Analysis of personality disorder profiles obtained by five-factor personality model

Analiza profila poremećaja ličnosti primenom petofaktorskog modela ličnosti

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Abstract

Background/Aim. In spite of the growing body of evidence in the field of personality disorders, these disorders still retain the lowest diagnostic reliability of any major category of mental disorders. The aim of this study was to investigate the differences of personality profiles in patients diagnosed with personality disorder in comparison with the group of healthy control subjects, as well as to establish to what extent the five-factor personality model domains determine the specific clusters of personality disorders. **Methods.** The study group comprised 97 patients diagnosed as personality disorders (according to the *Diagnostic and Statistical Manual of Mental Disorders* – DSM-IV criteria), aged between 18 and 65 years [mean = 35.78 years, standard deviation (SD) = 13.72 years], 67% were female. Control group included 58 healthy subjects (student population) aged between 20 to 35 years (mean = 22.48 years, SD = 2.56 years), 56% were female. The assessment was carried out by the new version of the NEO Personality Inventory-Revised (NEO-PI-R), form S, and the Structured Clinical Interview (SCID II) for DSM-IV disorders. **Results.** The three clusters were found by the use of regression analysis: cluster A – eccentrics (low scores in agreeableness), cluster B – dramatics (high score in extroversion, low score in agreeableness, and cluster C – anxious (low score in extroversion). The findings showed that the high level of neuroticism was a non-specific predictor of all three clusters, while dimension openness to experience had no predictive power for any of the three clusters. **Conclusion.** Our findings support the meta-analysis which suggests consistently high level of neuroticism and low level of agreeableness in most personality disorders. The study showed that it is possible to conceptualize personality disorders by using five-factor personality model of normal personality. Integrating the psychiatric classification with the dimensional model of general personality structure could enable the uncovering of essential parameters for setting the diagnosis.

Key words:
**personality disorders; personality assessment;
neuroticism; surveys and questionnaires.**

Apstrakt

Uvod/Cilj. Uprkos rastućem broju istraživanja u oblasti poremećaja ličnosti, ove poremećaje karakteriše najniža dijagnostička pouzdanost u odnosu na sva druga psihijatrijska oboljenja. Cilj ovog rada bio je da se ispitaju razlike profila ličnosti kod ispitanika sa dijagnozom poremećaja ličnosti u odnosu na kontrolnu grupu zdravih ispitanika i da se utvrdi koliko domeni petofaktorskog modela ličnosti doprinose određivanju specifičnih klastera poremećaja ličnosti. **Metode.** Studijsku grupu činilo je 97 ispitanika sa dijagnozom poremećaja ličnosti [prema kriterijumima Dijagnostičkog i statističkog priručnika za mentalne poremećaje (DSM-IV)], starosti od 18 do 65 godina [srednja vrednost = 35,78 godina, standardna devijacija (SD) = 13,72 godina], od kojih je 67% bilo ženskog pola. Kontrolnu grupu činilo je 58 zdravih ispitanika (studentska populacija), starosti od 20 do 35 godina (srednja vrednost = 22,48 godina, SD = 2,56 godina) od kojih je 56% bilo ženskog pola. Primenjeni su Revidirani novi upitnik ličnosti (NEO-PI-R), forma S, i Instrument za procenu poremećaja ličnosti – Strukturisani klinički intervju (SCID II) za DSM-IV poremećaje. **Rezultati.** Na osnovu regresione analize dobijeno je rešenje za tri klastera: klaster A – ekscentrici (niski skorovi na saradljivosti), klaster B – dramatici (visoki skor na ekstroverziji i nizak skor na saradljivosti) i klaster C – strašljivci (nizak skor na ekstroverziji). Rezultati su pokazali da je visok nivo neuroticizma nespecifični prediktor sva tri klastera, a da dimenzija otvorenost nema prediktorsku snagu ni za jedan klaster poremećaja ličnosti. **Zaključak.** Dobijeni rezultati su u skladu sa nalazima meta-analiza koji ukazuju na konzistentno visok nivo neuroticizma i niske saradljivosti kod većine poremećaja ličnosti. Naša studija je pokazala da je na ispitivanoj populaciji moguće konceptualizovati poremećaj lično-

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sti primenom petofaktorskog modela normalne ličnosti. Integracija psihijatrijske klasifikacije i dimenzionalnih modela ličnosti omogućila bi iznalaženje bitnih parametara za postavljanje dijagnoze.

Introduction

Current nosological systems (Diagnostic and Statistical Manual of Mental Disorders – DSM, International Classification of Disease – ICD) assume that there are qualitative differences between healthy personality and personality disorder, as well as between specific types of personality disorders [1]. The existing ICD-10 categorical perspective, based on the arbitrary nature of the given criteria and their threshold limit values, leads to a significant diagnostic overlapping, insufficient homogeneity and insufficient stability of diagnostic categories of personality disorders [2].

The need to reconceptualize personality disorders as dimensional taxonomies came as a result of numerous empirical studies conducted both on clinical and general population [3]. According to the available literature, the basic domains of five-factor model have consistently proven to represent the common dimensions of healthy personality structure and personality disorders [4]. In addition, the healthy personality domains could account for a significant part of variance of personality disorder syndrome [5].

Widiger and Costa [6] suggested a model which implies that the personality disorder categories (Diagnostic and Statistical Manual of Mental Disorders – Text revision – DSM-IV-TR) are maladaptive and/or are extreme versions of the domains and facets of the five-factor personality model. Some other authors directed their research more specifically towards particular categories of personality disorders. Hence, Samuel et al. [7] find that borderline personality symptoms lie alongside the same latent dimension as the neuroticism dimension of the five-factor model [7]. In addition to neuroticism, the existence of significant comorbidity of personality disorders as well as other five-factor model dimensions were found [7].

The aims of this study were: a) to investigate the differences in personality profiles by applying the Revised Neo Personality Inventory (NEO-PI-R) [8] in subjects diagnosed with personality disorder in comparison with the control group of healthy subjects, and b) to establish to what extent each NEO five-factor model domain contributes in determining the specific personality disorder clusters – eccentric (A), dramatic (B), and anxious (C).

Methods

Sample

The study included 155 subjects divided into two groups. The study group comprised 97 patients of the Institute for Mental Health in Belgrade diagnosed as personality disorders (according to DSM-IV criteria), aged between 18 and 65 years [mean = 35.78 years, standrad deviation (SD) = 13.72 years], 67% were female. Control group included 58 healthy subjects (student population) from the Psychology Department of the Faculty of Media and Communications, Singidunum University, Belgrade, aged between 20 to 35 years (mean = 22.48 years, SD = 2.56 years), 56% were female.

Assessment

The Revised NEO Personality Inventory, form S [9]

The NEO-PI-R is a questionnaire with 240 statements and a broad range of answers: the level of agreement or disagreement with item content is shown on Likert 5-point scale ranging from 0 (strongly disagree with the statement) to 5 (strongly agree with the statement). The Questionnaire is based on the five-factor model of personality interpreting the five basic dimensions (domains): neuroticism, extroversion, openness to experience, agreeableness and conscientiousness. Each measurement scale includes six subscales which measure so-called facets or aspects, with eight items per subscale (five domains and 30 specific traits – one domain comprises six specific personality traits).

Structured Clinical Interview (SCID II) [10]

The 'Structured Clinical Interview for DSM-IV Axis II Personality Disorders was used to assess personality disorders. The interview includes 125 'yes' or 'no' questions. Afterwards, the positive answers are tested by using a semistructured interview. Positive answers which indicate pathological, permanent, and all-embracing quality of conduct covered by the question are accepted as a sign of the presence of the symptoms. The instrument shows the total number of symptoms (0-9) in a subject on every of the 10 categories of personality disorders, as well as severity of personality disorder through the total number of personality disorder diagnoses (subject scores threshold limit value for the diagnosis on one, or more than one of 10 categories of personality disorders).

Data analysis

Cronbach's α was used to estimate the reliability, while the results were analyzed by the use of descriptive statistics and the one-way analysis of variance (ANOVA). In order to check the predictive role of personality domains in subjects with personality disorders, regressive analysis was carried out with domains such as neuroticism, extroversion, openness to experience, agreeableness and conscientiousness as predictive variables, and personality disorder clusters A, B, and C as criterion variables.

Results

According to Cronbach's α coefficient, high reliability/internal consistency was found for domains N (α = 0.928) and C (α = 0.920), while the reliability of remaining NEO domains, E (α = 0.877), O (α = 0.872) and A (α = 0.871) was good.

In our study group, the average number of personality disorder diagnoses was 2.84 (from 1 to 7), whereas one third of the subjects were diagnosed with a personality disorder (n = 29; 29.9%).

Descriptive statistic factors and F-multipliers of the NEO-PI-R are shown in Table 1.

The ANOVA statistical test detected statistically significant differences in all domains of the NEO-PI-R questionnaire. Moreover, the subjects in our study had higher scores for N dimension (F = 83,421, $p < 0.001$), and lower scores for remaining NEO domains in comparison with those in the control group of healthy subjects.

Regressive analysis results showed that the coefficient of determination obtained was statistically significant for all three criterion variables: cluster A – eccentrics ($R^2 = 0.268$, F = 10,888, $p < 0.01$), cluster B – dramatics ($R^2 = 0.427$, F = 22,227, $p < 0.01$) and cluster C – anxious ($R^2 = 0.313$, F = 13.570, $p < 0.01$).

After establishing statistical significance of all three models, specific predictive structures were set up for all three criterion variables, as well. For cluster A – eccentrics, statistically significant predictors were N (β = 0,006, $t = 2,832$, $p < 0.005$) and A domains (β = -0.010, $t = -4.091$, $p < 0.01$). The most important predictors for cluster B – dramatics were N (β = 0.013, $t = 4.932$, $p < 0.001$), E (β = 0.008, $t = 2.298$, $p < 0.001$) and A (β = -0.017, $t = -5.607$, $p < 0.001$), while predictive variables N (β = 0.013, $t = 4.974$, $p < 0.001$) and E (β = -0.008, $t = -2.398$, $p < 0.005$) accounted for 31.3% of variance of cluster C – anxious.

Discussion

Our findings showed that people with and those without personality disorder diagnosis differ regarding intensity of all NEO domains, which is in accordance with previous findings – higher scores for N and lower scores for E, A, O and C have been confirmed in subjects diagnosed with personality disorders [11].

Based on the personality profile we obtained by applying NEO-PI-R, the subjects diagnosed with personality disorders were upset, low-spirited, perceiving life as difficult (low cores for N dimension combined with low scores for E dimension), suspicious of other people's intensions, cynical, egocentric, vindictive, antagonistic, competitive, preferring familiar environment, less prepared for any change (inflexibility), leading to frequent experience of negative affectivity in stressful situations (combination of low O and A dimensions). If lower scores for O dimension are interpreted as rigidity (having in mind that cognitive and affective inflexibility lead to numerous disorders), then the results of our study showing that the subjects with personality disorders who had lower scores for this dimension in comparison with healthy subjects could be regarded as convincing [8].

A combination of high N and low C scores in subjects diagnosed with personality disorders suggests more impulsive reactions, riskier behavior, and greater inclination towards substance abuse comparing to the control group of healthy subjects. Additionally, a combination of high N and low A scores suggests a specific style of anger control in subjects diagnosed with personality disorders in comparison with the group of healthy subjects: it is easier for them to get angry; they are more direct in expressing their rage; they are inconsiderate of how their rage affects others; they are more prone to physical violence and verbal abuse [8].

NEO domains were accountable for a third of variance referring to each personality disorder cluster (from 26.8 to 42.7%), which is compatible with resent findings of Nestadt et al [12]. Our findings support other authors' claim that possible solution of this problem could be integration of dimensional models of personality disorders and those of healthy personalities [13, 14].

High neuroticism (emotional instability) is a common feature of all personality disorder clusters. Differential diagnostic relevance is attributed to extraversion which makes diagnostic difference between dramatic cluster (positive pole) and anxious cluster (negative pole).

Table 1

Descriptive statistic factors and F-multipliers of NEO-PI-R domains

NEO domains	Sample	Mean	SD	Min	Max	F	df	p
Neuroticism (N)	N1	164.53	25.527	86	223	83.421	153	0.000
	N2	126.22	24.816	75	190			
Extroversion (E)	N1	142.23	22.453	77	193	27.881	153	0.000
	N2	160.03	16.094	110	195			
Openness to experience (O)	N1	160.51	21.807	103	208	6.375	153	0.013
	N2	169.52	20.985	117	212			
Agreeableness (A)	N1	161.07	21.556	101	206	11.372	153	0.001
	N2	172.52	18.430	132	214			
Conscientiousness (C)	N1	157.54	23.824	103	214	27.106	153	0.000
	N2	176.76	19.291	129	213			

NEO-PI-R – Revised Neo Personality Inventory; N1 = 97 (study group diagnosed with personality disorders); N2 = 58 (control group without personality disorder diagnosis); SD – standard deviation; Min – minimum; Max – maximum.

Low agreeableness is typical of eccentric and dramatic clusters, which is not the case with anxious cluster. Our findings support the meta-analysis which suggests consistently high level of neuroticism and low level of agreeableness in most personality disorders [15].

This study has several limitations that have to be considered in the interpretation of the results. The study sample was relatively small. We did not perform objective assessment of comorbid mood and anxious disorders, therefore influence of state on a personality trait was conducted only by clinical assessment, which was made in the phase of clinical remission.

Conclusion

The results of this study confirmed that it was possible to conceptualize a personality disorder by the use of five-factor model of normal personality in the studied population. High neuroticism has diagnostic value for personality disorders, and other domains have differential diagnostic relevance. Integrating the psychiatric classification with the dimensional model of general personality structure could enable the uncovering of essential parameters for setting the diagnosis.

Acknowledgement

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