



## Brief report

## Maturation in patients with borderline personality disorder

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## ABSTRACT

Patients with borderline personality disorder have a characteristic and extreme personality associated with psychopathology. The aim was to investigate personality change in relation to suicidality following treatment. 21 patients were assessed before and after psychotherapy on personality (NEO PI-R) and suicidality (SUAS). At follow-up, Neuroticism and Conscientiousness normalized along with six lower-order facets; Depression, Impulsiveness, Competence, Achievement Striving, Self-Discipline and Deliberation. Thirteen patients showed a positive personality development paralleled by a lesser degree of suicidality.

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## 1. Introduction

Borderline personality disorder (BPD) can be well conceptualized by normal personality traits, such as described by the Five-Factor Model (FFM) (Samuel and Widiger, 2008). In their meta-analysis, the typical FFM profile in BPD is characterized by very high levels of Neuroticism, low levels of Agreeableness, and low levels of Conscientiousness. At the lower-order facet level the pattern is high to very high levels of all facets of Neuroticism, in addition to low levels of Warmth and of Positive emotion in the Extraversion domain. In the Agreeableness domain they manifest low levels of Trust, Straightforwardness, and Compliance. In the fifth domain, Conscientiousness, they have low to very low levels of all six facets, especially regarding Competence, Dutifulness, Self-Discipline, and Deliberation. The six facets of Openness to Experience show no particular relation to BPD traits (Samuel and Widiger, 2008). A large study following BPD patients over 16 years has shown that personality change mirrors symptom change (Wright et al., 2015a), with notable heterogeneity in individual trajectories. The authors in the above mentioned study recommend future studies to investigate facet-level change. To our knowledge, no previous study has investigated personality change in BPD following a specific psychotherapeutic treatment.

The aims of this study were to test the hypothesis that patients with BPD normalize in characteristic traits after structured psychotherapeutic treatment. We investigated if such change was associated with change in suicidality. We also investigated change in remaining personality traits not specific to BPD.

## 2. Methods

We recruited 21 female ( $M_{age}=25.9$ ) patients with borderline personality disorder initiating mentalization-based treatment (MBT) (Bateman and Fonagy, 2004, 2006) at a specialized MBT-unit specifically aimed at treating the most severe BPD cases in a catchment area of approximately two million inhabitants. All patients met DSM-IV criteria for BPD and showed extensive co-morbidity on axis I ( $M=3.1$ ,  $S.D.=1.2$ ) and axis II ( $M=2.5$ ,  $S.D.=1.5$ ). 77% were on sick-leave, and 65% had only high-school education. The diagnostic assessment included two steps: the first to assess the presence of BPD; the second to assess additional psychopathology. Axis II diagnosis was obtained using SCID-II (First et al., 1997). The interviews were performed by experienced clinicians and videotaped. The out-patient treatment was based on the two manuals for MBT (Bateman and Fonagy, 2004, 2006), including 18 months of weekly group and individual psychotherapy. A majority of patients received psychotropic medication. Written informed consent was obtained from all participants.

Personality was assessed by the Revised NEO Personality Inventory (NEO PI-R) (Costa and McCrae, 1992), a 240 item questionnaire to capture personality in five broad domains and 30 lower-order facets. Suicidality was assessed using the Suicide Assessment Scale, SUAS (Stanley et al., 1986), consisting of 20 items, each item rated in terms of severity (0–4 points). Patients completed the NEO PI-R and SUAS during the initial assessment period (0.5–2 months before treatment) and 15–24 months ( $M=19$ ) after initiation of treatment.

Normalization was defined as significant change towards the average according to established norms, on any given facet. We hypothesized normalization in BPD specific domains and facets, therefore change in Neuroticism, Agreeableness, Conscientiousness, and the 15 BPD specific traits were tested by one-tailed *t*-tests. The remaining 15 non-specific traits were tested by two-tailed *t*-tests. On the individual level, meaningful trait level change was defined as  $> 1$

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S.D., i.e. 10T-points. Non-parametric Mann–Whitney *U* test was used to detect differences in SUAS. Effect size was calculated with Cohen's *d*.

### 3. Results

A significant change towards normalization occurred for the group as a whole in Neuroticism and Conscientiousness ( $t=1.90$  and  $3.02$  respectively,  $d.f.=20$ ,  $p<0.05$ ;  $d=-0.47$ , and  $0.51$ , respectively). No significant change was detected in Agreeableness, Extraversion, or Openness to Experience. In facets specifically associated with BPD, five had changed significantly towards normalization, namely Depression ( $t=2.25$ ), Impulsiveness ( $t=1.79$ ), Competence ( $t=3.07$ ), Self-Discipline ( $t=1.81$ ), and Deliberation ( $t=2.44$ ,  $d.f.=20$ ,  $p<0.05$ ). Of the fifteen remaining facets not specific to BPD, only Achievement Striving changed significantly ( $t=2.20$ ) (see Fig. 1).

There was heterogeneity in individual trajectories. Thirteen patients had a normalized profile, four patients were unchanged over time, and four patients had a more extreme profile at follow-up. The lion part of normalization occurred in Neuroticism, Agreeableness and Conscientiousness (78%). On any given facet, a third (34%) of the patients changed one standard deviation or more. SUAS score decreased significantly at follow-up, from 39 to 31 (Wilcoxon Signed rank test,  $p<0.05$ ;  $d=0.54$ ). In the normalized group (13 patients), SUAS decreased from 40 to 29 ( $d=0.86$ ) while the unchanged/more extreme group did not change in suicidality ( $M=38$ , both before and after). This difference did not reach significance (Mann–Whitney,  $p=0.12$ ). At outset, the normalized group did not differ from the unchanged/more extreme group regarding BPD severity (No. of BPD criteria fulfilled were 7.1 and 6.3 respectively,  $p=0.26$ ).

### 4. Discussion

The aim of this study was to examine if the personality pattern in BPD can be altered by psychotherapeutic intervention. Following treatment, Neuroticism and Conscientiousness normalized, while the remaining three domains were unchanged. At the facet level, mean-level change occurred in six facets, five of them of particular relevance to BPD. Patients experienced less sadness, guilt, hopelessness, and

impulsiveness, and felt more confident in their ability to deal with life's challenges. They had raised their aspiration levels, and increased in self-discipline and deliberation. The degree of suicidality also decreased; prominent particularly in 13 patients with a normalized profile, indicating that personality normalization is paralleled by clinical improvement. There was a considerable heterogeneity in individual trajectories, found also by Wright et al. (2015a); a few patients even deteriorated over time. Results should be interpreted with caution, as the study involved a limited number of patients.

Compared to other studies of change in BPD, the effect sizes of Neuroticism and Conscientiousness are larger in this study (e.g. Hopwood et al., 2009). Perhaps several primary mechanisms of change (Caspi and Roberts, 2001) were present in the treatment. The personality development seen here resemble a maturational process; described as becoming more emotionally stable, well-organized, deliberate, achievement striving and decisive, and also more considerate and charitable (Caspi et al., 2005). As this study is a short-term follow-up, we recommend further study on long-term change in personality following treatment.

To summarize, the present study has shown that BPD patients undergoing a specialized treatment program normalize in relevant personality traits corresponding to psychological maturation and simultaneously decreased in suicidality. To quote Wright et al., 2015b: 'these disorders do not carry with them a life sentence'.

### Contributors

JL and GR conceived and designed the study. JL carried out the data collection, preliminary analyses and draft of the manuscript. JL and CN carried out the final analyses. All authors contributed to revisions of the manuscript and have read and approved the final version.

### Conflict of interest

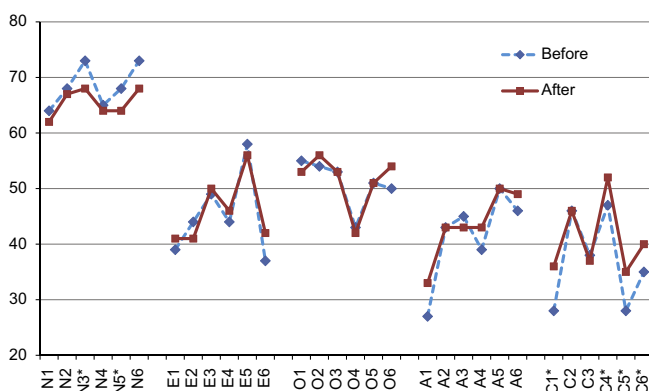
We have no conflict of interest to declare.

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**Fig. 1.** NEO PI-R profile before and after treatment in patients with BPD. Facets: N1 Anxiety, N2 Angry Hostility, N3 Depression, N4 Self-Consciousness, N5 Impulsiveness, N6 Vulnerability, E1 Warmth, E2 Gregariousness, E3 Assertiveness, E4 Activity, E5 Excitement-Seeking, E6 Positive Emotions, O1 Fantasy, O2 Esthetics, O3 Feelings, O4 Actions, O5 Ideas, O6 Values, A1 Trust, A2 Straightforwardness, A3 Altruism, A4 Compliance, A5 Modesty, A6 Tender-Mindedness, C1 Competence, C2 Order, C3 Dutifulness, C4 Achievement Striving, C5 Self-Discipline, and C6 Deliberation. Significant change in T-score (y axis) marked by \* ( $p<0.05$ ). N1-6, E1, E6, A1, A2, A4, C1, C3, C5 and C6 were tested with one-tailed T-test, the remaining with two-tailed T-test.

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