

Comparison of cognitive-behaviour therapy with psychoanalytic and psychodynamic therapy for depressed patients – A three-year follow-up study

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Zusammenfassung

Vergleich von kognitiver Verhaltenstherapie mit analytischer und tiefenpsychologisch fundierter Psychotherapie bei depressiven Patienten – Eine Dreijahreskatamnese-Studie

Fragestellung: Es wird die Effektivität von kognitiver Verhaltenstherapie mit analytischer und tiefenpsychologisch fundierter Psychotherapie bei depressiven Patienten verglichen.

Methode: In einem prospektiven, quasi-experimentellen Design wurden 100 Patienten zu Therapiebeginn, Therapieende und zur Dreijahreskatamnese untersucht. Ergebnismessinstrumente waren das Beck-Depressions-Inventar (BDI) und die Symptom Check Liste (SCL-90-R) zur Erfassung der Symptome, das Inventar für Interpersonelle Probleme (IIP) und der Fragebogen für Soziale Unterstützung (F-SozU) zur Erfassung des sozio-interpersonellen Funktionierens und der INTREX Introjekt-Fragebogen zur Erfassung der Selbstrepräsentanzen. Effektivitätsvergleiche wurden mit Mixed Models berechnet.

Ergebnisse: Signifikante Unterschiede fanden sich zur Dreijahreskatamnese zwischen analytischer Psychotherapie und Verhaltenstherapie für depressive und allgemein psychiatrische Symptome, teilweise für sozio-interpersonelle Probleme und für die Veränderung in der Selbstrepräsentanz. Die tiefenpsychologisch fundierte Psychotherapie unterschied sich von der Verhaltenstherapie nur in der Reduktion interpersoneller Probleme.

Diskussion: Analytische Psychotherapie führt drei Jahre nach dem Behandlungsende zu länger anhaltenden Effekten als Verhaltenstherapie; dies wurde als Dosiseffekt diskutiert.

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Keywords

Psychoanalytic Therapy – Psychodynamic Therapy – Cognitive Behaviour Therapy – Depression – Outcome Research – Long-term Follow-up

Summary

Objective: The study investigates the effectiveness of long-term psychotherapies. Cognitive-behaviour therapy was compared with psychoanalytic and psychodynamic therapy in the treatment of patients with a primary diagnosis of unipolar depression.

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Method: In a prospective, quasi-experimental design 100 patients were compared at pre- and post-treatment and three-year follow-up. Outcome measures were the Beck Depression Inventory and Global Severity Index for measuring symptoms, the Inventory of Interpersonal Problems and the Social Support Questionnaire for measurement of social-interpersonal functioning, and the INTREX Introject Questionnaire for measuring personality structure. Comparative effectiveness of the experimental groups was analyzed using mixed models.

Results: We found significant outcome differences between psychoanalytic therapy and cognitive-behaviour therapy in depressive and global psychiatric symptoms, partly social-interpersonal and personality structure at three-year follow-up. Psychodynamic therapy was superior to cognitive-behaviour therapy in the reduction of interpersonal problems.

Conclusion: Psychoanalytic therapy shows significantly longer-lasting effects compared to cognitive-behaviour therapy three years after termination of treatment, which is discussed as a dose-effect.

1. Introduction

The effectiveness of short-term psychotherapy for depressive disorders is well established, as meta-analyses have confirmed. But with accumulating scientific evidence of the recurrent nature of unipolar depression in the last decades (Judd 1997), psychotherapy outcome research has evidenced a shift away from assessing simply whether treatment leads to recovery and remission of acute symptoms towards studies examining whether treatment may prevent future symptom recurrence or a chronic illness course. Thus, the effectiveness of a treatment cannot be evaluated adequately by measuring its influence on an index episode; the litmus test rather is the prevention of recurrence and relapse. With this concern in mind, it is of crucial importance to grasp potential episodes after termination of treatment, and to take – for a long enough follow-up period – the natural course of the disorder into account. Epidemiologic research has supplied valid data for the natural course of depressive disorder, and based on these data, a two-year follow-up (Roth & Fonagy 2005) or a three-year follow-up (Frank et al. 1990) period is recommended to disentangle treatment effects from the natural course of depressive disorder.

When scrutinizing the results of short-term psychotherapy, studies show, at least for Major Depressive Disorder (MDD), that recurrence and relapse are common after short-term treatment for depressive disorders and that chronic cases are insufficiently treated (Cuijpers et al. 2010; Dunner 2001). One proposed solution is to provide maintenance and continuation therapy with ongoing clinical monitoring with flexible frequencies and patterns (e.g., Vittengl et al. 2009a). Another proposed solution is providing long-term treatments (Shea et al. 1992) as a potentially more efficient and cost-effective way to help patients to cope better with potential future stressors likely to trigger depression. Although the effectiveness of long-term psychotherapy for general mental disorders has been demonstrated in one review (DeMaat et al. 2009), and two meta-analyses (Leichsenring & Rabung 2008, 2011), studies of long-term treatment with long-term follow-ups for depressed patients as a diagnostic homogeneous group are still lacking.

Together with the investigation of long-term stability, the research question of how and why treatments achieve stable results became central (Kazdin 2007). Meanwhile, empirical evidence has accumulated that impaired personality structures like inadequate personality functioning or distorted self-schemata (Beshai et al. 2011) may predispose patients to relapse and recurrence (Fava et al. 2007). Therefore, outcome research increasingly targets personality structures but still empirical findings are only tentative (e.g., which treatment models enable patients to change maladaptive personality structures).

To address these issues, we compared psychoanalytic (PA) and psychodynamic (PD) therapy to cognitive-behaviour therapy (CBT) applying a three-year follow-up. To assure relevance for research on mental health care utilization, we investigated “real-world” treatments provided in the German health-care system, using a design balancing the concerns of both internal and external validity.

Considering the restraint empirical knowledge up to now, we have formulated the following open research questions: Is (1) PA and (2) PD significantly different to CBT at three-year follow-up in terms of a) symptom improvement, b) social-interpersonal improvement, and c) change in personality structure?

2. Methods

2.1. Study design

The Munich Psychotherapy Study (MPS) is a comparative quasi-experimental study of PA, PD and CBT. It is designed to maximize external validity by examining non-manualized and representative psychotherapies under the conditions of day-to-day practice conducted by experienced psychotherapists, while improving internal validity by recruiting a diagnostically homogeneous sample, blinding the investigator as to treatment modality and allocating participants partly at random. The study was conducted at the Department of Psychosomatic Medicine and Psychotherapy, Technische Universität München (TUM, Germany). The study protocol was approved by the Ethics Committee of the TUM. The study design was described in detail in Huber et al. (Huber et al. 2012). Here we confine ourselves to presenting the comparison of CBT versus PA and CBT versus PD.

2.2. Participants

Patients seeking treatment at the outpatient clinic completed the Beck Depression Inventory (BDI; Hautzinger et al. 1994). If BDI was at least 16, an intake interview was conducted by the investigator who used ICD-10 (WHO 1993)/DSM-IV (APA 1994) criteria to assess depressive disorder and personality disorder. We screened 150 depressive patients with BDI over 16 in this manner. Two psychiatrists consensually assessed the type of depressive disorder (and if appropriate any co-morbid axis I and II disorders) by means of the clinical interview that was recorded and subsequently reviewed by the two psychiatrists using the International Diagnostic Checklists for

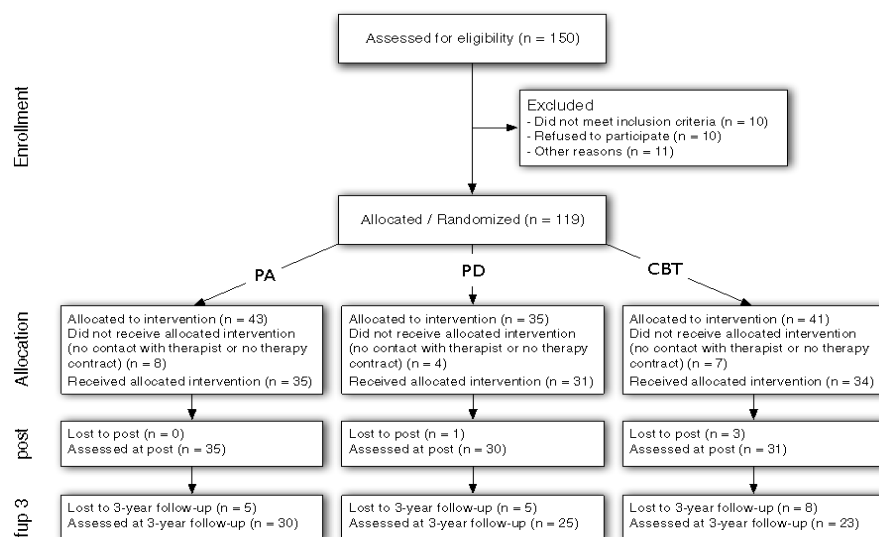


Figure 1: Participant flow through trial (post = post treatment, fup 3 = three-year follow-up)

ICD-10 and DSM-IV (ICD-10/DSM-IV Checklists Hiller et al. 1995). These checklists include diagnostic criteria to enable clinicians and researchers to reliably diagnose mental disorders. Interrater reliability (kappa) was .70 for depressive episode and .72 for recurrent depressive disorder (Hiller et al. 1994).

Thus, inclusion criteria required participants to have (1) a BDI total score of at least 16 and (2) a primary diagnosis of a major depressive disorder with a current moderate or severe episode (ICD-10 diagnoses F 32.1/2 or F 33.1/2 or DSM-IV diagnoses 296.22/23 or 296.32/33) or a double depression characterized by both dysthymic disorder and a current major depressive episode (Keller et al. 1997). Exclusion criteria included bipolar affective disorder, depression due to somatic illnesses or diseases of the brain, alcohol or substance dependence, psychotherapy during the past two years, and concurrent anti-depressants.

The development of sample is presented in Figure 1. 150 patients with depressive symptoms were screened. 31 patients were excluded because they did not fulfil the inclusion criteria, refused to participate in the study, or for other reasons. 119 patients were allocated to the three experimental groups. Seven patients did not contact the therapist and twelve did not begin treatment after five trial sessions (in Germany patients and therapists usually have five trial sessions before they sign therapy-contract); as recommended by Lambert and Ogles (2004) only patients who agreed to the therapy-contract were included in the study. As a result, 35 patients of the PA, 31 patients of the PD and 34 patients of the CBT group were followed-up, even if they did not complete treatment (intent-to-treat approach). No patient of the PA, one patient of the PD and three patients of the CBT-group dropped out during treatment. Additionally, two patients of the PD group and two patients of the CBT group failed

to provide ratings on the primary outcome measure (but they continued to be part of the study). During the three-year follow-up period, five patients in PA, five in PD and eight in CBT were lost. Thus, at three-year follow-up, the PA group included 30, the PD group 25 and the CBT group 23 patients.

Fisher's exact tests show that there was no statistically significant difference in drop-out rate from pre- to post-treatment, $p = .16$, from post-treatment to three-year follow-up, $p = .62$, and from pre-treatment to three-year follow-up, $p = .20$.

2.3. Assessment and Measures

A multidimensional measurement strategy was applied. A key goal of the study was to go beyond symptom measurement, therefore, in addition to symptom measures, we included measures of social-interpersonal problems and personality structure as well.

Symptoms were assessed using the BDI and the Global Severity Index (GSI) of the Symptom Check-List (SCL-90-R; Franke 1995). We used the total scores of the BDI and the GSI where higher values represent higher symptom severity. Self-reported remission from depressive symptoms was operationalized as a total score of under 10 in the BDI which is in accordance to the S3- and national healthcare guideline "Unipolar Depression" (AWMF 2009), Williams et al.'s review (2002) and the suggestion of Knekt and co-workers (Knekt et al. 2008, 2011).

Social-interpersonal functioning was assessed with the German version of the Inventory of Interpersonal Problems, 64-item version (IIP; Horowitz et al. 2000) using the total score with high values indicating more interpersonal problems. Horowitz (1988) and Huber (2007) reported satisfactory psychometric qualities of the IIP. Additionally, the Social Support Questionnaire, (F-SOZU short version; Sommer & Fydrich 1991), a self-report questionnaire for the assessment of perceived social support, was applied. We used the total score where higher values represent more perceived social support. Psychometric qualities (reliability, content and construct validity) are satisfactory (Dunkel et al. 2005; Fydrich et al. 1999).

Personality structure was evaluated by a measure of self-schema. The INTREX Introject Questionnaire (Tress 1993) is a self-rating instrument derived from the Structural Analysis of Social Behaviour (Benjamin 1974, 1983). It was applied to grasp self-schema, which according to psychoanalytic theory is conceived as a set of internalized self-representations ("introject"), that comprises "a relatively stable conscious and unconscious repertoire of ways of treating the self, including self-appraisals, behaviours directed at the self and images of the self" (Henry et al. 1990), and in cognitive theory as the core beliefs of the self and information-processing propensities (Hollon et al. 2006) that guide appraisal and influence selective attention, memory search, and cognitions (Segal 1988).

The *procedure* was as follows: patients presented at the clinic, completed the BDI, and were scheduled for an intake interview if BDI was 16 or higher. If the patient was deemed depressed according to the inclusion criteria and he/she signed the consent form, the patient filled in the SCL-90-R, the IIP, F-SozU, and INTREX. After that, the patient was randomly assigned. Due to limited financial resources random-

ized allocation started with psychoanalytic and psychodynamic therapy and included cognitive-behaviour therapy later. Hence, there was a simultaneous randomized allocation only to two therapy arms. *Measurement points* were pre-treatment, post-treatment, and three-year follow-up; at these time-points patients completed the SCL-90-R, BDI, IIP, F-SozU, and INTREX. Investigators were blind to treatment modality.

The BDI was specified a priori as primary outcome measure. Secondary outcome measures were SCL-90-R-GSI, IIP, F-SozU, and INTREX.

2.4. Treatments and therapists

The 21 therapists were very experienced in their field, no candidates were included; mean duration of psychotherapeutic practice was 15 years (range: 6–29 years); mean age was 47 years (range: 38–56 years). 14 therapists delivered PA and PD and seven therapists cognitive-behaviour therapy only. There was no significant difference in training, expertise and experience between the therapists of the treatment modalities. The therapeutic modality, not the therapist, was randomly assigned to the patient in order not to interfere with the patient-therapist match. To meet requirements of external validity, treatments were not applied in a manualized form. PA is defined as a “predominantly verbal, interpretative, insight-oriented approach which aims to modify or re-structure maladaptive relationship representations that lie at the root of psychological disturbance” (Kaechele & Fonagy 2009). It “involves careful attention to the therapist-patient interaction, with thoughtfully timed interpretation of transference and resistance” (Gabbard 2004). According to German Psychotherapy Guidelines (Rueger et al. 2003) average duration is between 160 and 240 sessions; session frequency is two to three sessions per week with the patient lying on a couch. PD is based on the same principles of theory and technique but is more limited in the depth of the therapeutic process and in its goals by focusing on the symptom-sustaining here-and-now conflicts without enhancing regression in the therapeutic process. Its mean duration is between 50 and 80 sessions, session frequency is one session a week with the patient sitting upright in a face-to-face position (Rueger et al. 2003). Cognitive-behaviour therapy comprises therapeutic modalities developed on the basis of a psychology of learning and social psychology and requires the analyses of the causal and maintaining factors of the depression. It combines cognitive and behavioural techniques in different extent (Hollon & Beck 2004). Average duration is between 45 and 60 sessions; session frequency is one session per week (Rueger et al. 2003).

In this study, mean duration of PA was 39 months (range 3–91) or 234 sessions (range 17–370), of PD was 34 months (range 3–108) or 88 sessions (range 12–313), and of CBT was 26 months (range 2–78) or 45 sessions (range 7–100); minimal values are due to the intent-to-treat approach.

Treatment fidelity was assessed with expert-rated measures. Independent raters assessed treatment fidelity using the Psychotherapy Process Q-set (Jones 2000). The 100 items of the PQS capture key treatment parameters, including patient behaviour,

therapist behaviour, and patient-therapist interactions. We used the 20-item PQS prototype for psychoanalytic and the 20-item PQS prototype for cognitive-behavioural therapy described by Ablon and Jones (Ablon & Jones 2005) to assess how much each treatment adhered to standard psychoanalytic and cognitive-behavioural practice. Fifty percent of all psychoanalytic, psychodynamic and cognitive-behavioural treatments were selected at random and one audio-taped mid-phase session of each treatment was assessed by trained PQS raters blind to treatment modality. Mean scores of the 20 items of the psychoanalytic and cognitive-behavioural prototype were calculated. Using analysis of variance (ANOVA) and Bonferroni-corrected post-hoc tests, we found that the psychoanalytic mean score was significantly higher in the PA group as compared to the other groups, $F(2, 45) = 9.81, p < .001$, and that the cognitive-behavioural mean score was significantly higher in the CBT group as compared to the other groups, $F(2, 45) = 15.41, p < .001$ (all post-hoc tests $p < .01$). Thus, according to the ratings of independent raters, the three treatments were different in terms of important process parameters.

2.5. Data Analysis

We performed intent-to-treat analyses on 100 patients. Baseline data of experimental groups were compared by chi-square tests for categorical or one-way ANOVA for continuous variables. To test for the comparative effectiveness of the experimental groups, mean response profiles were analyzed using mixed models (Fitzmaurice et al. 2004). Response profile analysis imposes minimal restrictions on change over time and covariance among repeated measures. Moreover, it can handle incompleteness due to missing data. Time was treated as a repeated measure factor with three levels, respectively. For each outcome measure, we tested a model including main effects of time and group, an interaction effect of time and group, and additional main effects of confounding variables (if necessary). Going beyond the omnibus test of the time \times group interaction, single-degree-of-freedom contrasts for each measurement time point were considered (treating CBT as the reference group). Within-group effect sizes (d_w) for CBT, and between-group effect sizes (d_b) for CBT vs. PA and CBT vs. PD were calculated based on respective t -values. Analyses were conducted using the MIXED command of PASW Statistics 18 assuming an unstructured covariance matrix and applying restricted maximum likelihood (REML) estimation. Finally, we compared treatment groups in terms of self-reported remission of depressive symptoms ($BDI < 10$) at three-year follow-up using logistic regression analysis.

3. Results

The mean age of the patients was 33 years with a range from 23 years to 49 years. Most of the participants were female (71%); 42% were single, 28% were separated from their partners, 30% were in permanent partnerships. 52% of the patients suffered from an episode of major depressive disorder, 48% of the patients from a re-

Table 1: Baseline characteristics of the three treatment groups Psychoanalytic (PA), Psychodynamic (PD), and Cognitive-Behavioural Therapy (CBT)

	PA	PD	CBT	
Sample size	35	31	34	
Age				$F(2, 97) = 2.91^{\#}$
$M (SD)$	31.2 (5.6)	34.9 (8.0)	34.0 (6.0)	
Gender				$\chi^2(2) = 5.99^*$
female	24	18	29	
Relationship status				$\chi^2(4) = 1.83$
Single	15	13	14	
Separated	12	7	9	
Partnership	8	11	11	
Clinical characteristics				
Duration of illness in months, $M (SD)$	72.5 (81.8)	58.8 (82.5)	53.9 (72.7)	$F(2, 97) = 0.51$
Severe Depressive Episode	12	11	11	$\chi^2(2) = 0.07$
Double Depression	21	15	19	$\chi^2(2) = 0.91$
Personality disorder	11	11	12	$\chi^2(2) = 0.16$

$^{\#} p \leq .10$. $^* p \leq .05$.

current depressive disorder; 55% suffered from an additional dysthymic disorder (double depression). 66% of the patients fulfilled the diagnostic criteria of a moderate, 34% of a severe episode. 34% of the patients suffered from a co-morbid personality disorder. Mean duration of illness for the depressive disorder was five years ($M = 62$ months, $SD = 79$). As shown in Table 1, there were no significant differences in demographic or in diagnostic variables at pre-treatment between the groups except for gender. However, because patients in the PA group showed a marginally significant tendency to be younger than patients from the other two groups, both age and gender were included as covariates in the following analyses.

Table 2 presents the results of testing the effects of gender, age, time, group, and time \times group interaction on primary and secondary outcome measures. Significant main effects of time were found for all outcome measures. More important, significant time \times group interactions emerged for the primary outcome measure (BDI) as well as for three secondary outcome measures (IIP, GSI, INTREX). Time \times group interaction was only marginally significant in the case of F-SozU. Thus, there was strong evidence that mean response profiles of primary and secondary outcomes differed across treatment groups. Table 3 presents the estimated mean response profile of the CBT group as well as estimated differences between the CBT group and the other treatment groups for each outcome measure. Within-group effect sizes for CBT were large for changes in symptoms (BDI, GSI) and self-schema (INTREX), and

Table 2: Testing the effects of gender, age, time, group, and time \times group interaction on outcome measures using mixed models

	BDI	GSI	IIP	F-SozU	INTREX
Gender	$F(1, 93.9) = 0.41$	$F(1, 91.1) = 1.35$	$F(1, 94.5) = 0.81$	$F(1, 94.1) = 2.52$	$F(1, 91.1) = 0.01$
Age	$F(1, 97.0) = 1.99$	$F(1, 93.7) = 0.81$	$F(1, 94.8) = 0.74$	$F(1, 93.9) = 1.12$	$F(1, 91.6) = 0.13$
Time	$F(2, 89.0) = 186.01^{***}$	$F(2, 86.2) = 82.85^{***}$	$F(2, 82.0) = 56.01^{***}$	$F(2, 74.6) = 12.30^{***}$	$F(2, 80.5) = 44.84^{***}$
Group	$F(2, 95.5) = 3.19^*$	$F(2, 94.3) = 1.18$	$F(2, 94.0) = 1.45$	$F(2, 94.1) = 2.60^\#$	$F(2, 91.3) = 0.64$
Time \times Group	$F(4, 89.0) = 2.63^*$	$F(4, 86.1) = 3.64^{**}$	$F(4, 81.9) = 4.10^{**}$	$F(4, 74.6) = 2.13^\#$	$F(4, 80.5) = 2.56^*$

Notes. $^\# p \leq .10$. $* p \leq .05$. $** p \leq .01$. $*** p \leq .001$.

Table 3: Estimated mean response profiles of outcome measures in the CBT group and estimated differences (effect sizes) between the CBT group and other treatment groups

	Time	n	CBT ¹			PA vs. CBT			PD vs. CBT		
			M	SE	d_w	B	SE	d_b	B	SE	d_b
BDI	Pre	100	24.99	1.42							
	Post	92	9.38	1.52	-1.84 ^{***}	-3.30	2.36	-0.29	-2.69	2.46	-0.22
	Fup	78	12.15	1.65	-1.44 ^{***}	-7.93	2.53	-0.67 ^{**}	-4.12	2.62	-0.33
GSI	Pre	100	1.12	0.10							
	Post	91	0.60	0.09	-1.06 ^{***}	-0.32	0.14	-0.49 [*]	-0.24	0.14	-0.35 ^{^\#}
	Fup	77	0.66	0.10	-0.86 ^{***}	-0.49	0.15	-0.71 ^{**}	-0.17	0.15	-0.24
IIP	Pre	100	1.71	0.08							
	Post	91	1.48	0.11	-0.54 [*]	-0.37	0.12	-0.65 ^{**}	-0.35	0.13	-0.58 ^{**}
	Fup	76	1.46	0.12	-0.53 [*]	-0.50	0.14	-0.82 ^{***}	-0.40	0.14	-0.62 ^{**}
F-SozU	Pre	96	3.51	0.14							
	Post	90	3.82	0.15	0.53 [*]	0.11	0.17	0.14	-0.02	0.17	-0.03
	Fup	69	3.73	0.17	0.35	0.35	0.19	0.43 ^{^\#}	-0.15	0.20	-0.18
INTREX	Pre	95	4.16	0.33							
	Post	90	5.54	0.38	0.84 ^{***}	0.79	0.47	0.36 ^{^\#}	-0.13	0.49	-0.05
	Fup	68	5.62	0.38	0.81 ^{***}	1.42	0.52	0.59 ^{**}	0.05	0.54	0.02

Notes, $^\# p \leq .10$, $* p \leq .05$, $** p \leq .01$, $*** p \leq .001$. d_w within-group effect size. d_b between-group effect size. Effect sizes for single-degree-of-freedom contrasts were computed with the formula $d = 2t/\text{SQRT}(df)$. ¹Estimated marginal means (M) and standard errors (SE) for the Cognitive Behavioural Therapy group based on the fitted model (including gender, age, time, group, and time \times group interaction) with gender fixed at .5 and age fixed at 33.5 years.

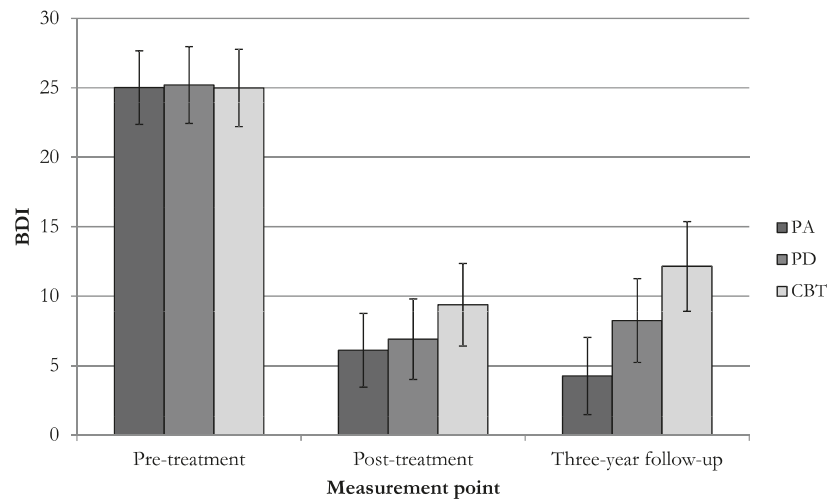


Figure 2: Estimated means and 95%-confidence intervals of BDI summary score across treatment groups and measurement points

small to moderate for changes in social-interpersonal functioning (IIP, F-SozU). For BDI, the single-degree-of-freedom contrasts showed that groups did not differ in terms of depressive symptoms directly after treatment. However, depressive symptoms were significantly lower in the PA group as compared to the CBT group at three-year follow-up (see Figure 2). Differences between the PD and CBT group were not significant. For GSI, contrasts showed that PA was superior to CBT in terms of general distress both after treatment and at three-year follow-up. For IIP, the PA group and the PD group consistently reported less interpersonal problems than the CBT group at both measurement points. Although the omnibus test of the time \times group interaction was only marginally significant for F-SozU, there was a marginally significant tendency of the PA group reporting on more social support at three-year follow-up than the CBT group. For INTREX, the advantage of PA over CBT in terms of positive self-schema was only marginally significant directly after treatment, but highly significant at three-year follow-up. In either case, differences between the PD and CBT group were not significant. Thus, the most consistent finding across primary and secondary outcome measures was PA being superior to CBT at three-year follow-up, with four highly significant and one marginally significant contrasts as well as moderate to large effect sizes. In contrast, the PD and CBT groups differed only for IIP.

Finally, at three-year follow-up, rate of remission from depressive symptoms was 83% in the PA group, 68% in the PD group, and 52% in the CBT group. When controlling age and gender, the odds of remission were significantly greater in the PA group as compared to the CBT group, with odds ratio (OR) = 4.79, 95% CI [1.29 to 17.74], and did not differ between the PD and CBT groups, with OR = 2.06, 95% CI [0.60 to 7.10].

4. Discussion

This three-year follow-up study examined the long-term effectiveness of PA, PD and CBT for depression, focussing on the stability of treatment effects over time. In this article, we addressed the comparison between CBT versus PA and PD.

4.1. Symptoms

We found that CBT was very effective in alleviating depressive symptoms over time, and in alleviating global psychiatric symptoms after three-years' follow-up period in terms of Cohen's benchmarks (Cohen 1988). 52% of our sample reported a remission from depressive symptoms' rate three-years after termination of treatment, in other words, roughly half of the patients continued to have a mild depressive syndrome according to Williams et al.'s cut-off point on the BDI (2002). Fava et al. (1996) reported a 35% relapse rate in a four-year follow-up period, and Bockting et al. (2009) and ten Doesschate et al. (2010) a 79% relapse/recurrence rate at a 5.5 years follow-up, whereas Paykel et al.'s (2005) data implied that the preventive effect of CBT on recurrence was lost approximately 3.5 years after cessation of treatment. When comparing CBT with PA and PD at three-years follow-up, we found significant differences between CBT and PA, both for depression-specific measure (BDI) and for general psychiatric symptom measure (SCL-90-R), but no significant differences between CBT and PD. Expressed in a rate of remission from depressive symptoms, PA was significantly superior to CBT and there was no significant difference between PD and CBT. These findings may be explained in the context of more recent and differentiated calculations for the dose-effect relationship, suggesting that more than 50 sessions are necessary for more than 75% of patients to loose their symptoms (Lambert & Ogles 2004), while acute distress items need a smaller dosage than chronic distress items or characterological items (Kopta et al. 1994). In an outpatient study of long-term psychotherapy, psychoanalytic psychotherapy needed approximately 170 sessions and psychodynamic psychotherapy approximately 60 sessions for the patients to leave the severely impaired range of the GSI of the SCL-90-R (Puschner et al. 2007). In our study only 13 of 34 patients in the CBT group and only 20 of 31 patients in the PD group received more than 50 sessions (compared to 33 of 35 patients in the PA group), evidently not enough to become symptom-free within a three-years' period. These data lend support to the psychoanalytic interpretation, that the treatment dosage must allow for a working through ("Durcharbeiten," Freud 1914/1967) of the patient's problems against hers/his resistances to transfer insight into persistent change (Greenson 1965). In this vein, recent empirical research in the stability of change after cognitive-behaviour therapy suggests an increase in treatment dose (Jarrett et al. 2001) as residual symptoms are common after the treatment of the acute symptomatology (Taylor et al. 2010), predisposing for relapse and recurrence (Fava et al. 2007; Vittengl et al. 2009a). Therefore, the authors suggest to implement new intervention modules (Taylor et al. 2010) or to increase the frequency of continuation phase cognitive therapy (Vittengl et al. 2009b, a).

4.2. Social-interpersonal functioning

Our data showed (in terms of Cohen's benchmarks) that CBT was moderately effective in alleviating interpersonal problems three-years after cessation of treatment. Vittengl et al. (2004, 2009a) reported no significant change in social-interpersonal functioning during a two-year follow-up between maintenance CBT and an assessment-only control group, but the benefits were maintained across this time period. The authors suggested that CBT might alter a state construct but not a trait construct of the IIP, because the latter requires a focus specifically on interpersonal behaviour (Vittengl et al. 2003) which changes more slowly than intra-individual experience of depressive symptoms and, therefore, may require in the long run to increase session's frequency or to add pharmacotherapy (Vittengl et al. 2009a). In comparison with both PA and PD, CBT was significantly inferior due to small within-group ES. We assume that the CBT therapists of our study targeted mainly the typically depressive cognitive distortions, thus neglecting the important role of other interpersonal problems as ongoing stressors, whereas PD explicitly focuses on the interpersonal dimension (Oremland 1991), revealed by the significant difference between PD and CBT. Therefore, we additionally hypothesize that, against the backdrop of the interpersonal problems' high etiological relevance as a risk factor for relapse/recurrence of depression, the relatively small reduction in interpersonal problems may account as another risk factor in a multifaceted model of depression for the small remission from depressive symptoms rate of CBT.

The three-year follow-up reveals that changes in perceived social support were not stable in CBT as the respective within-group effect size changed from moderate at post-treatment to small and non-significant. Although there was a tendency for PA being more effective than CBT in improving perceived social support, the between-group effect size did not reach statistical significance. These findings together with the IIP findings indicate that the construct of social support possibly is not qualified to grasp a more elaborated understanding of "the complexities of people's involvement with others" (Coyne & DeLongis 1986, for an overview see Coyne & Downey 1991).

4.3. Personality structures (self-schema)

CBT effectively improves self-schema three-years after cessation of treatment; being as effective as PD and significantly less effective than PA. Dozois et al. (2009) demonstrated that cognitive therapy plus anti-depressive medication was significantly superior to anti-depressive medication alone in improving schema structure in a pre/post design, but the results of our study suggest that stable improvement in schema structure needs a longer, in our case a psychoanalytic, therapy. Although change in personality structures like self-schema lies according to both, psychoanalytic theory ("structural change") and cognitive theory, at the basis of a stable remission of depressive disorder, empirical studies that directly examine the contribution of schema change to relapse and recurrence are still sparse (Scher et al. 2005). But there are several empirical studies that demonstrated schema change to be a predictor for re-

lapse/recurrence of depressive disorder from a cognitive theory's perspective and from a psychoanalytic theory's perspective (Grande et al. 2009). Therefore, there is some empirical evidence that CBT may not sufficiently change schema to protect against recurrence/relapse nor does PD but these assumptions still need to be replicated by other empirical studies.

The obvious difference in treatment dose (PA = mean of 234 sessions in 39 months, PD = mean of 88 sessions in 34 months, CBT = mean of 45 sessions in 26 months), which is an essential parameter of the treatment packages under scrutiny, may account for the differences across all dimensions of outcome.

4.4. Strengths and limitations

We will discuss the strengths and limitations of our study in terms of the pragmatic-explanatory continuum indicator summary (PRECIS; Thorpe et al. 2009) to avoid simplistic labelling. According to PRECIS criteria, our study shares some characteristics with effectiveness studies (pragmatic studies which are more naturalistic and maximize external validity) and some characteristics with efficacy studies (explanatory studies which maximize internal validity) and thus falls in the middle of the effectiveness-efficacy continuum. The following features of the study were strengths in terms of external validity: Participants were enrolled under the routine conditions of a university outpatient clinic; they were "real-world" patients without restrictive selection criteria; the treatments were applied by "real-world" therapists; no treatment manuals were used; no special strategies like continuous supervision to maintain or improve adherence were used; and the patients were followed up for three-years to control for natural course. At the same time, the blindness of investigators regarding the diagnoses and the homogeneity of the sample served to increase internal validity. In sum, we consider our study to be in the middle of the pragmatic-explanatory continuum, having significant scientific strengths as well as the potential capacity to inform healthcare decision-making regarding clinical practice; thus it can be rubricated as a pragmatic or practical clinical trial (Godwin et al. 2003; Tunis et al. 2003).

Our study has several limitations as well, in the first place the small sample sizes and the lack of a Structured Clinical Interview for DSM-IV (SCID-I and SCID-II) assessment of primary and co-morbid diagnoses. The application of a more time-consuming measure was not possible due to limited resources. Another limitation is the lack of a low-intensity treatment group to control for the natural course of the disorder because depressive episodes in some patients are self-limited and possibly remit within six to eight months. On the other hand, patients were followed up three years after termination of treatment and would have relapsed if the treatments would not have changed the natural course of the disorder. In terms of internal validity, the differing dose of the treatments (i.e., the number of sessions) can be considered a confound. We believe that each treatment has a different underlying working model that needs a specified time frame with a stipulated number of sessions and specific interventions in order to initiate a specific process. Moreover, we deliberately wanted

to investigate treatment packages with their prototypical doses to inform practitioners about their everyday practice, thus helping to bridge the notorious gap between research and practice. Another limitation and threat to internal validity (though a strength in terms of external validity) was the lack of treatment manuals and the absence of a manual-guided adherence measure. However, treatment fidelity was assessed by an observer-rated measure (PQS) for PA and PD and for CBT.

5. Conclusion

Given that a complex, multivariate psychosocial model is more appropriate than univariate explanations for relapse/recurrence of depressive disorder (Dobson & Dozois 2008), our results support the assumption that PA is superior to CBT, because on a symptomatic, on a social-interpersonal functioning level and on a personality structure level, the higher treatment dose and the more extended time frame of PA enhances more extended and stable benefits. PD, although achieving remarkably high benefits in the interpersonal dimension, is only partially capable to produce personality structures change enough to protect against relapse/recurrence after an extended follow-up interval. However, only a process-outcome approach applying mediation analyses can yield an empirically sound explanation for the research question under scrutiny.

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