.9% were female. Ethnicities included Caucasian (49%), African American (44%), Latino (5%) and Asian (2%). All patients met DSM-IV criteria for Major Depressive Disorder, and 85% had at least one comorbid disorder. Interpersonal problems, depressive symptoms and therapeutic alliance were assessed at intake by independent and reliable observers (MS- or Ph.D-level psychologists). Throughout treatment, symptoms were assessed eight times (weeks 2, 4, 6, 7, 8, 12, 15, 16); alliance was measured four times (weeks 2, 4, 8, 16). The study was approved by the institutional review board, all patients signed informed consent.

2.2. Treatments

All treatments were administered for 16 weeks. In SET ($n=47$), patients received 20 sessions of manualized psychodynamic therapy for depression (Luborsky et al., 1995). Psychotherapists had over 15 years of psychotherapy experience (at least 10 years in SET), while clinical management was delivered by experienced psychopharmacologists. In medication (MED; $n=54$) and placebo (PBO; $n=50$), patients received either Sertraline or placebo; nonresponders were switched to Venlafaxine (MED) or to a second placebo (PBO) after 8 weeks. Clinical management followed a manualized protocol (Fawcett et al., 1987).

2.3. Measures

Interpersonal problems were assessed using the 64-item version of the Inventory of Interpersonal Problems (Horowitz et al., 2000). Items are grouped into 8 octant scales around the dimensions of agency and communion. The mean of all items indicates the general level of interpersonal distress (Distress). Agency and communion scores were calculated with standardized octant scales relative to the normative group (gender norms provided by Horowitz et al., 2000).[1] Depressive symptoms were measured with the 17-item version of the observer-rated Hamilton Rating Scale for Depression (Hamilton, 1960). Alliance was measured using the 24-item California Psychotherapy Alliance Scale (CALPAS; Gaston and Marmar, 1994). Alliance was also assessed at intake by adding the sentence "*Because you have not yet experienced treatment through this study, answer the following questions, thinking about how you expect treatment to be*" to the instruction. Intake alliance can therefore be understood as alliance expectation. Subsequent alliance assessments during treatment used the standard CALPAS instructions.

2.4. Statistical analyses

Analyses of symptom change and alliance over time were carried out with multilevel models (MLM; Raudenbush and Bryk, 2002) using IBM SPSS, version 21.[2] Due to a nonlinear change of patient scores over time, the time variable (slope) was entered as logarithmic transformation of weeks on level 1. IIP variables (Distress, Agency, Communion) were simultaneously entered as level-2 predictors of intercept and slope. In addition, treatment type and IIP scores by treatment type interactions were entered as level-2 predictors of slope. Treatment type was entered as factor, the placebo group served as reference condition. Predictors of slope are 2- or 3-way cross-level interactions with the time variable. In case of significant interactions, slope estimates were computed to quantify the effect. Analyses of attrition were conducted using logistic regression.

3. Results

3.1. Correlations at intake

At intake, the level of interpersonal distress did not correlate significantly with depression severity ($r=0.15$; $p=0.062$), but was associated with lower alliance expectations ($r=-0.21$, $p=0.015$). Although communion correlated with alliance expectations ($r=0.30$, $p=0.001$), agency was not related to either alliance or initial symptom severity (r's between −0.01 and .05).

3.2. Interpersonal problems as predictors of alliance throughout treatment

Interpersonal distress as well as communion predicted alliance intercepts (see Table 1). Alliance scores showed a significant time × treatment interaction, where SET and MED slopes significantly differed from the PBO slope. Alliance decreased during treatment in the PBO condition and remained constant in the MED and SET group (SET slope estimate 0.11, S.E. 0.08, $t(103.0)=1.54$, $p=0.13$; MED slope estimate −0.02, S.E. 0.07, $t(99.4)=-0.32$, $p=0.756$; PBO slope estimate −0.16, S.E. 0.06, $t(110.3)=-2.57$, $p=0.012$). None of the IIP variables were significantly related to alliance slope. The 3-way interactions of time by treatment by IIP were nonsignificant and therefore dropped from the final model.

3.3. Interpersonal problems as predictors of symptomatic improvement

Agency and communion failed to predict HRSD intercepts, indicating that the type of interpersonal problems was not significantly related to initial depression severity (see Table 2). However, communion predicted symptom change over time. Patients who reported being overly friendly (i.e., high communion) improved slower than those less friendly (slope estimate for patients with +1 SD communion −0.37, S.E. 0.059; and for those with −1 SD communion −0.50, S.E. 0.063). The interaction between treatment type and communion did not reach significance.

The association of agency with symptom change was moderated by type of treatment. In SET, there was a significant effect of agency on symptomatic improvement with depressive symptoms

[1] Interpersonal dimensions were calculated as vectors from octant scales around the interpersonal circumplex. Octant scales are: PA=Domineering; BC=Vindictive; DE=Cold; FG=Socially Inhibited; HI=Nonassertive; JK=Exploitable; LM=Self-sacrificing; NO=Intrusive. Formulas were as follows: Agency=0.25*((M$_{PA}$−M$_{HI}$)+(0.707*(M$_{BC}$+M$_{NO}$−M$_{FG}$−M$_{JK}$))). Communion=0.25*((M$_{LM}$−M$_{DE}$)+(0.707*(M$_{JK}$+M$_{NO}$−M$_{BC}$+M$_{FG}$))).

[2] Multilevel Analyses were conducted with SPSS and based on REML Estimation. SPSS model estimates are highly similar to other multilevel software (Heck et al., 2010). In Tables 1 and 2, the *F*-test informs about the significance of fixed-effect parameters. In addition, estimates of the fixed-effect coefficients are equivalent to unstandardized regression coefficients as obtained by other multilevel software (e.g. HLM).

Table 1
Multilevel Model with Interpersonal Problems as Predictors of Alliance.

Parameter	F	*df*	*p*	Estimate	*S.E.*
Intercept	1.63	1;137.5	0.205	0.15	0.119
× Distress	4.17	1;139.3	0.043	−0.16	0.078
× Agency	0.14	1;134.8	0.706	−0.03	0.077
× Communion	9.58	1;135.7	0.002	0.23	0.074
Slope (time)	0.17	1;101.8	0.677	−0.16	0.063
× Treatment	7.24	2;95.2	0.001	SET: 0.28	0.073
				MED: 0.14	0.071
				PBO:–	–
× Distress	0.69	1;106.0	0.408	0.03	0.035
× Agency	0.44	1;96.1	0.508	−0.02	0.033
× Communion	0.80	1;104.5	0.372	−0.03	0.032

Note: Continuous variables (alliance, distress, agency, and communion) were standardized prior to the analyses. Slope represents the change in units of logtransformed weeks. For the interaction effect with treatment, PBO served as reference group.

Table 2
Multilevel Model with Interpersonal Problems as Predictors of Outcome[2].

Parameter	*F*	*df*	*p*	Estimate	S.E.
Intercept	57.51	1;146.1	0.000	0.54	0.071
Distress	3.40	1;150.2	0.067	0.08	0.045
Agency	0.81	1;148.9	0.371	0.04	0.047
Communion	0.90	1;147.8	0.344	−0.04	0.046
Slope (time)	70.85	1;120.4	0.000	−0.50	0.074
× Treatment	1.73	2;116.6	0.182	SET: 0.21	0.126
				MED: −0.01	0.112
				PBO:–	–
× Distress	0.14	1;122.0	0.712	0.04	0.052
× Agency	3.00	1;118.4	0.086	−0.04	0.068
× Communion	4.58	1;117.2	0.034	0.15	0.063
× Distress × Treatment	2.12	2;114.6	0.125	SET: −0.12	0.076
				MED: 0.04	0.081
				PBO:–	–
× Agency × Treatment	3.20	2;112.6	0.044	SET: −0.13	0.087
				MED: 0.06	0.086
				PBO:–	–
× Communion × Treatment	2.68	2;112.6	0.073	SET: −0.06	0.083
				MED: −0.17	0.079
				PBO:–	–

Note: Continuous variables (HRSD, distress, agency, and communion) were standardized prior to the analyses. Slope represents the change in units of logtransformed weeks. For interaction effects with treatment, PBO served as reference group. Estimates and significance tests for continuous variables inform about the association within the reference group.

decreasing significantly for more dominant patients (slope estimate for patients with +1*SD* agency −0.46, S.E. 0.11, $t(111.1)=-4.31$, $p<0.001$), but not for highly submissive patients (slope estimate for patients with −1 SD agency −0.21, S.E. 0.13, $t(117.8)=-0.98$, ns). However, in the MED and PBO conditions, both highly submissive as well as more dominant patients improved at similar rates (slope estimates between −0.46 and −0.54, all *p*'s <0.001).

3.4. Interpersonal Problems as predictors of premature termination

Premature termination was defined as discontinuing treatment sessions before week 16 and included 11 randomized patients who never started treatment. There were no significant differences in premature termination rates between the groups (50.0% in MED, 48.0% in PBO and 34.0% in SET; Chi-Square=2.99, $df=2$; $p=0.224$). Patients terminating early were significantly younger than completers ($t(149)=2.48$; $p=0.014$), with no differences found in regard to gender, ethnicity or initial depression severity.

Early therapeutic alliance (week 2–4) was not significantly related to early termination. However, patients with lower levels of interpersonal distress were more likely to terminate early ($B=-0.35$, Wald 4.68, $df=1$, $p=0.031$). When examined separately, agency was marginally related to early termination ($B=0.45$, Wald 3.77, $df=1$, $p=0.052$) whereas communion showed no association. These findings suggest that more dominant patients tended to leave treatment early, although this association lessened ($p=0.14$) when interpersonal distress was entered as additional predictor. There were no significant interactions between IIP variables and treatment type.

4. Discussion

This study examined the influence of interpersonal problems on treatment alliance, outcome and premature termination in three treatments for depression. Overall, high levels of interpersonal distress predicted lower expectations for alliance at intake. Several previous studies found that patients with high interpersonal disturbances have difficulties in forming positive therapeutic alliances (e.g., Constantino and Smith-Hansen, 2008). However, previous studies were less consistent regarding the association between interpersonal distress and outcome. For cognitive therapy of depression, Renner et al. (2012) found a small influence of interpersonal distress on improvement ($\beta=0.10$). Due to their large sample ($n=532$), this association was significant. A similarly small effect would not have been detected by the current study due to the smaller sample. In addition, the correlation between interpersonal distress and depression severity at intake fell short of significance. In comparison to other studies, a minimum HRSD score as inclusion criterion as well as generally high levels of interpersonal problems in this sample might have resulted in limited range of both variables and contributed to the lower correlation.

Contrary to the hypothesis that more distress is associated with a variety of negative consequences, higher levels of interpersonal distress predicted premature termination. Interpersonal suffering is an important determinant of motivation to start treatment and may be equally important for motivation to continue. This topic has not been previously investigated for depression, but the finding is consistent with results on dropout from SET for personality disorder (Thormählen et al., 2003). In the current study, this finding applied to all three treatments. Further research should examine if the same is true for psychotherapies that may not focus as much on interpersonal difficulties (e.g. CBT).

Problems related to high communion were associated with better alliance and slower symptomatic improvement in this study. Communion has been repeatedly linked to alliance quality (e.g. Hersoug et al., 2009). Not surprisingly, patients who describe themselves as generally distant and cold towards others also report less positive relationships with their therapists. However, the association between communion and outcome is more complex. In cognitive therapy of depression, communion was unrelated to outcome (Renner et al., 2012), but Crits-Christoph et al. (2005) reported a negative effect of communion on outcome in SET for Generalized Anxiety Disorder. Our failure to find a difference for the influence of communion in medication vs. SET may still be consistent with Puschner et al.'s (2004) finding that communion affected outcome in psychodynamic therapy, but not in CBT. What may matter is the type of psychotherapy, with interpersonal problems related to communion not impacting CBT outcome.

In contrast to communion, the association of agency with outcome was moderated by treatment type. While both submissive and dominant patients improved in MED and PBO, highly submissive patients did less well than more dominant patients in SET (see also Renner et al., 2012 for CT). Considering submissiveness as the

characteristic feature of interpersonal problems in depression, this effect becomes highly relevant. If psychotherapy demands more active patient involvement than psychopharmacological treatments, a certain degree of agency might be necessary for therapeutic success. Although this hypothesis seems intuitively plausible, further research is necessary to understand, how psychotherapeutic interventions can be adjusted to facilitate improvement for non-assertive patients.

4.1. Limitations

We investigated type of treatment as a potential moderator, but additional moderating factors are possible. Furthermore, interpersonal problems were assessed by self-report only. Even though the current sample was considerably larger than many previous reports, the sample size allowed for the detection of small-moderate effects ($r=0.20$) only in the entire sample, but not within the respective treatment groups.

5. Conclusions

The current study demonstrates that interpersonal problems predict therapeutic alliance, treatment outcome, and premature termination in treatments for depression, with findings partially dependent on treatment type. As depressive patients frequently experience interpersonal problems related to submissiveness, the role of low agency in psychotherapy should be investigated in future studies.

Role of funding source

The original study was conducted with support from NIMH grant R01 MH 061410 to J. P. Barber (P.I.). The sertraline and pill placebos were provided by a grant from Pfizer Corp. The current study was written with support from the German Research Foundation, grant number: DI 1690/2 to U. Dinger.

Conflict of interest

Dr. Dinger has received funding from the German Research Foundation (DFG). Dr. Barber has received funding from the National Institute of Mental Health (NIMH), and the National Institute on Drug Abuse (NIDA); authors' fees from Guilford Press, Basic Books, and Cambridge University Press; and honoraria from Lundbeck. The other authors declare no conflict of interest.

Acknowledgments

We are grateful to the research team at the University of Pennsylvania and to those colleagues who were involved in and supported the primary trial.

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