

Interpersonal Problems and Outcome in Outpatient Psychotherapy: Findings From a Long-Term Longitudinal Study in Germany

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We used a comprehensive longitudinal data set from Germany to examine trajectories of symptom distress depending on interpersonal problems at study intake measured via the Inventory of Interpersonal Problems–64 (IIP–64; Horowitz, Strauß, & Kordy, 1994). Participants ($N = 622$) underwent mid- or long-term outpatient psychotherapy (either psychodynamically oriented psychotherapy, cognitive behavioral therapy, or analytic psychotherapy). Data comprises up to 5 assessments during a 2-year period and was analyzed via hierarchical linear modeling. In the analytic psychotherapy subgroup, initial symptom level was higher in submissive patients. Initial interpersonal problems were not predictive of the rate of symptom change during therapy. Only in psychodynamic treatments, low affiliation positively affected treatment outcome. Interpersonal problems at intake were not related to the number of utilized sessions and utilization rate across treatment subgroups. We discuss the findings and outline future research topics.

Psychotherapy research has shown repeatedly that interpersonal relationships, dynamics, and conflicts play a central role for the course and outcome of psychotherapy (for an overview, see Davies-Osterkamp, Strauß & Schmitz, 1996). The circumplex model is a widely accepted operationalization of the interpersonal concept in psychotherapy research, and it is accepted among researchers as a well-founded concept of interpersonal behavior.

CIRCUMPLEX MODEL OF INTERPERSONAL BEHAVIOR

Several conceptual formulations of a circumplex structure of interpersonal behavior have been outlined, for example, by Leary (1957), Kiesler (1983, 1996), and Benjamin (1993). The common underlying assumption of these models concerns the complementarity in behavior, that is, the idea that a particular behavior prompts a particular response behavior. Consequently, problematic behaviors and the related responses are thought to form a stable dysfunctional pattern in an individual that constitutes the basis for interpersonal prob-

lems. The circumplex model provides a comprehensive and coherent description of various interpersonal characteristics and problems (Kiesler, 1983). An overview and a detailed description of the circumplex approach is provided by Kiesler (1996).

To assess interpersonal interactions, Horowitz, Rosenberg, Baer, Ureno, and Villaseñor (1988) developed the Inventory of Interpersonal Problems (IIP), which was updated by Horowitz, Alden, Wiggins, and Pincus (2000). During the last decade, this instrument has become a standard measure in psychotherapy research and one of the most frequently used methods to assess interpersonal problems. Several studies have shown that the circumplex approach provides a useful model for analyzing IIP data (Alden, Wiggins, & Pincus, 1990; Gurtman, 1992; Horowitz, Rosenberg, & Bartholomew, 1993a).

The general assumption underlying the circumplex model is that interpersonal behavior can be described along two central dimensions, namely, the dimension of affiliation or love (LOV; with the extremes hostile vs. friendly behavior) and the dimension of dominance (DOM; with the extremes dominant vs. submissive behavior). It is further assumed that

this two-dimensional space can be divided into eight octants that allow the description of someone's specific interpersonal behavior. In case of the IIP, the eight components of the circumplex are named domineering, intrusive, overly nurturant, exploitable, submissive, socially avoidant, cold, and vindictive. Information on someone's scores on these eight scales can be used to calculate his or her problem profile for the two central dimensions of affiliation (horizontal axis) and dominance (vertical axis; Alden et al., 1990; Gurtman, 1996). On the basis of this method, Gurtman (1996) introduced a four-category system that divides the interpersonal circle into four quadrants. These are formed by the intersection of the dimensions of affiliation and dominance. Each quadrant is thus characterized by a certain type of interpersonal problems: friendly dominant (FD), hostile dominant (HD), hostile submissive (HS), and friendly submissive (FS).

INTERPERSONAL PROBLEMS AND OUTCOME

One can assume that a patient's interpersonal characteristics have an impact on psychotherapy process and outcome in at least two different ways: First, problems and conflicts with other people may lead to someone seeking psychotherapy (Horowitz et al., 1988; Maling, Gurtman, & Howard, 1995). Furthermore, interpersonal problems are often seen as underlying conditions causing psychological distress. Thus, a person's psychological impairment may be caused (in part) by his or her dysfunctional interpersonal behavior. For instance, an overly nurturant person (high on affiliation) may be concerned to lose someone close to him or her, and this in turn may contribute to a panic disorder. Second, on the other hand, a patient's interpersonal characteristics might influence the therapeutic relationship. For instance, psychoanalytic theories assume that patients reenact their core relationship problems in the therapeutic process (Freud, 1912; Schauenburg, Kuda, Sammet, & Strack, 2000). One can assume that a patient's interpersonal behavior influences interaction with the therapist irrespective of psychotherapeutic method (Gurtman, 1996; Kiesler & Watkins, 1989; Muran, Segal, Samstag, & Crawford, 1994; for divergent results, see Puschner, Bauer, Horowitz, & Kordy, *in press*). A submissive patient, for instance, may be more receptive to the therapist's instructions than a dominant person and therefore show better symptom improvement.

Interpersonal problems can thus influence treatment outcome either as a focus of the therapeutic treatment or a complicating factor during therapy or in shaping the therapeutic relationship.

Several previous studies (e.g., AUTHORS, YEAR) have investigated the relationship between interpersonal problems and psychotherapy outcome. Interpersonal problems were examined either as an outcome predictor ("In what way do

interpersonal problems affect treatment outcome?") or as a criterion variable ("How successfully are interpersonal problems reduced by psychotherapy?"). Several studies have shown that interpersonal difficulties seem to be more resistant to change than general psychological distress: Psychotherapy is more effective in improving symptoms than interpersonal problems (e.g., Kraft, Percevic, Puschner, & Kordy, 2003; Liedtke & Geiser, 2001). Some studies have found that interpersonal distress declines with delay in time (Keller & Schneider, 1993; Strauß & Burgmeier-Lohse, 1994).

The question of whether interpersonal impairment at the beginning of treatment is of prognostic value for treatment outcome has been the subject of previous research. Although Strauß, Eckert, and Ott (1993), and Davies-Osterkamp, Strauß, & Schmitz (1996) found severe initial interpersonal problems to be associated with better outcome, no influence of initial interpersonal impairment was found by Keller and Schneider (1993). Similarly, there are no consistent findings on the influence of the so-called I-S index on outcome. This index, which expresses the weight of interpersonal in relation to noninterpersonal problems (the latter measured with the Symptom Checklist-90-Revised [SCL-90-R]; Derogatis, 1986), proved to be a relevant predictor of treatment outcome (Horowitz et al., 1988). However, this finding has not been replicated (Davies-Osterkamp et al., 1996; Strauß et al., 1993).

Concerning the question of whether specific interpersonal problems influence outcome more than others, there seems to be evidence that the dimension of affiliation is related to therapy outcome. Schauenburg et al. (2000) found that patients scoring high on this dimension (i.e., describing themselves as too friendly) show better outcome. The same pattern was observed by Filak, Abeles, and Norquist (1986) who used the Interpersonal Checklist. In line with these results, Gurtman (1996) found that some kinds of interpersonal problems may facilitate the therapeutic process: Patients showing predominantly FS problems were more receptive to self-exploration and change, and their therapists assumed a greater potential for long-term gains from treatment.

In contrast to the affiliation dimension, there is less evidence of dominance being related to outcome (Filak et al., 1986; Schauenburg et al., 2000). Investigations that nevertheless have found an influence of this dimension indicated that low scores (i.e., submissive characteristics) might be positively related to outcome (Davies-Osterkamp et al., 1996) and that high scores (i.e., dominant characteristics) might be predictive of poor outcome (Gurtman, 1996). Similarly, in a study on generalized anxiety disorder, Borkovec, Newman, Pincus, and Lytle (2002) found that outcome was influenced by the patients' interpersonal problems, with dominant characteristics being related to poorer outcome.

In summary, prior research has indicated that interpersonal characteristics are moderately related to treatment outcome. To give the reader an impression of the magnitude of

effects in prior research, the effect sizes of the studies cited previously were reviewed. These effect sizes quantify the extent to which treatment produced change in psychological impairment and interpersonal distress. Consistently, in all studies in which either effect sizes or the relevant information to estimate them were reported, bigger effects were found for symptom impairment compared to interpersonal problems. For example, in the study of Liedtke and Geiser (2001), effect sizes (comparison between pretreatment and follow-up information) amounted to .79 for the Global Severity Index (GSI) of the SCL-90.-R, to estimates between .10 and .47 for the eight IIP subscales, and to .47 for the IIP total score. Pretreatment–posttreatment comparisons resulted in even lower effect size estimates for the IIP (between .02 and .25 for the subscales and .18 for the total score). Similarly, Schauenburg et al. (2000) and Davies-Osterkamp et al. (1996) reported effect sizes of .67 and .60 for the GSI and of .07 and .30 for the IIP total score.

Most of the previous findings on the relation between interpersonal characteristics and treatment outcome rely on studies with limited sample sizes and/or samples comprising only selected diagnostic groups or forms of therapy (predominantly short-term psychodynamic treatment).

Thus, there is a need to further explore this relation on the basis of comprehensive data from routine treatment settings. Using data from a large naturalistic German study (AUTHORS, YEAR) on outpatient psychotherapy, in this article, we focus on the following research questions:

1. Do interpersonal problems at intake predict outcome, that is, the rate of symptomatic change during outpatient psychotherapy?
2. Does the relation between initial interpersonal problems and symptom improvement depend on the type of outpatient psychotherapy (psychodynamic treatment vs. cognitive behavioral therapy vs. analytic psychotherapy)?
3. Do session number and proportion of utilized from reimbursable sessions differ according to type and severity of interpersonal problems?

METHOD

Design

Data collection for the study Transparency and Outcome Orientation in Outpatient Psychotherapy (TRANS-OP) by the Center for Psychotherapy Stuttgart started in September 1998. Participants were insurees of a major private health insurance company, the Deutsche Krankenversicherung (DKV), from all over Germany who applied for subsidized outpatient psychotherapy. For the patients, the design of TRANS-OP comprised five measurement points during a

2-year period. Furthermore, therapists were requested to contribute their clinical judgments at intake.

All patients received questionnaires at the time of their first inquiry for reimbursement of outpatient psychotherapy at the DKV (Time [T] 1) as well as 1½ years (T4) and 2 years thereafter (T5). Intermediate measurement points T2 and T3 were administered randomly at two out of seven possible points in time (4, 8, 16, 26, 40, 52, and 64 weeks after T1). This design—optimized for the application of hierarchical linear modeling (HLM)—allows for a large number of measurements (total of 10) while keeping low the patients' effort.

Altogether, 939 insurees considered participation, and a first questionnaire was sent to them. Of these, 780 actually started treatment (i.e., had more than one reimbursed session during the observation period), and of these, 622 (79.7%) returned the questionnaire and gave their written consent to participate. Response rates for the second, third, fourth, and fifth patient questionnaire were 74.1% ($N = 578$), 70.1% ($N = 547$), 63.7% ($N = 497$), and 60.6% ($N = 473$), respectively. Also, the therapists' readiness to participate was quite notable, that is, 56.9% ($N = 444$) sent back their first questionnaire.

Measures

Interpersonal problems were assessed at intake via the German version of the IIP-64 (Horowitz, Strauß, & Kordy, 1994). The IIP consists of eight subscales, each measured by eight items answered on a 5-point Likert scale.

Symptom distress was measured via the German version (Lambert, Hannover, Nisslmüller, Richard, & Kordy, 2002) of the Outcome Questionnaire (OQ-45.2; Lambert et al., 1996), a multiple choice instrument with 45 items assessing psychological functioning in three areas: (a) symptom distress (intrapsychic functioning), (b) interpersonal functioning, and (c) social role performance. For this article, the Symptom Distress (OQ-SD) subscale (25 items measured on 4-point Likert scales) was used.

For both IIP-64 and OQ-SD, sum scales were only computed when at least 80% of a scale's items had been filled in.

Diagnoses according to International Classification of Diseases-10th Revision (ICD-10; AUTHORS, YEAR) were taken from the therapists' first questionnaire and in case this was not available, supplemented by information on his or her application form to the DKV. In addition, the DKV provided dates of beginning and end of treatment (first and last reimbursed session). Furthermore, information on form of psychotherapy as well as on number of sessions applied for, approved for reimbursement, and actually utilized was supplied.

Sample

Patients. Table 1 shows that the sample consisted of highly educated persons most of which held a university degree. The distribution of men and women was almost equal.

TABLE 1
Socioeconomic Status and Diagnoses

Variable	Categories	N	%
Sex ^a	Male	278	44.7
	Female	344	55.3
Age (years) ^b	19 and younger	11	1.8
	20 to 29	79	12.7
	30 to 39	128	20.6
	40 to 49	189	30.4
	50 to 59	177	28.5
	60 to 69	33	5.3
Marital status ^c	70 and older	5	0.8
	Single	195	31.5
	Married	272	43.9
	Divorced	86	13.9
	Living separated	52	8.4
Educational status ^d	Widowed	15	2.4
	Hauptschule (low track)	38	6.1
	Realschule (middle track)	112	18.1
	Abitur (high track)	450	72.8
	Other or no degree	18	3.9
Professional status ^e	In professional training	38	6.2
	Professional training completed	75	12.3
	Advanced professional degree	65	10.7
	University degree	360	59.1
	No professional degree	29	4.8
ICD-10 diagnoses ^{f,g}	Other professional degree	42	6.9
	F30-F39	247	47.0
	F40-F48	228	43.4
	F50-F59	19	3.6
	F60-F69	24	4.6
	Other	7	1.3

Note. ICD-10 = International Classification of Diseases-10th Revision.

^aN = 622. ^bN = 622. ^cN = 620. ^dN = 618. ^eN = 609. ^fN = 525. ^fF30-F39 = mood (affective) disorders; F40-F48 = neurotic, stress-related and somatoform disorders; F50-F59 = behavioral syndromes associated with physiological disturbances and physical factors; F60-F69 = disorders of adult personality and behavior.

Mean age at intake was 43.5 years ($SD = 11.6$), and the majority of the participants was married.

Predominant ICD-10 diagnoses (also see Table 1) included affective (F3) and neurotic disorders (F4). Behavioral syndromes with physical factors (F5) and personality disorders (F6) were diagnosed more rarely, whereas other Chapter V diagnoses were scarce.

An analysis of study dropouts yielded no differences between continuous participants who sent back all five questionnaires ($N = 459$) and discontinuers (who did not send back the questionnaire after 2 years; $N = 144$) on their initial scores on affiliation (1.58 ± 2.92^1 vs. 1.73 ± 3.20) two-sample t test, $t(601) = .52$, $p > .05$ ($r = .022$) or dominance (-1.75 ± 2.67 vs. -1.72 ± 3.08), $t(600) = .10$, $p > .05$ ($r = .00$) nor on their baseline symptom distress as measured by

OQ-SD (42.63 ± 13.89 vs. 43.27 ± 15.77), $t(607) = .47$, $p > .05$ ($r = .02$). Also, other operationalizations of study dropout showed that participation was unrelated to baseline interpersonal problems and symptom distress, that is, participants' initial scores on affiliation, dominance, or symptom distress did not differ as to whether they decided to discontinue participation after T1, T2, or T3 (t values ranging from -1.30 to 0.27 , all $ps > .05$).

Therapists. Therapists (51.3% women) were in private practice. For treatment applications to be accepted for reimbursement by the health insurance company, therapists had to be licensed to practice either psychodynamically oriented psychotherapy (PD), cognitive behavioral treatment (CBT), or analytic psychotherapy (AP). Therapists were experienced in the sense that a training lasting 3 to 5 years is required to become licensed.

Treatments. Out of the sample ($N = 780$), 50.9% had applied for PD, 31.8% for CBT, and 17.3% for AP. In the German health care system, funding for CBT comprises 25 to 50 sessions (about 1 session per week), 50 to 80 sessions (also about 1 session per week) for PD, and up to 300 sessions (up to 5 sessions a week) for AP. In the application for treatment reimbursement, therapists had to specify kind and planned length of treatment. However, we have no information which interventions were actually carried out. Of the included treatments, 73.2% were completed within the 2-year observation time, that is, participants had either used up their amount of sessions approved for reimbursement by that time or finished their treatment before their amount of reimbursable sessions was exploited. As expected, the proportion of treatments that had been completed within 2 years was substantially lower in AP as compared to PD and CBT (PD = 71.3%; CBT = 85.1%; AP = 57.0%), $\chi^2(1, N = XX) = 21.76$, $p < .01$ ($r = .17$).

Session number was obtained in one go at the end of the TRANS-OP study in summer 2002 and not at the end of each participant's observation period (as participants were recruited consecutively). Thus, for those participants whose treatments lasted longer than 2 years, session number during the 2-year observation period was calculated assuming an equal distribution of sessions over time (e.g., 90 sessions in 3 years = 60 sessions in 2 years). Accordingly, mean session number during 2 years was 43.6 ± 36.4 sessions and differed markedly by form of treatment (PD = 38.31 ± 21.1 ; CBT = 28.4 ± 16.3 ; AP = 86.9 ± 59.2), $F(2, XXX) = 175.5$, $p < .01$ ($\eta = .75$). Furthermore, the distribution of number of utilized sessions was distinctly skewed (Shapiro-Wilk PD $W = .976$, $df = 311$, $p < .001$; CBT $W = .959$, $df = 201$, $p < .001$; AP $W = .906$, $df = 110$, $p < .001$).

Not all participants utilized the entire amount of reimbursable sessions; that is, on the average, they used only 64.64% ($SD = 25.92$) of the sessions they were entitled to, with participants in AP (60.31 ± 24.99) exhibiting the lowest utiliza-

¹Mean \pm standard deviation.

²The r indicates effect size (cf. Meyer, McGrath, & Rosenthal, 2003).

tion rate as compared to PD (66.82 ± 25.45) and CBT (63.52 ± 26.88), $F(X, XXX) = 3.54$, $p < .05$ ($\eta = .09$). The distribution of this utilization rate (utilized of reimbursable sessions) was skewed as well (Shapiro–Wilk PD $W = .948$, $df = 311$, $p < .001$; CBT $W = .950$, $df = 201$, $p < .001$; AP $W = .975$, $df = 110$, $p < .05$).

Data Analysis

Using means and standard deviations of the normative sample (Brähler, Horowitz, Kordy, Schumacher, & Strauß, 1999), LOV and DOM at intake were calculated from the standardized unipsatized eight single scales' sum scores of the IIP-64 based on Leary's (1957) original approach (see footnotes 3 and 4 for the exact formulas; cf. Alden et al., 1990; Horowitz et al., 1994).

Rates of reliable change were estimated following Speer (1992) who suggested calculating confidence intervals (CIs) around the pretreatment scores (± 2 standard errors) and evaluate the posttreatment scores in relation to this interval. The approach is also known as Edwards–Nunnally (EN) method. The EN method establishes reliable change by observing a participant's posttreatment test score relative to an established CI around the estimated true pretreatment score of the individual:

$$[r_{xx}(x_{pre} - M_{pre}) + M_{pre}] - 2 \times SD_{pre} \times \sqrt{1 - r_{xx}},$$

with (our sample's OQ–SD scores; also see Table 2) $r_{xx} = .87$, $M_{pre} = 42.78$, and $SD_{pre} = 14.35$. The resulting CI's lower border had a mean of 32.32, whereas the upper border had a mean of 53.02 OQ–SD points ($SD = 12.08$).

Speer (1992) concluded that the EN approach would be an improvement on the original clinical significance method formulated by Jacobson and Truax (1991) by minimizing the influence of regression to the mean in the calculation of improvement rates.

HLM (Bryk & Raudenbush, 1987; Raudenbush & Bryk, 2001) is the method of choice for modeling completely unbalanced longitudinal data. HLM makes it possible to use all available data from all participants even if they missed a number of measurement points and took part at different time intervals as long as data loss occurred at random. This condition is fulfilled because the design assured that intermediate measurement points were selected at random (see previously).

³PA = Domineering; BC = Vindictive; DE = Cold; FG = Introverted; HI = Submissive; JK = Exploitable; LM = Overly Nurturant; NO = Intrusive. LOV = $(0 \times PA) + (-.707 \times BC) + (-1 \times DE) + (-.707 \times FG) + (0 \times HI) + (.707 \times JK) + (1 \times LM) + (.707 \times NO)$.

⁴DOM = $(1 \times PA) + (.707 \times BC) + (0 \times DE) + (-.707 \times FG) + (-1 \times HI) + (-.707 \times JK) + (0 \times LM) + (.707 \times NO)$.

Following Bryk and Raudenbush (1987) and Raudenbush (2001), a formal denotation of a Level 1 HLM (without predictors) of the course of symptom improvement would be

$$Y_{it} = \beta_{00} + \beta_{01} t_{it} + \varepsilon_{it}, \text{ with} \\ \varepsilon_{it} = u_{0i} + u_{1i} t_{it} + e_{it}, e_{it} \sim N(0, \sigma^2).$$

Y_{it} denotes a given participant's i predicted OQ–SD score at time t consisting of the addition of the fixed effect of the intercept (β_{00}), the slope (β_{01}), the random effects u_{0i} and u_{1i} , and the measurement error e_{it} , which is assumed to be independent, normally distributed with a mean of zero and constant variance. Analyses were carried out in S-PLUS® Version 6.1 using the function "linear mixed effects" (cf. Pinheiro & Bates, 2000).

Although observations included measurements before, during, and after psychotherapy, models pertain only to the data comprising the observations obtained while participants were in treatment (1,536 observations of 557 participants). The time variable was not the measurement point as scheduled by the design but the exact time of assessment (i.e., the day the patient actually filled in the questionnaire) relative to the start of treatment (in months).

RESULTS

Interpersonal Problems and Symptom Distress at Intake

Table 2 shows means, standard deviations, and range of the eight IIP-64 scales as well as of LOV and DOM and also of symptom distress (OQ–SD). In addition, the percentage of participants lying outside the normal range in the eight IIP-subscales (above norm) and on the LOV and DOM dimension (above and below norm) is reported.

Impairment was not uniform; that is, compared to a normative sample (Brähler, Horowitz, Kordy, Schumacher, & Strauß 1999), participants reported much higher scores on the subscales Submissive, Exploitable, and Overly Nurturant as compared to Domineering, Vindictive, and Cold, whereas scores on Introverted and Intrusive ranged on an intermediate level. On the first combined measure (LOV), if impaired, participants' scores ranged predominantly on the too loving side, whereas on the second (DOM), participants primarily described themselves as too submissive.

As shown in Table 3, differences by form of treatment as to the extent of interpersonal problems emerged only on one of the eight original IIP-64 scales; that is, at intake, participants in CBT were somewhat less domineering compared to those in PD and AP. Furthermore, no differences by form of psychotherapy were found for LOV, DOM, or symptom distress.

However, amount of interpersonal problems was substantially related to gender, that is, women displayed higher values on affiliation (2.24 ± 2.99 vs. 0.82 ± 2.79), $t(XXX) =$

TABLE 2
Interpersonal Problems (IIP-64) and Symptom Distress (OQ-SD) at Intake

Scale	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>N</i>	<i>M Norm</i> ^b	<i>SD Norm</i> ^b	<i>Impaired (%)</i> ^c
Domineering (PA)	1.03	0.61	0.00	3.13	607	1.10	0.65	13.84
Vindictive (BC)	1.06	0.61	0.00	3.50	605	1.18	0.60	11.90
Cold (DE)	1.14	0.71	0.00	3.38	604	1.20	0.68	14.57
Introverted (FG)	1.59	0.84	0.00	3.88	605	1.26	0.72	32.39
Submissive (HI)	2.03	0.89	0.00	3.88	607	1.44	0.75	45.96
Exploitable (JK)	1.99	0.77	0.00	3.88	606	1.45	0.66	48.84
Overly nurturant (LM)	2.07	0.76	0.00	4.00	605	1.53	0.61	45.12
Intrusive (NO)	1.42	0.71	0.00	3.75	607	1.23	0.61	26.69
Love (LOV)	1.61	2.99	-9.15	10.25	603	0.00	1.93	12.44/45.27
Dominance (DOM)	-1.74	2.77	-9.35	7.75	602	0.00	1.99	48.01/10.29
OQ-SD	42.78	14.35	8.00	82.00	609	26.14	11.31	63.88

Note. IIP-64 = Inventory of Interpersonal Problems-64; OQ-SD = Outcome Questionnaire-Symptom Distress subscale.

^aSum score/8. ^bNormative German samples are from Brähler, Horowitz, Schummacher, and Strauß (1999) for IIP-64; Lambert, Hannover, Nisslmüller, Richard, and Kordy (2002) for OQ-SD. ^cOriginal IIP scales and OQ-SD (unipolar) = percentage above normative range ($M + SD$); LOV and DOM (bipolar) = below ($M - SD$)/above ($M + SD$) normative range.

TABLE 3
Initial Interpersonal Problems and Symptom Distress by Form of Treatment (Analysis of Variance)

Scale	<i>SS</i> (Between)	<i>df</i>	<i>F</i>	<i>p</i>	η^a
Domineering (PA)	2.37	2	3.16	.04	0.11
Vindictive (BC)	0.38	2	0.49	.61	0.04
Cold (DE)	0.12	2	0.12	.89	0.02
Introverted (FG)	1.33	2	0.95	.39	0.06
Submissive (HI)	0.24	2	0.15	.86	0.02
Exploitable (JK)	0.49	2	0.42	.66	0.03
Ov. nurturant (LM)	0.55	2	0.47	.63	0.04
Intrusive (NO)	0.18	2	0.17	.84	0.02
Love (LOV)	6.96	2	0.39	.68	0.04
Dominance (DOM)	1.96	2	0.13	.88	0.02
OQ-SD	485.49	2	1.18	.31	0.06

Note. OQ-SD = Outcome Questionnaire-Symptom Distress subscale; PD = psychodynamically oriented psychotherapy; CBT = cognitive behavioral treatment; AP = analytic psychotherapy. N_{PD} = 301 to 305; N_{CBT} = 194 to 197; N_{AP} = 107 to 108.

^aeta (η) indicates the estimated effect size.

-5.93, $p < .01$ ($r = .24$) and lower values on dominance (-2.03 ± 2.68 vs. -1.38 ± 2.86), $t(XXX) = 2.84$, $p < 0.01$ ($r = -.12$).

Change of Symptomatic Distress During Outpatient Psychotherapy

According to the EN method (see previously), 53.0% of the participants with available data ($N = 464$) were classified as "reliably improved" 2 years after the start of treatment; 43.3% were found to be "unchanged," and 3.7% were classified as "reliably deteriorated." The effect size (Cohen's d) for the difference on OQ-SD between intake and 2 years later was 0.88.

To describe the course of symptom improvement over time, an unconditional HLM (measured by OQ-SD) was

computed: $OQ-SD_{ti} = \beta_{00} + \beta_{01}t_{ti} + \epsilon_{ti}$. Table 4 shows that participants started treatment with an average of 40.36 OQ-SD points and significantly improved by 0.37 points per month in treatment.

Interpersonal Problems at Intake and Course of Symptom Distress During Outpatient Psychotherapy

To analyze the impact of interpersonal problems on outcome in the total sample, a conditional model including initial LOV, DOM, and LOV \times DOM as predictors of the course (intercept and slope) of symptom change was computed:

$$OQ-SD_{ti} = \beta_{00} + \beta_{01}LOV_{1i} + \beta_{02}DOM_{2i} + \beta_{03}LOV \times DOM_{3i} + \beta_{10}t_{ti} + \beta_{11}LOV_{1i}t_{ti} + \beta_{21}DOM_{2i}t_{ti} + \beta_{31}LOV \times DOM_{3i}t_{ti} + \epsilon_{ti}.$$

Table 5 shows that neither LOV nor DOM nor their interaction as measured at intake predicted the pace of symptom improvement (slope) during 2 years after the start of treatment. However, initial dominance was related to the starting level (intercept) of symptom impairment, that is, the lower

TABLE 4
HLM Parameters of Course of OQ-SD Over Time in Psychotherapy

Effect	Notation	Coefficient	SE	<i>df</i>	<i>t</i>	<i>p</i>	r^a
Intercept	β_{00}	40.36	0.65	956	62.36	< .001	0.90
Slope ^b	β_{10}	-0.37	0.04	956	-9.89	< .001	0.30

Note. 1,513 observations of 556 participants. Random effects (SD): intercept = 13.07; slope = 0.33; residual = 7.65. Goodness-of-fit: AIC: 11,719.18; BIC: 11,751.10; logLik: -5,853.59. HLM = hierarchical linear modeling; OQ-SD = Outcome Questionnaire-Symptom Distress subscale. ^a r indicates the effect size (cf. Meyer, McGrath, & Rosenthal, 2003). ^bSlope is computed using months as the unit of measurement.

TABLE 5
HLM Parameters of Course of OQ–SD Over
Time in Psychotherapy As Predicted
by Initial Interpersonal Problems

Effect	Notation	Coefficient	SE	df	t	p	r
Intercept	β_{00}	39.32	0.83	932	47.49	< .001	.84
LOV	β_{01}	–0.28	0.27	532	–1.04	.29	.05
DOM	β_{02}	–0.79	0.26	532	–3.06	< .01	.13
LOV × DOM	β_{03}	–0.04	0.08	532	–0.47	.64	.02
Slope	β_{10}	–0.35	0.05	932	–6.88	< .001	.22
LOV	β_{11}	0.01	0.02	932	0.75	.45	.02
DOM	β_{21}	0.01	0.02	932	0.74	.46	.02
LOV × DOM	β_{31}	0.01	0.00	932	1.08	.28	.04

Note. 1,472 observations of 536 participants. Random effects (SD): intercept = 12.77; slope = 0.34; residual = 7.65. Goodness-of-fit: AIC = 11,414.97; BIC = 11,478.44; logLik = 5,695.48. HLM = hierarchical linear modeling; OQ–SD = Outcome Questionnaire–Symptom Distress subscale; LOV = dimension of love; DOM = dimension of dominance.

initial DOM, the more pronounced the symptom distress displayed by the participants at the first treatment session.

Initial Interpersonal Problems and Symptom Improvement in the Different Forms of Treatment

Analogous analyses were carried out separately for each of the three forms of treatment (PD, CBT, and AP). Tables 6 through 8 show that effects of initial interpersonal problems on outcome differed markedly by form of treatment: Significant effects emerged for LOV and LOV × DOM on slope in PD, no effects were found in CBT, and a significant effect of DOM on intercept was observed in AP (also see footnote 5).

Following Liao (1994), the magnitude of predictor effects on the course of improvement is illustrated by inserting different values into the model equations of the conditional HLMs for the three forms of treatment (also see footnote 6). We chose one “typical” value of each quadrant opened up by the two dimensions LOV and DOM that lies in the impaired range of

both LOV and DOM. For “too low” LOV and DOM, the 16th percentile of the normative range was chosen (LOV = –1.69; DOM = –1.92) and for “too high” values, the 84th percentile (LOV = 1.87; DOM = 1.79). The resulting points in the circumplex each lie in the middle between the two axes (cf. Carson, 1969; Gurtman, 1996), that is, on 45° for the FD quadrant, on 135° for HD, on 225° for HS, and on 315° for FS. As a reference value for no impairment, we chose the center of the circumplex with both LOV and DOM equaling zero.

Figures 1 to 3 show the models of in-treatment change in symptom distress (ordinate) over time (abscissa) for the chosen typical values of each quadrant. The horizontal gray line

TABLE 6
HLM Parameters of Course of OQ–SD
Over Time in Psychotherapy As Predicted
by Initial Interpersonal Problems
for Participants in Psychodynamic
Psychotherapy

Effect	Notation	Coefficient	SE	df	t	p	r
Intercept	β_{00}	39.06	1.01	482	38.69	< .001	.87
LOV	β_{01}	–0.36	0.37	265	–0.98	.32	.06
DOM	β_{02}	–0.40	0.32	265	–1.27	.21	.08
LOV × DOM	β_{03}	–0.08	0.10	265	–0.79	.43	.05
Slope	β_{10}	–0.29	0.07	482	–4.44	< .001	.20
LOV	β_{11}	0.05	0.02	482	2.04	.04	.09
DOM	β_{21}	0.01	0.02	482	0.66	.51	.03
LOV × DOM	β_{31}	0.01	0.01	482	1.92	.05	.09

Note. 755 observations of 269 participants. Random effects (SD): intercept = 10.19; slope = 0.23; residual = 8.21. Goodness-of-fit: AIC = 5,845.0; BIC = 5,900.41; logLik = –2,910.508. HLM = hierarchical linear modeling; OQ–SD = Outcome Questionnaire–Symptom Distress subscale; LOV = dimension of love; DOM = dimension of dominance.

TABLE 7
HLM Parameters of Course of OQ–SD
Over Time in Psychotherapy As Predicted
by Initial Interpersonal Problems
for Participants in Cognitive
Behavioral Treatment

Effect	Notation	Coefficient	SE	df	t	p	r
Intercept	β_{00}	40.13	1.78	230	22.59	< .001	.83
LOV	β_{01}	–0.33	0.58	163	–0.59	.56	.05
DOM	β_{02}	–0.34	0.58	163	–0.59	.56	.05
LOV × DOM	β_{03}	–0.13	0.17	163	–0.74	.46	.06
Slope	β_{10}	–0.37	0.10	230	–3.71	< .001	.24
LOV	β_{11}	–0.02	0.04	230	–0.46	.65	.03
DOM	β_{21}	0.00	0.03	230	0.03	.97	.00
LOV × DOM	β_{31}	0.00	0.01	230	0.09	.93	.01

Note. 401 observations of 167 participants. Random effects (SD): intercept = 15.58; slope = 0.24; residual = 7.22. Goodness-of-fit: AIC = 3,170.99; BIC = 3,218.68; logLik = –1,573.49. HLM = hierarchical linear modeling; OQ–SD = Outcome Questionnaire–Symptom Distress subscale; LOV = dimension of love; DOM = dimension of dominance.

⁵In addition, we analyzed for curvilinear effects (extremity on the axes) by adding LOV² and DOM² to the HLM analyses: $OQ-SD_{ti} = \beta_{00} + \beta_{01}LOV_{1i} + \beta_{02}DOM_{2i} + \beta_{03}LOV \times DOM_{3i} + \beta_{04}LOV^2_{4i} + \beta_{05}DOM^2_{5i} + \beta_{10}t_{ti} + \beta_{11}LOV_{1i}t_{ti} + \beta_{21}DOM_{2i}t_{ti} + \beta_{31}LOV \times DOM_{3i}t_{ti} + \beta_{41}LOV^2_{4i}t_{ti} + \beta_{51}DOM^2_{5i}t_{ti} + \epsilon_{it}$. Compared to the models reported previously, additional nonlinear effects were rare, mostly weak, and—most important—entirely restricted to intercept, that is, there were no additional nonlinear effects on the course of symptom improvement either for the entire sample or for the different forms of treatment.

⁶Note that we did not compute the four quadrants separately (cf. Horowitz, 2004) but illustrated the magnitude of effects based on the two dimensions (LOV and DOM).

TABLE 8
HLM Parameters of Course of OQ-SD
Over Time in Psychotherapy As Predicted
by Initial Interpersonal Problems
for Participants in Analytic Psychotherapy

Effect	Notation	Coefficient	SE	df	t	p	r
Intercept	β_{00}	37.76	1.98	212	19.01	< .001	.79
LOV	β_{01}	0.40	0.55	96	0.73	.46	.07
DOM	β_{02}	-2.44	0.61	96	-4.03	< .001	.38
LOV × DOM	β_{03}	0.24	0.19	96	1.25	.21	.13
Slope	β_{10}	-0.36	0.12	212	-3.09	< .01	.21
LOV	β_{11}	-0.02	0.03	212	-0.60	.55	.04
DOM	β_{21}	0.04	0.04	212	1.03	.31	.07
LOV × DOM	β_{31}	-0.00	0.01	212	-0.14	.89	.01

Note. 316 observations of 100 participants. Random effects (*SD*): intercept = 13.61; slope = 0.53; residual = 6.73. Goodness-of-fit: AIC = 2,430.89; BIC = 2,475.65; logLik: -1,203.45. HLM = hierarchical linear modeling; OQ-SD = Outcome Questionnaire–Symptom Distress subscale; LOV = dimension of love; DOM = dimension of dominance.

represents cutoff C between dysfunctional and normative range calculated according to Jacobson and Truax (1991).

Figure 1 illustrates the model for participants in PD. This model predicts the slowest rate of improvement for participants with interpersonal problems in the FD quadrant. In this model, participants initially showing pronounced interpersonal problems in the HS quadrant start with the highest symptom impairment and also show the fastest improvement.

The closely parallel lines in Figure 2 show that in the model for participants in CBT, initial type and severity of interpersonal problems do not predict symptom improvement during 2 years.

As shown in Figure 3, in the model for participants in AP, type and severity of interpersonal problems at intake do not predict slope, but significantly relate to intercept: Symptom distress at the start of treatment is predicted to be lowest for participants with interpersonal problems in the HD quadrant, highest for those with interpersonal problems in the HS and FS quadrants, and at an intermediate level for those with interpersonal problems in the FD quadrant or no interpersonal problems.

Interpersonal Problems and Utilization of Outpatient Psychotherapy

Finally, we analyzed whether amount of interpersonal problems related to the number of utilized psychotherapy sessions and to the utilization rate (utilized of reimbursable sessions) during the 2-year observation time. Because both number of utilized sessions and utilization rate differed markedly between forms of psychotherapy (see Method section), analyses were carried out separately for each form of treatment. Furthermore, for the reason that distributions of both session number and utilization rate were skewed, for each form of treatment, we categorized both variables into four categories

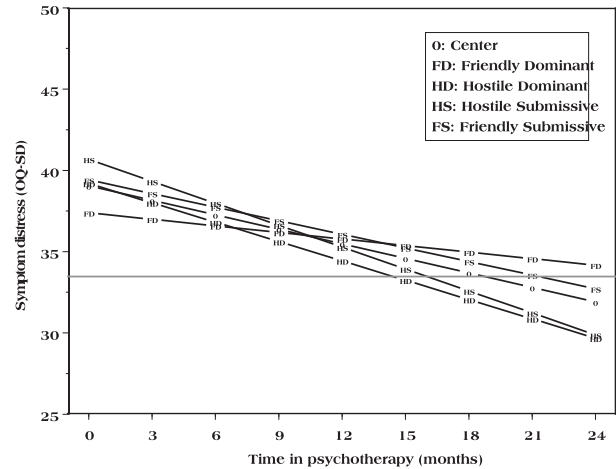


FIGURE 1 Symptom distress as predicted by varying initial interpersonal problems for psychodynamic psychotherapy. OQ-SD =

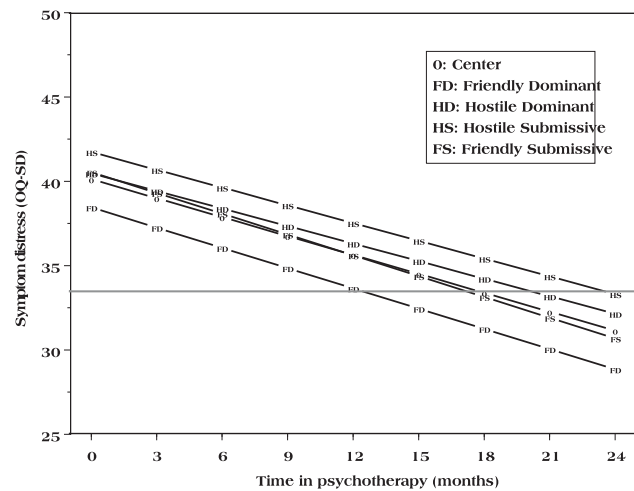


FIGURE 2 Symptom distress as predicted by varying initial interpersonal problems for cognitive behavioral treatment. OQ-SD = Outcome Questionnaire–Symptom Distress subscale.

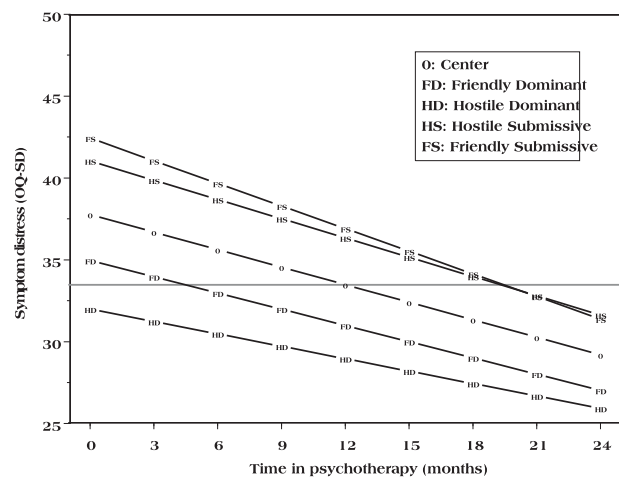


FIGURE 3 Symptom distress as predicted by varying initial interpersonal problems for analytic psychotherapy. OQ-SD = Outcome Questionnaire–Symptom Distress subscale.

(via quartile split), which were then entered into ordinal regression models.

As can be seen in Tables 9 through 11, neither form of treatment LOV, DOM, or LOV \times DOM at intake predicted session number or utilization rate.

DISCUSSION

The assessment of interpersonal problems and the relevance of such problems for treatment planning, course, and outcome have been an issue of ongoing debate in psychotherapy research. On the basis of a large data set (AUTHORS, YEAR), the impact of interpersonal problems at treatment onset—assessed via the IIP-64—on the course of psychological symptom distress during mid- and long-term outpatient psychotherapy (PD, CBT, and AP) was analyzed via HLM.

A considerable proportion of the study participants complained about interpersonal problems at the start of treat-

TABLE 9
Number of Utilized Sessions and Utilization Rate As Predicted by Initial Interpersonal Problems for Participants in PD (Ordinal Regression)

Variable	Effect	Coefficient	CI 95%	SE	df	p
Sessions utilized ^a	LOV	-.02	-.11 to .07	.05	1	.72
	DOM	-.07	-.15 to .01	.04	1	.09
	LOV \times DOM					
	DOM	.01	-.02 to .03	.01	1	.55
Utilization rate (%) ^b	LOV	-.01	-.09 to .08	.05	1	.86
	DOM	-.06	-.14 to .02	.04	1	.13
	LOV \times DOM					
	DOM	.01	-.02 to .04	.01	1	.48

Note. PD = psychodynamically oriented psychotherapy; CI = confidence interval; LOV = dimension of love; DOM = dimension of dominance.

^aN = 299. $\chi^2 = 3.33$, $p = .34$. Pseudo R^2 (McFadden) = .00. ^bN = 300. $\chi^2 = 2.64$, $p = .45$. Pseudo R^2 (McFadden) = .00.

TABLE 10
Number of Utilized Sessions and Utilization Rate As Predicted by Initial Interpersonal Problems for Participants in CBT (Ordinal Regression)

Variable	Effect	Coefficient	CI 95%	SE	df	p
Sessions utilized ^a	LOV	.01	-.09 to .12	.05	1	.79
	DOM	-.03	-.13 to .08	.06	1	.64
	LOV \times DOM					
	DOM	-.01	-.04 to .02	.02	1	.55
Utilization rate (%) ^b	LOV	.05	-.05 to .16	.05	1	.32
	DOM	-.02	-.13 to .09	.06	1	.72
	LOV \times DOM					
	DOM	.01	-.02 to .05	.01	1	.49

Note. CBT = cognitive behavioral therapy; CI = confidence interval; LOV = dimension of love; DOM = dimension of dominance.

^aN = 193. $\chi^2 = 1.68$, $p = .64$. Pseudo R^2 (McFadden) = .00. ^bN = 191. $\chi^2 = 1.11$, $p = .76$. Pseudo R^2 (McFadden) = .00.

TABLE 11
Number of Utilized Sessions and Utilization Rate As Predicted by Initial Interpersonal Problems for Participants in AP (Ordinal Regression)

Variable	Effect	Coefficient	CI 95%	SE	df	p
Sessions utilized ^a	LOV	.03	-.09 to .15	.06	1	.63
	DOM	-.06	-.19 to .07	.07	1	.39
	LOV \times DOM					
	DOM	.01	-.02 to .06	.02	1	.40
Utilization rate (%) ^b	LOV	.01	-.11 to .13	.06	1	.87
	DOM	.06	-.07 to .19	.07	1	.34
	LOV \times DOM					
	DOM	-.01	-.05 to .03	.02	1	.57

Note. AP = analytic psychotherapy; CI = confidence interval; LOV = dimension of love; DOM = dimension of dominance.

^aN = 108. $\chi^2 = .90$, $p = .83$. Pseudo R^2 (McFadden) = .00. ^bN = 108. $\chi^2 = 1.06$, $p = .79$. Pseudo R^2 (McFadden) = .00.

ment, with the most problems occurring in the FS quadrant of the circumplex (more marked for women than for men). This is a typical finding in clinical samples (e.g., Brähler et al., 1999; Horowitz, Rosenberg, & Bartholomew, 1993b; Keller & Schneider, 1993; Schauenburg, Pekrun, & Leibing, 1995).

Effect of Interpersonal Problems at Intake on Course of Symptom Distress

Interpersonal problems were assessed along the two basic dimensions of the interpersonal circumplex, affiliation and dominance. Although findings are not entirely consistent, prior research suggests better treatment outcome for patients with problems on the affiliation dimension (Filak et al., 1986; Gurtman, 1996; Schauenburg et al., 2000) or low scores on the dominance-associated subscales (Borkovec et al., 2002; Davies-Osterkamp et al., 1996).

The effect of these two dimensions and their interaction on course of symptom distress was first analyzed for the whole sample. Psychological symptom status at start of treatment differed depending on the dominance score, that is, initial symptom level was higher in submissive participants.

However, although psychological symptoms generally improved over time, neither the affiliation nor the dominance dimension nor their interaction affected rate of symptom change. This was contrary to expectations derived from the studies cited previously. However, prior evidence is scarce, and there are other studies—possibly added by unpublished ones—that have not found an association of outcome with either affiliation (Davies-Osterkamp et al., 1996; Strauss & Hess, 1993) or dominance (Filak et al., 1986; Schauenburg et al., 2000). Furthermore, this study is not fully comparable to the cited studies. Because, for instance, session number was higher than in for example, Borkovec et al. (2002), Gurtman (1996) and Schauenburg et al. (2000), the impact of interpersonal problems on outcome in mid- or long-term treatments is possibly different to that in short-term psychotherapy. In

addition, age might have a bearing on the impact of interpersonal problems on course of treatment, and mean age in our sample (45 years) was up to 19 years higher than in other studies (e.g., Borkovec et al., 2002; Davies-Osterkamp et al., 1996; Filak et al., 1986; Schauenburg et al., 2000).

Initial Interpersonal Problems and Symptom Improvement in the Different Forms of Treatment

Analyzing the three forms of psychotherapy separately, the effect of dominance on initial symptom status observed in the total sample was restricted to the AP treatment subgroup. This implies that patients seeking AP, if severely impaired, are rather too submissive than too dominant. On the other hand, dominant participants in AP were generally less distressed, but this applied mainly to HD participants. The relationship of dominance and symptomatic distress was not as prominent in the other two forms of treatment, and this might reflect selective therapy assignment. However, neither interpersonal problems nor the level of symptom distress differed across types of therapy at start of treatment. The patient, the therapist, or some third party (for instance, the referring family doctor) might appraise that AP is particularly suited to help with this combination of submissiveness and high symptom distress.

As in the total sample, no effect of interpersonal problems on the rate of symptom change was found for participants in CBT and AP. In participants in PD, however, rate of change was predicted by interpersonal problems on the affiliation dimension. However, contrary to expectations, too friendly participants improved more slowly than too hostile participants. The interaction of affiliation and dominance just reached statistical significance, with HS participants showing the highest rate of symptom change. Although this is in contrast to the findings of Filak et al. (1986) and Schauenburg et al. (2000) who found high affiliation to be associated with better outcome in psychodynamic treatments, Davies-Osterkamp et al. (1996) reported better outcome for introverted patients in psychodynamic group therapy. Our finding might indicate that PD is especially effective in improving this kind of interpersonal problem, which in turn leads to decrease in psychological symptoms. Although depression is frequently associated with problems of hostility and submissiveness (e.g., Brähler et al., 1999), improving interpersonal relations as part of the interpersonal (psychodynamic) psychotherapy has indeed been found to be an effective treatment for depression (Elkin et al., 1989; Weissman et al., 1979). Another explanation might be that the nature of the therapeutic relationship in this form of treatment might be especially suitable for cold or introverted persons.

In CBT, outcome was unrelated to interpersonal problems at intake. This implies that in this form of treatment, the therapeutic relationship and/or patients' responsiveness to psychotherapeutic interventions is hardly affected by interpersonal characteristics. Although Muran et al. (1994) found a positive relationship between friendly submissiveness and

helping alliance at start of treatment in short-term cognitive therapy, this effect might occur only in the early phase of treatment and not impact on long-term treatment outcome. Furthermore, our results are inconsistent with the finding of Borkovec et al. (2002) that interpersonal problems are predictive of posttreatment outcome in CBT. However, as their study pertains only to the short-term treatment of patients with generalized anxiety disorder, results are not directly comparable.

Interpersonal Problems and Utilization of Outpatient Psychotherapy

Interpersonal problems at baseline were not related to the (subsequently realized) amount of treatment in terms of session number or to utilization rate. This applied to all three types of outpatient psychotherapy. Other factors obviously play a more important role for duration and attrition of psychotherapy than interpersonal problems.

Limitations

Several limitations of this study should be borne in mind. Observation time was 2 years, and we do not know whether there were any effects of interpersonal problems on outcome exceeding the study period. However, as most patients in CBT and PD completed their treatments within the observation period, this applies primarily to the AP subgroup.

Second, as our sample consisted of predominantly highly educated insureds of a private health insurance company, results should be generalized with caution. Third, as noted previously, there was a selection bias as to treatment assignment. On the other hand, it is only by means of such a naturalistic study that patterns of treatment selection as they occur in routine practice can be analyzed. Furthermore, our results pertain to mid-term and/or long-term psychotherapy as it is commonly—but not exclusively—practiced in Germany. Finally, we used months since the start of treatment as the time variable in the HLM models. A different time variable, for example, session number, might have led to different results.

Conclusions and Outlook

Without taking into account form of treatment, the predictive value of the IIP seemed to be rather weak. However, as the differences between the different forms of treatments implied, the relationship between interpersonal problems and outcome might be more complex. Especially as our results were not in line with previous research, further research is needed to clarify these questions.

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