Treatment Selection in Personality Disorders

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Chapter 1

Introduction

INTRODUCTION

This thesis focuses on the selection of psychotherapy treatment in patients with personality disorders (PD). In four different studies, clinical knowledge and practice findings on treatment selection and effectiveness of treatment selection are investigated. This thesis aims to contribute to evidence-based treatment selection for patients with PD.

PERSONALITY DISORDERS

PDs are among the most common mental disorders in the general population and psychiatric healthcare settings. The reported prevalence rates are between 7.3 and 15.7% (Crawford et al., 2005; Klein et al., 1995; Lenzenweger, Lane, Loranger, & Kessler, 2007; Maier, Lichtermann, Klingler, Heun, & Hallmayer, 1992; Moldin, Rice, Erlenmeyerkimling, & Squireswheeler, 1994; Samuels et al., 2002; Torgersen, Kringlen, & Cramer, 2001; Zimmerman & Coryell, 1989). Research has shown that well-being and functioning of individuals suffering from PD is largely impaired, and that this is indeed due to the presence of PD (Cramer, Torgersen, & Kringlen, 2006; Soeteman, Verheul, & Busschbach, 2008). The diagnostic criteria used in this thesis are based on the DSM-IV-TR (American Psychiatric Association, 2000), which defines PD as "an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment". The DSM-IV-TR general diagnostic criteria for PD are provided in Table 1.1.

The DSM-IV-TR defines PDs in terms of personality traits, which are enduring patterns of perceiving, relating to, and thinking about the environment and oneself that are exhibited in a wide range of social and personal contexts. The emphasis on traits in the DSM-IV-TR establishes the possibility of a conceptual continuity between normal and disordered personality (Livesley, 2001). Furthermore, the polythetic format for diagnosis implies that PDs are combinations of traits and leads to considerable heterogeneity within one specific PD category.

There are ten officially recognized PDs, classified in three clusters; cluster A, i.e. the odd cluster, including the Paranoid, Schizoid and Schizotypal PD, cluster B, i.e. the dramatic cluster including the Antisocial, Borderline, Histrionic, and Narcissistic PD and cluster C, i.e. the anxious cluster including the Avoidant, Dependent and Obsessive-Compulsive PD. Apart from these ten, the classification

Table 1.1. General diagnostics criteria for a DSM-IV Axis II Personality disorder (APA 2000)

A	An enduring pattern for inner experience and behavior that deviates markedly from the expectations of the individual's culture. This pattern is manifested in two (or more) of the following areas: 1. Cognition (i.e. ways of perceiving and interpreting self, other people and events) 2. Affectivity (i.e. the range, intensity, lability and appropriateness of emotional response) 3. Interpersonal functioning 4. Impulse control
B	The enduring pattern is flexible and pervasive across a broad range of personal and social situations.
C	The enduring pattern leads to clinically significant distress or impairment in social, occupational, or other important areas of functioning.
D	The pattern is stable and of long duration and its onset can be traced back at least to adolescence or early adulthood.
E	The enduring pattern is not better accounted for as a manifestation or consequence of another mental disorder.
F	The enduring pattern is not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication) or a general medical condition (e.g. head trauma).

comprises a 'not otherwise specified' category (PD NOS), including two provisional diagnoses, i.e. depressive PD and passive-aggressive PD.

The PDs should be distinguished from clinical symptoms such as depression and alcohol dependence. The DSM-IV-TR uses a "multiaxial" system for assessment. PD's are placed on axis II, distinct from the clinical disorders that are placed in axis I. Assessing PD's on a separate axis recognizes the clinical significance and high prevalence. PD's differ from clinical syndromes in the extent to which they are rooted in the character of the individual, with PDs being more interwoven with the character structure.

Both the definition and classification of PDs has been subject to criticism. The DSM-IV-TR classification simplifies professional communication and encourages empirical research, but has limited clinical utility (Tyrer, 2010). To enhance clinical utility, in the new DSM-5, section III, 'Emerging Measures and Models' a revision of the assessment of PD has been proposed (American Psychiatric Association, 2013). In this revision the general definition of PD is modified, four types are discarded (i.e., Paranoid, Schizoid, Histrionic, and Dependent PD), and two components are added: five severity levels of personality functioning, and a dimensional description of the patient in terms of personality trait domains. The present research was conducted between 2003 and 2006, and is therefore still based on the DSM-IV-TR definition of PD.

The most reliable and valid strategy to diagnose PDs is the Longitudinal Expert All Data (LEAD) method (Spitzer, 1983). Its application is time-consuming, and therefore less feasible in clinical practice. The second best option is to conduct a semi-structured interview, such as the SIDP-IV (Jong, Derks, Oel, & Rinne, 1995) or SCID-II (First, 1997).

PERSONALITY DISORDERS AND TREATMENT

Systematic review studies have concluded that psychotherapy is an efficacious treatment for patients with PD, with mean effect sizes ranging between approximately 1.0 and 2.5 for various outcome parameters (Bateman & Fonagy, 2000; Leichsenring & Leibing, 2003; Perry, Banon, & Ianni, 1999). Since then, consensus has grown that psychotherapy is the treatment of choice for patients with PD (Landelijke Stuurgroep Multidisciplinaire Richtlijn ontwikkeling in de GGZ, 2008; National Institute for Health and Clinical Excellence, 2009a, 2009b). Effective psychotherapies for PD include a range of treatments, varying in setting (e.g. outpatient versus inpatient), duration (e.g. short-term versus long-term), format (e.g. individual versus group) and theoretical background (e.g. cognitive behavioural versus psychodynamic). This variety of treatment options raises the classical question: "*What* treatment, by *whom*, is most effective for *this* individual with *that* specific problem, under *which* set of circumstances?" (Paul, 1967). However, as yet, this question has not been investigated empirically. Research on predictors, moderators and mediators of treatment effectiveness has not sufficiently evolved to allow for definite treatment selection guidelines (Critchfield & Benjamin, 2006). Therefore, in deciding what treatment to select for a particular patient, the clinician is not much helped by empirical research findings, and he or she will have to resort primarily to clinical judgment. The current evidence from empirical research can be summarized as follows:

- Selection to treatment duration
  Longer treatment predicted positive outcome in cluster B patients (Chiesa & Fonagy, 2007)

- Selection to treatment setting
  Our research group has investigated the effectiveness and cost-effectiveness of five different treatment modalities by combining duration (i.e. short-term versus long-term psychotherapy) with treatment setting (i.e. outpatient, day hospital, versus inpatient). For cluster C PD, short-term inpatient psychotherapy

resulted in significantly more improvement of all outcome measures than did most other treatment modalities (Bartak et al., 2010) and was also the most cost-effective choice (Soeteman et al., 2011). For cluster B PD, psychiatric symptoms of patients in inpatient treatment improved marginally but nevertheless significantly more than those of patients in outpatient treatment (Bartak, Andrea, Spreeuwenberg, Ziegler, et al., 2011). On the other hand, the most cost-effective variant was outpatient psychotherapy (Soeteman et al., 2010). For cluster A PD, improvements were shown in all settings, but as sample sizes were small, it was not possible to empirically compare them (Bartak, Andrea, Spreeuwenberg, Thunnissen, et al., 2011).

- Selection to treatment intensity/level of destabilisation
  Various studies have demonstrated theoretical differences between a supportive and an interpretive form of psychodynamic psychotherapy. None reported (large) differences in effectiveness; however, they demonstrated differences in drop-out rate. In cluster C PD, the supportive variant was associated with a remarkably lower drop-out rate than that found with the interpretive or expressive variant (Piper, Joyce, McCallum, & Azim, 1998; Piper, McCallum, Joyce, Azim, & Ogrodniczuk, 1999; Winston et al., 1994; Winston et al., 1991)

- Selection to theoretical orientations
  The theoretical orientation does not seem to be crucial to the efficacy of psychotherapeutic treatment for PD (Verheul & Herbrink, 2007). Bateman and Fonagy (2000) concluded that the efficacy is rather determined by the consistent application of a coherent and understandable – both to patients and to therapists –theoretical frame. Furthermore, many psychotherapies for PD are in fact integrated treatments with elements from various specific theoretical orientations. An example is schema therapy, which combines elements from cognitive-behavioural, psychodynamic, and experiential psychotherapies.

SCEPTRE – STUDY ON COST-EFFECTIVENESS OF PERSONALITY DISORDER TREATMENT

Two studies presented in this thesis are based on data from a large prospective psychotherapy investigation in the Netherlands, the Study on Cost-Effectiveness of Personality Disorder Treatment (SCEPTRE). Patients were recruited from six mental healthcare institutions: De Viersprong (Halsteren), Mentrum/Arkin (Amsterdam),

Zaans Medical Centre (Zaandam), Altrecht (Utrecht), De Gelderse Roos/Pro Persona (Lunteren), and GGZWNB (Bergen op Zoom/Roosendaal). These institutions offer specialized psychotherapy for adult PD patients. More than 900 patients with personality pathology were included between 2003 and 2006, and they were followed for five years. The study aimed to determine the effectiveness and cost-effectiveness of different 'dosages' of psychotherapy for patients with PD, treatment selection was addressed as well. To overcome the problem of selection bias in the naturalistic design of SCEPTRE, we controlled for initial differences in patient characteristics with the propensity score method (Bartak et al., 2009; Spreeuwenberg et al., 2010; van Eeren et al., 2011). SCEPTRE has a high follow-up response, so that the results are meaningful for clinical practice.

AIMS AND RESEARCH QUESTIONS

The primary aim of this thesis is to investigate A) clinical knowledge; B) routine clinical practice, and C) empirical evidence of treatment selection for patients with PD. The secondary aim is to contribute to evidence-based treatment selection in clinical practice. In this context, we addressed the following research questions:

A. Clinical knowledge
    1. What patient characteristics are considered relevant to treatment selection for patients with PD?
    2. What matching hypotheses underlie or implicitly underlie clinical practice of treatment selection for patients with PD?

B. Routine clinical practice
    3. What is the relationship between characteristics of patients with PD and treatment allocation in routine clinical practice?

C. Empirical evidence
    4. Do patients with high psychological strength profit more from predominantly destabilizing treatments; and do patients with low psychological strength profit more from predominantly stabilizing treatments?

THE FORMAT OF THIS THESIS

Chapter 2: using a consensus method, patient characteristics are identified that might be of clinical use in treatment selection (research question 1);

Chapter 3: explored clinical knowledge on treatment selection by interviewing expert clinicians (research question 2);

Chapter 4: explored the most important factors influencing treatment selection in routine clinical practice, based on the SCEPTRE baseline data (research question 3);

Chapter 5: the following matching hypothesis was tested: patients with high psychological strength profit more from predominantly destabilizing treatments, whereas patients low on strengths profit more from predominantly stabilizing treatments, using data from the SCEPTRE study (research question 4);

Chapter 6: discusses the answers to the research question stated above, addresses implications for clinical practice, and provides recommendations for future research.

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Chapter 2

In search of patient characteristics that may guide empirically based treatment selection for personality disorder patients – A concept map approach

ABSTRACT

Using the concept map method, this study aimed to summarize and describe patient characteristics pertinent to treatment selection for patients with personality disorders (PDs). Initial patient characteristics were derived from the research literature and a survey among Dutch expert clinicians. Concept mapping is a formalized conceptualization procedure that describes the underlying cognitive structures people use in complex tasks, such as treatment allocation. Based on expert opinions of 29 Dutch clinicians, a concept map was generated that yielded eight domains of patient characteristics, i.e. Severity of symptoms, Severity of personality pathology, Ego-adaptive capacities, Motivation and working alliance, Social context, Social demographic characteristics, Trauma, and Treatment history and medical condition. These domains can be ordered along two bipolar axes, running from internal to external concepts and from vulnerability to strength concepts, respectively. Our findings may serve as input for the delineation of algorithms for patient-treatment matching research in PD.

Van Manen, J.G., Kamphuis, J.H., Goossensen, A., Timman, R., Busschbach, J.J.V., & Verheul, R. (2012). In search of patient characteristics that may guide empirically based treatment selection for personality disorder patients – A concept map approach. Journal of Personality Disorders, 26(4), 481-497.

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INTRODUCTION

Effective psychotherapies for personality disorders (PDs) include a range of treatments, varying in setting (e.g. outpatient versus inpatient), duration (e.g. short-term versus long-term), format (e.g. individual versus group) and theoretical background (e.g. cognitive behavioural versus psychodynamic). This variety of treatment options raises the classical question: "*What* treatment, by *whom*, is most effective for *this* individual with *that* specific problem, under *which* set of circumstances?" (Paul, 1967). To date, research has supported the effectiveness of some psychotherapeutic treatments (e.g. dialectical behavior therapy, mentalization-based treatment and schema-focused therapy) in some PDs (e.g. borderline and avoidant PD). However, research on moderators and mediators of treatment effectiveness has not sufficiently evolved to allow for definite treatment selection guidelines (cf. Critchfield & Benjamin, 2006). Therefore, when facing the everyday task of deciding which treatment to select for a particular patient, the clinician can only derive limited assistance from empirical research, and she/he will have to resort to clinical judgment.

Predicting and selecting the optimal treatment for a particular client is a cognitively complex task, as it involves appraising multiple treatment alternatives on multiple divergent aspects, and performing various probabilistic calculations (Denig, Witteman, & Schouten, 2002). Several specific biases have been observed among clinicians that may lead to suboptimal treatment selection. For example, clinicians tend to conclude that the patient's problems are caused by personality factors, and in so doing underestimate the role of situational factors (Morrow & Deidan, 1992). Furthermore, clinicians tend to consider only one treatment option per case, and consider other treatment options only after the initial selection appears to be unsatisfactory (Witteman & Kunst, 1997). In a more general sense, ample evidence indicates that clinical judgment is suboptimal for predictive purposes, as it is vulnerable to various general cognitive biases. Two meta-analytical studies (Aegisdottir, et al., 2006; Grove, Zald, Lebow, Snitz, & Nelson, 2000) have convincingly documented that statistical predictions are generally more accurate than clinical judgment in prediction.

The present study is part of a larger research program that aims to contribute to empirically based treatment selection for PD patients. While our previous work explicated clinicians' actual use of information about patient characteristics to select treatments (Van Manen, et al., 2008, 2011), the present study aims to summarize and describe patient characteristics relevant for the selection of the optimal psychotherapeutic treatment for patients with personality disorders. In accordance

with evidence based medicine, we formulated patient characteristics based on both clinical expertise and available empirical evidence (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996).

Concept mapping is a standardized procedure for the conceptualization of a specific subject (cf. Kane & Trochim, 2006; Trochim, 1989; Trochim & Kane, 2005), and is particularly appropriate when a concept is still in its exploratory stage as it aids the clarification of the constituent elements (Johnsen, Biegel, & Shafran, 2000; Paulson, Truscott, & Stuart, 1999). Concept mapping combines qualitative and quantitative research strategies, and the input for the concept map can be drawn from different sources such as published research data and/or data generated by experts during a brainstorm meeting (Trochim, 1989). The four main processes of the concept map procedure are: (1) generation of concepts by participants and/or by research data; (2) grouping together of the concepts through an 'unstructured card sort' by participants; (3) statistical analysis of the card sort using multidimensional scaling and cluster analysis, and (4) interpretation of results by participants. Concept mapping has previously been used in psychotherapy research for such diverse purposes as the description of client perspective on alliance formation (Bedi, 2006) and counselling for suicide (Paulson & Worth, 2002), and the mapping of therapeutic common factors (Tracey, Lichtenberg, Goodyear, Claiborn, & Wampold, 2003) and coping strategies (Gol & Cook, 2004). In this study we used the concept mapping method to describe a manageable number of patient characteristics that may serve to formulate actuarial algorithms for treatment selection research in the PD population.

METHOD

Participants

A group of researchers and expert clinicians was selected on basis of their specific research expertise or expertise in the assessment and/or treatment of PD patients. More specifically, the first author (J.G.v.M.) compiled a list of Dutch authors who published articles or chapters on the treatment of personality disorders, treatment selection in personality disorders, or personality disorders in general. A list of 46 experts resulted, who received a letter from one of the authors (R.V.) inviting them to participate in a structured group process in order to share their knowledge on treatment selection in PD patients. This structured process consisted of two individual tasks of approximately one hour, and a 4-hour group meeting. To encourage participation, the experts received a gift voucher upon finishing the

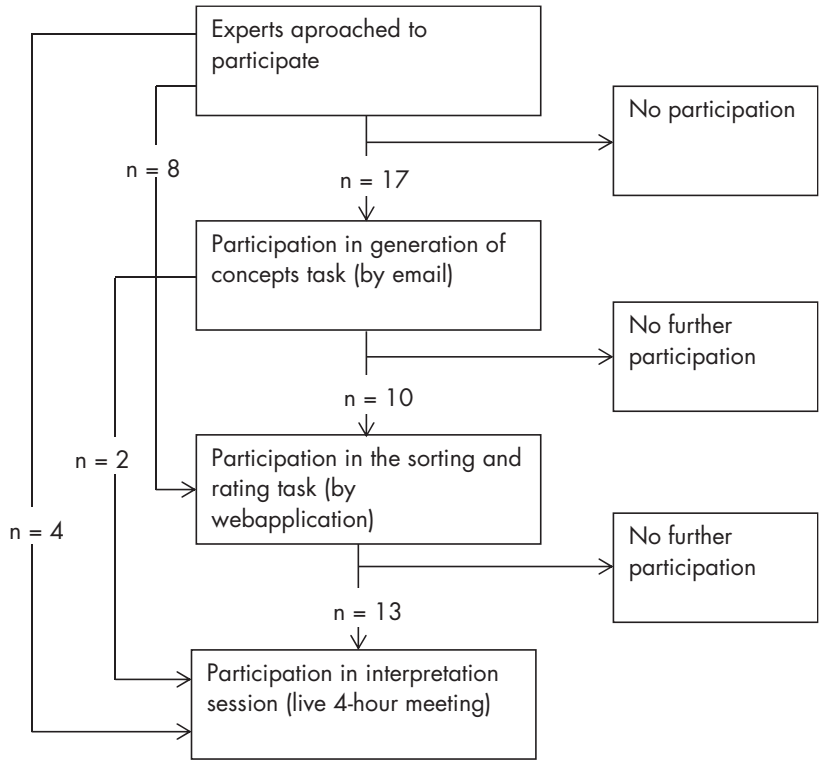

Figure 2.1. Flowchart of the Participation of Experts in the different Stages of the Concept Map Procedure

Note. The arrows to the left of the boxes indicate the number of experts who skipped one or more stages, while arrows in the middle indicate the number of experts who proceeded to the subsequent steps. Drop-out at each stage is indicated by the arrows and the boxes to the right.

two individuals tasks (i.e. € 25,- for each individual assignment) and again after the group meeting (i.e. € 250,-). Not all experts were able to contribute or attend timely to all three parts of the study, nor were they required to. Figure 2.1 displays a flow chart detailing the expert participation at each stage of the study. To ensure adequate preparation, we required the experts to complete the missed assignment even if the resulting data could not longer be included in the analyses. Seventeen experts did not respond to any of the three parts of the study, therefore 29 out of the 46 Dutch experts participated in one or more of the three different stages of the study. This number is relatively high when compared to the average range of participants for a concept map procedure (between 10 to 20 participants; Trochim, 1989). More participants yield more information and consequently more precise results (Trochim, 1993). The participants were between 29 and 64 years

old, (M = 49.0; SD = 9.0), and reported an average of 21 years of professional experience (SD = 9.5). Most were licensed clinical psychologists (n=15, 52%), followed by psychiatrists (n=7, 24%), licensed psychotherapists (n=4, 14%), and clinical researchers (n=3, 10%). Both sexes (men n=16, 55%; women n=13, 45%) and major theoretical orientations were equally represented (cognitive behavioral n=9, 31%; psychodynamic n=9, 31%; integrative n=11, 38%).

Procedure

Concept mapping includes four stages: (a) generation of the concepts; (b) sorting and rating of the concepts; (c) statistical analysis; and (d) interpretation session.

Generation of the concepts

The concept mapping procedure starts with the generation of a set of concepts that ideally represent the entire conceptual domain of interest (Trochim, 1989), i.e. in this study the patient characteristics that seem of importance in the treatment selection process for PD patients. We combined two sources for the concept generation process, i.e. (1) a literature search, and (2) expert opinion. Two electronic databases (PsycINFO, PubMed) were used for the literature search into articles and chapters on treatment selection in personality disorders. Keywords used were personality disorder(s) in combination with client characteristics, patient selection, client treatment matching, patient care planning, or treatment planning. The database search was conducted in the spring of 2008 and was restricted to Dutch and English language papers published after the first of January 1990. Additional papers were identified by searching the reference list of retrieved articles. The search resulted in 55 articles or chapters. More details on the search strategy (including a reference list) can be found in an online available research report (http://repub.eur.nl/resource/pub_20870/index.html). From the selected sources 310 concepts were distilled. As Kane and Trochim describe in their guide to concept mapping, the number of concepts and their clarity to the participants are the key factors of success of the concept mapping process (Kane & Trochim, 2006). Frequently, steps must be taken to prune and edit the retrieved concepts. Using a small group of participants or researchers for key decisions in the formulation of concepts, and using simple editing rules is generally sufficient for reducing and editing the concepts (Bedi & Alexander, 2009; Gol & Cook, 2004; Kane & Trochim, 2006). Based on the editing rules of Kane and Trochim (2006) and Gol and Cook (2004), six rules of concept editing were specifically formulated for the present study and applied by the first author (J.G.v.M.): (1) selecting patient characteristics only (e.g. drop other concepts like 'theoretical orientation of therapist');

(2) eliminating duplicate concepts; (3) editing for clarity and comprehension; (4) seeking optimal specificity in the formulation; (5) equalizing the level of abstraction (e.g. use only symptoms or only diagnosis, but not both); and (6) stipulating a maximum number of concepts of 100 (manageability). When these editing rules failed to provide decisive formulation, the first author consulted a core group of concept map participants to discuss optimal formulation of the concepts. Employment of these rules resulted in 68 concepts or patient characteristics, which were subsequently sent to 46 participants by email, with the request to supplement and/or clarify the concepts. Of the 46 invited experts, 17 (37%) replied (see Figure 2.1). The suggestions of the experts were processed which resulted in a revised list of 126 patient characteristics. The previously explicated six rules were again applied by the first author (J.G.v.M.) with help of the core group, which resulted in a third and final list of 81 patient characteristics.

Sorting and rating of concepts

In the next phase, all 46 experts were invited to perform the sorting/rating tasks, to which 18 (39%) experts complied (see Figure 2.1). For the sorting and rating tasks we used a personalized web application, derived from www.conceptsystemsglobal.com. For the sorting task, the participants were instructed to group the patient characteristics in a way that makes sense to you, with the purpose of making conceptually homogeneous clusters. Restrictions on the sorting task were: (1) a patient characteristic can not be placed in a pile by itself (i.e. a pile must consist of more than one patient characteristic), (2) not all patient characteristics can be placed in one pile (i.e. more than one pile is required), (3) piles named 'miscellaneous' and 'other' are not allowed (i.e. piles should have some homogeneity), and (4) patient characteristics can not be sorted according to priority or importance (i.e. the patient characteristics must be grouped in some content oriented way).

As a preliminary analysis, all individual data sorts were aggregated into one data matrix, which involved two steps. First, each participant's sorting solution was put into a binary similarity matrix, with as many rows and columns as there are patient characteristics (81). A 1 is entered into the cell when the two patient characteristics were grouped together in a pile, and a 0 when they are not grouped together. Second, all individual binary similarity matrices were summed to obtain a combined group similarity matrix.

For the rating task, experts were instructed to rate the importance of each patient characteristic for the final treatment selection decision on a 6 point Likert scale ranging from 1 (absolutely not important) to 6 (extremely important).

Statistical analysis

Two statistical procedures were sequentially performed. First, a nonmetric Multidimensional Scaling (MDS) analysis was performed to represent the patient characteristics and their cohesion in a two-dimensional plane. MDS generates a spatial representation of the latent organization of a set of items based on the frequency with which the items are sorted together (Kruskal & Wish, 1978). In other words, MDS arranges the different patient characteristics visually along axes in such a way that the distance between two patient characteristics is inversely related to the frequency of the two patient characteristics being sorted together. In MDS the gold standard is to determine the optimal number of dimensions based on diagnostic statistics, which in theory can yield as many as N – 1 dimensions, where N is the number of concepts (Kane & Trochim, 2006). However, in the concept mapping procedure it is custom to limit the solution to two dimensions (axes). The reason is that the concept map approach is less interested in determining the statistically optimal number of dimensions, but instead it places more emphasis on the interpretability of the map and its ability to portray the relations between the different items in terms of distance and proximity. Furthermore, solutions with three or more dimensions quickly become too complicated to interpret (Kane & Trochim, 2006; Kruskal & Wish, 1978). The fit of the solution is estimated with a stress indicator. The stress indicator measures the mismatches between the MDS distances and the observed similarities in the sorted data. It ranges from 0 (no discrepancy between distances on the MDS map and observed similarities) to 1 (the distances in the MDS map have no relation to the observed similarities). According to Trochim (1993), approximately 95% of concept mapping projects yield stress values between 0.205 and 0.365.

The second statistical analysis forms clusters of patient characteristics. A hierarchical cluster analysis using Ward's minimum variance algorithm was applied to the MDS coordinates. In this way internally consistent and non-overlapping clusters of patient characteristics were created. The result is a cluster tree that shows step by step which patient characteristics are joined when the number of clusters decreases from 81 clusters to 1 cluster. Following Bedi (2006) three criteria to select the number of clusters were used: (1) the range of clusters should account for the richness of the information on the one hand, but should still be interpretable on the other hand (i.e. 5 to 15 clusters), (2) the cluster bridging values[1] should be

[1] The bridging value, ranging from 0 to 1, indicates how often a patient characteristic was sorted with others that are close to it on the map or whether it was sorted with characteristics that are farther away on the map (Concept Systems, 2003). Low bridging values indicate a 'tight' relationship with other patient characteristics nearby, high values indicate a tendency 'to bridge' to patient characteristics all over the

low, indicating that the patient characteristics within the clusters were frequently sorted together, but not frequently with patient characteristics from other clusters, (3) the final cluster solution should be close to the average number of piles selected by the participants (i.e. mean +/- 1 SD). All analyses were performed using the 'Concept Systems' computer program (Concept Systems, 2003).

Importance ratings of the patient characteristics were used to calculate the mean importance of the clusters. The differences in importance between the clusters were tested with t-tests using a Bonferroni correction for multiple testing.

Trochim (1993) recommends calculating the reliability of the final concept map. We calculated the accuracy reliability as described by Jackson and Trochim (2002; Trochim, 1993), and Bedi (2006). Accuracy reliability is the association between each individual sort and the total group sort. It is calculated as the average of the correlations between each individual binary similarity matrix and the total group similarity matrix (Bedi, 2006). High reliability indicates that the total group sort is a trustworthy indicator of the individual sorts. In a meta-analysis of 33 concept map studies, Trochim (1993) found a mean accuracy reliability of 0.29 (SD = 0.04)[2], Bedi (2006) found in his study an accuracy reliability of 0.45 (SD = 0.11). We compared our results with the accuracy reliability of Trochim (1993) and Bedi (2006).

Interpretation session

In the final phase of the concept mapping procedure, the resulting concept map was interpreted in a 4-hour meeting among the participating experts. Of the 46 invited experts, 19 (41%) took part in the interpretation session (see Figure 2.1). The goal of the interpretation session was twofold: (1) interpret and name the concept map clusters, and (2) describe the underlying two axes of the concept map.

map. Patient characteristics with higher bridging values are more difficult to interpret. Cluster bridging value is the average of the bridging values of all patient characteristics in a cluster, and is an indicator for the homogeneousness of the patient characteristics in a cluster.

[2] Following the line of reasoning advocated by Bedi (Bedi, 2006), we eliminated Trochim's unconventional use of the Spearman-Brown correction on the reliability values. The value presented is without the Spearman-Brown correction.

RESULTS

Generation of the concepts

As presented in Table 2.1, the review of the literature and expert opinion yielded 81 patient characteristics putatively relevant for treatment selection for PD patients.

Sorting and rating of the concepts

Participants sorted the 81 patient characteristics into an average of 11 piles (M = 10.9, SD = 3.2). On a scale from one to six, the mean importance of a patient characteristic was M = 4.04 (SD = 0.84), suggesting a high overall importance of the patient characteristics.

Statistical analysis

The stress value of the MDS-map was .22, indicating a satisfactory fit. First, in examining the interpretability of the initial 15 cluster solution, the authors noticed that in the step from 8 to 7 clusters 2 clusters merged that seem to have a different content. Second, the 8-cluster solution resulted in moderately low cluster bridging values, which supports the choice for 8 clusters. Finally, the 8 cluster solution lies within the range (+/- 1 SD) of the average number of sorted piles. Therefore, the 8-cluster solution was chosen as final.

The concept map of the final solution is presented in Figure 2.2. This map is the result of the MDS analysis, the hierarchical cluster analyses, and the interpretation session with participants (results of the interpretation sessions is discussed in detail below). Clusters that are placed far apart, such as Social context and Severity of symptoms, indicate that the patient characteristics in these clusters were not sorted together very often. On the other hand, the clusters Ego-adaptive capacities and Severity of personality pathology are placed next to each other, suggesting a tight relationship between these clusters. The average bridging values for each cluster is presented in Table 2.1. Bridging values ranged from 0.13 for the most homogeneous cluster 7 (i.e. Trauma) to 0.84 for the least homogeneous cluster 8 (i.e. Treatment history and medical condition).

Table 2.2 shows on the diagonal the mean cluster importance and off-diagonal the statistical testing of the mutual differences in importance between the clusters. Mean cluster importance was calculated on basis of the expert importance ratings of the patient characteristics belonging to each cluster. The clusters Severity of symptoms, Severity of personality pathology, Ego-adaptive capacities, and Motivation and working alliance were rated of significantly higher importance than the clusters Social context, Social demographical characteristics, and Trauma.

Table 2.1. Concepts and Clusters derived from the Concept Map, along with their Bridging and Rating Values

	Clusters and concepts	Bridging value (mean)	Rating value (mean)
	Cluster 1: severity of symptoms	0.19	4.47
9	Anxiety symptoms		
11	Posttraumatic stress symptoms (re-experiencing the trauma, nightmares)		
21	Suicide attempts		
23	Recurrent psychiatric or psychological symptoms		
30	Dissociative symptoms		
34	Eating problems (binge eating, purging, overweight, underweight)		
37	Autism Spectrum Disorder		
48	Difficulties with sustained attention or focussing		
60	Depressive complaints and/or (hypo)manic episodes		
62	Deliberate acts of self-harm		
63	Schizophrenia		
65	Psychotic episodes		
68	Unusual speech (vague, rambling, metaphorical, with excessive details, stereotypical)		
76	Substance abuse or substance dependence		
81	Simulation of psychiatric or psychological symptoms		
	Cluster 2: severity of personality pathology	0.34	4.26
1	Extreme timidity		
3	Severity of personality pathology		
4	Number of personality disorders and/or number of maladaptive personality traits		
12	Psychopathy		
13	Anaclitic personality: dependent on love, care and attention from others		
28	Focality: the degree to which the symptoms can be described as one core problem area, which can explain the symptoms.		
35	Pattern of aggressive behaviour		
45	Type of personality disorder		
50	Neuroticism or emotional stability		
51	Perfectionism		
80	Personality structure (psychotic, borderline, neurotic)		

Table 2.1. Concepts and Clusters derived from the Concept Map, along with their Bridging and Rating Values (continued)

	Clusters and concepts	Bridging value (mean)	Rating value (mean)
	Cluster 3: ego-adaptive capacities	0.30	4.24
2	Attribution style: attribution of the cause of behaviour to internal, dispositional causes, or external, situational causes		
6	Capacity to relate: capacity to form intimate, significant and stable relationships		
33	Attachment pattern		
42	Primitive defence mechanisms: the use of for example splitting and distortion mechanisms to defend against emotional conflicts or internal or external stressors		
44	Identity integration: het ability to form stable, integrated and positive representations of the self, and the ability to perceive his/her own life as meaningful		
46	Social skills and adaptability		
49	Self-activation: the ability to act when problems need to be solved.		
52	Introjective personality: a high level of critical perfectionism and autonomous behaviour		
53	Level of altruism		
57	Obligingness: the tendency to give in, in interpersonal conflicts, to avoid quarrels, and to control own anger		
59	Ability to mentalize: the ability to understand the mental state of oneself and others, such as feelings, thoughts, intentions and wishes		
64	Ego strength: de capacity tolerate stress, conflicts and impulses and to hold on to one's own identity versus the risk on fragmentation and psychotic reactions		
72	Psychological mindedness: the ability to identify dynamic (intrapsychic) components and relate them to a person's difficulties.		
73	Extraversion: showing interest and involvement with what is outside the self		
	Cluster 4: motivation and working alliance	0.44	4.53
10	Motivation for treatment: patient takes the responsibility for his/her problems and feels the urge to overcome these problems despite an possible painful process		
20	Introspective and reflective capacity: the capacity to observe and think of own feelings, fantasies, motives and behaviour		
27	Cognitive capacities or intelligence		
29	Descriptors of the working alliance between patient and intake clinician		

Table 2.1. Concepts and Clusters derived from the Concept Map, along with their Bridging and Rating Values (continued)

	Clusters and concepts	Bridging value (mean)	Rating value (mean)
32	Reaction on trial interventions: increased motivation, positive affect, expression of appreciation or agreement, intense fear, confusion, fragmentation, disintegration, primitive defence mechanisms		
54	A position of trust in the commitment and motives of the intake clinicians		
69	Therapy allegiance		
75	Level of problem recognition		
	Cluster 5: social context	0.38	3.81
5	Quality of the social network or support system		
25	Dutch fluency		
26	Meaningful daily activities (e.g. work, parental care, study, volunteer work)		
77	Hobby's		
78	Wish of continuing work or study		
79	Patient can not be absent for his/her children		
	Cluster 6: social demographic characteristics	0.28	3.48
14	Judicial status (e.g. arrests, sentence, unresolved legal situation)		
17	Age		
24	Life stage		
31	Patient can bear the treatment expenses		
36	Patient's preference for treatment like the setting or duration of treatment		
38	Couple- family- or systemic problems		
40	Gender		
41	Social class		
55	No permanent address		
56	Considerable outstanding debts		
61	Cultural background		
70	Education		
74	Religion		

Table 2.1. Concepts and Clusters derived from the Concept Map, along with their Bridging and Rating Values (continued)

	Clusters and concepts	Bridging value (mean)	Rating value (mean)
	Cluster 7: trauma	0.13	3.20
7	Sexual abuse after infancy		
15	Overinvolvement attitudes from parents/guardians in infancy		
19	Sexual abuse after infancy		
22	Emotional or physical neglect in infancy		
43	History of being bullied		
47	Continuing and/or actual traumatic circumstances		
58	Parental violence (physical, verbal) in infancy		
66	Loss or separation of parents/guardians during childhood		
67	Parental divorce in infancy		
	Cluster 8: treatment history and medical condition	0.84	4.12
8	Treatment history: sort of treatment en treatment duration		
16	Use of psychotropic's		
18	Course of earlier treatments: drop-out, degree of improvement		
39	Psychopathology in relatives		
71	Severe somatic problems which can interfere with treatment		

The accuracy reliability for the resulting concept map was 0.56 (SD = 0.06; t_{17} = 37.2, p<0.001), indicating adequate reliability for our data.

Interpretation session

During the interpretation session the participants were asked to describe the clusters that had emerged from the concept mapping procedure. Below these descriptions are provided, starting at the bottom cluster in Figure 2.2 and proceeding anticlockwise.

The bottom cluster was named Severity of symptoms. To the experts, the content of this cluster appeared to refer to the manifestation of various mental disorders, and to the burden of these symptoms for the patient or his/her environment. The cluster includes mainly symptoms from DSM-IV axis I-disorders such as substance abuse (76) and anxiety disorders (9).

The second cluster was named Severity of personality pathology. To the experts, the content of this cluster appeared to refer to the level of maladaptive function-

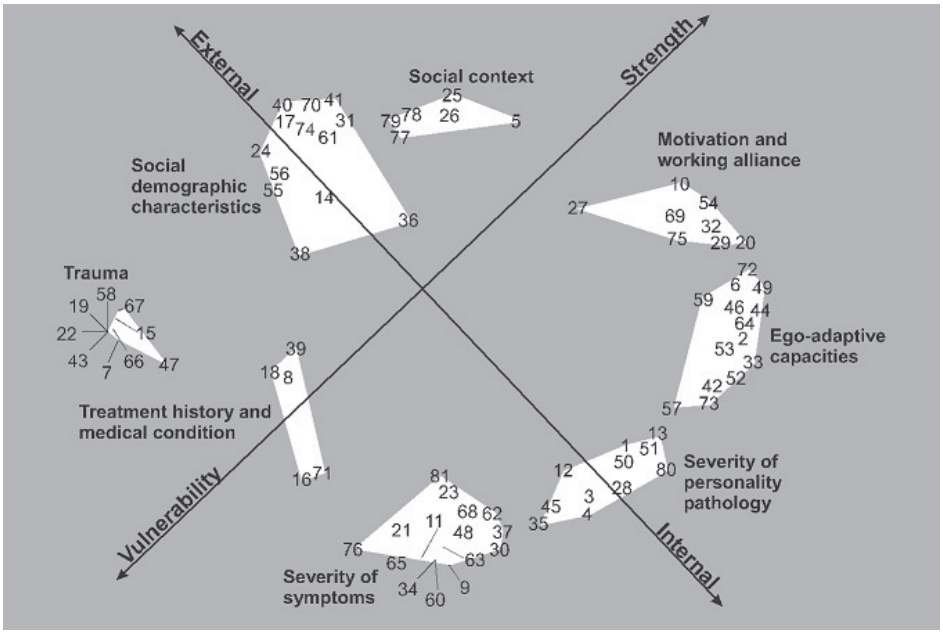

Figure 2.2. Concept map of eight clusters of patient characteristics.

Table 2.2. Mean Importance of the Clusters and t-Test results for Differences in Importance between the Clusters.

Clusters	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Severity of symptoms	(4.26)	-2.08	0.15	-2.21	4.32**	6.07**	7.40**	0.83
2. Severity of PD pathology	.	(4.47)	1.38	-0.29	5.01**	8.62**	7.83**	3.00*
3. Ego-adaptive capacities	.	.	(4.24)	-4.06**	3.42*	4.57**	5.61**	0.60
4. Motivation and working alliance	.	.	.	(4.53)	5.74**	5.94**	6.27**	1.88
5. Social context	.	.	.	.	(3.81)	2.46	3.03*	-1.82
6. Social demographic characteristics	.	.	.	.	.	(3.48)	1,71	-5.95**
7. Trauma	.	.	.	.	.	.	(3.20)	-4.34**
8. Treatment history and medical condition	.	.	.	.	.	.	.	(4.12)

Note. On the diagonal the averaged importance according to the participants (n = 18) of the clusters are presented. In the above diagonal elements the t-statistics are presented with df = 17, and the significance level. We used the Bonferonni correction for multiple testing resulting in more strict significance levels:
* p<0.01 ** p<0.0018.

ing of the personality. It was judged to be a general indicator of the severity of the personality pathology. The cluster contains psychodynamic concepts such as focality of the personality pathology (28), but also diagnostic criteria according to the DSM-IV such as number of PDs and/or number of maladaptive personality traits (4), or type of PD (45).

The third cluster was named Ego-adaptive capacities, and consists of psychodynamically oriented concepts such as identity integration (44), primitive defence mechanisms (42) and attachment pattern (33). One of the participants described this cluster as follows: "Ego-adaptive capacities refer to internal processes that mediate between the demands of the internal world and the external world, such as controlling internal impulses or meeting requirements of the outside world." Although conceptually related the participants pointed to an important difference between the clusters Severity of personality pathology and Ego-adaptive capacities, Severity of personality pathology describes a general indication of the severity of the personality pathology, while Ego-adaptive capacities describes specific conflicts and/or deficiencies in the PD patient.

The fourth cluster was named Motivation and working alliance, and contains patient characteristics such as a high level of problem recognition (75), introspective and reflective capacities (20), and therapy allegiance (69). There was relatively low consensus on the interpretation of this cluster, perhaps as a result of relatively low homogeneity within this cluster and relatively high relatedness to other clusters (high cluster bridging value, see Table 2.1). According to the experts 'motivation for treatment' refers to some degree of positive outcome expectancy due to treatment, and to the effort patients are willing to invest in the demands of treatment (in terms of time, money, psychological effort). Working alliance refers to the patient's capacity to form trusting bonds. Both concepts are considered to be mutually reinforcing.

Clusters five and six were named Social context and Social demographic characteristics. Although conceptually related, the participants pointed to important differences between these two: whereas the cluster Social demographic characteristic consists of factual information (e.g. age (17), gender (40), living conditions (55), and financial state of affairs (56)), the cluster Social context represents the patient's effort and capacities to function socially (e.g. quality of the social network or support system (5), meaningful daily activities (26)).

Cluster seven was named Trauma. It is a conceptually uniform cluster (low cluster bridging value, see Table 2.1), and to the experts, the content of this cluster appeared to refer to traumas and emotional neglect in the present and/or past. The information appeared to be not only factual, but there also seems to be infor-

mation about the perception of the patient. Patient characteristics belonging to this cluster are, for instance, history of being bullied (43), parental divorce in infancy (67), and continuing and/or actual traumatic circumstances (47).

The eighth and final cluster was named Treatment history and medical condition. It consisted of heterogeneous patient characteristics, as is evident from the high cluster bridging value (see Table 2.1). The experts described it as follows: "treatment history in terms of: kind of treatment, duration of treatment and the final treatment effect and medical conditions which can interfere with treatment."

According to the experts, the concept map in Figure 2.2 appeared to reveal two underlying dimensions or axes. One axis ranges from cluster Severity of personality pathology to Social demographic characteristics. Clusters in the lower right corner are internal structures or processes in the patient, whereas clusters in the high left corner are external variables, e.g. situational and environmental characteristics. This axis is therefore called the internal – external axis. The other axis runs orthogonal to the previous axis, i.e. it moves from the cluster Treatment history and medical conditions towards the space between the two clusters Social context and Motivation and working alliance. Participants argued that in the lower left corner Vulnerability clusters are depicted that may be associated with slower change processes. In the upper right corner Strength clusters are depicted, that are often considered predictors for favorable treatment outcome, and a relative quick recovery. Hence this axis is called the vulnerability – strength axis.

DISCUSSION

Drawing on clinical expertise and a literature review, we used the concept map method to summarize and describe patient characteristics pertinent to treatment selection for patients with personality disorders. We started out with a comprehensive set of 81 patient characteristics deemed potentially relevant for such decisions. Using sorting and rating assignments and statistical techniques, a concept map emerged that reduced the total number of patient characteristics to eight meaningful clusters. This final concept map had a satisfactory fit (stress = 0.22), adequate reliability, and yielded the following set of clusters of patient characteristics: (1) Severity of symptoms, (2) Severity of personality pathology, (3) Ego-adaptive capacities, (4) Motivation and working alliance, (5) Social context, (6) Social demographic characteristics, (7) Trauma, and (8) Treatment history and medical condition.

The two bipolar dimensions underlying the eight clusters of patient characteristics, i.e. internal versus external and strength versus vulnerability, suggest that there are at least two major criteria to be considered when selecting empirically based treatments for PD patients. First, the patient should be examined in terms of the amount of emotional pressure or stress she/he can tolerate (dimension vulnerability-strength). Possibly, this dimension may help decide whether the patient needs a primarily stabilizing or supportive treatment or, alternatively, may profit more from a primarily destabilizing or confrontational/expressive treatment. The concept of the supportive-expressive continuum is often used to describe different psychodynamic interventions, and is empirically based on the data of the Psychotherapy Research Project of the Menninger Foundation (Wallerstein, 1989). Expressive therapy is primarily focused at relational and conflict issues, and is targeted toward enhancing the patient's cognitive and emotional understanding of his or her symptoms (Leichsenring & Leibing, 2007; Winston, 2003). In supportive therapies, the establishment of a helping alliance is regarded as a central component and the treatment is directed toward improving stability of the patient's psychological structure, a sense of self, and relationships (Leichsenring & Leibing, 2007; Winston, 2003). Hypothetically, the distinction between supportive/stabilizing or expressive/destabilizing can describe different psychotherapies for personality disorders. For example, dialectial behavior therapy (Linehan, 1993) can be classified as a relatively supportive and stabilizing treatment because of its highly structured program that emphasizes teaching specific skills and its focus on motivational factors, empathy, validation and active therapeutic support. Transference focused psychotherapy (Yeomans, Clarkin, & Kernberg, 2002), on the other hand, might be categorized as relatively expressive and destabilizing as it uses more confrontational techniques (e.g. analysis of the transference), and provides less support when stress levels are increased or self-destructive behaviors have to be managed by the patient him/herself. A viable hypothesis for further research would be that more vulnerable patients are better off in supportive/stabilizing treatments, whereas patients with more strength characteristics benefit more from expressive/destabilizing treatments. This reasoning is in line with Gabbard (2005), who suggests that indicators for an expressive psychotherapy are characteristics such as a strong motivation to understand, and good impulse control, while indicators for a supportive therapy are characteristics such as chronic ego weakness. The second bipolar dimension, i.e. external versus internal, may suggest that it is worthwhile to examine whether the interventions should be primarily focused on systemic problems, such as family problems or lack of social support, or individual problems, such as mental states and symptoms. Whether these con-

jectured patient-treatment matches translate to enhanced treatment outcomes may be investigated in further research, e.g. in match-mismatch designs.

The selected patient characteristics were considered of differential importance to the experts. Severity of symptoms, Severity of personality pathology, Ego-adaptive capacities and Motivation and working alliance were considered of higher importance than the characteristics Social context, Social demographic characteristics and Trauma. These results are consistent with an earlier study focusing on the relationship between pre-treatment patient characteristics and the final treatment allocation in a PD patient population (Van Manen, et al., 2011). This study revealed several patient characteristics to be associated with treatment allocation, i.e. symptom distress, cluster C personality pathology, level of identity integration, motivation, treatment history, parental responsibility, and age. The similarities in patient characteristics between the present and earlier study underline the potential value for the treatment selection process of patient characteristics such as Severity of symptoms, Severity of personality pathology, Ego-adaptive capacities, and Motivation and working alliance. However, one difference between both studies is remarkable. According to the experts in the present study, Social context and Social demographic variables are less important, while in the earlier study a social demographic variable, i.e. having parental responsibility for children, was the strongest predictor of actual treatment allocation in daily practice. These contradicting results may be explained by the tendency of clinicians to underestimate the influence of practical variables, such as driving distance to the treatment center, insurance status, or work and family situations.

In this program of research, which aims at developing algorithms for treatment selection in a PD population, several further empirical studies are to be considered. First, to derive starting values (i.e. weights) for the specification of an actuarial treatment allocation algorithm, one might inspect existing datasets to derive post-hoc matching relations between the clusters of patient characteristics, treatment allocation, and subsequent treatment outcome. Of note, the clusters need not to have the same status in the algorithm. While some of the patient characteristics appear to be crucial ingredients to case formulation (e.g. Severity of personality pathology, Ego-adaptive capacities and Motivation and working alliance), other characteristics (e.g. Social demographic characteristics) appear more like screeners that a priori constrain the available options for selection. Second, one might prospectively test the treatment utility of such an actuarial algorithm by randomly assigning patients to either the algorithm or treatment selection as usual.

A major strength of this study was the systematic step-by-step procedure of the concept elicitation procedure as well as the relatively high number of participants

in the concept map procedure. However, our analysis also has several limitations. First, the current solution is representative for the Dutch situation in mental health care, which is characterized by a wide variety and availability of modalities of psychotherapy. For example, in the Netherlands long-term outpatient, day hospital, and inpatient psychotherapies are still reimbursed by insurance companies, whereas in many other countries they are not. Thus, it is recommended to try to replicate this study in other countries. Second, the concept map method depends on clinician self-report in retrospect, thereby possibly introducing pre-existing theoretical notions or beliefs rather than empirical facts. Therefore, our results should be regarded as a first step toward empirically based treatment selection. Clearly, further research is needed to investigate to what extent use of the presented concepts yields more effective treatment selection.

In conclusion, this study revealed eight clusters of patient characteristics and two overarching dimensions deemed useful for selecting optimal psychotherapeutic treatments for patients with PD. The found patient characteristics can serve as input for research on treatment selection algorithms, and their effectiveness, which may bring empirically based treatment selection for PD patients one step closer.

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Chapter 3

How do intake clinicians use patient characteristics to select treatment for patients with personality disorders?

ABSTRACT

Treatment selection in clinical practice is a poorly understood, often largely implicit decision process, perhaps especially for patients with personality disorders. This study therefore investigated how intake clinicians use information about patient characteristics to select psychotherapeutic treatment for patients with personality disorders. A structured interview with a forced choice format was administered to 27 experienced intake clinicians working in five specialist mental health care institutes in the Netherlands. Substantial consensus was evident among intake clinicians. The results revealed that none of the presented patient characteristics were deemed relevant for the selection of the suitable treatment setting. The appropriate duration and intensity are selected using severity or personal strength variables. The theoretical orientation is selected by using personal strength variables.

Van Manen, J.G., Kamphuis, J.H., Visbach, G.T., Ziegler, U.M., Gerritsen, A., Van Rossum, G., Rijnierse, P.M., Timman, R., & Verheul, R. (2008). How do intake clinicians use patient characteristics to select treatments for patients with personality disorders? Psychotherapy Research, 18(6), 711-718.

INTRODUCTION

Recent systematic review studies have concluded that psychotherapy is an efficacious treatment for patients with personality disorders, with mean effect sizes ranging between approximately 1.0 and 2.5 for various outcome parameters (Bateman & Fonagy, 1999; Leichsenring & Leibing, 2003; Perry, Banon & Ianni, 1999). To date, however, there is no conclusive evidence for the superiority of specific psychotherapeutic treatments in the treatment of personality disorders. Whereas some studies suggest that cognitive-behavioral psychotherapies are more effective than psychodynamic psychotherapies for borderline (Giesen-Bloo et al., 2006) and avoidant (Emmelkamp et al., 2006) personality disorder, other studies have reported equal benefit from those two theoretical orientations (Leichsenring & Leibing, 2003; Svartberg, Stiles & Seltzer, 2004). Furthermore, the available studies did not examine the differential effectiveness of various dosages of psychotherapy in terms of setting, duration or intensity of treatment.

Effectiveness of treatment would likely substantially benefit from evidence-based treatment selection strategies. Currently, there is only a modest evidence base for these strategies (Links & Stockwell, 2001; Vervaeke & Emmelkamp, 1998). In fact, several studies have indicated that treatment selection is instead (partly) guided by non-evidence based factors such as the availability of treatment facilities (Chiesa, Bateman, Wilberg, & Friis, 2002; Issakidis & Andrews, 2003), personal experience and strong belief (or faith; Beutler, 2000; Vervaeke & Emmelkamp, 1998), and socio-demographical variables (e.g., employment status, health insurance status; Scheidt et al., 2003). This situation likely results in an inefficient usage of the available resources. Furthermore, treatment selection based on these rationales can be non-effective or even harmful (Beutler, 2000).

Several researchers have attempted to provide guidelines for treatment selection using innovative review procedures. Particularly important among these is the effort by the group of experts headed by Castonguay and Beutler (2006). Critchfield and Smith Benjamin (2006) describe a set of principles for therapeutic change in patients with personality disorders. One of these principles is that patient- and problem-related factors are linked to outcome in personality disorder treatment. They note, for example, that the match between level of impairment and treatment intensity is important in treatment selection. It should be noted, however, that the status of these principles is somewhat preliminary because they are largely based on findings from other disorders and are generalized based on the subjective sense that the results may be salient to personality disorders as well. Indeed, they recognize that these principles, at present, should be considered 'reasonable

hypotheses.' In sum, it can be concluded that the development of clinical decision models for systematic application of the stepped and matched care principles is in its infancy.

The present study aims to elucidate how intake clinicians use pre-selected patients characteristics to determine optimal treatment parameters for patients with personality disorders, and to what extent they agree on these allocation strategies. More specifically, this study explores a) to what extent intake clinicians agree about matching key patient characteristics to selected macro treatment characteristics (i.e., setting, duration, intensity, and theoretical orientation), and b) what the nature of these consensus reports of perceived matching relations is.

METHOD

Participants

Twenty-seven clinicians (21 licensed psychotherapists and six psychiatrists) were recruited from five different mental health care institutes (i.e., Center of Psychotherapy De Viersprong, Halsteren, *n* = 8; Altrecht, Zeist, *n* = 4; Zaans Medical Center, Zaandam, *n* = 5; Center of Psychotherapy De Gelderse Roos, Lunteren, *n* = 6; Center of Psychotherapy Mentrum, Amsterdam, *n* = 4). These institutes offer a representative sample of outpatient, day hospital and inpatient psychotherapeutic programs for patients with personality problems and/or personality disorders in the Netherlands. All clinicians were involved in the intake procedure of their institute. The entire sample had considerable clinical experience (i.e. a median of 19 years of clinical experience; range = 5-35 years). All intake clinicians were familiar with multiple theoretical orientations, including cognitive-behavioral, psychodynamic and experiential psychotherapy. Seventeen of the total of 27 intake clinicians indicated that they were primarily psychodynamically trained, three received primarily cognitive behavioral training, four indicated extensive psychodynamic and cognitive behavioral training, and three received primarily experiential training.

Selection of patient characteristics

To determine the most important patient characteristics, a list of relevant patient characteristics for treatment selection was derived from the literature. In a review study of outcome predictors in group psychotherapy, Piper (1994) reported that treatment outcome of therapy could be predicted by the interaction between patient characteristics and form of therapy. Predictive patient characteristics

included internal locus of control, psychological mindedness, motivation, social competence, learned resourcefulness, ego strength, coping style, and defense style. Another review study on the characteristics of patients who do well in time-limited psychotherapies revealed that severity of disturbance, motivation, capacity to relate, ego strength, psychological mindedness, focality, and response to trial therapy are important factors influencing treatment outcome (Lambert & Anderson, 1996). Furthermore, Beutler, Alomohamed, Moleiro and Romanelli (2002) reported six patient and problem variables that have been found to relate either to patient prognosis or to moderate different types of treatments; functional impairment, subjective distress, social support, complexity/ comorbidity, resistance, and coping skills. Other studies found similar patient characteristics to be important when allocating patients to treatment (Rosenbaum, Selzer, Valbak, Hougaard, & Sommerlund, 1997; Tillett, 1996; Truant, 1999).

A list of 18 somewhat overlapping patient characteristics resulted. To reduce overlap and to obtain a manageable set of patient characteristics, we asked a group of 29 intake clinicians from the participating institutes to select the six most relevant patient characteristics for allocating patients to treatments. Finally, Janine van Manen and Roel Verheul served as an expert panel to reduce redundancy and decide on the final set. The resulting set of 12 patient characteristics were: ego strength, motivation for change, psychological mindedness, capacity for a therapeutic relation, quality of defense style, capacity to relate, symptom severity, type of personality disorder, treatment history, focality of problem(s), having a job, and care responsibility.

To facilitate the matching task for the interviewees, patient characteristics were dichotomized into high versus low 'severity' levels. With regard to type of personality disorder, two dummy variables were created (i.e. Cluster A versus Cluster BC, and Cluster AB versus Cluster C; these dummy variables were thought to reflect the severity hierarchy between the clusters (e.g., Cluster A has more severe pathology than Cluster B, and Cluster B has more severe pathology than Cluster C). The 'treatment history' Variable was dichotomized into outpatient versus day hospital/ inpatient treatment because these levels differ most in terms of (financial) costs.

Defining of treatment parameters

A subsequent task was to select the most relevant treatment parameters. We focused on 'macro-treatment' decisions (i.e., broad decisions about the general treatment model that is likely to be most effective and efficient; Livesley, 2003; Sanderson & Clarkin, 2002; Verheul, 2005). The characteristics focused on in this study are (a) the optimal treatment *setting*, (b) the necessary *duration*, (c) the appropriate

intensity of treatment (i.e., the use of confrontational/expressive techniques as opposed to supportive strategies), and (d) the most suitable *theoretical orientation*. For each of these four treatment parameters high-dosage and low-dosage levels were specified.

Setting

We distinguished between outpatient and day hospital/inpatient psychotherapies. A low dosage refers to outpatient psychotherapy and a high dosage reflects day hospital/inpatient psychotherapy.

Duration

Short-term and long-term psychotherapies were contrasted. Because psychotherapy for patients with personality disorders might require up to 200 sessions or more (Perry et al., 1999), a relatively high cut-off point was chosen. Short-term treatments were defined as day hospital or inpatient psychotherapies shorter than half a year, or outpatient psychotherapies with less than 50 sessions (i.e., low dosage); long-term treatments were defined as day hospital or inpatient psychotherapies of half a year or longer, or outpatient psychotherapies with 50 sessions or more (i.e., high dosage).

Intensity

In line with Gabbard (2000), we distinguished between supportive and confrontational treatments. Gabbard describes a continuum on which different psychotherapeutic interventions can be placed. One extreme consists of expressive (confrontational) forms of treatment which turn unconscious conflicts into consciousness through therapist confrontations, interpretations, and clarifications. The other extreme includes supportive psychotherapy, which aims at suppressing unconscious conflicts and instead bolstering defenses by therapist empathetic validation, advice giving, and praise of appropriate behavior (Gabbard, 2000). A low dosage refers to a supportive psychotherapy, and a high dosage refers to a confrontational psychotherapy.

Theoretical orientation

The majority of treatments use different interventions at different moments in time. Nevertheless, most therapies can be classified according to the predominant set of interventions during treatment (Gabbard, 2000). Psychodynamic and cognitive-behavioral therapies are the most frequently applied theoretical orientations in the treatment of personality disorders (Leichsenring, & Leibing, 2003), and were

therefore chosen as the focus of our study. Regarding theoretical orientation, the coding into dosage levels was less appropriate; the purpose remained, however, to examine matching relations with patient characteristics. Cognitive behavioral treatment was therefore arbitrarily assigned the low dose while psychodynamic received the high dose coding.

Assessment procedure

A structured interview was designed to investigate agreement among intake clinicians about the possibilities for matched care. Janine van Manen conducted all 27 interviews. Each intake clinician was interviewed about the potential matching relation between 12 patient characteristics and four treatment parameters (i.e., setting, duration, intensity, and theoretical orientation). To illustrate, for the potential matching relationship between psychological mindedness and duration, for instance, the clinician was asked: "Which duration (short-term or long-term) is indicated among patients with low [or high] psychological mindedness?" The intake clinician might for example answer: "A patient with low psychological mindedness is indicated for a long-term psychotherapeutic treatment, whereas a patient with high psychological mindedness is indicated for a short-term psychotherapeutic treatment." Intake clinicians were instructed to focus only on (a) patients with a personality disorder, (b) patients who do not meet exclusion criteria for psychotherapy (e.g., brain damage, mental retardation, or schizophrenia), and (c) a situation without any local, financial or managerial restrictions to treatment availability. For each patient characteristic level, intake clinicians chose either of the dosage levels, or had the option to answer 'I don't know/ All options are feasible' (these two possibilities were taken together because they are both indicative of a non-matching relation).

As shown in Table 3.1, there are nine possible response patterns. Patterns a, b and c are referred to as 'Matching 1', i.e. fully or partially consistent with a match between high severity and high dosage, or a match between low severity and low dosage:

- Pattern a: A 'full matching' pattern (i.e. fully consistent with the matches just described);
- Pattern b: A 'partial matching' pattern: the high-severity level is indicative for a high dosage, but the low-severity level does not match with a particular dosage level;

- Pattern c: Also a 'partial matching' pattern, but the reverse of Pattern b: the low-severity level is indicative for a low dosage, but the high-severity level is not indicative for a certain dosage level.

Patterns d, e, and f are consistent with the reverse of 'Matching 1', and are referred to as 'Matching 2' (i.e. fully or partially consistent with a match between high severity and low dosage or between low severity and high dosage:
- Pattern d: A 'full matching' pattern (i.e. fully consistent with the pattern just described);
- Pattern e: A 'partial matching' pattern: the high-severity level is indicative for a low dosage, but the low-severity level does not match with a particular dosage level;
- Pattern f: Also a 'partial matching' pattern, but the reverse of Pattern e: the low-severity level is indicative of a high dosage, but the high-severity level is not indicative of a certain dosage level.

Patterns g, h and i are not indicative for matching, and consist of the following three options:
- Pattern g: Applicable when the interviewee is unable to select an appropriate dosage level for high-severity and low-severity patients;
- Pattern h: Indicates that the high treatment dosage is indicated for both severity levels;
- Pattern i: Indicates the opposite of Pattern h (i.e. both severity levels are indicative of the low treatment dosage).

Statistical procedures

Each of the nine patterns (a-i) was assigned a value between –2 and 2 (see Table 3.1). Matching 1 patterns were assigned a positive value: The full matching pattern (a) was assigned a score of 2, and the partial matching patterns (b) and c) were assigned a score of 1. Matching 2 patterns were assigned a negative value: The full matching pattern (d) was assigned a score of -2, and the partial matching patterns (e) and (f) were assigned a score of -1. All remaining patterns were not indicative for matching, and were assigned a score of 0.

Forty-eight potential matching patterns were assessed in the interview (i.e., 12 patient characteristics x 4 treatment parameters) and coded into a score between –2 and 2 according to the algorithm described previously. To narrow it down to those patient characteristics that intake clinicians deemed relevant for macro treatment decisions, we selected only the matching patterns for which 70%

Table 3.1. All possible scores for a matching relation between patient characteristic and treatment parameter

	Matching relation:	Matching 1			Matching 2			No Matching		
	Potential answers:	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Severity level:	Dosage level:									
High severity level	Low-dosage level	0	0	99	1	1	99	99	0	1
	High-dosage level	1	1	99	0	0	99	99	1	0
Low severity-level	Low-dosage level	1	99	1	0	99	0	99	0	1
	High-dosage level	0	99	0	1	99	1	99	1	0
	Score	*2*	*1*	*1*	*-2*	*-1*	*-1*	*0*	*0*	*0*

Note: 0 means that the interviewee indicates that the dosage level does not apply for the specific severity level; 1 means that the interviewee indicates that the dosage level applies for the specific severity level; 99 means that the interviewee indicates that both dosage levels are applicable or that he/she doesn't know

or more of the participants agreed that there was a matching relation (i.e., = 30% or less indicated a value of 0 to the matching relation). To test the null hypothesis that the answers of the intake clinicians are indicative of a non-matching relation (value = 0), we subsequently conducted non-parametric Mann-Whitney tests.

RESULTS

Table 3.2 shows to what extent clinicians agree that patient's characteristics are useful in determining the most appropriate setting, duration, intensity, and theoretical orientation in personality-disordered patients. Percentages are provided for each of the possible matching patterns (i.e., Matching 1 [full, and partial], Matching 2 [full, and partial], and no match), as well as the test statistic (Mann-Whitney U).

Matching to Treatment Setting

Based on Table 3.2 none of the selected patient characteristics were deemed relevant for the selection of treatment setting, according to at least 40% (range = 40.7 - 81.5%) of the intake clinicians.

Matching to Treatment Duration

Our findings indicate that focality and ego strength were deemed relevant by clinicians for determining treatment duration. Focality is the strongest potential

Table 3.2. Matching relations between patient characteristics and treatment parameter (N=27)

Matching pattern	Matching pattern 1		Matching pattern 2		No Match	Mann-Whitney Test
Score	Full 2	Partial 1	Full -2	Partial -1	0	U
	%	%	%	%	%	
Setting parameters						
None						
Duration parameters						
Focal or broad problem(s)	50.0	30.8	0.0	0.0	19.2	65.0***
Ego strength	33.3	33.3	0.0	3.7	29.6	135.0**
Intensity parameters						
Symptom severity	0.0	0.0	44.4	29.6	25.9	94.5***
Type personality disorder[1]						
Cluster A vs BC	0.0	0.0	3.7	74.1	22.2	81.0***
Ego strength	0.0	0.0	85.2	14.8	0.0	0.0***
Psychological mindedness	0.0	0.0	74.1	14.8	11.1	40.5***
Capacity to relate	0.0	0.0	63.0	14.8	22.2	81.0***
Quality of defense mechanism	0.0	0.0	70.4	14.8	14.8	54.0***
Capacity for a therapeutic relation	0.0	0.0	55.6	25.9	18.5	67.5***
Theoretical orientation						
Ego strength	0.0	3.7	29.6	40.7	25.9	121.5***
Psychological mindedness	0.0	0.0	48.1	29.6	22.2	81.0***

*p<0.05, **p<0.01, ***p<0.001

[1]Cluster A includes paranoid, schizoid, and schizotypal personality disorder; cluster B includes borderline, antisocial, narcissistic, and histrionic personality disorder; cluster C includes dependent, avoidant, and obsessive-compulsive personality disorder.

matching variable; half of the intake clinicians agreed that patients with focal problems benefit from short-term psychotherapy, whereas broad spectrum problems require long-term psychotherapy (U = 65.0, p < .001). Furthermore, there is substantial agreement that patients with high ego strength might benefit sufficiently from short-term psychotherapy.

Matching to Treatment Intensity

The results indicate that more than half of the patient characteristics were deemed relevant by clinicians for determining the appropriate treatment intensity. For example, 85.2% of the clinicians agree that patients with low ego strength should

be assigned to supportive psychotherapy, whereas those with high ego strength would benefit most from confrontational psychotherapy. Similar findings apply to psychological mindedness, capacity to relate, quality of defense style, and capacity for a therapeutic relationship. Furthermore, 74.1% of the intake clinicians agreed that supportive psychotherapy is indicated for Cluster A patients. One intake clinician also agreed that a confrontational approach was indicated for Cluster BC patients. Patients with high symptom severity are, according to the intake clinicians, best treated with a supportive psychotherapy, and/or patients with few symptoms are best treated with a confrontational /expressive approach ($U = 94.5$, $p < .001$).

Matching to Theoretical Orientation

Based on Table 3.2, according to 77.7% of the intake clinicians psychologically minded patients are likely to benefit more from psychodynamic psychotherapy, and 48.1% of intake clinicians agreed also that their low-scoring counterparts are more likely to benefit from cognitive behavioral treatments ($U = 81.0$, $p < .001$). The majority of the intake clinicians (70.3%) agreed that patients with high ego strength could benefit from psychodynamic treatment. Furthermore a minority (29.6%) indicated that patients with low ego strength would benefit most from a cognitive behavioral treatment.

DISCUSSION

In this study we investigated, using a forced-choice format interview, (a) the extent to which experienced intake clinicians involved in the care of patients with personality disorders, agreed on matching relations between pre-selected patient characteristics and macro treatment parameters, and (b) the substance of those agreed upon principles. Generally, the appropriate duration and intensity are selected using severity variables or personal strength variables, and the theoretical orientation is selected using personal strength variables.

There was little consensus on treatment setting. Less then 70% of the intake clinicians could affirm any matching relation between the presented patient characteristics and treatment setting. The intake clinicians apparently use different patient characteristics when selecting the appropriate setting, or other factors may guide intake clinicians' selection of treatment setting (see e.g. Klein, Menza, Arfken, & Schuster, 2002 for alternative treatment allocation criteria for patients with substance use problems). Our conjecture is that the patient preference counts

heavily when selecting the appropriate setting, especially when potential day hospital or inpatient treatment programs are involved, because these choices have a major impact on the patient's daily life (work, family). This hypothesis is in line with a literature review of Van Audenhove and Vertommen (2000) who stressed the importance of patient preferences in determining treatment choice.

There are hints that the preferred matching relations do not necessarily reflect the state of research. For example, Clarkin, Levy, Lenzenweger and Kernberg (2007) and Levy and colleagues et al. (2006) concluded that severe borderline patients profit from highly structured outpatient psychotherapy with a confrontational approach (transference focused psychotherapy). Our results, on the other hand, suggest that intake clinicians assign patients with a high severity level and patients with less personal strengths to psychotherapy with a supportive approach, in which unconscious conflicts are suppressed rather than clarified or made conscious. Perhaps intake clinicians did not incorporate recent empirical evidence in their decision making.

Ego strength was deemed relevant for the selection of optimal levels of duration, intensity, and theoretical orientation. Our findings indicate that patients who lack ego strength are deemed more suitable for long-term, supportive psychotherapies, whereas their relatively strong counterparts are referred to short-term, confrontational psychotherapies. This selection strategy fits with evidence from several studies that reported high drop-out rates for patients with severe personality disorders in short-term, psychodynamic day hospital psychotherapy, especially antisocial, schizotypal, or borderline personality disorder (Vaglum et al., 1990; Wilberg et al., 1998). Especially for these groups of patients, long-term programs emphasizing supportive elements and/or structured skills training are more likely to be successful than short-term programs stressing expressive and interpretive elements. This selection strategy is also consistent with the success of mentalization based treatment (MBT) for patients with severe personality disorders (Bateman & Fonagy, 1999; 2001). MBT can be characterized as a highly structured program emphasizing supportive elements and spreading the confrontational components over a long period of time.

Ego strength, psychological mindedness, capacity to relate, quality of defense mechanisms, and capacity for a therapeutic relation showed an essentially identical pattern of association with decisions regarding the appropriate intensity of treatment. Intake clinicians might take all these variables into consideration when selecting the most appropriate intensity. Other possible explanations for the multiple matching relations are that (a) intake clinicians may not have been able to differentiate between these parameters at a conceptual level, and (b) the respec-

tive strength parameters may be strongly interrelated, and perhaps may even refer to a single underlying construct. Further research may clarify the interrelations among the various patient characteristics, and may examine their differential utility for matching purposes.

Our findings should be interpreted with some caution. First, dichotomization of the patient characteristics assumes a linear association with the treatment parameters, but in reality the relationship might be non-linear (e.g., both extremely low-severity and extremely high-severity patients might be indicated for outpatient treatment, whereas those in between might be indicated for day hospital/inpatient treatment). This concern is somewhat mitigated by the fact that we identified considerable agreement among clinicians about possibilities for matched care, whereas a nonlinear relationship would most likely occur in case of disagreement among clinicians. Nevertheless, non-linear alternatives should be recognized in further work on this topic. Second, the current report is limited to single-factor matching associations, whereas in reality patient characteristics might interact so that the impact of a characteristic is contingent on different levels of another variable. In fact, we attempted to elicit this kind of information from the intake clinicians, but the internal representation and reasoning in terms of interactions quickly become too complex to yield reliable evaluations. Third, despite our careful consideration and extensive consultation with expert clinicians, the selection of patient characteristics remains open for debate. A systematic literature review on predictors of treatment outcome in patients with personality disorder may yield alternative patient characteristics that are of potential relevance for treatment selection. The same goes for the somewhat arbitrary cut-off points for each of the treatment and patient parameters. For different settings, different cut-offs may work better. Furthermore the intake clinicians might interpret the high and low levels of the respective patient characteristics differently, resulting in low agreement among clinicians. Scales might describe the patient characteristics more accurately.

These limitations notwithstanding, the present study has demonstrate that expert clinicians show a substantial level of consensus on patient characteristics that are relevant when selecting the appropriate duration, intensity and theoretical orientation of a psychotherapeutic treatment. This study explicates treatment allocation strategies and as such opens the 'black box' of clinical judgment in treatment selection. However, the present findings are certainly not meant in a prescriptive sense: They reflect consensus appraisals of experienced clinicians, when using a forced choice format and carefully selected dichotomized patient and treatment parameters. As such, the present study provides testable hypotheses for treatment selection research. Do clinicians *in fact* refer patients with personality pathology

according to these (or other) strategies, and do these (or other) strategies in fact promote treatment outcome? These questions should be elaborated on in future studies.

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Chapter 4

Relationship between patient characteristics and treatment allocation for patients with personality disorders

ABSTRACT

Within a large multi-center study in patients with personality disorders, we investigated the relationship between patient characteristics and treatment allocation. Personality pathology, symptom distress, treatment history, motivational factors, and sociodemographics were measured at intake in 923 patients, who subsequently enrolled in short-term or long-term outpatient, day hospital, or inpatient psychotherapy for personality pathology. Logistic regressions were used to examine the predictors of allocation decisions. We found a moderate relationship (R^2 = 0.36) between patient characteristics and treatment setting, and a weak relationship (R^2 = 0.18) between patient characteristics and treatment duration. The most prominent predictors for setting were: symptom distress, cluster C personality pathology, level of identity integration, treatment history, motivation, and parental responsibility. For duration the most prominent predictor was age. We conclude from this study that, in addition to pathology and motivation factors, sociodemographics and treatment history are related to treatment allocation in clinical practice.

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INTRODUCTION

Psychotherapy has shown to be an effective treatment for patients with personality disorders (PD; Bateman & Fonagy, 2000; Binks, et al., 2006; Leichsenring & Leibing, 2003; Perry, Banon, & Ianni, 1999). This is true for a variety of dosages and theoretical orientations (Verheul & Herbrink, 2007). No single approach has yet been proven to be superior to another (Bateman & Fonagy, 2000; Benjamin & Karpiak, 2002). In everyday practice, a clinician will need to select a therapy that fits not only the patient's diagnosis and other clinical characteristics but is also accepted by the patient and fits in with his or her practical circumstances (Norcross, 2002a). The underlying hypothesis is that a good fit between patient and treatment will increase the effectiveness of treatment. In practice, patient-treatment matching is typically based on clinical judgments, as empirically validated predictors that specify which patient will benefit most from which treatment are undeveloped (Spinhoven, Giesen-Bloo, van Dyck, & Arntz, 2008).

Given the absence of sound empirical evidence, Castonguay and Beutler (2006) formulated their 'principles of change' that provide knowledge and guidelines for selecting and fitting therapeutic procedures (Castonguay & Beutler, 2006). The principles are presented for four frequently encountered disorders, including personality disorders. An example of a principle of change relevant for treatment selection in PD patients is: "more severe problems require more time in treatment or more types of treatment in order to facilitate change" (Critchfield & Benjamin, 2006). It should be acknowledged that most evidence presented by Critchfield & Benjamin is tentatively generalized from psychotherapy research into other mental disorders to PD (Critchfield & Benjamin, 2006).

Another line of research related to treatment selection is research on moderators of treatment outcome in PD. Accumulating evidence points to the important role of the therapeutic alliance. For example, in a review on the role of the therapeutic relationship in effective treatments of PD patients, the available data suggests that effectiveness is associated with a good therapeutic alliance and with the therapist's willingness to set limits, usually through therapy rules or contracts (Benjamin & Karpiak, 2002; Smith, Barrett, Benjamin, & Barber, 2006). However, how these findings can be translated into treatment allocation rules is not yet clear. For example, the effect of setting limits in treatment may depend on (1) the theoretical orientation of treatment, (2) the clinical characteristics of the PD patient and (3) therapist factors (Smith, et al., 2006).

In addition to empirical evidence, clinical expertise is recognized as an important factor for optimizing treatment allocation (Spengler, et al., 2009; Zeldow,

2009). Spinhoven (2008) showed for instance that assessors can accurately predict treatment outcome in a population of borderline patients (Spinhoven, et al., 2008). In line herewith, we assume that clinical expertise can be used as a preliminary source of information for optimal treatment allocation. In this study, we tried to describe the variation in treatment allocation on the basis of measurable characteristics of patients with PD. The aim is to provide insight in the clinical expertise used in treatment allocation. This insight into clinical expertise can be used directly to improve treatment allocation, or it can be used to formalize testable hypotheses for empirical research.

More specifically, we will report on the association between various patient characteristics and subsequent treatment allocation in terms of setting (outpatient, day hospital, or inpatient) and treatment duration (short-term, or long-term). To the best of our knowledge this is the first large study to investigate treatment selection in PD patients over a broad range of psychotherapeutic treatments.

METHOD

Intake Procedure

Subjects participated in the large-scale, multi-site Study on the Cost-Effectiveness of Personality Disorder Treatments (SCEPTRE; Bartak, et al., 2010) and were recruited from consecutive admissions to six mental health care centers in the Netherlands (i.e., De Viersprong, Halsteren; Altrecht, Utrecht; Zaans Medisch Centrum, Zaandam; De Gelderse Roos, Lunteren; Mentrum, Amsterdam; GGZ WNB, Bergen op Zoom/Roosendaal). These centers offer outpatient, day hospital, and/or inpatient psychotherapy for adult patients with personality pathology. Subsequent to referral and before the start of the intake procedure, all applicants performed a battery of paper and pencil assessments at home. The battery included self-report questionnaires measuring psychopathology, personality, functional impairments and treatment history (see Measurement Instruments). In addition, the intake procedure took one or two assessment sessions with an intake clinician in which the following topics could be discussed with the patient: anamnesis, medication, somatic problems, treatment history, biographic information, living situation, examination of psychological functions, testing the limits, treatment motivation and preferences, et cetera. The intake procedure also included a semi-structured interview for diagnosing personality disorders (SIDP-IV, see Measurements Instruments) conducted by an independent clinician. Intake clinicians had access to the individual scores on the questionnaires and the semistructured interview. After the assessment sessions,

the intake clinicians had a routine meeting with the intake team to discuss the treatment selection. This treatment selection was then discussed with the patient in a session. When patients were allocated to treatment, patients provided informed consent. The current study design was approved by the Dutch Medical Ethics Committee.

Study population

From March 2003 to March 2006, 1380 patients completed the intake procedure and were selected for treatment. Of those, 155 (11%) patients did not meet the inclusion criteria, i.e., age between 18-70 (n=13), significant personality pathology (n=34), intention of the referral was psychotherapy aimed at changing maladaptive personality patterns; if the treatment was focused on axis I, for example alcohol dependency or severe eating disorder, patients were not included (n=99), sufficient command of the Dutch language (n=6), absence of organic cerebral impairment (n=1), no mental retardation (n=1), and no schizophrenia (n=1), leaving 1225 patients eligible for the study. In addition, 100 patients (8%) refused to participate, 31 patients (3%) were not able to participate due to logistic reasons (e.g. no appointment could be made for providing informed consent), 38 patients (3%) dropped out of treatment prematurely (did not enter treatment or had less than three treatment sessions/hospital days), and 133 patients (11%) were excluded due to missing or unreliable assessment data. Of the remaining 923 patients, 115 (12%) had no PD diagnosis. However, the majority of these patients (70%) scored positively on at least five PD criteria. As these patients can also be characterized as a group with a relevant level of personality pathology (Verheul, Bartak, & Widiger, 2007), all 115 patients were included in the study population.

Treatment allocation

The six mental health care centers offer various psychotherapeutic treatments tailored to a PD population. In this study we clustered these different treatments in terms of setting and duration. We opted to look first at setting and duration given that they have a profound influence on treatment costs and cost-effectiveness (Soeteman, et al., 2010; Soeteman, et al., 2011). With respect to setting, patients were either referred to (1) outpatient psychotherapy, up to a maximum of two sessions per week (n=272; 29%), (2) day hospital psychotherapy, at least one morning/afternoon per week, mostly combined with psychosocial treatment (n=311; 34%) or (3) inpatient psychotherapy, patients staying and sleeping at the institution five days a week, receiving different forms of psychotherapeutic and psychosocial treatment (n=340; 37%). Short-term treatment was limited to

Table 4.1. Descriptors of total study population and population in different treatment groups

	Treatment allocation						
		Outpatient		Day hospital		Inpatient	
	Total	Short	Long	Short	Long	Short	Long
Patient Characteristics	(n[1]=923)	(n[1]=73)	(n[1]=199)	(n[1]=121)	(n[1]=190)	(n[1]=156)	(n[1]=184)
Sociodemographics							
Sex (% male)	31.9	39.7	34.7	25.6	26.3	37.8	30.4
Age (mean years ± sd)	34.0±9.8	38.5±9.6	36.5±9.4	34.9±9.8	31.6±9.5	37.7±9.5	28.3±7.0
Medium/high education (%)	87.9	88.2	78.5	90.2	86.5	94.1	92.7
Parental responsibility (%)	74.3	45.8	55.8	68.3	84.7	80.1	94.0
Having no job (%)	32.4	19.1	30.3	37.1	34.3	34.5	32.9
Treatment history							
Outpatient (%)	58.9	35.6	47.7	65.3	56.8	68.6	70.1
Inpatient (%)	17.9	12.3	16.1	14.0	17.9	22.4	20.7
Symptom distress (mean ± sd)	1.4±0.6	0.96±0.5	1.3±0.6	1.4±0.6	1.6±0.6	1.4±0.5	1.6±0.6
Motivation for treatment (mean ± sd)	58.7±8.7	54.9±8.3	54.8±9.1	57.2±9.9	59.6±7.6	62.1±7.1	61.4±7.7
Personality pathology							
SIDP-IV: axis II (hierarchical)							
Cluster A (%)	7.7	1.4	11.6	6.6	10.0	3.2	8.2
Cluster B (%)	22.5	6.8	22.1	24.0	27.9	10.3	33.2
Cluster C (%)	33.6	20.5	29.1	46.3	33.7	34.6	34.2
PDNOS (%)	23.7	23.3	25.1	21.5	19.5	33.3	20.1
No PD (%)	12.5	47.9	12.1	1.7	8.9	18.6	4.3

Table 4.1. Descriptors of total study population and population in different treatment groups (continued)

		Treatment allocation					
		Outpatient		Day hospital		Inpatient	
Patient Characteristics	Total (n^1=923)	Short (n^1=73)	Long (n^1=199)	Short (n^1=121)	Long (n^1=190)	Short (n^1=156)	Long (n^1=184)
SIPP-118							
Self control (mean ± sd)	2.5±0.5	2.8±0.5	2.6±0.5	2.6±0.5	2.4±0.6	2.6±0.5	2.5±0.5
Identity integration (mean ± sd)	2.3±0.5	2.8±0.5	2.4±0.5	2.4±0.4	2.3±0.5	2.3±0.4	2.1±0.4
Responsibility (mean ± sd)	2.9±0.6	3.3±0.5	3.0±0.5	3.0±0.5	2.8±0.6	3.0±0.6	2.8±0.6
Relational functioning (mean ± sd)	2.6±0.5	2.9±0.5	2.6±0.6	2.6±0.5	2.5±0.5	2.5±0.5	2.4±0.5
Social concordance (mean ± sd)	3.0±0.4	3.2±0.5	3.0±0.5	3.1±0.4	3.0±0.5	3.1±0.4	3.0±0.4
DSQ-60							
Defensive functioning (mean ± sd)	3.7±0.4	3.9±0.4	3.6±0.4	3.7±0.4	3.6±0.5	3.8±0.4	3.5±0.4

[1] Maximum n; for the patient characteristics, the percentage of missing values varies between 0% and 6.6%.

treatment durations up to 6 months (n=350, 38%), whereas long-term treatment included treatments with durations of 6 months and longer (n=573, 62%). Table 4.1 shows the descriptives for the total study population.

Measurement instruments

The patient characteristics can be divided into five categories: sociodemographics, treatment history, symptom distress, motivation for treatment, and severity level of personality pathology. Sociodemographics included: sex, age, educational level (medium/high, i.e., at least intermediate vocational education or secondary school), parental responsibility (i.e., responsibility for caring for children), and having a job (i.e., retired, having work or studying). Treatment history refers to outpatient and inpatient treatment history as two (not mutually exclusive) categories. Symptom distress was measured using the Global Severity Index (GSI), as measured by the Dutch SCL-90-R (Arrindell & Ettema, 1981; Derogatis, 1977). High scores indicate more distress. Motivation for treatment was measured using the total score of the Motivation for Treatment Questionnaire (MTQ; van Beek & Verheul, 2008). High scores refer to a high level of motivation. Personality pathology was measured by a semi-structured interview and two questionnaires. PDs were assessed using the Dutch version of the Structured Interview of DSM-IV Personality Disorders (SIDP-IV; de Jong, Derks, van Oel, & Rinne, 1995; Pfohl, Blum, & Zimmerman, 1995). This interview included 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. The reliability of the instrument in this study was moderate to high (Bartak, et al., 2010). To form mutually exclusive diagnostic groups, we clustered the formal DSM-IV-TR Axis II diagnoses hierarchically into: cluster A (at least one cluster A PD present; paranoid, schizoid, or schizotypal PD); cluster B (at least one cluster B PD present; antisocial, borderline, histrionic, or narcissistic PD, but no cluster A PD) and cluster C (at least one cluster C PD present; avoidant, dependent, or obsessive-compulsive PD, but no cluster A or B PD). As a measure of the severity of personality pathology, we used the five higher-order domains of the Severity Indices of Personality Pathology (SIPP-118): self-control, identity integration, responsibility, relational functioning, social concordance (Verheul, et al., 2008). Higher scores reflect a more adaptive level of personality functioning. Defensive functioning was measured by the Overall Defensive Functioning (ODF) score derived from the Defensive Style Questionnaire (Trijsburg, van 't Spijker, Van, Hesselink, & Duivenvoorden, 2000). Higher scores refer to more mature levels of defensive functioning.

Statistical analyses

Logistic regression models were performed in order to determine the effect of each patient characteristic on the treatment allocation. When setting (inpatient, day hospital, outpatient) was the outcome, a multinomial logistic regression analysis was conducted, yielding 3 comparisons; (1) inpatient versus outpatient, (2) day hospital versus outpatient, and (3) inpatient versus a day hospital setting. For the model with duration as the outcome variable, a binary logistic regression analysis was performed, with short-term treatment as a reference category. In these models, all patient characteristics were entered simultaneously. We could not find evidence for multicollinearity. Odds Ratios (OR) with accompanying 95% confidence intervals were computed for each patient characteristic, together with the percentage of explained variance of the entire model, as measured by Nagelkerke's (proxy) R^2 (Nagelkerke, 1991). In all models, continuous predictors were divided by their standard deviation. This facilitates the interpretation of the ORs of different questionnaires, with each point of the OR score being equivalent to one standard deviation (in stead of one point on the scale). Patients with incomplete data were excluded from the analyses. Statistical analyses were performed with SPSS 15.0.1.

RESULTS

Table 4.2 shows the ORs and corresponding 95% confidence intervals resulting from logistic regression analyses with either setting or duration as outcome.

Allocation to treatment setting

With respect to setting, the complete model could explain a moderate level of variance (Nagelkerke's $R^2 = 0.36$). Almost all patient characteristics were related to treatment setting. Significant predictors for an inpatient treatment setting as opposed to an outpatient treatment setting were: medium/high education, no parental responsibilities, an outpatient treatment history, higher level of symptom distress, higher level of motivation, lower level of identity integration, lower level of responsibility, and a more mature level of defensive functioning. Significant predictors for a day hospital setting as opposed to outpatient treatment were: medium/high education, no parental responsibility, an outpatient treatment history, higher level of symptom distress, higher level of motivation, cluster C PD pathology, lower level of responsibility and a more mature level of defensive functioning. Significant predictors for inpatient treatment as opposed to day hospital treatment were: male

Table 4.2. Logistic regression with treatment allocation as outcome and patient characteristics as predictors

	Treatment allocation							
	Setting[1]						Duration[2]	
	Inpatient vs Outpatient[3]		Day hospital vs Outpatient[3]		Inpatient vs Day hospital[3]		Long-term vs short-term[3]	
Patient Characteristics	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Sociodemographics								
Male sex (vs female sex)	1.18	0.73-1.90	0.68	0.43-1.09	1.73*	1.12-2.67	0.88	0.61-1.27
Age	0.88	0.69-1.13	0.89	0.70-1.12	1.00	0.81-1.24	0.62***	0.52-0.75
Medium/high education (vs low)	3.16**	1.58-6.33	1.92*	1.06-3.46	1.65	0.86-3.17	0.54*	0.32-0.93
Parental responsibility (no vs yes)	5.33***	3.09-9.19	2.55***	1.58-4.13	2.09**	1.24-3.51	1.13	0.76-1.68
No job (vs job)	1.16	0.72-1.85	1.26	0.81-1.97	0.92	0.62-1.36	1.02	0.72-1.44
Treatment history								
Outpatient (vs no)	3.07***	1.99-4.75	2.18***	1.45-3.29	1.41	0.96-2.07	0.82	0.59-1.14
Inpatient (vs no)	1.27	0.73-2.21	0.85	0.49-1.50	1.49	0.93-2.37	1.15	0.76-1.75
Symptom distress	1.44*	1.06-1.95	1.64***	1.23-2.18	0.88	0.68-1.14	0.99	0.79-1.24
Motivation for treatment	1.97***	1.54-2.51	1.28*	1.04-1.58	1.53***	1.23-1.92	0.84*	0.70-1.00
Personality pathology								
SIDP-IV: axis II (hierarchical)[4]								
Cluster A	0.77	0.30-1.98	2.00	0.84-4.79	0.38*	0.17-0.86	1.76	0.81-3.80
Cluster B	0.94	0.52-1.70	1.65	0.93-2.92	0.57*	0.34-0.95	2.05**	1.30-3.22
Cluster C	1.35	0.80-2.25	2.37***	1.44-3.90	0.57*	0.36-0.90	1.14	0.78-1.65

Table 4.2. Logistic regression with treatment allocation as outcome and patient characteristics as predictors (continued)

	Treatment allocation							
	Setting[1]						Duration[2]	
	Inpatient vs Outpatient[3]		Day hospital vs Outpatient[3]		Inpatient vs Day hospital[3]		Long-term vs short-term[3]	
Patient Characteristics	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
SIPP-118								
Self control	1.32	0.94-1.83	0.91	0.66-1.26	1.44*	1.07-1.93	1.04	0.80-1.33
Identity integration	0.59**	0.41-0.84	1.03	0.73-1.45	0.57***	0.41-0.78	0.95	0.73-1.25
Responsibility	0.66**	0.50-0.88	0.66**	0.51-0.86	1.00	0.80-1.26	0.96	0.79-1.18
Relational functioning	0.81	0.61-1.09	1.03	0.78-1.37	0.79	0.61-1.01	0.94	0.76-1.17
Social concordance	1.11	0.83-1.47	1.03	0.78-1.34	1.08	0.85-1.38	0.95	0.76-1.17
DSQ-60								
Defensive functioning	1.56**	1.12-2.18	1.55*	1.13-2.13	1.01	0.76-1.34	0.74*	0.58-0.95

[1] Estimated multinomial logistic regression coefficients with outpatient setting as the reference category for the analyses inpatient versus outpatient and day hospital versus outpatient, and day hospital setting as the reference category for the analysis inpatient versus day hospital setting. All patient variables were entered in one block (Nagelkerke's R^2 = .36)

[2] Estimated binary logistic regression coefficients with short-term duration as the reference group. All patient variables were entered in one block (Nagelkerke's R^2 = .18)

[3] Due to missing values in the patient characteristics (missing values vary between 0% and 6.6%), the maximum n is n=272 for the outpatient setting, n=311 for the day hospital setting, n=340 for the inpatient setting, n=573 for the long-term duration, and n=350 for the short-term duration.

[4] Hierarchical clustering, with cluster A = at least one cluster A diagnoses, cluster B = at least one cluster B diagnosis and without any cluster A diagnosis; cluster C = at least one cluster C diagnosis and without any cluster A or B diagnosis; reference group = patients with PDNOS only or patients without a formal PD diagnosis.

OR = Odds Ratio; 95% CI = 95% Confidence Interval; *p<0.05, **p<0.01, ***p<0.001

gender, no parental responsibilities, higher motivation for treatment, absence of cluster A/B/C PD, higher level of self control, and a lower level of identity integration.

Allocation to treatment duration

With respect to duration, the complete model explained less variance compared to setting: Nagelkerke's R^2 was 0.18. It seems that the preselected patient characteristics cannot predict accurately whether a patient is allocated to a short-term or long-term therapy. Age was found to be a significant predictor, indicating that older patients were significantly less likely to be selected for long-term treatment (OR = 0.62; CI = 0.52-0.75; $p < 0.001$). Furthermore, lower educational level, lower level of motivation, cluster B pathology, and a less mature defense style are associated with long-term treatment.

DISCUSSION

In a large sample of PD patients, we found that many patient characteristics under study were associated with treatment selection in terms of setting and duration. This finding seems to support the view that treatment selection is a multifactorial decision process (Tillett, 1996; Valbak, 2004). Prominent predictors for setting were: educational level, parental responsibility, treatment history, symptom distress, motivation, cluster C PD, level of identity integration, level of responsibility, and level of defensive functioning. In addition, age and cluster B PD were found to be prominent predictors for treatment duration.

The preselected patient characteristics explained a moderate amount of variance in the model for setting (36%), and a relatively small amount of variance in the model for duration (18%). The small amount of explained variance in the duration model could be explained by treatment heterogeneity in both the short and long treatment group. For example, short inpatient treatment differs considerably from short outpatient treatment in its capacity to provide containment in a "pressure cooker" atmosphere (Chiesa, Fonagy, & Gordon, 2009). An alternative explanation for the relatively low amount of explained variance in the duration model is the cautiousness of intake clinicians in setting (time) limits on the treatments and their preference for open-ended treatments (Yeomans, Seber & Clarkin, 1992).

Allocation to treatment setting

With respect to treatment setting, the results suggest a relationship between severity of pathology and treatment setting. Patients at the two extreme ends of the personality pathology spectrum (i.e., high versus low severity) seem to be preferably allocated to an outpatient treatment, whereas patients in the middle of the spectrum are more often selected for a day hospital or inpatient treatment. This finding is consistent with clinical expertise that considers high severity patients to be at risk of being destabilized by the high levels of affect arousal originating from the intensity that is typical for many day hospital and inpatient treatments. Furthermore, their healthy counterparts, with less deficit pathology and more focal problems, are typically assumed to be able to profit sufficiently from less intensive treatment. For these reasons, both patient groups are more likely to be selected for treatments in an outpatient setting. On the contrary, patients with moderately severe personality pathology who also have some healthy aspects (e.g. high motivation, high responsibility) are considered to profit most from intensive day hospital or inpatient treatment, as they are more capable of tolerating the arousal levels resulting from such treatments.

Our data showed that an outpatient treatment history predicted assignment to a day hospital and inpatient treatment. This finding can be understood from a stepped care perspective, i.e. to start with a lower and cheaper treatment dosage when possible, and step up to a higher and more expensive treatment dosage when necessary (Bower & Gilbody, 2005). Intake clinicians apparently use this principle in daily practice.

In addition to personality pathology and treatment history, the results showed that 'practical' patient characteristics, especially having parental responsibilities, were associated with treatment allocation. These findings are not surprising: earlier studies reported that practical variables such as availability of local treatment facilities, insurance status, and employment status had a significant influence on treatment allocation (Chiesa, Bateman, Wilberg & Friis, 2002; Issakidis & Andrews, 2003; Scheidt, Burger, & Strukely, 2003).

Allocation to treatment duration

With respect to the length of the treatments, our data showed that older patients were more likely to be selected for short-term treatment. It could be hypothesized that patients with more severe and persistent pathology will seek treatment at an earlier age, whereas those who can cope without treatment for a longer period of time are typically patients with less severe problems. Furthermore, we observed a tendency for patients with more severe pathology and less adaptive capacities,

especially cluster B patients, to be selected for longer treatment. This treatment selection tendency is in line with the research of Chiesa and colleagues who found in a sample of cluster B patients that longer treatment predicted positive outcome (Chiesa & Fonagy, 2007).

Limitations

The main strengths of the current study include the inclusion of a large number of patients, the multi-center design including treatment centers offering various settings and durations of psychotherapy, and the presence of an extensive assessment battery at intake. However, the study also had some limitations. First, it should be noted that the generalizibility of our findings may be limited to countries such as The Netherlands that have the availability of day hospital and inpatient psychotherapy facilities. Second, we did not take into account all possible determinants for treatment allocation. Other determinants might be: clinician preferences or theoretical orientation (Witteman & Koele, 1999), patient-therapist relationship factors (Norcross, 2002b) and local availability of treatment facilities (Chiesa, et al., 2002; Issakiis & Andrews, 2003; van Audenhove & Vertommen, 2000). Third, even after careful consideration, the operationalization of the patient characteristics remains open for debate. Fourth, we did not consider interactions between patient characteristics. It could therefore be that some characteristics are differently associated to treatment allocation under certain circumstances. Fifth, we focused only on setting and duration, and not on the theoretical orientation of treatment. Obviously a similar study with a focus on theoretical orientation of treatment would be interesting.

In conclusion, this study showed that, in addition to pathology and motivation descriptors, sociodemographics and treatment history are also related to treatment allocation in clinical practice. Whether the associations identified in this study are truly relevant for optimizing the (cost)effectiveness of treatment remains to be seen: do variations in treatment allocations indeed make a difference in relation to treatment outcome? We therefore recommend that future studies should test matching hypotheses in this regard.

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Chapter 5

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

ABSTRACT

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. 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. 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. The results imply that destabilizing psychotherapies can be considered as first treatment option for patients both high and low on psychological strengths.

Van Manen, J.G., Horn, E.K., Stijnen, T., Busschbach, J.J.V., & Verheul, R. (2014). Tailoring psychotherapy in patients with personality disorders: matching the level of psychological strengths to the level of stabilizing versus destabilizing psychotherapy. Personality and Mental Health, 9, 133-149.

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 (Hayes & 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 and colleagues (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's (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, Joyce, McCallum, & Azim, 1998; Piper, McCallum, Joyce, Azim, & Ogrodniczuk, 1999).

The present study aims to explore the matching hypothesis outlined above in a large quasi-experimental, 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 5.1). The intake and screening procedure included self-report questionnaires and a semistructured 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 day-hospital 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

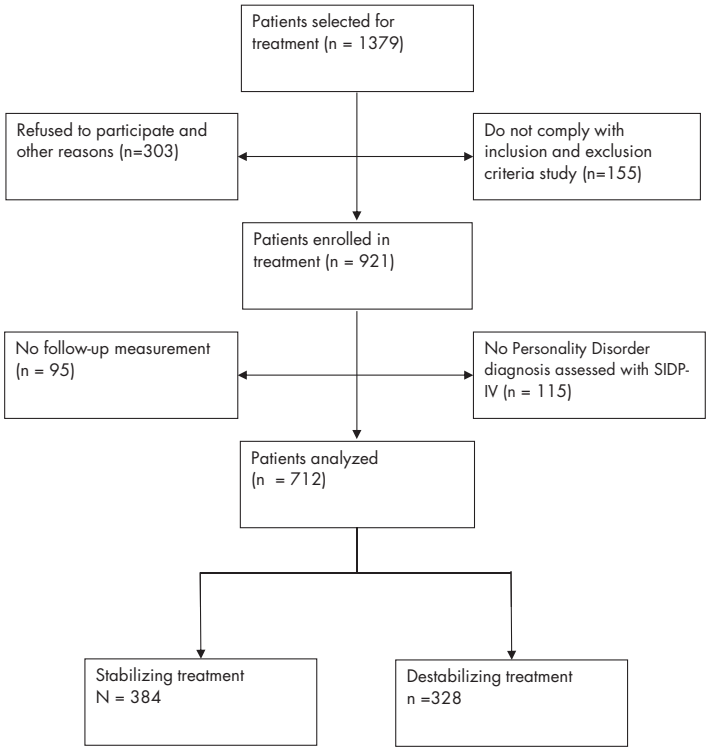

Figure 5.1. Patient flow

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 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

local treatment selection: Van Manen, et al., 2008; Van Manen, et al., 2011; Van Manen, et al., 2012, in this thesis the articles can be found in chapter 2, 3 and 4). 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 cognitive-behavioral 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, insight-oriented 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

PD diagnosis

DSM-IV-TR PD diagnoses were measured using the Dutch version of the Structured Interview for DSM-IV Personality Disorders (SIDP-IV) (Jong, Derks, Oel, & 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).

Strength measures

As there is no golden standard for measuring psychological strengths or ego-adaptive 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 internal-strength 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 self-report 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 chi^2 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 (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 destabilizing treatments and 19.5% in stabilizing 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 5.1 shows that the average length of the destabilizing psychotherapies is somewhat shorter (7.6 ± 4.8 months) than of stabilizing psychotherapies (11.7 ± 5.3 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 day-hospital 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.

Table 5.1. Socio-demographics, diagnostic and treatment characteristics of all 735 patients and of the patients in the two different psychotherapies

	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 ± 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 [a]				
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 ± 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

[a] Assessed 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

Uncorrected outcome

Table 5.2 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 5.2). 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.

Table 5.2. Uncorrected mean outcomes (SD) and effect sizes in the four patient-psychotherapy groups for all outcome variables estimated at 12 months after baseline

			Patient-psychotherapy groups[a]			
			Stabilizing psychotherapy		Destabilizing psychotherapy	
Outcome	Patient's strenght operationalizations[b]		Low strenghts[b]	High strenghts[b]	Low strenghts[b]	High strenghts[b]
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
		n	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
		n	220	178	151	182
	SIDP-IV: cluster AB vs CNOS	Baseline	1.80 (0.73)	1.41 (0.62)	1.61 (0.62)	1.50 (0.60)
		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

Table 5.2. Uncorrected mean outcomes (SD) and effect sizes in the four patient-psychotherapy groups for all outcome variables estimated at 12 months after baseline (continued)

			Patient-psychotherapy groups[a]			
			Stabilizing psychotherapy		Destabilizing psychotherapy	
Outcome	Patient's strenght operationalizations[b]		Low strenghts[b]	High strenghts[b]	Low strenghts[b]	High strenghts[b]
OQ-45: Interpersonal relations	SIPP: total	Baseline	24.30 (5.34)	18.18 (5.71)	23.98 (4.95)	18.43 (5.72)
		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
		n	143	241	90	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
		n	220	179	152	181
	SIDP-IV: cluster AB vs CNOS	Baseline	22.78 (6.37)	20.38 (6.10)	21.53 (5.59)	21.02 (6.17)
		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)
		ES	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)
		12 months	10.90 (5.76)	12.34 (5.07)	11.17 (6.32)	12.86 (5.63)
		ES	1.27	0.37	1.32	0.37
		n	195	188	155	166
	DSQ: odf	Baseline	16.65 (4.95)	14.14 (4.52)	17.18 (4.53)	14.63 (4.46)
		12 months	11.07 (5.93)	12.03 (5.08)	11.23 (6.32)	12.76 (5.67)
		ES	1.13	0.47	1.31	0.42
		n	212	173	148	179
	SIDP-IV: cluster AB vs CNOS	Baseline	16.52 (5.12)	14.95 (4.71)	16.22 (4.52)	15.62 (4.71)
		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
		n	198	182	158	169

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

ES = effect size calculated as Cohen's d

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

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

Corrected outcome

Table 5.3 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 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 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, & Pinsker (2004)) and used in clinical practice

Table 5.3. Corrected effects and effect sizes in the four patient-psychotherapy groups for all outcome variables estimated at 12 months after baseline

		Patient-psychotherapy groups[a]				Effects					
		Stabilizing		Destabilizing		Treatment		Strengths		Treatment * Strengths	
		Low strenghts[b]	High strenghts[b]	Low strenghts[b]	High strenghts[b]						
Outcome	Psychological strengths[b]	ES	ES	ES	ES	b[c]	p	b[d]	p	b[e]	p
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 AB vs CNOS	0.72	0.99	1.02	1.15	-0.13	<.01	-0.15	<.01	0.08	.32
	MTQ: Total	0.79	1.00	0.97	1.23	-0.16	<.01	-0.14	<.01	-0.02	.75
OQ-45: Interpersonal relations	SIPP: total	0.54	0.70	0.85	0.69	0.00	.99	-0.92	.02	1.95	.02
	DSQ: odf	0.50	0.74	0.77	0.77	-0.76	.08	-0.92	.02	1.47	.07
	SIDP-IV: cluster AB vs CNOS	0.42	0.73	0.70	0.80	-1.26	<.01	-1.08	.01	1.30	.14
	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 AB vs CNOS	0.54	0.77	0.74	0.78	-0.63	.05	-0.50	.12	0.97	.13
	MTQ: Total	0.61	0.77	0.66	0.86	-0.86	.00	-0.32	.28	-0.17	.76

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

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

ES = effect size calculated as Cohen's d

[a] Effect of stabilizing and destabilizing psychotherapy presented for the two levels of patient's psychological strengths

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

[c] This beta shows the average effect for treatment calculated over the stabilzing and destabilzing treatments, expressed as number of standard deviations decrease (-) on the outcome scales (GSI, OQ-45)

[d] this beta shows the average effect for strength calculated over the high and low strength patients, expressed as number of standard deviations decrease (-) on the outcome scales (GSI, OQ-45)

[e] this beta shows the interaction effect (high strength patients in destabilizing treatment), expressed as number of standard deviations decrease (-) or increase ( ) on the outcome scales (GSI, OQ-45

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, Joyce, McCallum, & Azim, 1998; Piper, McCallum, Joyce, Azim, & Ogrodniczuk, 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 destabilzing 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.

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Chapter 6

Discussion

DISCUSSION

This thesis aims to contribute to evidence-based treatment selection for patients with PD. The findings presented suggest that treatment selection is a complex task due to the different manifestations of PD and the wide variety of effective psychotherapeutic treatments in terms of setting, duration, intensity and theoretical orientations. Treatment selection appears a largely implicit and poorly understood process, which at least in part explains why there are no evidence based guidelines available yet. It is reasonable to assume that clinicians can profit from more understanding of the treatment selection process and of concrete guidelines. It has been hypothesized that a good fit between patient and treatment will make treatment more effective. In that respect it would be helpful if one could formulate 'matching relation(s)' between patient characteristic (such as diagnosis and sociodemographics) and specific treatment characteristic (such as setting, duration, intensity). This thesis aims at finding such matching relation(s) with the use of the 'evidence-based medicine model' (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). This model integrates a) clinical knowledge, b) routine clinical practice, and c) empirical evidence. As a result the research questions were as follows:

A. Clinical knowledge
    1. What patient characteristics are considered relevant to treatment selection for patients with PD?
    2. What matching hypotheses underlie or implicitly underlie clinical practice of treatment selection for patients with PD?

B. Routine clinical practice
    3. What is the relationship between characteristics of patients with PD and treatment allocation in routine clinical practice?

C. Empirical evidence
    4. Do patients with high psychological strength profit more from predominantly destabilizing treatments; and do patients with low psychological strength profit more from predominantly stabilizing treatments?

ANSWERS TO THE RESEARCH QUESTIONS

1) What patient characteristics are considered relevant to treatment selection for patients with PD?

To answer this question the concept mapping method was used: a formalized conceptualization procedure which explicates implicit knowledge such as treatment selection. Based on both a literature search and the expert opinions of 29 Dutch clinicians in PD a concept map was constructed that revealed eight relevant patient characteristics: 1) severity of symptoms; 2) severity of personality pathology; 3) ego-adaptive capacities; 4) motivation and working alliance; 5) social context; 6) social demographic characteristics; 7) trauma and treatment history; and 8) medical condition. These eight clusters could be ordered along two bipolar axes, running from 'internal- to external characteristics' and from 'vulnerability- to strength concepts'.

2) What matching hypotheses underlie or implicitly underlie clinical practice of treatment selection for patients with PD?
Twenty-seven Dutch clinical experts in PD were interviewed to investigate the relevance of 48 possible matching hypotheses. These consisted of a preset of patient characteristics on the one hand, and setting, duration, intensity and theoretical orientation of a psychotherapeutic treatment on the other hand. None of the preselected patient characteristics was deemed relevant for setting. Personal strength characteristics and indicators of severity of pathology were thought relevant for duration and intensity. Lastly, the experts would select the theoretical orientation on the basis of personal strength variables.

3) What is the relationship between characteristics of patients with PD and treatment allocation in routine clinical practice?
In a large multicenter study (the SCEPTRE study), the routine clinical practice of treatment selection was investigated. All patients (N = 923) enrolled in the study received the routine intake procedure. The resulting treatment allocation was related to characteristics measured before the intake procedure. Treatment allocation was defined in terms of setting (outpatient, day hospital and inpatient) and duration (long, short). The most prominent predictors for setting were: symptom distress, cluster C personality pathology, level of identity integration, treatment history, motivation and parental responsibility. The most prominent predictor for duration was age. It was concluded that treatment selection is a multifactor decision process, and that in addition to pathology and motivational descriptors, sociodemographics and treatment history are related to allocation.

4) Do patients with high psychological strength profit more from predominantly destabilizing treatments; and do patients with low psychological strength profit more from predominantly stabilizing treatments?

The consulted experts hypothesized that the match between personal strengths and the level of destabilization of the treatment is one of the key principles that determine treatment selection. This hypothesis was based on the data of clinical practice. More specifically, this hypothesis formulates that patients with high psychological strength profit more form a destabilizing treatment and patients with low personal strength profit more from a stabilizing treatment. This hypothesis was tested in the data set of the quasi-experimental SCEPTRE study, using data of 735 PD patients who received treatment in 6 psychotherapy centers in the Netherlands. The data was analyzed using multilevel modeling to estimate outcome at 12 months after baseline. The propensity score method was employed to control for initial baseline differences in the quasi experimental dataset. The findings showed that destabilizing psychotherapies have better outcomes than stabilizing psychotherapies. Furthermore, patients with high psychological strengths showed more improvement than patients with low psychological strengths. The hypothesized matching relation could not be confirmed however. What is more, one of the 12 tested matches was positive in the opposite direction as hypothesized. This means that all patients, irrespective of their personal strength, benefit from destabilizing therapies.

PRACTICAL IMPLICATIONS FOR ROUTINE CLINICAL CARE

1. Even patients with little psychological strengths can profit from destabilizing treatments.

Chapter 5 shows that a high level of destabilization has a positive impact on treatment outcome – irrespective of level of psychological strengths and of specific outcome variables. This finding suggests that even vulnerable patients profit as much as their healthier counterparts from confrontative, expressive, and insight-oriented interventions. This notion may be new to professionals who believe that patients with low personal strengths should receive supportive, stabilizing, low impact treatment. An often heard argument in this respect is that patients with low personal strengths would be harmed by high pressure treatment. It could mean a demanding, depriving and anxiety arousing experience for the patient, due for example to the pressure to talk, the absence of gratification and praise, and the interpretation of transference. One could argue that patients with low

personal strength cannot cope with these higher arousal levels and as a result develop more psychiatric symptoms, such as psychotic decompensation, induced depressions, suicidal acts, or reduced therapy compliance. However, high pressure treatment does not necessarily endanger patients' safety and wellbeing. It will be adapted to the level of arousal that the patient can cope with, and will have a clear focus of treatment, provide guidance about what to do when a patient is in crisis, ensure continuity of staff members, and integrate treatment in the social network (Hutsebaut, Bales, Busschbach, & Verheul, 2012). Given such safeguards and structure, the results of this thesis show that even patients with a low level of personal strengths can profit from destabilizing treatments.

2. The allocation process should focus on, but not restrict to, treatment history, motivation and the social context when planning treatment of the patient.
Treatment selection in PD is a multifactor process. As described in chapters 2 and 4, internal patient factors (like reflective capacity, identity integration, capacity to relate) as well as external factors (like systemic problems, outstanding debts, cultural background, having children, having a job) are important when selecting treatment. Looking across the different studies in this thesis, some patient characteristics stand out.

i. First, treatment history: patients for whom low doses of psychotherapy were not successful need to step up to a therapy with a higher dosage, which means a more intensive setting, e.g. day hospital or inpatient setting, more sessions in a week, or involving family in therapy. This allocation rule is also referred to as the 'stepped care principle' (Davison, 2000).
ii. Second, more motivated patients are eligible for a higher dosage of treatment. According to the expert clinicians, motivation can work as a positive moderator in the psychotherapy process, and consequently enhance the treatment effect.
iii. The third patient characteristic is the social context. Being a parent is especially a factor that limits the treatment options, e.g. long term inpatient psychotherapy. Other decisive social variables include: wish to continue study, considerable outstanding debts, and severe systemic problems.

One caveat should be mentioned however; these allocation rules have not been tested on their effectiveness. Nevertheless, as they were found in multiple studies in which clinical experts express best clinical practice, in terms of evidence based medicine they can therefore be considered as 'best practices'.

LIMITATIONS

Several limitations of the research presented in this thesis have been addressed in the discussion paragraphs of the different chapters. Below some limitations are discussed which have not yet be dealt with or are important generic limitations which apply to most chapters.

First; despite careful considerations, extensive consultations with expert clinicians, and searching for relevant literature, the selection and definition of the patient characteristics was limited, often due to practical reasons (e.g. no valid questionnaire was available for a specific variable) or because clinicians had difficultly describing the clinical features of their patients, like personal strength. A similar limitation applies to the operationalization of 'treatment' in terms of setting, duration, and level of destabilization. Moreover, in the different settings there was a mixture of different treatment orientations. Furthermore, it was often necessary to dichotomize the patient and treatment characteristics, which reduced the sensitivity of the analysis. Despite these limitations, the conclusions still hold. For instance, 'personal strength' was operationalized in four different ways. Moreover, we used a large data set to assure enough power to detect statistically significant relations.

Second, several possible determinants for treatment allocation were not included, such as: clinician preferences or theoretical orientation (Witteman & Koele, 1999), patient-therapist relationship factors (Norcross, 2002) and local availability of treatment facilities (Chiesa, Bateman, Wilberg, & Friis, 2002; Issakidis & Andrews, 2003; Van Audenhove & Vertommen, 2000).

Third, in the Netherlands a wide variety of modalities of specialist psychotherapy for PD is available. The data used in this thesis may therefore not be representative for all Dutch centers that treat PD. It can be stated with certainty, however, that the data is not representative in an international perspective, as inpatient psychotherapy for PD patients is hardly offered outside the Netherlands. Furthermore, it cannot be excluded that the patient population has changed since the start of the SCEPTRE study. For instance, De Viersprong institution currently employs a policy to admit patients with more intensive symptoms.

Fourth, the complex higher order interactions between multiple patient characteristics and treatments were not considered. For example, in reality patient characteristics might interact so that the impact of a characteristic is contingent on different levels of another variable. Research in this thesis was limited to single factor matching associations.

Fifth, confounding of treatment integrity (organizational factors, therapist adherence, clear focus of treatment etc.) and level of destabilization cannot be

excluded. A therapy with a high level of destabilization requires a consistent and safe environment with, for example, a clear focus in treatment, a safety plan, and staff adhering to the treatment manual. The beneficial effect of level of destabilization could therefore also be attributed to sufficient treatment integrity.

SUGGESTIONS FOR FURTHER RESEARCH

The findings of this thesis are based on a naturalistic study design. Given that a randomized design provides a higher level of evidence, a next step should be to test these findings in a randomized controlled trial in which patients are randomly admitted to stabilizing and destabilizing therapies. The challenge will be to protocolize these therapies and to operationalize personal strength.

The factors underlying the success of destabilizing therapies could be a next field of exploration: is it the destabilization itself that leads to success, or is it a highly structured en integer clinical environment that pushes the effects?

If personal strength is (still) seen as a relevant clinical variable, if would be helpful if consensus could be reached on how to operationalize it.

CONCLUSIONS

Clinicians use many different matching relations when allocating patients with PD to treatment, but the consensus on the matching relations is limited to: 1) social context, especially parental responsibility; 2) motivation; 3) treatment history, which results in application of the stepped care principle; and 4) matching between personal strength and the level of stabilization or destabilization in treatment. In this thesis this matching relation is tested in a large clinical population, but we were unable to confirm its effectiveness: destabilizing treatments gave better results regardless of the patient's personal strengths. This implies that clinicians should hold modest expectations for their allocation practices, while at the other hand one could be optimistic about destabilizing treatments.

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Summary

SUMMARY

This thesis deals with the topic of treatment selection of psychotherapy for patients with personality disorder (PD).

In **chapter 1** is the need for such research explained. Patients with PD have impaired well-being and they have problems in multiple areas such as partner relations, work and friendships. Consensus has grown that psychotherapy is the treatment of choice for these patients. Psychotherapies for PD vary in setting (e.g. outpatient versus inpatient), duration (e.g. short-term versus long-term), format (e.g. individual versus group), and theoretical background (e.g. cognitive behavioural versus psychodynamic). This variety raises the question of treatment selection: which setting, duration, format or theoretical background should be selected for a specific patient with PD. However, as yet, this question has not been investigated empirically. This thesis contributes to evidence-based treatment selection for patients with PD. The primary aim was to investigate expert clinical knowledge, routine clinical practice, and matching hypotheses of treatment selection for patients with PD. The secondary aim was to thereby contribute to evidence-based treatment selection in clinical practice. In this context, following research questions were addressed:

1. What patient characteristics are considered relevant to treatment selection for patients with PD?
2. What matching hypotheses underlie or implicitly underlie clinical practice of treatment selection for patients with PD?
3. What is the relationship between characteristics of patients with PD and treatment allocation in routine clinical practice?
4. Do patients with high psychological strength profit more from predominantly destabilizing treatments; and do patients with low psychological strength profit more from predominantly stabilizing treatments?

In **chapter 2** the concept map method is described, which serves to summarize and describe patient characteristics pertinent to treatment selection in PD patients. Patient characteristics were derived from the research literature and a survey among Dutch expert clinicians. Concept mapping is a formalized conceptualization procedure that describes the underlying cognitive structures people use in complex tasks, such as treatment allocation. Based on expert opinions of 29 Dutch clinicians, a concept map was generated that yielded eight domains of patient characteristics, i.e. Severity of symptoms, Severity of personality pathology, Ego-

adaptive capacities, Motivation and working alliance, Social context, Social demographic characteristics, Trauma, and Treatment history and medical condition. These domains can be ordered along two bipolar axes, running from internal to external concepts and from vulnerability to strength concepts, respectively. Our findings may serve as input for the delineation of algorithms for patient-treatment matching research in PD.

Chapter 3 reports how intake clinicians use information about patient characteristics to select psychotherapeutic treatment for PD patients. A structured interview with a forced-choice format was administered to 27 experienced intake clinicians working in five specialist mental health care institutions in the Netherlands. Substantial consensus was evident, in that none of the presented patient characteristics was deemed relevant for the selection of the suitable treatment setting. These intake clinicians select duration and intensity of treatment on the basis of severity of the PD or personal strength variables. The theoretical orientation is selected on the guidance of the patient's personal strength variables.

Chapter 4 reports on the relationship between patient characteristics and treatment allocation in a large multi-center study in PD patients. Personality pathology, symptom distress, treatment history, motivational factors, and sociodemographics were measured at intake in 923 patients, who subsequently were enrolled in short-term or long-term outpatient, day hospital, or inpatient psychotherapy. Predictors of allocation decisions were examined with logistic regression analyses. The relationship between patient characteristics and treatment setting was moderate (R^2 = 0.36), and the relationship between patient characteristics and treatment duration was weak (R^2 = 0.18). The most relevant predictors for setting were: symptom distress, cluster C personality pathology, level of identity integration, treatment history, motivation, and parental responsibility. The most relevant predictor for duration was age. We conclude from this study that apart from pathology and motivation factors, sociodemographics and treatment history are related to treatment allocation in clinical practice.

In **chapter 5** the matching hypothesis is tested that patients high on psychological strengths profit more from destabilizing psychotherapy, whereas patients low on strengths profit more from stabilizing psychotherapy. The data of the SCEPTRE study was used. SCEPTRE is a quasi-experimental study conducted between 2003 and 2008 in 735 patients with personality disorders from 6 psychotherapy centers in the Netherlands. To test the matching hypothesis patients were assigned to differ-

ent levels of stabilizing and destabilizing psychotherapies. Levels of psychological strengths were measured. A multilevel model was used to estimate outcome at 12 months after baseline. The propensity score controlled for initial differences at baseline. The findings show that destabilizing psychotherapies have slightly better outcomes than stabilizing psychotherapies. Patients with high psychological strengths improve slightly more than do patients with low psychological strengths. The observed interaction effect contradicted our hypothesis. The results imply that destabilizing psychotherapies can be considered as first treatment option irrespective of a patient's level of psychological strength.

In **chapter 6** the answers to the research questions stated in the introductory chapter of this thesis are presented. The practical implication is that a high level of destabilization has a positive impact on treatment outcome irrespective of psychological strengths and specific outcome variables. This finding suggests that vulnerable patients as much as their healthier counterparts profit from confrontative, expressive, and insight oriented interventions. It is recommended that high pressure treatments should take place in a safe environment providing a clear focus of treatment, clarity about what to do when a patient is in crisis, continuity of staff members, and integration of treatment in the social network. Another relevant finding is that three patient characteristics are consistently related to treatment selection: 1) stepped-care: treatment history: patients for whom low doses of psychotherapy were not successful need to step up to a therapy with a higher dosage, which means a more intensive setting, e.g. day hospital or inpatient setting, more sessions in a week, or involving family in therapy; 2) motivation: more motivated patients are eligible for a higher dosage of treatment. Motivation can work as a positive moderator in the psychotherapy process, thus enhancing the treatment effect; 3) social context, especially parental responsibility is a factor that limits the possibility for e.g. long term inpatient psychotherapy. In this chapter the limitations of the research are discussed. Noteworthy in this respect are: 1) the limited selection and operationalization of the patient characteristics and the limited operationalization of treatment in terms of setting, duration, and level of destabilization, combined with the need to dichotomize these characteristics, which reduces the validity of the results; 2) the low generalizability of the findings to all types of PD and all treatments as well as to countries other than the Netherlands.

Summary in Dutch

NEDERLANDSE SAMENVATTING

Het onderwerp van dit proefschrift is indicatiestelling bij persoonlijkheidsstoornissen (PS).

In **hoofdstuk 1** wordt uitgelegd waarom onderzoek naar indicatiestelling bij persoonlijkheidsstoornissen nodig is. Patiënten met PS worden geassocieerd met een lager welzijn en meerdere problemen op het gebied van bijvoorbeeld relaties, vriendschap en werk. Psychotherapie wordt beschouwd als eerste keus behandelmethode bij patiënten met PS. Psychotherapie is er in veel verschillende vormen zoals de settting (ambulant versus opname), duur (langer durende therapie, versus korte therapie), format (individueel versus groepstherapie) en theoretische achtergrond (psychodynamisch, cognitief gedragstherapeutisch). Deze verschillende mogelijkheden roepen de klassieke vraag op naar indicatiestelling: "Welke setting, duur, format en theoretisch kader moet worden geïndiceerd voor deze specifieke PS patiënt?". Naar indicatiestelling bij PS is nog geen empirisch onderzoek gedaan. Door deze vraagstelling in dit proefschrift te onderzoeken, wordt een bijdrage geleverd aan de evidence based indicatiestelling bij mensen met PS. Het doel van het onderzoek was om klinische kennis van experts en gegevens uit de dagelijkse praktijk te operationaliseren, en hieruit indicatieregels (matching hypotheses) voor mensen met PS op te stellen en deze empirisch te toetsen. De volgende onderzoeksvragen worden in dit proefschrift besproken:

1. Welke patiëntkenmerken worden door experts van belang geacht voor indicatiestelling bij patiënten met PS?
2. Welke indicatiestellingregels (matching hypotheses) kunnen worden opgesteld aan de hand van ervaringskennis?
3. Wat is de relatie tussen kenmerken van patiënten met PS en de geïndiceerde behandeling in de dagelijkse praktijk?
4. Profiteren patiënten die hoog scoren op psychologische capaciteiten meer van voornamelijk destabiliserende behandelingen en profiteren patiënten die laag scoren op psychologische capaciteiten meer van stabiliserende behandelingen?

In **hoofdstuk 2** wordt de 'concept map methode' beschreven; deze methode analyseert en beschrijft de onderliggende factoren die van belang zijn voor indicatiestelling bij PS patiënten. Patiëntkenmerken werden vastgesteld met behulp van een literatuuronderzoek en een vragenlijst onder ervaren Nederlandse behandelaren. Op basis van de input van de 29 clinici, werd een concept map geconstrueerd

die bestaat uit acht domeinen van patiëntkenmerken. Deze kenmerken zijn: ernst van de psychiatrische symptomatologie, ernst van de persoonlijkheidspathologie, ego-adaptieve vermogens, motivatie en vermogen tot het aangaan van een werkrelatie, sociale context, socio-demografische variabelen, traumatisering en behandelgeschiedenis en somatiek. De acht domeinen kunnen geplaatst worden in een tweedimensionaal vlak met twee assen: één as loopt van interne naar externe factoren en de andere as die loopt van psychologische kwetsbaarheid naar psychologische kracht of stevigheid. De bevindingen kunnen dienen als eerste aanzet voor indicatiestellingsonderzoek, zoals matchingsonderzoek bij PS.

Hoofdstuk 3 beschrijft hoe intakers patiëntkenmerken gebruiken in de intake om een psychotherapeutische behandeling voor PS patiënten te selecteren. Er zijn 27 ervaren intakers uit vijf verschillende instellingen in Nederland geïnterviewd met behulp van een gestructureerd interview met multiple choice vragen. Er bestond onder de intakers een aanzienlijke mate van overeenstemming over het gebrek aan relevantie van de gepresenteerde patiëntkenmerken voor de selectie van een specifieke setting (ambulant, dagklinisch, klinisch). Intakers gebruiken de ernst van de PS en de mate van psychologische capaciteiten wanneer ze de duur en de intensiteit van de behandelingen selecteren. Het theoretische kader van de behandeling wordt volgens de geïnterviewde intakers gekozen aan de hand van de psychologische capaciteiten van een patiënt.

Hoofdstuk 4 beschrijft het verband tussen patiëntkenmerken van PS en de uiteindelijk ontvangen behandeling in de grote multicenter SCEPTRE studie. In deze quasi-experimentele studie werden 923 PS patiënten na de intake toegewezen aan verschillende, langer en korter durende behandelingen met verschillende settingen: ambulant, dagklinisch of klinisch. Persoonlijkheidspathologie, psychiatrische symptomen, behandelgeschiedenis, motivatie en sociodemografische gegevens werden gemeten aan de start van de intake. Predictoren voor het uiteindelijke behandeladvies (in termen van setting en duur) werden vastgesteld met behulp van logistische regressie. Het verband tussen de patiëntkenmerken en de setting van de behandeling was matig (R^2 = 0.36), het verband tussen de patiëntkenmerken en de duur van de behandeling was zwak (R^2 = 0.18). De significante predictoren voor setting waren: lijdensdruk, Cluster C PS, mate van identiteitsintegratie, behandelgeschiedenis, motivatie en ouderschap. De significante predictor voor duur was leeftijd. Uit deze studie concluderen we dat naast de meer algemeen aanvaarde factoren zoals pathologie en motivatie, sociodemografische gegevens

en behandelgeschiedenis belangrijk zijn voor indicatiestelling in de dagelijkse praktijk.

In **Hoofdstuk 5** wordt de 'matching hypothese' getoetst welke beschrijft dat patiënten die hoog scoren op psychologische capaciteiten meer profiteren van destabiliserende psychotherapie en patiënten die laag scoren op psychologische capaciteiten meer profiteren van stabiliserende psychotherapie. Om deze hypothese te toetsen werden data van de eerder genoemde SCEPTRE studie gebruikt. In dit onderzoek werden 735 patiënten met een persoonlijkheidsstoornis vanuit 6 psychotherapeutische instellingen in Nederland gevolgd. Patiënten werden geïndiceerd naar verschillende niveaus van stabiliserende en destabiliserende psychotherapieën. Het niveau van psychologische capaciteiten werd gemeten met vragenlijsten. Met behulp van een multilevel model werd de uitkomst van de behandeling op 12 maanden na de baseline meting geschat. De propensity score werd gebruikt om te controleren voor initiële verschillen tussen patiënten op baseline. De resultaten laten zien dat destabiliserende therapieën iets betere uitkomsten hebben dan stabiliserende psychotherapieën. Verder profiteren patienten die hoger scoren op psychologische capaciteiten meer dan patiënten die lager scoren op psychologische capaciteiten. De matching hypothese kon niet worden bevestigd, we vonden juist één tegenovergesteld effect. De implicatie van deze studie is dat destabiliserende behandelingen overwogen kan worden als eerste keus behandeling ongeacht de mate van psychologische capaciteiten van de patiënten.

In **hoofdstuk 6** worden de antwoorden op de onderzoeksvragen uit de introductie beantwoord. De belangrijkste bevinding van dit proefschrift is dat een hoge mate van destabilisering een positief effect heeft op de behandeluitkomst, onafhankelijk van psychologische capaciteiten van de patiënt en onafhankelijk van de gebruikte uitkomstmaat. Dit impliceert dat als kwetsbare beschouwde patienten net zoveel profiteren van confronterende, interpreterende behandelingen als patiënten met meer psychologische capaciteiten. Destabiliserende behandelingen moeten plaatsvinden in een consistente, coherente en continue omgeving wat bijvoorbeeld tot uiting komt in een duidelijk behandelbeleid bij crisis, continuïteit van therapeuten en een integratie van de behandeling in de sociale omgeving van patiënten. Verder blijkt uit huidig onderzoek dat drie factoren relevant zijn voor de indicatiestelling: 1) het 'stepped-care' principe: patiënten die onvoldoende hebben geprofiteerd van een lage dosis van psychotherapie 'step up' naar een hogere dosis van psychotherapie, bv dagklinische behandeling in plaats van

ambulant, of meer sessies per week, 2) motivatie: meer gemotiveerde patiënten komen in aanmerking voor intensievere behandelingen, aangezien motivatie kan functioneren als een positieve moderator in het behandelproces, 3) sociale context, met name verantwoordelijkheid dragen voor kinderen, is een factor die in grote mate de behandelmogelijkheden kan belemmeren, bijvoorbeeld bij langdurige klinische opname. In dit hoofdstuk worden ook de beperkingen van de onderzoeken uit huidig proefschrift beschreven. De belangrijkste zijn: 1) de selectie en operationalisatie van de patiëntkenmerken en operationalisatie van behandeling in termen van setting, duur en mate van destabilisatie, naast het dichotomiseren van zowel de patiënt- als de behandelingsvariabelen beperken de validiteit van de resultaten, 2) de lage generaliseerbaarheid van de bevindingen naar alle verschillende typen PS en naar anderen landen dan Nederland.

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PhD portfolio

PHD PORTFOLIO

Name	Janine van Manen
Scientific workplace	Viersprong Institute for Studies on Personality Disorders (VISPD)
Erasmus MC department	Medical Psychology & Psychotherapy
Promotors	Prof.dr. J.J. van Busschbach
	Dr. R. Verheul

PhD training

Missing Data and Multilevel Models, Experimental Psychopathology, Dutch Institute for Research and Postgraduate Education, Soesterberg	2003
Courses for the Quantitative Researcher, Erasmus MC, Rotterdam	2009
Prognostic Research, University Utrecht, Utrecht	2009
Repeated Measurements in Clinical Studies, Erasmus MC, Rotterdam	2010

Clinical training

Training Health Care Psychologist, RINO Zuid, Eindhoven	2005-2009
Training SCID-I en SCID-II, Viersprong, Halsteren	2005
Rorschach Comprehensive System (Exner), Viersprong, Halsteren	2008

National Presentations

Symposium GGZ Noord Holland Noord, Triversum en Zaans Medisch Centrum, Zaandam: 'Project Indicatiestelling: de ontwikkeling van een instrument ter ondersteuning van de indicatiestelling bij persoonlijkheidsstoornissen'	2004
Mini SCEPTRE symposium, Halsteren: 'Project Indicatiestelling'	2004
35e NVvP-Voorjaarscongres, Maastricht: 'Onderzoek naar indicatiestelling voor psychotherapie bij persoonlijkheidstoornissen'	2007
SCEPTRE Symposium, Utrecht: 'Indicatiestelling'	2009
Studiedag Benecke, Ede: 'Indicatiestelling bij persoonlijkheidsstoornissen'	2009

International Presentations

International Meeting of the Society for Psychotherapy Research, Rome, Italy. Poster presentation: 'Clinical Decision Support System for treatment selection of patients with a personality disorder'	2004
European Congress for Psychotherapy, 'Mind, Brain and Psychotherapy', Amsterdam. Oral presentation: 'Development of a Clinical Decision Support System for treatment selection for patients with personality disorders: a prototype'	2004
International Meeting of the Society for Psychotherapy Research, Montreal, Quebec, Canada. Oral presentation: 'Development of a clinical decision support system for treatment selection for patients with personality disorders: a prototype'	2005

Teaching activities

Viersprong academy, Halsteren. 'Basistraining SCID-I and SCID-II'	2015

Publications

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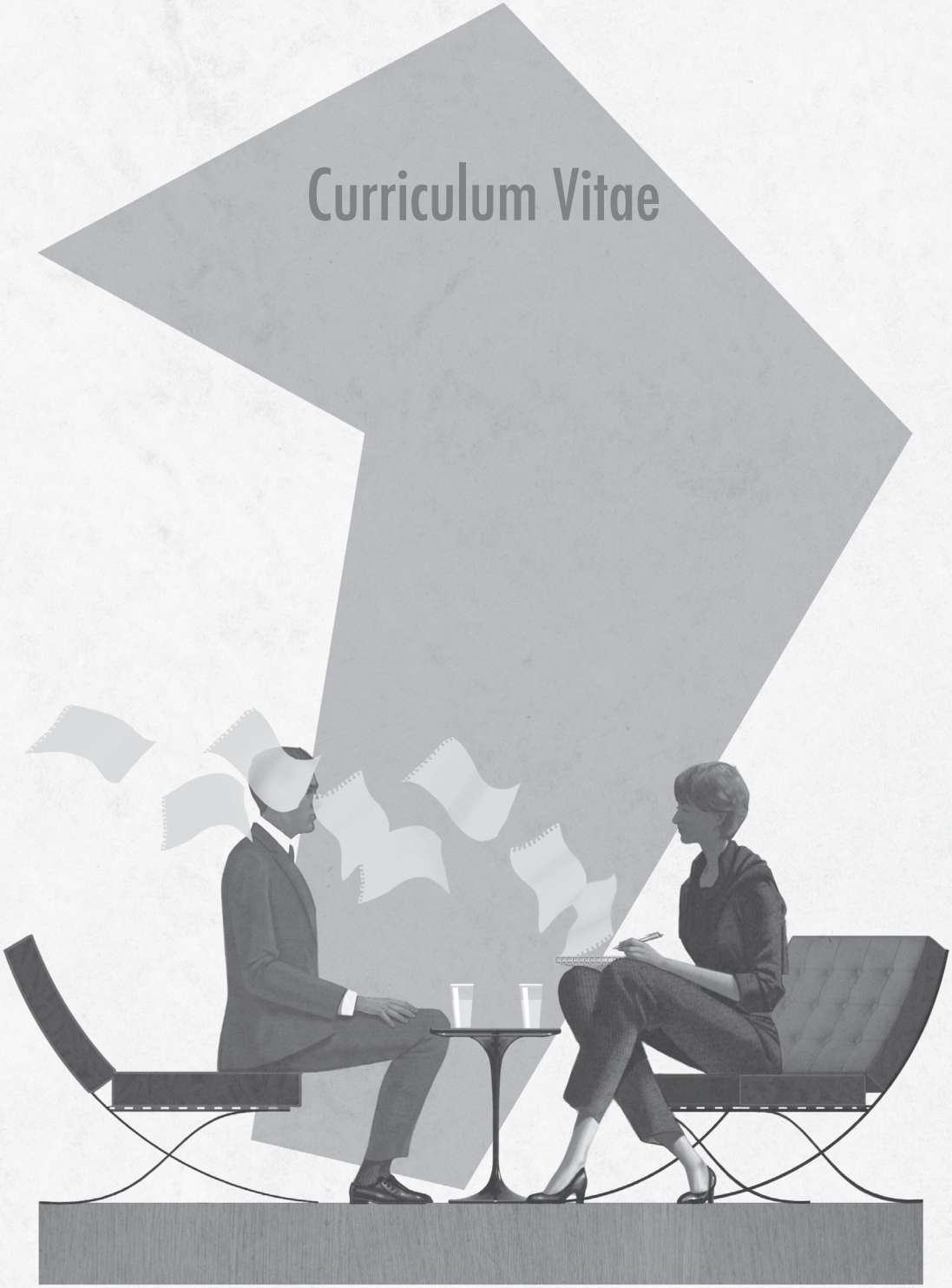
Curriculum Vitae



CURRICULUM VITAE

Janine van Manen was born on January 5, 1978 in Apeldoorn, the Netherlands. In 1997 she graduated from high school at Christelijk Lyceum Sprengeloo in Apeldoorn and started her study Psychology at the University of Groningen. She choose a major in clinical psychology, completed a clinical internship at the 'Psychologen Kollektief Groningen' and conducted a research on predictors for treatment outcome in children with anxiety disorders. Furthermore she took lessons in methodology and worked as a "studenten assistant" helping students with statistical problems. In 2003 she obtained her master degree in clinical psychology with a secondary specialization in methodology. The same year Janine started working as junior researcher at the Viersprong Institute for Studies on Personality Disorders (VISPD). In this position she worked on the assessment and allocation research questions of the SCEPTRE research project. The results of this research project is described in this thesis. Next to her research activities, she was honoured to receive a training to become a health care psychologist (GZ-psycholoog), for which she received her license in 2009. In 2011 she switched her focus from research to practicing clinical psychology. Since then her primary task was assessment in forensic youth and later adults with personality disorders. In 2015 she left the Viersprong and started working at HSK as a health care psychologist and she started the first VGCt course to become a cognitive behavioural therapist.