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Tailoring psychotherapy in patients with personality disorders: Matching the level of psychological strengths to the level of stabilizing versus destabilizing psychotherapy

JANINE G. VAN MANEN^{1,2}, EVA K. HORN^{1,2}, THEO STIJNEN³, REINIER TIMMAN^{1,2}, JAN J. V. BUSSCHBACH^{1,2} AND ROEL VERHEUL^{1,4}, ¹Viersprong Institute for Studies on Personality Disorders, Halsteren, The Netherlands; ²Departement of Psychiatry, section Medical Psychology and Psychotherapy, Erasmus Medical Center, Rotterdam, The Netherlands; ³Department of Medical Statistics and Bioinformatics, Leiden University Medical Center, Leiden, The Netherlands; ⁴Programme group Clinical Psychology, Faculty of Social and Behavioural Sciences, University of Amsterdam, Amsterdam, The Netherlands

ABSTRACT

Background – Clinical evidence suggests that patients high on psychological strengths profit more from destabilizing psychotherapy, whereas patients low on strengths profit more from stabilizing psychotherapy. This matching hypothesis was tested.

Methods – This quasi-experimental study was conducted between 2003 and 2008 in 735 patients with personality disorders from 6 psychotherapy centers in the Netherlands. Patients were assigned to different levels of stabilizing and destabilizing psychotherapies. Levels of psychological strengths were measured. We used multilevel modeling to estimate outcome at 12 months after baseline. The propensity score controlled for initial differences at baseline.

Results – The findings show that destabilizing psychotherapies have slightly better outcomes than stabilizing psychotherapies. Patients high on psychological strengths improve slightly more than patients low on psychological strengths. The observed interaction effect contradicted our hypothesis.

Conclusion – The results imply that destabilizing psychotherapies can be considered as first treatment option for patients both high and low on psychological strengths. Copyright © 2015 John Wiley & Sons, Ltd.

Introduction

Personality disorders (PDs) are highly prevalent mental disorders with high individual, societal and economic burden of disease (Soeteman, Hakkaart-van Roijen, Verheul, & Busschbach, 2008; Soeteman, Verheul, & Busschbach, 2008). Although PDs are relatively enduring conditions, amenability to psychological treatments has been established and documented (APA, 2001; Binks et al., 2006; Leichsenring & Leibing, 2003; Perry, Banon, & Ianni, 1999). Importantly, the efficacy of psychotherapy for PD is not primarily determined by the specific theoretical orientation, but rather by the consistent application of a coherent and – both to patient and to therapist – comprehensible therapeutic method (Verheul & Herbrink, 2007). In addition, efficacious treatments are typically characterized by a high level of structure, effort to enhance compliance, a clear focus, a long-term and powerful attachment relationship, an active stance, and integration with other services (Bateman & Fonagy, 2000).

An element that has received less attention but is nevertheless likely to be essential, is the optimal level of destabilizing in treatment. Patients with PD are typically characterized by persistent and pervasive patterns of cognition, emotion and behavior. From a dynamic systems theory perspective, it can be predicted that such patterns or 'attractor states' need to be destabilized first. Then more functional patterns can be organized (Haves & Strauss, 1998; Thelen & Smith, 1994). This prediction is in line with the principles of psychodynamic psychotherapy promoting the application of various interpretive or expressive techniques (Gabbard, 2005). Such techniques are focused on uncovering unconscious wishes, fears, conflicts and defenses, as opposed to supportive techniques that help the patients to adapt to stresses while avoiding insights. The broad spectrum of psychotherapeutic techniques can be placed on an expressive-supportive continuum, running from typically expressive or destabilizing categories such as interpretation and confrontation to typically supportive or stabilizing categories such as empathic validation, advice and praise, and affirmation (Horwitz et al., 1996). Psychodynamic psychotherapy explicitly encourages to "be as expressive as you can be, and as supportive as you have to be" (Wallerstein, 1986, p.688). In this study we defined three levels of destabilization. The focus in the 'stabilizing treatments' is on acceptance and help patients to cope with his PD problems. Therapists typically work with supportive and structuring interventions, which results in relatively low stress levels during treatment. The focus in the 'destabilizing treatments' is on change and help the patient to replace their dysfunctional patterns by adaptive ones. Therapists typically work with confrontative, expressive, insight-oriented interventions, which results in relatively high stress levels during treatment. In the intermediate variant therapists focus simultaneously on acceptance and change, and use both stabilizing and destabilizing interventions, resulting in changing stress levels in the patient.

To the best of our knowledge we are not aware of any empirical study focusing directly on the importance of stabilizing versus destabilizing in the treatment of PD. However, various studies provide pieces of evidence that are consistent with the psychodynamic literature which suggests that patients scoring high on psychological strengths or ego-adaptive capacities (e.g. capacity to relate, identity integration and the ability to mentalize) are better able to tolerate and profit from destabilizing techniques than patients scoring low on such psychological strengths. This 'matching hypothesis' is for instance supported by various studies that have shown that patients with severe PD drop out prematurely from expressive psychotherapies more often than from supportive psychotherapies (Piper, Joyce, McCallum, & Azim, 1998; Piper, McCallum, Joyce, Azim, & Ogrodniczuk, 1999). Secondly, the studies of Bartak et al. (2011, 2010) have shown superiority of short-term inpatient psychotherapy in patients with cluster C but not with cluster B PD. Short-term inpatient treatments are characterized by a high level of therapeutic intensity and pressure. The authors suggest that "patients with cluster C personality pathology might be able to handle the high pressure of this treatment modality better than (pure) cluster B PD patients, who probably have a lower tolerance for therapeutic pressure" (Bartak et al., 2010, p. 28). Third and finally, the matching hypothesis is consistent with Gabbard et al. (2000) suggestion of patient characteristics that can help clinicians decide whether a predominantly expressive versus a predominantly supportive treatment focus is indicated. According to Gabbard, indications for a

highly expressive modality are, for instance: a strong motivation, suffering, tolerance of frustration, psychological mindedness, and intact reality testing, whereas indications for a highly supportive modality are, for instance: low anxiety tolerance, poor frustration tolerance, poor impulse control, and little capacity for self-observation. Some research in a non-PD population supports the suggestion of Gabbard of a matching relation, i.e. matching between level of personality organization (Koelen et al., 2012) or different personality types (anaclictic/introjective) (Blatt, Zuroff. Hawley, & Auerbach, 2010) and type of intervention (interpretive versus supportive) (Piper et al., 1998; Piper et al., 1999).

The present study aims to explore the matching hypothesis outlined above in a large quasiexperimental, naturalistic study. In this population we study whether patients high on strengths profit more from predominantly destabilizing treatments, whereas patients low on strengths might profit more from predominantly stabilizing treatments. Research questions are focused on (1) the impact of psychological strengths on treatment outcome, (2) the impact of level of destabilization on treatment outcome, and (3) the interaction between the patient's psychological strength and the treatment's level of destabilization with respect to outcome.

Method

Participants

Participants (n = 735) were recruited from a consecutive series of admissions to six mental health care centers in the Netherlands (i.e. de Viersprong, Netherlands Institute for Personality Disorders, Halsteren; Altrecht, Utrecht; Zaans Medical Centre, Zaandam; Pro Persona, Centre of Psychotherapy, Lunteren; GGZWNB, Halsteren; Arkin, Amsterdam). These centers offer specialist psychotherapy for adult patients with PDs. From March 2003 to March 2006, a total of 1,379 admissions completed the intake and screening procedure and were selected for treatment (Figure 1). The intake and screening procedure included self-report questionnaires and a semi-structured interview for diagnosing PDs. The data obtained from this initial assessment served as baseline data for our study. As it was part of the standard screening procedure, and not involved additional risks or load, informed consent for the baseline data collection was not mandatory under Dutch law. The study was approved by the medical ethics committee of the Erasmus MC.

Of the 1,379 admissions, 146 were excluded from the study because of one of the following inclusion criteria: age between 18 and 70 years (n = 13), personality pathology is primary psychiatric disorder (not eating disorder for example) (n = 34), and referral for psychotherapeutic treatment aimed at personality problems (n = 99). Nine patients met one of the following exclusion criteria: insufficient command of the Dutch language (n = 6), organic cerebral impairment (n = 1), mental retardation (n = 1), and schizophrenia (n = 1).

This left 1,224 eligible patients, of whom 100 refused to participate (i.e., did not provide informed consent) and 38 patients did not enter treatment (i.e., received less than two treatment sessions or less than two days of inpatient or dayhospital psychotherapy). Another 31 patients could not participate due to logistic reasons (i.e., no appointment could be made to provide informed consent), and 134 patients were excluded due to missing or unreliable self-report questionnaires or semi-structured interview (mostly because of lack of interviewers at the start of the study, n = 106).

The remaining 921 patients were informed about the study and its procedures, provided written informed consent for follow up data, and entered the study. Of those, 186 were post hoc excluded because they could either not be diagnosed with a PD (n=115) or the follow-up data were not available (n=71). There was no difference in psychiatric symptoms (BSI), their social role and relational functioning (OQ-45), their level of personality pathology (SIPP-118) and



Figure 1: Patient flow

the socio-demographic variables age and sex at baseline between patients with follow-up data and those without. The final sample consisted of 735 patients who were included in this study.

Treatments and level of destabilization

Patients were assigned to the different psychotherapeutic treatments available in the six treatment centers in the local standard way, i.e. based on the available test results, expert opinion and clinical experience (for more information about the treatment selection: Van Manen et al., 2008; Van Manen et al., 2011; Van Manen et al., 2012). Treatments were delivered by licensed psychiatrists of psychologists. They had an average of 15 years of postgraduate clinical experience (SD =10.1).

The available treatments differ in terms of setting (i.e. outpatient, day-hospital and inpatient), duration (i.e., varying from three to 24 months), theoretical orientation (predominantly cognitivebehavioral and psychodynamic orientations) and level of destabilization. The latter characteristic is focused on in this study. The level of destabilization of all individual treatment programs in the six treatment centers were scored on a 3-point Likert scale (i.e., low, intermediate, and high level) at two times during the investigation. In 2002 (before the inclusion started), the intake clinicians of each center provided a consensus rating for each treatment program. As we were interested in the reliability and validity of this measurement, we repeated the scoring procedure in 2007 (after the inclusion was completed), but this time we asked the managers in the steering committee of the investigation, to independently provide scores. Both times we instructed the respondents to score the level of destabilization independent from the setting and the duration of the treatment. The three levels were described as follows:

(1) Low level of destabilization: Predominantly stabilizing psychotherapies focus on acceptance and help patients to cope with his PD problems. Therapists typically work with supportive and structuring interventions. Examples of therapeutic techniques are: giving advice, psycho-education and empathic validation. As a result the tension or stress in the patient is kept as low as possible.

- (2) Intermediate level of destabilization: These psychotherapies focus simultaneously on acceptation of the PD problems as well as on helping patients to replace their dysfunctional patterns by adaptive ones. Therapists work both with confrontative, expressive, insightoriented interventions and with supportive and structuring interventions. Because of the flexibility in using both techniques, a therapist tailors his interventions to the tension and stress level of the patient, or by the psychic state of the patient at the specific moment in treatment.
- (3) High level of destabilization: Predominantly destabilizing psychotherapies focus on change and help the patient to replace their dysfunctional patterns by adaptive ones. Therapists typically work with confrontative, expressive, insight-oriented interventions aiming at uncovering unconscious wishes, fears, conflicts and defenses. Examples of therapeutic techniques are: interpretation, confrontation and clarification. As a result the tension and stress level in a patient can increase to a high level.

The two measurements in 2002 and 2007 were highly correlated (r = .69, p < .001), supporting the reliability and construct validity of our operationalization of level of destabilization. In this study we used the level of destabilization scores by the managers in the steering committee of the investigation. Because only 36 out of the 735 patients had a treatment with a low level of destabilization, we combined the low and intermediate level into a group with low level of destabilization (referred to as 'stabilizing psychotherapy') and a group with high level of destabilization (referred to as 'destabilizing psychotherapy').

Assessments

DSM-IV-TR PD diagnoses were PD diagnosis. measured using the Dutch version of the Structured Interview for DSM-IV Personality Disorders (SIDP-IV) (Jong, de Derks, Oel, & van Rinne, 1995; Pfohl, Blum, & Zimmerman, 1997). This interview covers the 11 formal DSM-IV-TR axis II diagnoses including PD not otherwise specified (PDNOS), two appendix diagnoses (i.e. depressive and negativistic PD), and self-defeating PD. Interviewers were Master level psychologists, who were trained thoroughly by one of the authors (R.V.). They received monthly booster sessions to avoid deviation from the interviewer guidelines. Inter-scorer reliability was evaluated in a convenience sample of 25 videotaped interviews, that were rated by three observer raters resulting in 75 observations. Percentage of agreement between observer raters ranged from 84% (avoidant PD) to 100% (schizoid) (median 95%). Intraclass correlation coefficients for the sum of DSM-IV PD traits present (i.e. scores '2' or '3') ranged from 0.60 (schizotypal) through 0.92 (antisocial) (median 0.74).

As there is no golden standard Strength measures. for measuring psychological strengths or egoadaptive capacities, we considered this variable a 'latent construct' and used four operationalizations: severity of PD, adaptive personality functioning, overall defensive functioning, and motivation for treatment. These variables fit into the internalstrength domain as revealed by a recent concept map study of patient characteristics relevant for treatment assignment (Van Manen et al., 2012). First, severity of PD was measured with the SIDP-IV (describing of the administration is given above). To form mutually exclusive diagnostic groups, we clustered the formal DSM-IV-TR Axis II diagnoses hierarchically into: (a) Low strength group: at least one cluster A or B PD present (i.e., paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, and/or narcissistic PD) versus (b) High strength group: at least one cluster C PD or PDNOS present (i.e., avoidant, dependent, obsessive-compulsive, depressive, passive aggressive, and/or mixed PD, but no cluster A or B PD). Second, adaptive personality functioning was measured using the Severity Indices of Personality Pathology (SIPP-SF) (Verheul et al., 2008). The SIPP-SF measures five domains of adaptive personality functioning; high scores reflect adaptive personality, whereas low scores reflect maladaptive personality. We computed a total score by adding all items and applied a median split to distinguish high from low adaptivity. Third, overall defensive functioning was measured using the Dutch version of the Defense Style Questionnaire (DSQ-60). The DSQ-60 is designed to measure type and degree of the defensive style (Bond, Gardner, Christian, & Sigal, 1983; Thygesen, Drapeau, Trijsburg, Lecours, & de Roten, 2008), high scores reflect a more mature level of defensive functioning, whereas low scores reflect less mature level of defensive functioning. We applied a median split on the Overall Defensive Functioning (ODF) score, to form (a) a relatively mature group versus (b) a relatively immature group. Finally, motivation for treatment was measured using the 8-item Motivation for Treatment Questionnaire (MTQ) (Van Beek & Verheul, 2008). The MTQ consists of two subscales, i.e., Need for help and Readiness to change; high scores reflect high level of motivation, whereas low scores reflect a low level of motivation. A median split was applied on the total score of the 8 items and distinguishes high from low motivation.

Outcome measures. The primary outcome measures were psychiatric symptoms and psychosocial functioning. Psychiatric symptoms were measured using the Dutch version of the Brief Symptom Inventory (BSI) (De Beurs & Zitman, 2006; Derogatis & Melisaratos, 1983), a validated selfreport scale derived from the revised Symptom Checklist-90 (SCL-90-R) (Arrindell & Ettema, 2003; Derogatis, 1986). In this study, we used the Global Severity Index (GSI) as the mean score of the 53 BSI items. The GSI ranges from 0-4, with higher scores indicating more problems. Psychosocial functioning was measured with two subscales of the Outcome Questionnaire-45 (OQ-45), i.e. Interpersonal relations and Social role functioning (Lambert et al., 1996). The subscale Interpersonal relations ranges from 0-44, the subschale Social role functioning ranges from 0-36, with higher scores indicating more problems. All three outcome measures were assessed at baseline and several follow-up points. Three treatment centers conducted follow-ups at approximately 12, 24, and 36 months after baseline; the other three treatment centers conducted follow-ups at the end of treatment, subsequently after about 6 and 12 months, and again at 36 months after baseline. The use of different assessment points was due to logistic reasons and was taken into account by choosing multilevel modeling as the statistical method for the analyses.

Statistical analyses

Baseline differences between stabilizing groups were analyzed with t-tests for normally distributed variables, Mann-Whitney U tests for non-normal distributed variables and continuity corrected chi² tests for categorical variables.

We used multilevel modeling to deal with the dependency of repeated measures on the same subject in time and longitudinal data with observations unequally spaced in time. First, we estimated the uncorrected treatment effect at 12 months after baseline using a random intercept and random slope model with time as level I and patient number as level II. Within-group effect sizes (Cohen's d) (Cohen, 1988) were calculated to describe changes from baseline to 12 months for each treatment group. Second, we estimated the treatment effects at 12 months corrected for baseline differences by means of the 'propensity score' (for a detailed description of this method and its use in psychotherapy research, see Bartak et al. (2009) and Spreeuwenberg et al. (2010). Using the propensity score, we attempt to 'mimic' random assignment (as in a randomized clinical trial) to psychotherapies with high and low levels of 'destabilization'. To identify relevant confounders to be used to calculate the propensity score, we considered a list of social and economic variables. All variables significantly related to a specific outcome were used to estimate the univariate propensity scores in a regression analysis, with group membership (high versus low levels of destabilization) as a dependent variable. Diagnostic variables likely to be correlated with the psychological strengths, and the psychological strength variables themselves were not included in the propensity score, as including those would decrease the sensitivity of our design and diminish effects. To compare change in outcome variables across the treatment groups, a sophisticated multilevel model was used. Dependent variables were the change scores (follow up minus baseline) as observed during follow-up for each of the outcome measures. The following independent variables were entered in the model: time, outcome measure at baseline, the propensity score, group membership (high or low level of destabilization), the patient strength characteristic and the interaction between group membership and patient strength characteristic. This model estimated differences in change scores at 12 months after baseline between the two treatment groups.

All analyses were based on intention-to-treat (ITT). ITT is defined as assignment and a minimal exposure to the intended treatment modality. All patients completed at least one follow-up assessment, and received a 'minimally effective dosage' of psychotherapy (defined as at least two sessions of outpatient psychotherapy or at least two treatment days of day hospital or inpatient psychotherapy). The ITT analyses are based on the initial treatment assignment and not on the treatment eventually received. Drop-out and crossover between treatments are possible. However, dropout rage seems quite manageable; the proportion of dropout were 12.9% in stabilizing treatments and 19.5% in destabilizing treatments. Furthermore 79.2 percent of patients received the treatment setting they were allocated to. The analyses were performed using SPSS 21 for data preparation and baseline differences. Proc Mixed of SAS 9.3

was applied for multilevel modeling (SAS Institute Inc., Cary, N.C., USA).

Results

Sample characteristics

Of the 735 patients, 69.9% were female, and 30.1% male. The mean age was 33.7 years (SD = 9.7). Education was medium to high for 73.6% of the patients. Furthermore, 22.9% of the sample had a parental responsibility. The percentage of patients without a job was 35.2%. The percentage of patients that were married was 21.1%. In terms of PD diagnoses, 8.2% had a cluster A PD, and an additional 24.9% had a cluster B (but no cluster A) PD. Thus, 33.1% of the patients had a cluster A and/or B PD, constituting the 'low strength' group. Furthermore, 38.9% had a cluster C (but no cluster A and/or B) PD, and an additional 28.0% had a PDNOS (but no cluster A, B, and/or C) PD. Thus, 66.9% of the patients had a cluster C PD and/or PDNOS, constituting the 'high strength' group.

Treatment characteristics

Table 1 shows that the average length of the destabilizing psychotherapies is somewhat shorter $(7.6 \pm 4.8 \text{ months})$ than of stabilizing psychotherapies $(11.7 \pm 5.3 \text{ months})$. Furthermore, destabilizing psychotherapies are more likely to be executed in an inpatient setting than stabilizing psychotherapies (55.1% versus 25.4%), whereas stabilizing psychotherapies are more likely to be executed in a dayhospital setting (39.4% versus 30.2%) or outpatient setting (35.2% versus 14.7%) than destabilizing psychotherapies. Higher mean scores for the strength operationalizations DSQ-odf, SIDP-IV and MTQ-total were observed for the destabilizing group. No baseline differences were found for the outcome variables.

Uncorrected outcome

Table 2 shows the uncorrected effect sizes for patients with low versus high psychological

strengths, both in stabilizing and destabilizing psychotherapies, for each outcome variable and strength operationalization separately. One year after treatment all patients in destabilizing as well as in stabilizing psychotherapies showed improvements in terms of psychiatric symptoms, social role, and relational functioning (Table 2). Remarkably, we can observe a consistent pattern in the data, with substantially greater effect sizes in patients with low strengths (effect sizes range 0.8-2.0, median 1.3) than in those with high strengths (effect sizes range 0.0-1.0, median 0.5), both across outcome variables, levels of destabilization and across strength dichotomies (i.e., severity of PD, adaptive personality functioning, and overall defensive functioning), but not for motivation for treatment. With respect to motivation for treatment, we can observe a reversed pattern, with substantially greater effect sizes in patients with high motivation (effect sizes range 1.1-1.9, median 1.2) than in those with low motivation (effect sizes range 0.4-0.6, median 0.5), both across outcome variables and levels of destabilization.

Corrected outcome

Table 3 shows the corrected effect sizes for patients with low versus high psychological strengths, both in stabilizing and destabilizing psychotherapies, for each outcome variable and strength characteristic separately. Furthermore, the main effects of level of destabilization (low versus high), psychological strengths (low versus high), and the interaction effect between level of destabilization and psychological strengths on treatment outcome are shown.

Regarding the main effect of level of destabilization, destabilizing psychotherapies showed significantly more improvement on psychiatric symptoms than stabilizing treatments, for the strength variables: 'severity of PD' (SIDP-IV) and 'motivation for treatment' (MTQ). Furthermore, destabilizing treatments were superior to stabilizing treatments in terms of their impact on relational functioning, only for the psychological strength 'severity of PD' (SIDP-IV). For social role functioning, we observe

	Total population	Destabilizing psychotherapy	Stabilizing psychotherapy	p-value
N	735	334	401	
Socio-demographics				
Sex (% female)	69.9	64.4	74.6	0.004
Age (mean years \pm SD)	33.7 (9.7)	34.7 (10.0)	32.8 (9.3)	0.008
Medium/high education (%)	73.6	77.5	70.3	0.027
Parental responsibility (%)	22.9	21.3	24.4	0.375
Unemployed (%)	35.2	33.2	39.9	0.337
Marital situation				
Never married (%)	67.5	67.4	67.6	0.120
Married (%)	21.1	23.7	19.0	0.057
Widowed or divorced (%)	11.4	9.0	13.5	0.950
Diagnostics ¹				
Cluster A (%)	8.2	8.1	8.2	1.000
Cluster B (%)	24.9	19.5	29.4	0.002
Cluster C (%)	38.9	43.3	35.2	0.027
Cluster NAO (%)	28.0	29.0	27.2	0.634
Strength operationalizations				
SIPP: total	2.6 (0.4)	2.6 (0.4)	2.6 (0.4)	0.168
DSQ: odf	3.6 (0.4)	3.7 (0.4)	3.6 (0.4)	0.006
SIDP-IV: AB vs CNOS (%)	38.9	43.4	35.2	0.027
MTQ: total	59.1 (8.5)	59.8 (7.8)	58.4 (8.9)	0.027
Outcome variables				
GSI	1.5 (0.7)	1.5 (0.6)	1.6 (0.7)	0.619
OQ-45 Interpersonal Relations	21.2 (6.2)	21.2 (6.0)	21.3 (6.3)	0.792
OQ-45 Social Role	15.6 (4.8)	15.8 (4.7)	15.5 (4.9)	0.473
Treatment characteristics				
Duration (mean months \pm SD)	9.8 (5.5)	7.6 (4.8)	11.7 (5.3)	< 0.001
Outpatient (%)	25.9	14.7	35.2	< 0.001
Day-hospital (%)	35.2	30.2	39.4	0.009
Inpatient (%)	38.9	55.1	25.4	< 0.001
Drop-out rate (%)	16.5	12.9	19.5	0.022

Table 1: Socio-demographics, diagnostic and treatment characteristics of all 735 patients and of the patients in the two different psychotherapies

¹Assessed with the SIDP-IV, a semi-structured interview for DSM-IV axis II diagnoses. Hierarchically ordered: cluster A (at least one cluster A PD present); cluster B (at least one cluster B PD present, but no cluster A PD), cluster C (at least one cluster C PD present,

but no cluster A or B PD) and cluster NAO (at least one mixed or appendix PD present, but no cluster A,B or C PD). SIPP = Severity Indices of Personality Pathology, DSQ: odf = Overall Defensive Functioning scale of the Defense Style Questionnaire, SIDP-IV: cluster AB vs CNOS = hierarchically clustered PD groups measured with the Structured Interview for DSM-IV Personality Disorders, MTQ = Motivation for Treatment Questionnaire

GSI = Global Severity Index of the Brief Symptom Inventory, OQ-45 = Outcome questionnaire-45

the superiority of destabilizing psychotherapies for the psychological strengths 'defensive functioning' (DSQ), 'severity of PD' (SIDP-IV) and motivation for treatment (MTQ). Regarding the main effect of psychological strengths, patients high on psychological strengths show generally significantly better outcomes than patients low on psychological strength. This

				Patient-psychol	herapy groups ¹	
			Stabilizing p	sychotherapy	Destabilizing 1	psychotherapy
Outcome	Patient's strenght op	erationalizations ²	Low strenghts ²	High strenghts ²	Low strenghts ²	High strenghts ²
GSI	SIPP: total	Baseline	1.90 (0.65)	1.20 (0.52)	1.82 (0.55)	1.27 (0.53)
		12 months	0.61 (0.72)	0.96 (0.62)	0.74 (0.80)	1.09 (0.60)
		ES	1.98	0.47	1.96	0.35
		u	200	195	158	169
	DSQ: odf	Baseline	1.84 (0.67)	1.21 (0.52)	1.77 (0.56)	1.33 (0.57)
		12 months	0.65 (0.73)	0.88 (0.64)	0.76 (0.78)	1.06 (0.65)
		ES	1.76	0.61	1.79	0.48
		u	220	178	151	182
	SIDP-IV: cluster	Baseline	1.80 (0.73)	1.41 (0.62)	1.61 (0.62)	1.50 (0.60)
	AB vs CNOS	12 months	0.79 (0.72)	0.78 (0.68)	0.86 (0.81)	0.93 (0.68
		ES	1.38	1.02	1.22	0.95
		n	149	249	92	241
	MTQ: total	Baseline	1.33 (0.63)	1.79 (0.66)	1.38 (0.64)	1.68 (0.52)
		12 months	0.95 (0.69)	0.63 (0.66)	1.09 (0.63)	0.70 (0.78)
		ES	0.59	1.75	0.45	1.87
		n	202	190	162	170
OQ-45: Interpersonal	SIPP: total	Baseline	24.30 (5.34)	18.18 (5.71)	23.98 (4.95)	18.43 (5.72)
relations		12 months	14.21 (7.28)	17.95 (6.76)	15.54 (7.45)	17.86 (6.99)
		ES	1.89	0.04	1.71	0.10
		u	143	241	06	238
	DSQ: odf	Baseline	23.46 (5.93)	18.59 (5.70)	23.37 (5.55)	19.30 (5.77)
		12 months	14.87 (7.75)	16.98 (6.77)	15.93 (7.20)	17.39 (7.40)
		ES	1.45	0.28	1.34	0.33
		u	220	179	152	181
	SIDP-IV: cluster	Baseline	22.78 (6.37)	20.38 (6.10)	21.53 (5.59)	21.02 (6.17)
	AB vs CNOS	12 months	16.13 (7.95)	16.04 (7.04)	16.87 (7.31)	16.48 (7.34)
		ES	1.04	0.71	0.83	0.74
		n	149	250	91	242
	MTQ: total	Baseline	20.30 (6.34)	22.33 (6.08)	20.18 (6.05)	22.09 (5.84)
		12 months	17.03 (7.02)	15.17 (7.40)	17.44 (7.28)	15.73 (7.29)
		Cohen's d	0.52	1.18	0.45	1.09
		n	202	191	162	171
OQ-45: Social role	SIPP: total	Baseline	16.95(4.75)	14.07 (4.67)	17.21 (4.57)	14.49 (4.37)

Table 2: Uncorrected mean outcomes (SD) and effect sizes in the four patient-psychotherapy groups for all outcome variables estimated at 12 months after baseline

	12 months ES n	10.90 (5.76) 1.27 195	12.34 (5.07) 0.37 188	11.17 (6.32) 1.32 155	12.86 (5.63) 0.37 166
DSQ: odf	Baseline 12 months	16.65 (4.95) 11.07 (5.93)	14.14 (4.52) 12.03 (5.08)	17.18 (4.53) 11.23 (6.32)	14.63 (4.46) 12.76 (5.67)
	ES	1.13 2.12	0.47	1.31 148	0.42
SIDP-IV: cluster	Baseline	16.52 (5.12)	14.95 (4.71)	16.22 (4.52)	15.62 (4.71)
AB vs CNOS	12 months	11.21 (5.84)	11.75 (5.34)	11.83 (6.44)	12.03 (5.84)
	ES	1.04	0.68	0.97	0.76
	n	141	244	89	238
MTQ: total	Baseline	14.87 (4.57)	16.35 (5.14)	14.80 (4.70)	16.70 (4.45)
	12 months	12.75 (5.34)	10.58 (5.40)	12.91 (5.56)	10.91 (6.42)
	ES	0.46	1.12	0.40	1.30
	u	198	182	158	169
bbal Severity Index of the Brief Sympton	n Inventory, $OQ-45 = O$	utcome questionnaire.4	5 	-	

SIDP-IV: cluster AB vs CNOS = hierarchically clustered PD groups measured with the Structured Interview for DSM-IV Personality Disorders SIPP = Severity Indices of Personality Pathology, DSQ: odf = Overall Defensive Functioning scale of the Defense Style Questionnaire MTQ = Motivation for Treatment Questionnaire GSI = Glc

ES = effect size calculated as Cohen's d

¹Effect of stabilzing and destabilzing psychotherapy presented for the two levels of patient's psychological strenghts

²The high versus low psychological strengths are operationalized with four different measures: SIPP, DSQ, SIDP-IV and MTQ, as presented in the second column.

		Ь	atient-psycho	therapy group	s1				Effects		
		Stabi	lizing	Destal	oilizing	Treatm	nent	Stren	gths	Treatment	* Strengths
		Low strenghts ²	High strenghts ²	Low strenghts ²	High strenghts ²						
Outcome	Psychological strengths ²	ES	ES	ES	ES	р3	d	4d	Р	μ	d
GSI	SIPP: total	0.85	0.94	1.15	1.08	-0.01	.88	-0.14	<.01	0.11	.17
	DSQ: odf	0.82	0.97	1.08	1.14	-0.07	.08	-0.14	<.01	0.06	.45
	SIDP-IV: cluster	0.72	0.99	1.02	1.15	-0.13	<.01	-0.15	<.01	0.08	.32
	MTO: total	0.79	1.00	0.97	1.23	-0.16	<.01	-0.14	<.01	-0.02	.75
OQ-45: Interpersonal	SIPP: total	0.54	0.70	0.85	0.69	0.00	66.	-0.92	.02	1.95	.02
relations	DSQ: odf	0.50	0.74	0.77	0.77	-0.76	.08	-0.92	.02	1.47	.07
	SIDP-IV: cluster	0.42	0.73	0.70	0.80	-1.26	<.01	-1.08	.01	1.30	.14
	AB vs CNOS										
	MTQ: total	0.59	0.65	0.68	0.85	-0.72	.08	-0.91	.03	-0.62	.45
OQ-45: Social role	SIPP: total	0.63	0.76	0.73	0.80	-0.48	.11	-0.35	.23	0.28	.63
	DSQ: odf	0.64	0.74	0.65	0.85	-0.70	.02	-0.29	.33	-0.47	.42
	SIDP-IV: cluster	0.54	0.77	0.74	0.78	-0.63	.05	-0.50	.12	0.97	.13
	AB vs CNOS										
	MTQ: total	0.61	0.77	0.66	0.86	-0.86	00.	-0.32	.28	-0.17	.76
GSI = Global Severity SIPP = Severity Indice SIDP-IV: cluster AB v. MTQ = Motivation for ES = effect size calculat ¹ Effect of stabilizing an ² The high versus low p	Index of the Brief Sy i of Personality Pathcs is CNOS = hierarchics Treatment Question ed as Cohen's d d destabilizing psych sychological strength	mptom Inver ology, DSQ: c ally clustered naire otherapy pres s are operatio	atory, OQ-45 df = Overall I PD groups m ented for the nalized with f	= Outcome q Defensive Fun easured with 1 two levels of our different 1	Lestionnaire-4 ctioning scale the Structureo patient's psyc neasures: SIPP	5 : of the De I Interview hological s ?, DSQ, SI	fense St for DSI trengths DP-IV a	yle Quest M-IV Per nd MTQ	tionnaire sonality I , as preset	Disorders nted in the sec	cond column.
³ This beta shows the aron the outcome scales	/erage effect for treatı (GSI, OO-45)	ment calculat	ed over the st	abilzing and d	estabilzing tre	atments, e	xpressed	as numb	er of stanc	dard deviation	s decrease (-)
⁴ this beta shows the av	erage effect for streng	gth calculated	over the higl	n and low stre	ngth patients	, expressed	as num	ber of sta	indard dev	viations decrea	ase (-) on the
⁵ this beta shows the int	eraction effect (high	strength patie	ents in destabi	lizing treatme	nt) , expresse	d as numbe	er of star	ıdard dev	iations de	crease (-) or ii	ncrease () on
The ould be scales vor	01, CC+20										

pattern is most obvious with respect to psychiatric symptoms and interpersonal relational outcome, and least obvious with respect to social role functioning.

Regarding the interaction effect between level of destabilization and psychological strengths, only one significant effect occurred. Patients low on adaptive personality functioning (SIPP) profit more from destabilizing than from stabilizing psychotherapy (which is the opposite towards our hypothesis), whereas patients high on adaptive personality functioning (SIPP) do equally well in both levels of destabilization (also not according to our hypothesis). This matching effect was observed for the improvement in terms of relational functioning, but not for the other outcome variables.

Discussion

In this study we investigated whether patients high on psychological strengths profit more from predominantly destabilizing treatments, whereas patients low on psychological strengths profit more from predominantly stabilizing treatments. This hypothesis is often stated in psychodynamic clinical literature (e.g. Gabbard (2005) and Winston, Rosenthal, and Pinsker (2004)) and used in clinical practice when matching patients to psychotherapies (Van Manen et al., 2012). However, in this large quasi experimental naturalistic study we cannot confirm this matching hypothesis. The findings do show main effects for the level of destabilization (i.e., high level of destabilization is associated with better outcomes) and psychological strengths (i.e., patients high on strengths have better outcomes than those low on strengths), but no interaction effects in line with the matching hypothesis. The only interaction effect that emerged, was opposite to our hypothesis.

Main findings

This study shows a positive impact of a high level of destabilization on treatment outcome, irrespective of psychological strengths and specific outcome variable. Furtheremore, to some extent this finding is in contrast with the prevailing view that too much pressure on vulnerable patients increases the risk of drop-out, difficulties to form a stable working alliance, and even psychotic decompensation (Horwitz et al., 1996). Our finding suggests that even vulnerable patients profit from confrontative, expressive, and insight-oriented interventions. Moreover, we found a higher drop-out rate in the stabilizing therapy group. This finding is consistent with the dynamic systems theory perspective as described in the introduction (Hayes & Strauss, 1998; Thelen & Smith, 1994). We suspect that the majority of destabilizing treatments included in our sample, which were predominantly executed in an day-hospital or inpatient setting (86.6%), provide a highly structured and safe environment for patients to have corrective social-emotional experiences, to let go of their old dysfunctional patterns, and to experiment with and adopt new functional patterns. In other words, we suggest that these settings can provide the necessary positive holding environment patients need to work through the high anxiety levels that can occur in a insight-oriented treatment (Bateman & Fonagy, 2001; Lorentzen & Hoglend, 2008).

Our finding that destabilizing psychotherapy has a more positive impact on treatment outcome then stabilizing psychotherapy contrasts with the results of the study of Piper et al. (Piper et al., 1998; Piper et al., 1999). They found in a randomised clinical trial, in an outpatient patient population with a majority suffering from PD, that interpretive psychotherapy provided the same effectiveness as the supportive psychotherapies. The diffences in outcome between our study and the study of Piper could be explained by the more intensive setting of the destabilizing treatments in our study. Our hypothesis is that PD patients can only profit fully from a high pressure, destabilzing psychotherapy if the setting provides enough safety, that is for example in a dayhospital or inpatient setting. In the study of Piper and colleagues the expressive therapy was (even as the supportive variant) in an outpatient setting.

Furthermore, this study revealed that patients high on psychological strengths, for instance, overall mature defensive functioning, benefit more from psychotherapy than patients low on psychological strengths, irrespective of the level of destabilization and specific outcome variable. This finding is in line with previous research indicating that healthier patients tend to do better in psychotherapy than more severely ill patients (Luborsky et al., 1980). Possibly, healthier patients have psychological resources that enables them to profit from psychotherapy more than severely ill patients. Note that in our study 'healthier' does not mean 'less psychiatric symptoms, and healthy interpersonal relations and social role' as we entered these outcome measures at baseline in our multilevel model. The term healthier in this study is restricted to 'psychological strengths', e.g. motivation and overall defensive functioning.

The matching effect found in this study revealed that patients low on personal strengths profit more from a destabilizing treatment, and patients high on psychological strengths profit equally from destabilizing and stabilizing psychotherapies. This finding is opposite to our hypothesis. Perhaps a consistent reasoning according to the dynamic systems theory can help us interpret this interaction effect: patients high on psychological strengths only require a limited adjustment within the same pattern or attractor state, whereas those low on psychological strengths require a major change including replacing dysfunctional patterns or attractor state by functional ones. Thus, destabilization is not necessary in those high on psychological strengths, while it is in their low-scoring counterparts.

Clinical and scientific implications

Our findings have two important clinical implications. First, our findings discourage clinical practice to routinely match patients low on psychological strengths to supportive or stabilizing variants of psychotherapy. Second, the overall positive effect of destabilizing psychotherapies in a PD population and the lack of evidence for a matching hypothesis strengthens the position of predominantly destabilizing psychotherapies or, at least, the application of expressive and confrontative techniques within psychotherapeutic treatments. Destabilization seems to be beneficial for both the more vulnerable and the relatively healthier PD patient. However, our results do not preclude the possibility that destabilization can involve safety risks and thus iatrogenic effects for patients such as premature drop-out and difficulties in forming a stable working alliance. We would therefore recommend to apply destabilizing techniques in a well structured, safe, and holding therapeutic environment. An approach to safety in psychotherapeutic environments is offered by Hutsebaut and colleagues, who distinguish between organizational, team and therapist adherence to a treatment model as necessary components of treatment integrity in the implementation of complex interventions for PD patients (Hutsebaut, Bales, Busschbach, & Verheul, 2012).

It is important to note that this study is the first study of treatment matching in PD, which is a highly complex domain of research. Replication of this study will help to build further on a clinically useful evidence base for practitioners, but only a replication of the results in this study in a randomized clinical trial will give enough evidence to implement the results in daily practice. Therefore RCTs are recommended. Furthermore, we would recommend future studies to elaborate on the potentially moderating role of the level of structure, safety and holding in the therapeutic environment, with a beneficial impact of destabilization in safe environments and a negative impact in unsafe environments.

Strengths and limitations

A clear strength of this study is its relatively high external validity. The study is conducted in clinical practice and not under stringent experimental conditions. Nevertheless, it should be recognized that all patients were referred and admitted to specialist psychotherapy. It can therefore not be

precluded that our results are not applicable to PD patients who are not referred and admitted to specialist psychotherapy. A second strength is the large number of patients enabling the search for a matching effect. Despite these strengths the present findings have to be interpreted considering several limitations. First, although we controlled for pre-treatment differences or potential confounders using the propensity score, we cannot rule out that some potential confounders still influence the results (Bartak et al., 2010). Furthermore we used an alternative propensity score enabling to find matching effects. For example we did not control for patient characteristics highly correlated with the concept of 'psychological strengths' in the propensity score. This concern is somewhat mitigated by the fact that reanalysing de data with or without several correlated strength characteristics in the propensity score did not alter the results. Furthermore, the main effect of destabilization and the lack of matching effects were observed with all variants of the propensity score. Further research is undertaken by our research group to investigate the use of the propensity score in subgroup analyses to optimize the power to find a matching effect, while simultaneously retaining control for confounding effects (Van Eeren et al., 2011). A second limitation is that the treatments available in the destabilizing and stabilizing psychotherapies are a mixture of different settings, theoretical orientations and durations (Table 1). One could argue that the effects we found can be attributed to the differences in for example the setting, not to the 'level of (de)stabilization' in the treatments. We considered however that the differences in duration and setting is inherent to the concept of '(de)stabilization of treatment'. In other words: the setting and duration are not independent of the level of destabilization. Destabilizing treatments often use a 'high pressure cooker model' that yield good results in a relatively short time span. Stabilizing treatments use a more supportive and time-consuming trajectory. A third limitation concerns the operationalization and measurement

of the concept 'destabilization'. Although we have indications that the reliability of our operationalization is sufficient (correlation among two ratings was r = .69), the validity of our operationalization might be improved. Further investigations could describe at a detailed level all possible stabilizing and destabilizing therapist interventions. Each treatment could then be scored on the most prominent interventions the therapist uses, for example by rating the videotaped sessions by multiple raters. A fourth limitation is that the operationalization of the psychological strength characteristics remains open for debate. We could not find one variable that captured the whole concept, and others have also outlined this definition problem (Bjorklund, 2000; Lake, 1985). In an attempt to overcome this problem, we decided to use four constructs likely to be highly associated to the 'latent construct' of psychological strengths. A fifth limitation is the presence of non-response in our data. This may cause a problem for internal validity if non-response is not at random, but related to systematic bias in effect estimation. However, this bias seems unlikely because responders and non-responders did not differ in psychiatric symptoms at baseline, and therefore it seems that they do not represent two structurally different groups of patients (Bartak et al., 2010).

Conclusion

In conclusion our findings do not encourage clinical practice to routinely match patients low on psychological strengths to supportive or stabilizing variants of psychotherapy, and may encourage to routinely consider predominantly destabilizing psychotherapies as an interesting treatment option in these patients. These findings are in favor of the position of destabilizing psychotherapies in the treatment of PD patients.

Conflict of interest

The authors declare no conflicts of interest of any kind.

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Address correspondence to: Dr. R. Timman PhD, Erasmus MC, Psychiatry - Medical Psychology and Psychotherapy, P.O. Box 2040, NL-3000 CA Rotterdam, The Netherlands. Email: r.timman@eramusmc.nl