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Subtypes of Narcissistic Personality Disorder based on Psychotherapy Process: A

Longitudinal Non-Parametric Analysis

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Abstract

Objective: The present study aims at empirically exploring subtypes of narcissistic personality disorder (NPD), based on patient descriptors of the psychotherapeutic process. Subtype identification and characterization of NPD is central in particular to increase diagnostic precision, linking categorical and dimensional conceptualizations of psychopathology and to individualize treatments.

Methods: A total of $N = 161$ patients diagnosed with NPD undergoing clarification-oriented psychotherapy (COP) were included in the present reanalysis of a naturalistic pre-post process-outcome study. At three crucial time-points of the therapy (sessions 15, 20 and 25), the patient's in-session quality of content, process and relationship are assessed using intensive video- and audio-analyses. Levels of psychopathology were assessed using self-reported questionnaires. Data were analyzed using longitudinal non-parametric analysis.

Results: Based on in-session processes across three time-points, a two-subtype solution was retained (optimal vs suboptimal process qualities). Optimal process quality of time was linked with the intensity of narcissistic symptoms; suboptimal process quality was linked with a variety of general symptom loads and problematic personality traits. The two empirical subtypes were predicted by the quality of real-life functioning with an accuracy of over 92% and were partially associated with outcome.

Conclusions: NPD may be empirically differentiated between patients engaging in optimal psychotherapy process, vs those who engage in suboptimal psychotherapy process. This differentiation has reliable clinical predictors at the outset of treatment. The present study has implications in terms of personalizing psychotherapy for patients presenting NPD, or pathological narcissism.

Keywords: Narcissistic Personality Disorder; Sub-Types; Process-Outcome; Psychotherapy, Clarification-Oriented Psychotherapy; Kml3d

SUBTYPES OF NARCISSISTIC PERSONALITY DISORDER BASED ON

PSYCHOTHERAPY PROCESS: A LONGITUDINAL NON-PARAMETRIC ANALYSIS

The study of subtypes of pathological narcissism

The study of narcissistic personality disorder is moving towards a multifaceted and dynamic conception of the phenomenon, ranging on a continuum between forms of normal and pathological expressions of narcissism (Pincus, 2020; Ronnigstam, 2020). A consensus has it that several subtypes of narcissistic personality disorder may be differentiated (Levy, 2012), falling into a binary distinction between overt, grandiose (also associated with willfulness, exhibitionism, and thick-skinniness) and covert and more vulnerable presentations (also associated with hypersensitivity and thin-skinniness). These characterizations tend to speak to an underlying bidimensional model of pathological narcissism, involving grandiose and vulnerable expressions (Pincus, & Roche, 2011; Pincus, Cain & Halberstadt, 2020). This bidimensional model of pathological narcissism, or potentially NPD, has garnered scientific interest, with today a solid groundwork of evidence speaking towards its validity (Pincus 2020; Pincus, Cain & Halberstadt, 2020). From such a bidimensional psychopathology perspective, NPD may be associated with domineering stances, need for admiration and difficulty in developing empathy, with underlying high standards of performance (Caligor, Levy, & Yeomans, 2015), while it may also be associated with more insecure and interpersonally hypersensitive stances, emotion dysregulation (in particular related with shameful experiences) and brittle sense of self (Cain, Pincus, & Ansell, 2008; Ronningstam, 2009). Such a differentiated picture of a clinical phenomenon is consistent with, and integrates, the current development of dimensional conceptions of psychopathology, and in particular personality pathology (Hopwood, Zimmermann, Pincus & Krueger, 2015; Huprich, Nelson, Sohnleitner, Lengu, Shankar, & Rexer, 2018; Huprich, 2020; Ofrat, Krueger, & Clark, 2018; Widiger & Trull, 2007).

Empirical research has further suggested that there may be more than two dimensions of narcissistic phenomena in psychopathology. Using the Shedler-Westen Assessment Procedure (SWAP-200; Westen & Shedler, 1999), a study Q-factoranalyzed $N = 101$ patients with NPD and found three subtypes based on self-reported description: a) grandiose or malignant, b) fragile, and c) high functioning or exhibitionistic (Russ & Shedler, 2013; see also Russ, Shedler, Bradley & Westen, 2008). While the first two were similar, but not confounding with, the bidimensional model explained above, the latter c) is a differentiated subtype involving self-centeredness, entitlement and grandiosity, but also competitiveness and interpersonally comfortable relationships. These patients present generally as relatively well functioning, are generally employed and work to their full psychological potential. When they present in treatment, they may present with co-morbid depression, addiction, anxiety or adjustment disorders. This typology suggests that the perspective of real-world functioning may add a complementary perspective to understanding NPD.

Empirical evidence of real-world functioning of patients with NPD is mixed. NPD was associated with *both* weak and strong socioprofessional functioning. In a large sample of psychiatric outpatients, Dashineau, Edershile, Simms and Wright (2019) showed that narcissistic vulnerability was associated with a number of real-world psychosocial problems. This relationship was particularly strong when the researchers controlled for the shared variance among the predictors in this study. On the contrary, in a questionnaire study on $N = 577$ (nonclinical) undergraduates using the SNAP (Schedule for Nonadaptive and Adaptive Personality; Clark, 1993), Oltmanns, Melley and Turkheimer (2002) found somewhat unexpectedly that higher scores of narcissism were associated with better social and professional functioning. It appears that differentiated conception of real-life functioning of patients with NPD is needed.

Clinical descriptions of subtypes of real-world functioning in NPD may involve the differentiation between "successful", "unsuccessful" and "failed" functioning (Sachse, 2020). A successful real-life functioning in NPD involves the attainment of grandiose aims, an effective interpersonal style leading to significant others (i.e., partners, collaborators, acquaintances) admiring the patient, and possibly an intransparent, and thus "effective" (possibly from the perspective of the patient) exploitation of collaborators and team members. An unsuccessful real-life functioning in NPD involves the non-attainment of grandiose goals (often due to both their grandiosity and a lack of the person's capacities), ineffective interpersonal interaction styles leading to significant others ignoring or openly criticizing the patient, and a generalized social withdrawal (i.e., remaining at home refusing any challenges, playing video-games to avoid contact, financial dependency on parents, or social welfare). A failed real-life functioning in NPD involves a combination between the two first ones, where a successful patient with NPD experiences a major life event (i.e., interpersonal loss, bankruptcy, unemployment, illness), and as a consequence, abruptly shifts into a real-life functioning marked by loss of success, as described above. Clinically, unsuccessfulness or failure in the context of NPD may be accompanied by symptoms of professional burn-out, complex grief, depression and alcoholism, along with increased levels of suicide thoughts and behaviors (Blasco-Fontecilla, Baca-Garcia, Dervic, Perez-Rodriguez, Lopez-Castroman, Saiz-Ruiz, & Oquendo, 2009; Coleman, Lawrence, Parekh, Galfavy, Blasco-Fontecilla, Brent, Mann, Baca-Garcia, & Oquendo, 2017; Dimaggio, Procaccio, Nicolo, Popolo, Semerari, Carcione & Lysaker, 2007; Levy, 2012; Links, Gould, & Ratnayake, 2003; Links, 2013; Ogrodniczuk, 2013; Ogrodniczuk, & Kealy, 2013; Ronningstam, 2010, 2011). Treatment may be tailored as a function of real-world functioning subtype of NPD.

Importance of in-session psychotherapy processes

Psychotherapy research has provided insights into processes which may explain how psychotherapy works which is key when it comes to personalize treatment (Kazdin, 2009), yet, more research is needed to ultimately assist the therapist in selecting the appropriate clinical strategy at a given time-point of a treatment facing a given patient with a personality pathology. For personality disorders, in addition to variables pertaining to the therapeutic relationship (Smith, Barrett, Smith Benjamin, & Barber, 2006), patient's increases in emotional and socio-cognitive processing have been discussed as potential mechanisms of change (Kramer, 2019a; Schnell & Herpertz, 2018). A few studies have focused on in-session psychotherapy processes, both from the patient process perspective, and the therapist intervention strategies, potentially explaining outcome in psychotherapy for NPD. In two naturalistic studies on clarification-oriented psychotherapy, a development of client-centered therapy for NPD, researchers found that in-session patient's emotional processing predicted 18% of symptom change in the end of treatment (Kramer, Pascual-Leone, Rohde, & Sachse, 2016), while the decrease of shame-based emotional experiences during the working phase of treatment, and its transformation towards more compassionate stance towards the Self, was linked with the decrease in depressive symptoms over the course of treatment (Kramer, Pascual-Leone, Rohde, & Sachse, 2018). In a naturalistic study, Maillard et al. (2020) examined $N = 161$ patients with NPD undergoing clarification-oriented psychotherapy, and assessed patient processes and therapist interventions at sessions 15, 20 and 25; all three sessions were deliberately selected as being part of the active phase of the clarification-oriented psychotherapy. All sessions were audio- or video-taped allowing for the assessment of the in-session processes using validated observer-rated methodology. The researchers found that all patient process indicators increased in quality over the course of therapy, and these changes explained outcome in a systematic way. While the quality of the therapist interventions increased in parallel, in accordance with the documented treatment integrity,

these remained largely unrelated with outcome. One exception to this absence of results was the therapist general relationship variables (i.e., empathy, genuineness, or general responsiveness to the patient) which predicted decrease in depressive symptoms in NPD after therapy. Despite the importance of this work, it remains unclear how to use process information to inform treatment choices, in particular when it comes to the conceptualization of subtypes. Thus, the study by Maillard et al. (2020) used individual patient modeling (i.e., hierarchical linear modeling) to form a generic trajectory of change on each variable (Bryk & Raudenbush, 1987) and overlooked the possible moderating impact of subtypes of trajectories over time. The latter would be particularly informative for individualizing treatments, tailored to subtypes of different processes pertaining to NPD. The present study will focus on the same dataset as the Maillard et al. (2020) study, by only taking into account the patient in-session processes over time for which it was demonstrated that their evolution predicted outcome. Defining sub-types pertaining to NPD based on these process characteristics will enable to understand who benefitted most, and least, from treatment.

Taken together, it is important to take into account subtypes of NPD based on in-session dynamically changing process variables. The latter may be reliably assessed using observer-rated methodology and may therefore be suitable to differentiate between subtypes which a) are clinically relevant, b) may be directly observed in therapy sessions and c) are consistent with process research in psychotherapy. When selecting relevant patient-related processes, at least three are central for treatments of NPD: a) the quality of the therapeutic relationship and alliance (Smith et al. 2007; Ronningstam, 2009, 2012), b) in-session overcoming of experiential avoidance (or quality of emotional processing; Hayes-Skelton & Eustis, 2020; Kramer, 2019a; Ronningstam; 2016) and c) centrality of elaborated content (Maillard et al., 2020; Ronnningstam, 2009; Sachse, 2019; 2020).

The present study

The objectives of the present study are twofold. Firstly, we aim at exploring NPD with regard to subtypes based on in-session psychotherapy processes. Secondly, we aim at determining the psychological and psychopathological features, and the ones pertaining to real-world functioning, of such subtypes.

In order to address the above research questions, an exploratory approach to the definition of NPD subtypes will be used, without any guiding hypothesis. Rather, a controlled longitudinal approach will be used to define and characterize subtypes over time based on observed psychotherapy process.

Method

Participants

Patients. A total of $N = 161$ patients presenting with a Narcissistic Personality Disorder (NPD) participated in the present re-analysis of a parent naturalistic trial (Maillard et al., 2020). All were in treatment at a center specialized in personality disorders in Germany. One hundred and two (63.4%) were male. On average, they were 38.35 years old ($SD = 11.42$; range = 18-73). Some patients were married (52.1%), 40.4% were not, 5.6% were divorced and 1.9% were separated. All patients met diagnostic criteria for NPD according to SCID-II (DSM-IV-TR; APA, 2000; First & Gibbon, 2004). Reliability of the SCID-II diagnoses was maintained by regular clinical supervision (in 100% of the cases included). Severity of NPD was rated on a SCID-II based scale which was extended, with anchors at 1 (mild expression of NPD) and 7 (extremely severe expression of NPD). Reliability of this scale was maintained by regular clinical supervision (in 100% of the cases included). Patients in this sample averaged on 5.10 (SD = 0.93; range between 2 and 7). In addition to the SCID-II diagnoses and the severity of NPD were all patients categorized into two groups at the outset of treatment in terms of their real-life functioning (Sachse, 2020): successful vs unsuccessful. Reliability of this categorization was guaranteed by regular supervision in 100% of the cases.

All patients were German-speaking and, in accordance with ethical guidelines and state REB approval, provided written consent concerning the use of their data in the context of research.

Therapists. The therapists ($n = 44$) were psychologists and psychiatrists in post-graduate training for psychotherapy; 33 were women and 11 men, with a mean age of 26.4 years (range = 23-34). The therapists were supervised by the treatment developers.

Treatment

Clarification-Oriented Psychotherapy (COP) is a development of client-centered psychotherapy and incorporates interpersonal, experiential and cognitive elements into an integrative approach that is particularly relevant for patients with PD (Sachse, 2020); effectiveness of COP for the treatment of narcissistic personality disorder has been demonstrated in several independent naturalistic samples (large pre-post effect sizes found; Maillard et al., 2020; Sachse & Sachse, 2015). COP is structured as a phase model and fosters affect deepening and insight-increasing as its purported core mechanisms of change. The initial phases of COP involve relationship quality enhancement and the development of mission for change; specific techniques, such as the motive-oriented therapeutic relationship (Kramer, Berthoud, Keller, & Caspar, 2014), are implemented in this early stage of treatment. The central phase of COP involves the clarification, or the increase of insight into specific problem-underlying internal determinants (beliefs, emotions, intentions and motives), while addressing problems related with affect avoidance. Finally, in later sessions, the treatment proposes to directly target and modify these internal determinants. The present study focuses on the central phase of clarification of internal determinants. In the naturalistic context and in keeping with federal regulations, treatments were supervised and lasted between 40 and 90 sessions.

Measures

The Process-Content-Relationship Scale (PCRS*[Bearbeitungs-, Inhalts-Beziehungsskalen (BIBS)]* is an observer-rated instrument originally developed to assess the quality of the clarification process both in patients and therapists (Sachse, Schirm, & Kramer, 2015). Sub-scales involve the quality on the levels of content, process and relationship (Sachse, Schirm, & Kramer, 2015). The full scale encompasses 54 items in 9 subscales. Each item is rated on a 7-point Likert scale: the better the process quality, the higher the score on the scale. While six subscales concern the therapist activity, three concern the patient's. The present study focusing on the patient's in-session processes will only use the latter, in keeping with the literature on process research in psychotherapy: 1. *Content* (7 items): to what extent does the patient work on central themes?, 2. *Process* (7 items): to what extent does the patient orient the process on the central affects?, 3. *Relationship* (6 items): to what extent does the patient engage in a productive (or to what extent in a dysfunctional) therapeutic relationship? The latter subscale will be, both for theoretical and empirical reasons, splitted into functional relationship (3 items) and dysfunctional relationship (3 items; see Sachse et al., 2015 for the original reliability and internal consistencies for each). In the present study, Cronbach's alpha for each of the patient subscales (current sample) averaged at .83.

A total of 6 couples of raters were involve to code 60 cases (37% of total sample). Coding involved to watch/listen to video- or audio-recordings of 10 minutes of each included session, between minute 10 and 20. Intra-Class Coefficients (1, 2) averaged at .74 (SD = .10, range = .54 - .83).

The Beck Depression Inventory (BDI) is a self-report measure assessing the severity of depressive symptoms (Beck, Steer, & Brown, 1996). The 21 items are rated on a Likert-type scale ranging from 0 to 3. The global score is the sum of all items. The German translation was used for which internal consistency was acceptable (Cronbach's alpha = .76-

.95; Hautzinger, Bailer, Worall, & Keller, 1995). Mean BDI at intake for the current sample was 14.86 (SD = 8.16; range = 0-41) and 8.29 at discharge (SD = 7.13, range = 0-35); pre-post decrease was significant ($t_{1, 157}$ = 13.31, p = .00+, d = 0.85).

The Inventory of Interpersonal Problems (IIP-D) is a self-report assessing interpersonal functioning (Cronbach's alpha = .71-82; Horowitz, Strauss, & Kordy 1994). For the present study, the brief version of the German translation was used, with 6 subscales (socially inhibited; overly accommodating; non-assertive; vindictive/self-centered; self-sacrificing; intrusive/needy) containing a total of 12 items. Each item was rated on a 5-point Likert scale (from 0 = not at all to 4 = very much). Mean IIP at intake for the sample was 3.83 (SD = 1.33; range = .8-10) and 2.94 at discharge (SD = 1.31, range = 0-9); pre-post decrease was significant ($t_{1, 157}$ = 9.96, p = .00+, d = 0.67).

The Brief Symptom Inventory (BSI) is a widely used self-report questionnaire assessing general psychological distress and symptoms (Cronbach's alpha =.70-.89; Franke, 2000 for the German version). It encompasses 53 items and 9 subscales (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism). Each item is rated on a 5-point Likert scale, from 0 = not at all, to 4 = extremely. We used the Global Severity Index (GSI), which is the mean for all rated items, as well as all the 9 subscales. Mean GSI at intake for the sample was 1.22 (*SD* = 0.57; range = 0.25-3.22) and 0.81 at discharge (*SD* = .60, range = 0.02-2.96), pre-post decrease was significant ($t_{1, 151}$ = 14.03, p = .00+, d = 0.70).

The Volitional Components Inventory (in the German Original HAKEMP-90; Kuhl & Fuhrmann, 1998; based on the theory of the control of action; Kuhl & Beckmann, 1994) is a self-reported questionnaire encompassing 90 items, composed by three sub-scales measuring the concepts required in volitional control of action, and the readiness to act and take control over a concrete situation. Each sub-scale encompasses 12 descriptions of concrete situations,

followed each by two alternative options to choose from: a) one oriented towards action and b) one oriented towards the maintenance of the status quo. Out of the three sub-scales, only two are used in the present study: (1) the number of items coded "oriented towards action" in situations facing failure ("HOM"), and (2) the number of items coded "oriented towards action" in situations where action planning is required ("HOP"). According to the validation studies for each of the two sub-scales (Dieffendorf, Hall, Lord, & Strean, 2000), a score between 5 and 12 on each of the sub-scales (HOM and HOP) denotes high action-orientedness (while a score between 0 and 4 denotes high orientedness towards the maintenance of the status quo).

The Personality Trait Inventory (PSSI; Kuhl & Kazen, 1997) is a self-reported questionnaire encompassing 140 items, within a total of 14 sub-scales (10 items per sub-scale) assessing personality style or traits according to a dimensional conception of personality (Kuhl, 2001). A personality style denotes a tendency to act according to a specific pattern, but does not necessarily imply that this pattern be described as pathological. Each item may be rated on a 30-level visual analogue scale between two poles – one being a description of the "normal" functioning, one being a description of the "pathological" functioning –, and they fall into the following sub-scales: 1) Self-determining - anti-social; 2) Opinionated - paranoid; 3) Cautious - schizoid; 4) Self-critical - avoidant; 5) Meticulous - obsessive; 6) Apprehensive - schizotypal; 7) Optimistic - rhapsodic; 8) Ambitious - narcissistic; 9) Critical - negativistic; 10) Loyal - dependent; 11) Spontaneous - borderline; 12) Amiable - histrionic; 13) Calm - depressive; and 14) Cooperative - selfless. High scores on each sub-scale indicate the score being closer to the "pathological" expression of each pattern. Validity coefficients were reportedly acceptable for each of these sub-scales for the German original (Kuhl & Kazen, 1997).

Procedure

Research procedures were in keeping with the parent study (Maillard et al., 2020). Three sessions (session 15, 20, and 25) were rated for all individuals, and the psychopathology self-reported measures are given at intake, and at discharge (for the computation of outcome, as exploratory research question).

We used a longitudinal non-parametric approach to explore the research question. The method proposed by Genolini, Pingault, Driss, Cote, Tremblay, Vitaro, Arnaud and Falissard, (2013; Genolini & Falissard, 2010) was used (available in the R; R Core Team, 2018; as package kml3d). This method is an iterative procedure of detecting clusters of subjects with similar trajectories over several time points. Individuals in the same cluster are chosen so that they have the most similar trajectories over time regarding their observed longitudinal variables compared to others in the same cluster. The literature provides a number of clustering quality and reliability criteria which were implemented in the current study using klm3d package. The clustering method involved Euclidean distance computation, in order to verify, for each potential cluster, the individuals with similar joint trajectories in terms of their in-session process observed in sessions 15, 20 and 25. In the present study, the number of clusters was allowed to vary between two and five, the number of cluster iterations until a maximum of 10 000. This analysis was time-consuming (lasting over three hours) and took place on an ordinary desktop computer (Intel Core i5-3570 CPU 3.30 GHz with 8 Gb of RAM). Analyses of variance and independent sample t-tests were used ot compare means of continuous variables of psychopathology (e.g., BDI, IIP), chi-square test of independence was applied to categorical variables (i.e., real-world functioning subtypes), and was replaced with the Fisher Exact Test, in case in which the chi-square test was not reliable (due to low expected frequences).

Results

Identifying subtypes

Given the results of reliability, optimality and quality analyses related to klm3d, the solution with two clusters was deemed the most adequate solution. The best bi-cluster solution divided the sample into two groups of individuals, consisting of one cluster of 82 individuals and another one of 78 individuals (one individual was excluded in this analysis due to missing data, thus a total of $N = 160$). This solution was robust under a varying number of iterations. These solutions were identified as process subtype A ($n = 82$ individuals characterized) and process subtype B ($n = 78$ individuals characterized).

Figures 1 to 4 display each individual's trajectory on each of the four patient subscales which were used to identify the two subtypes of NPD. We differentiated between patient's quality in content (Figure 1), in process (Figure 2), as well as between patient functional (Figure 3) and dysfunctional therapeutic relationship (Figure 4). When applying the two-cluster solution (the two darker trajectories in each of the Figures), it appears that process subtype A may be defined as "suboptimal process" and subtype B as "optimal process".

Psychological features of the two subtypes

Severity of NPD was significantly associated with the two process subtypes "suboptimal" and "optimal". It appears that the suboptimal process is characterized by higher severity of NPD (mean = 5.33, SD = 0.86) than the optimal process (mean = 4.86, SD = 0.95; $t(1, 158) = 3.28$; $p = .001$).

Table 1 reports the psychological and psychopathological features of the two process subtypes "suboptimal" and "optimal". It appears that suboptimal process is characterized by higher levels of depression, of interpersonal self-sacrificing, of somatization symptoms, of obsessive-compulsive symptoms, depressive symptoms, anxiety symptoms, paranoid ideation, psychoticism, while optimal process is characterized by lower scores on action-orientedness.

Table 2 reports the personality trait features of the two process subtypes "suboptimal" and "optimal". It appears that suboptimal process is characterized by higher levels of opinionated traits (leaning towards paranoid), of meticulous traits (leaning towards obsessive), of apprehensive traits (leaning towards schizotypal), of critical traits (leaning towards negativistic), of loyal traits (leaning towards dependent), of calm traits (leaning towards depressive) and of cooperative traits (leaning towards selfless), while, importantly, optimal process is characterized by higher trait levels of ambitious traits (leaning towards narcissistic).

Functioning features of the two subtypes

When linking the two process subtypes "suboptimal" and "optimal" with the initial assessment of real-life functioning ("unsuccessful" real-life functioning, and "successful" real-life functioning; Sachse, 2020), we found the following correspondence. For patients with unsuccessful real-life functioning, 92% are in the "suboptimal" process subtype (and 8% in the "optimal" process subtype). For patients with successful real-life functioning, 96% are in the "optimal" process subtype (and 4% in the "suboptimal" process subtype).

Exploring the relationship of subtypes with psychotherapy outcome

In an exploratory fashion, we wanted to know if one subtype was related with better outcome (i.e., symptom change between pre- and post-treatment), and we conducted *t*-tests in order to answer this question. The results showed that subtype B "optimal psychotherapy process" was more likely to produce greater symptom changes, both for the interpersonal problem (measured by the IIP total score; $t(1, 134) = 6.20$, $p = .00+$) and the general symptoms (measured by the total score of BSI; $t(1, 149) = 4.67$, $p = .00+$). The outcome on the BDI did not differ between the two subtypes ($t(1, 154) = 1.60$, $p = .11$).

Discussion

This study aimed to empirically explore derived subtypes of narcissistic personality disorder (NPD) based on key patient-related observed in-session psychotherapy process variables, as they change over the course of treatment. Based on 10 000 cluster iterations in the context of a longitudinal non-parametric exploratory analysis, this study provided evidence for a reliable bidimensional solution: one subtype may be coined as "suboptimal process" and one subtype as "optimal process". While on average, we know from the original study carried out on the same dataset that the quality of these process characteristics increased over the selected working phase sessions of psychotherapy (Maillard et al., 2020), the present study goes a step further and shows that it is crucial to discriminate between subtypes at the outset of treatment to more fully understand treatment process and response. When clustering these individuals together in subtypes and when examining predictor variables at therapy intake, a differentiated picture may be found.

On the one hand, patients diagnosed with NPD with suboptimal psychotherapy process characteristics are the ones who present with anxious and depressive mood, psychoticism-like symptoms and tend to present co-morbid personality traits associated with paranoid, obsessive-compulsive, schizotypal, negativistic, dependent and selfless personality pathology at the outset of treatment. Interestingly, these patients presented with low scores on narcissism (i.e., leaning towards low ambitiousness), but high *intensity* of symptoms related with narcissistic personality disorder. These patients tend to have a real-world functioning that may be clinically described as "unsuccessful". It may be that the NPD fragile sense of Self appears quite bluntly here with a myriad of psychiatric problems organized around a "defeated" or particularly fragile personality.

On the other hand, patients diagnosed with NPD with optimal psychotherapy process characteristics are the ones who generally present with less symptom load and lower intensity of narcissistic personality disorder. More interestingly, these patients also present with higher

scores on the dimensions of ambitiousness (leaning towards narcissism), when compared

with the patients with suboptimal psychotherapy process. Of note, items on this specific

dimension assess the grandiosity of behavior, cognition and affect, and an example of an item

pertaining to this dimension is "I am attracted by the thought of being an important

personality". These patients also presented with lower scores on the quality of planning of

action and on orientedness towards action when confronted with a situation of failure.

According to Dieffendorf et al. (2000), while the scores of the optimal process subtype are

still rated in the category of action orientedness (vs orientedness towards status quo), they are

significantly lower than in the suboptimal process subtype. These patients may clinically be

described as "successful" from a real-world perspective. These optimal psychotherapy

process patients seem to present as so successful on several levels that their initial symptom

severity (both general and specific to narcissistic problems) is low. This result seems

contradictory, but may be explained by a compensatory function of ambitiousness only in

real-world successful patients with NPD. These patients, while presenting an over-

compensated sense of self possibly as a reaction to, or defense against, their more fragile

inner experience associated with shameful memories (Kramer et al., 2018), are the ones who

benefit the best from the treatment process when it is delivered from an insight-enhancing

(i.e., clarification) perspective. This compensatory function of ambitiousness may less be

relevant in the less successful patients. In conclusion, the relationship between pathological

narcissism on the one hand and psychotherapy process and real-world functioning on the

other is complex and shows that our results go beyond the description of two levels of

dysfunction (i.e., higher vs lower): the optimal process is associated with more

ambitiousness (with possibly compensatory functions in relationship with the fragile Self)

and higher functioning (and fewer symptoms), while the suboptimal process is associated

with less ambitiousness (and possibly no compensatory function involved, but the expression

of a "defeated" personality), lower functioning and more symptoms (including higher intensity of NPD symptoms).

These subtypes were related with specific indicators of psychotherapy outcome, in particular general symptoms and interpersonal problems: again, the patients with optimal processes are the ones more likely to enjoy good outcome on these indicators, compared with patients with suboptimal processes. Importantly, while this has important clinical implications for patients with high scores of narcissism and a weaker tendency to planning and action facing failure, associated with successful real-world functioning, but lower general symptom loads (i.e., those found to be in the optimal process group and who will enjoy better outcomes), it is more complicated for the patients found to be in the suboptimal process group. The latter patients, presenting with high symptom loads, unsuccessful real-world functioning and a number of problematic personality traits (i.e., those found to enjoy less favorable outcomes of psychotherapy), will need special attention when it comes to tailoring psychotherapy to the individual patient. Evidence-based treatments should take into account the psychopathological and real-world profile of patients with pathological narcissism, and NPD. Facing a patient with more symptoms, and problematic personality traits and low real-world adaptation, chances are that specific psychotherapeutic interventions may prove to be most powerful, when taking place in a context marked by a differentiated and detailed case formulation aiming at explaining the pathological narcissism in this given patient (Kramer, 2019b). Case formulation may help the clinician to orient assessment to the core issues and implement psychotherapy approaches in a reflective and effective way; the plurality of methods discussed in the literature may assist the clinician to select a particular case formulation methodology based on the patient's trait profile at the outset of treatment. As found in the present study, the decrease, observed after clarification-oriented psychotherapy, in depressive symptoms - often one of the lead symptoms bringing patients presenting with

narcissistic pathology into the clinic - was large irrespective of the subtype. This may suggest that tailoring psychotherapy to the individual patient using specific case formulation may work, as an add-on, the context an already effective treatment strategy.

The study of mechanisms of change into psychotherapy for patients with NPD is still at an exploratory stage. This may be because a) no empirically informed treatment has been formally validated, although there are several promising candidates (Ronningstam, 2020), b) the great heterogeneity of NPD has prevented researchers from finding a "one-size-fits-all" formulation of psychotherapy process for patients with this disorder, c) conditions to apply mechanisms-based research involve controlled psychotherapy research designs which are difficult to set up for this patientel and d) the empirical description of generic "laws of change" (Kramer, 2019a) may hide more differentiated profiles of evolution over time, such as found in the present study. All these arguments may also contribute to limit the generalizability of results gained from a highly controlled therapy study to real-world clinical practice.

The results from the present study may contribute to some extent to prepare further research into the processes of change in NPD. By taking into account subtypes of NPD, it will be possible to study the process of change in a differentiated manner (i.e., by studying the process as a function of the differential impact of intake variables): statistically, it is moderated mediation, or conditional indirect process modelling (Hayes, 2018), or the use of idiographic network analysis (Molenaar, 2004), that may account for this complexity. This means that the indirect effect between pre-treatment symptom level and post-treatment symptom level through either the quality of the patient relationship, processing and in-session content may be moderated by subtypes of psychopathological features, or real-world functioning, at pre-treatment. This being said, it may be possible to study mechanisms of change, in particular the gradient of impact of processes on outcomes, in psychotherapies

carried out in "real-world" naturalistic settings, in the context of practice-oriented psychotherapy research (Castonguay, Barkham, Lutz, & McAleavey, 2013), as shown by Maillard et al. (2020) and Kramer et al. (2018) in the context of NPD, with the advantage of high external validity, high generalizability to clinical contexts, and a clinician-friendly methodology based on in-session manifestations.

Despite the study's potential to inform the psychopathological processes underlying NPD from a dynamic perspective, the present study has several limitations. We did not assess the bidimensionality in NPD psychopathology itself, using the Pathological Narcissism Inventory (PNI; Pincus, Ansell, Pimentel, Cain, Wright, & Levy, 2009), as we did not use the concepts from the alternative model of personality pathology currently under investigation with highly promising results (Hopwood et al., 2015). Also, while the use of the DSM-IV diagnosis as inclusion criteria increased the homogeneity of the study sample, it also excludes the pure vulnerable clinical presentations of pathological narcissism. The statistical approach in the present study is exploratory, and despite the multiple contraints posed on its reliability and validity, we cannot exclude that the results found depend on the specific sample characteristics.

In conclusion, the present study contributes to the empirical understanding of subtypes of narcissistic personality disorder, and it is the first, to our knowledge, which has drawn from multiple measurement points across treatment of key in-session processes to define clinically relevant subtypes, using longitudinal non-parametric analysis. Two prototypical evolutions were found: suboptimal and optimal psychotherapy processes. While the former was associated with more general and personality symptoms, and low real-world functioning, the latter was associated with higher levels of narcissistic traits, low sense of control over action and a high real-world functioning. These subtypes bear important implications for future research on NPD-underlying psychopathology, concerning tailored

intervention, and mechanisms of change in psychotherapy for patients with narcissistic personality disorder or pathological narcissism.

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Table 1: Psychopathology predictors of psychotherapy process in two subtypes of

Narcissistic Personality Disorder ($N = 160$)

Psychopathology	"Suboptimal" A		"Optimal" B		df	t	p
	M	SE	M	SE			
BDI	17.52	0.87	12.09	0.88	155	4.40	.00+
IIP							
Socially inhibited	5.37	0.28	5.46	0.28	158	-0.24	.81
Overly accommodating	5.87	0.28	5.24	0.34	151	1.41	.16
Non-assertive	2.51	0.20	2.50	0.23	154	0.04	.96
Vindictive/self-centered	3.09	0.32	3.50	0.33	158	-0.91	.36
Self-sacrificing	4.38	0.21	3.79	0.23	154	1.90	.05
Intrusive/needy	1.93	0.19	2.39	0.19	158	-1.60	.11
BSI							
Somatization	8.28	0.53	6.63	0.54	158	2.18	.03
Obsessive-compulsive	11.43	0.55	6.29	0.47	155	7.14	.00+
Interpersonal-sensitivity	8.05	0.40	7.67	0.39	158	0.68	.50
Depression	9.72	0.53	7.33	0.47	157	3.35	.00+
Anxiety	9.20	0.45	7.04	0.52	153	3.14	.00+
Hostility	7.15	0.52	6.81	0.42	153	0.51	.61
Phobic anxiety	3.65	0.43	3.01	0.38	157	1.11	.27
Paranoid ideation	6.40	0.56	4.23	0.44	149	3.02	.00+
Psychoticism	5.05	0.42	2.53	0.36	149	4.54	.00+
HAKEMP							
HOM	10.46	0.21	8.45	0.24	154	6.33	.00+
HOP	10.63	0.16	7.67	0.27	125	8.36	.00+

Table 2: Personality traits predictors of psychotherapy process in two subtypes of Narcissistic

Personality Disorder ($N = 160$)

| Personality traits	« Suboptimal » A		« Optimal » B		df	t	p
	M	SE	M	SE			
PSSI							
Self-determining	8.96	0.61	9.26	0.75	150	-0.30	.76
Opinionated	15.98	0.52	13.71	0.67	147	2.69	.01
Cautious	12.82	0.51	12.47	0.64	149	0.42	.67
Self-critical	15.61	0.56	16.71	0.51	157	-1.45	.15
Meticulous	17.33	0.63	12.94	0.84	144	4.17	.00+
Apprehensive	9.62	0.63	5.90	0.60	158	4.28	.00+
Optimistic	9.84	0.66	9.31	0.64	157	0.58	.56
Ambitious	12.22	0.57	15.60	0.65	154	-3.92	.00+
Critical	12.90	0.51	9.79	0.56	156	4.07	.00+
Loyal	15.16	0.71	10.79	0.72	158	4.32	.00+
Spontaneous	11.15	0.65	9.67	0.71	156	1.53	.13
Amiable	11.85	0.64	12.46	0.74	154	-0.62	.54
Calm	15.05	0.54	13.13	0.59	156	2.41	.02
Cooperative	14.70	0.67	10.81	0.78	153	3.78	.00+

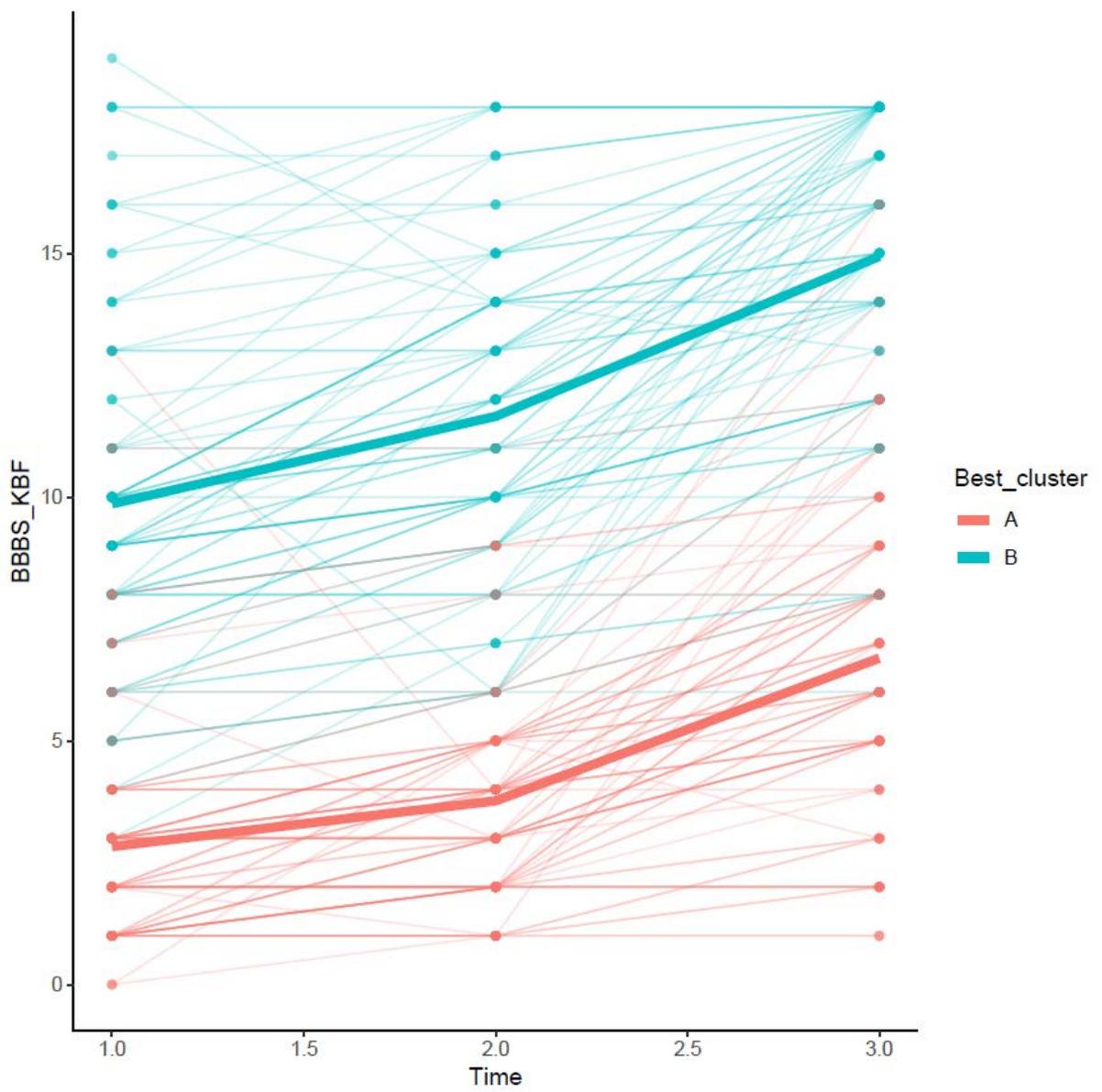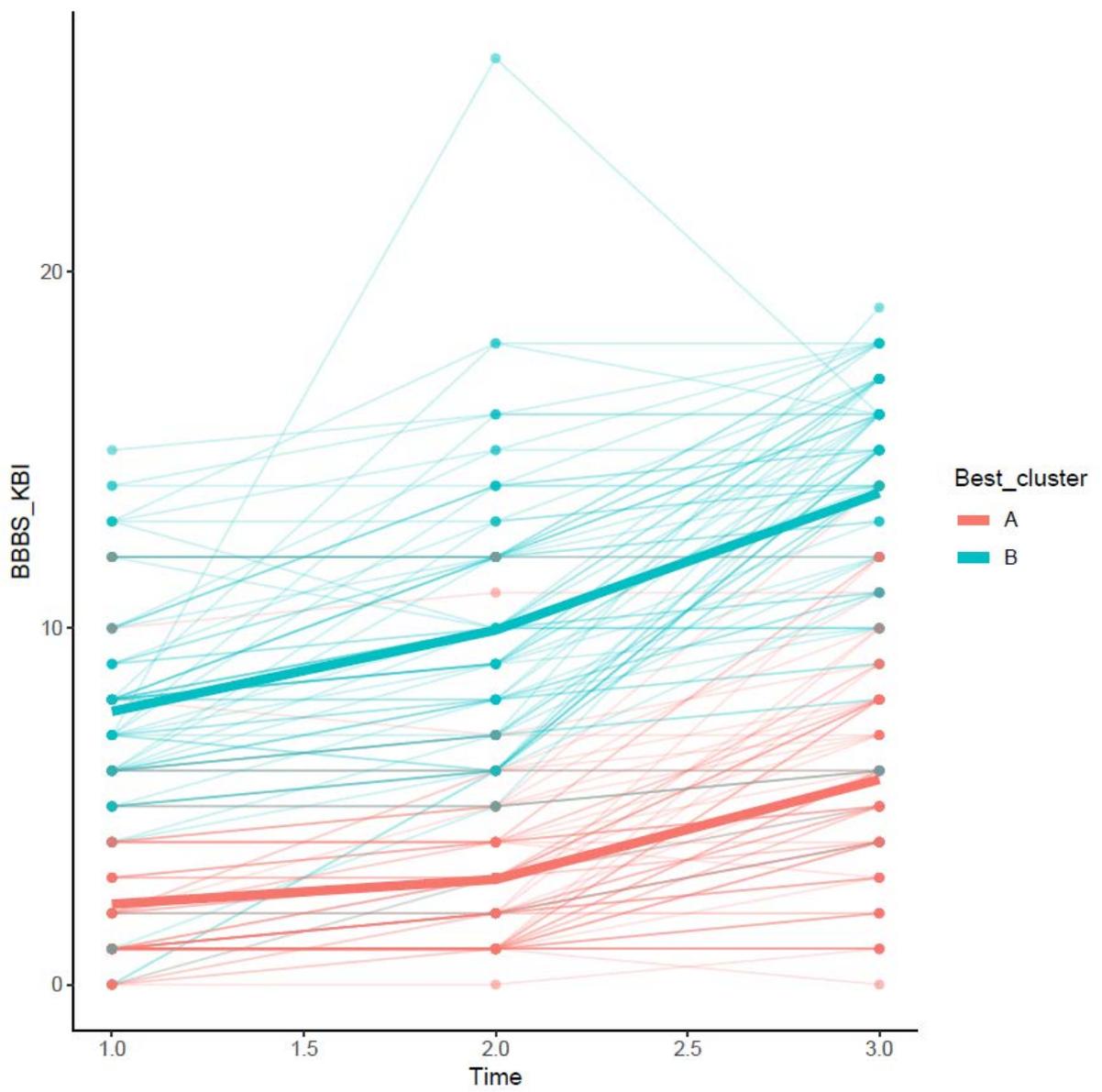Figure 1
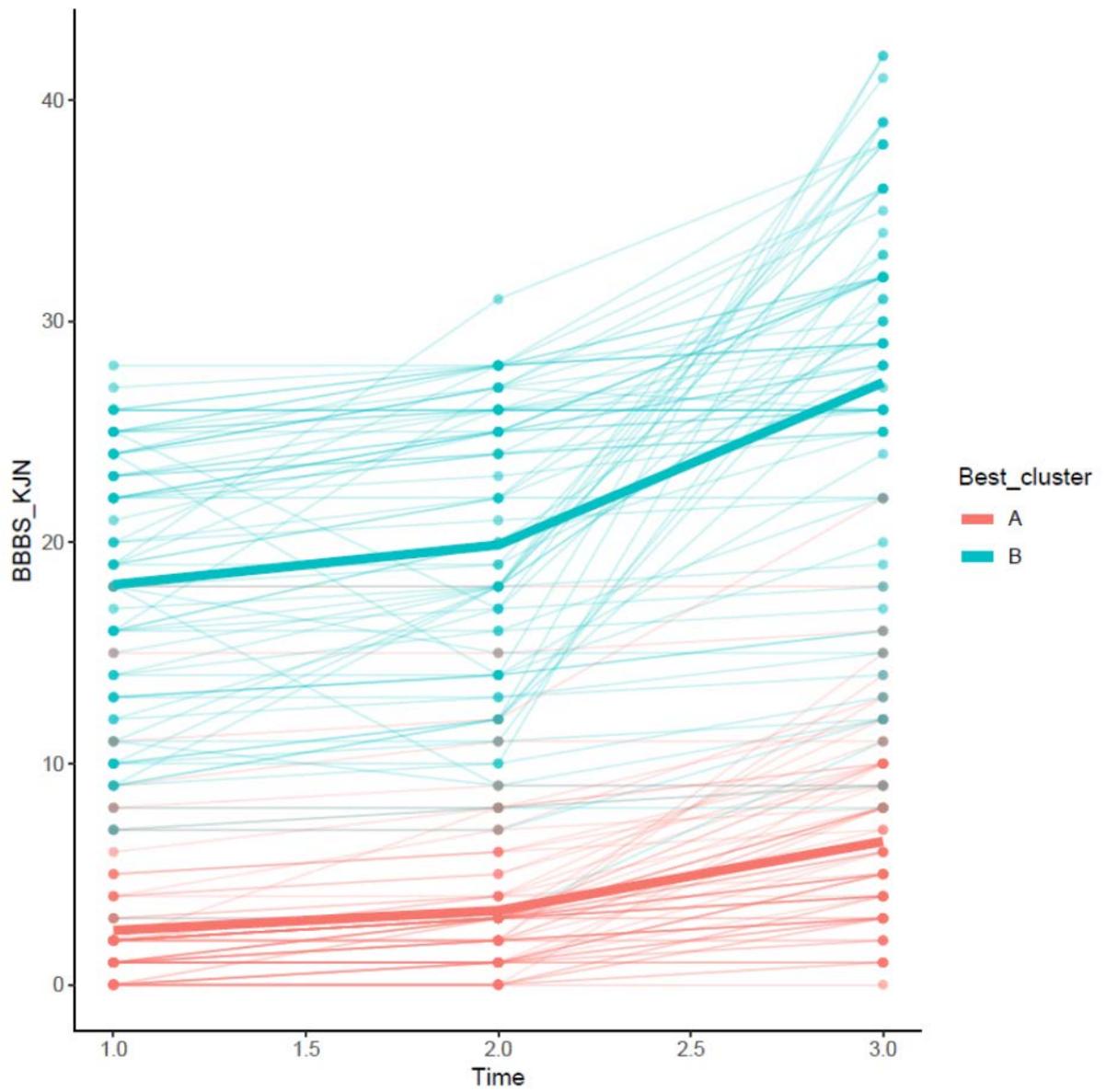
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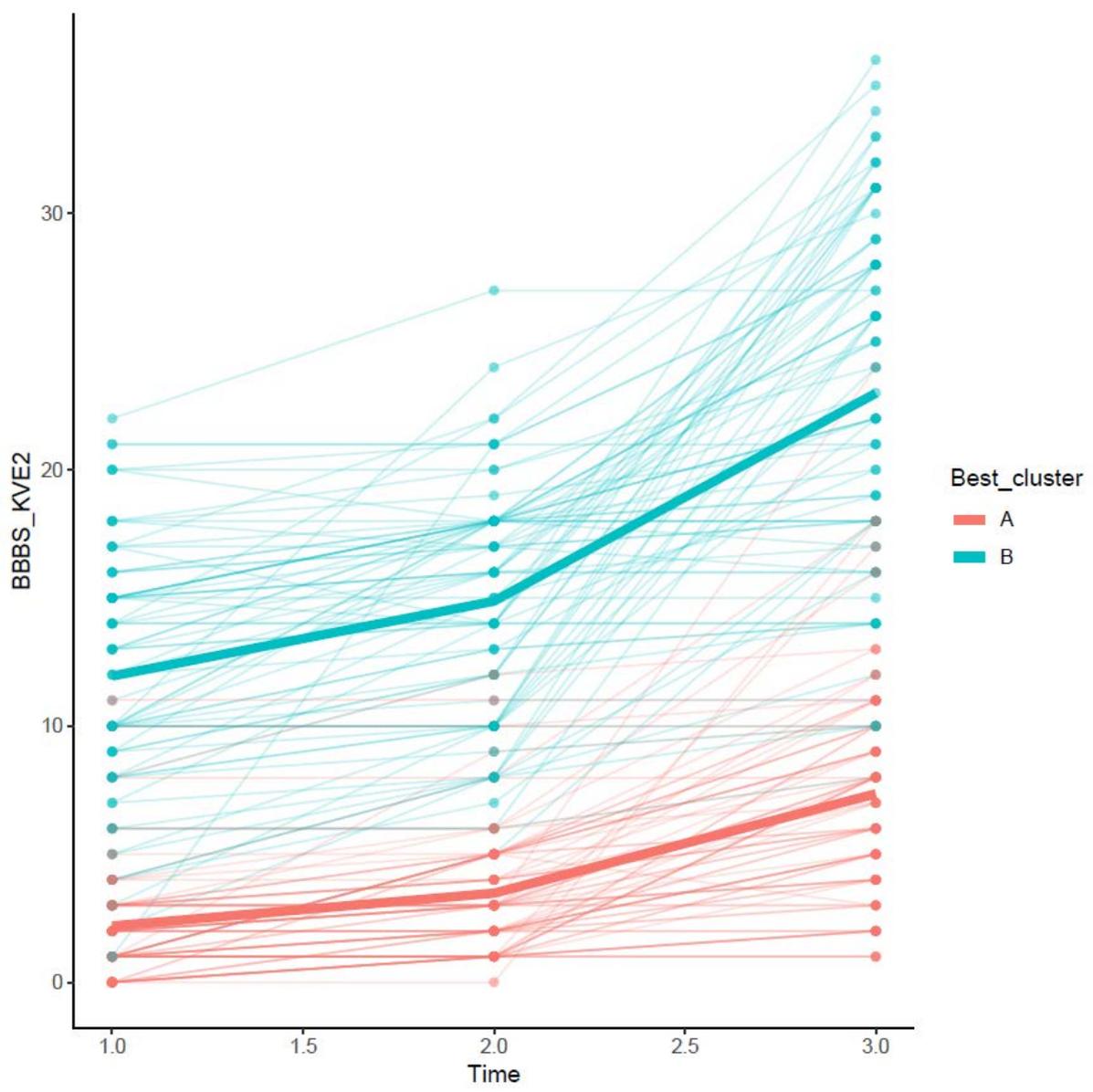
Figure 3

Figure 4

Figure Captions:

Figure 1

Two-cluster solution in patient content quality across sessions 15, 20 and 25 of clarification-

   oriented psychotherapy ($N = 160$)

Figure 2

Two-cluster solution in patient process quality across sessions 15, 20 and 25 of clarification-

   oriented psychotherapy ($N = 160$)

Figure 3

Two-cluster solution in patient functional relationship across sessions 15, 20 and 25 of

   clarification-oriented psychotherapy ($N = 160$)

Figure 4

Two-cluster solution in patient dysfunctional relationship across sessions 15, 20 and 25 of

   clarification-oriented psychotherapy ($N = 160$)