

PERSONAL DIMENSIONS IN FIRST PSYCHOTIC EPISODE PATIENTS WITH CATATONIA

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SUMMARY

The study reports findings from an observational cross-sectional study involving patients experiencing their first psychotic episode with acute catatonia (n=82), compared to non-catatonic patients (n=74) and a group of healthy volunteers (n=47). Diagnostic procedures spanned two days: the first involved clinical interviews to assess psychosis structure and gather objective data (from relatives and medical records), while the second included psychometric evaluations using PANSS and BFCRS scales. Between these days, participants completed the Big Five Personality Factor Questionnaire (5PFQ) and Beck's Personality Beliefs Questionnaire (PBQ). Comparative analysis (H-test) across the three groups highlighted differences in the 5PFQ factor "expressiveness vs. practicality," predominantly influenced by the "sensitivity vs. insensitivity" parameter. Patients exhibiting catatonic symptoms demonstrated significantly lower scores compared to controls in this regard.

Key words: catatonia - personality disorders - premorbid personality - personality traits - schizophrenia - Personality Psychopathology Five Model

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INTRODUCTION

The study of personality factors in mental disorders, and their role in the implementation of adaptive-compensatory or decompensating mechanisms, is relevant for several reasons (Andersen & Bienvenu 2011). Firstly, establishing correlations between "personality" and "illness" enhances our understanding of etiopathogenetic mechanisms. Secondly, expanding knowledge in this area can contribute to the development of preventive measures. Thirdly, understanding the interaction between personality and mental disorders improves prognostic capabilities. Lastly, solving the problem of comorbidity among different nosologies will strengthen conceptual unity and increase the reliability of studies on both personality and mental disorders (Ohi et al. 2016).

Before presenting our research findings, we wish to highlight several methodological nuances crucial for understanding the logic of our reasoning in this article.

Firstly, we must acknowledge the ongoing debate over the conceptual definition and diagnostic criteria for personality anomalies throughout the history of psychiatry. Proponents of various schools have proposed numerous classifications, unified by the approach of delineating distinct categories of personality disorders (e.g., schizoid, paranoid, narcissistic, etc.). Notably, some modern perspectives suggest that personality disorders can be considered discrete nosologies, as in the DSM-IV, where the diagnostic criteria for personality syndromes align with those for Axis I

psychopathological disorders (Jablensky 2002). Essentially, the diagnostic criteria for borderline, schizotypal, and dissocial personality disorders match the symptoms of psychotic disorders, with specific dynamics or trajectories characteristic of "true diseases" (Smulevich 2012), prototypically similar to clinically defined disorders (Beck et al. 2001), without ever considering a "catatonic personality disorder."

In contrast, Russian psychology classics define personality as a complex systemic socio-activity construct generated by life in human society (Leontiev, n.d.; Rubinstein 1989), adhering to the traditions of categorical classification of personality disorders (Korolenko & Korolenko 2009) based on clinical interviews and observation (Smulevich 2012).

Finally, the International Classification of Diseases 11th Revision (ICD-11) incorporates a dimensional approach alongside categorical-typological, operational, and ontological models for diagnosis in certain sections (Krueger & Markon 2006). Measurements are proposed to be conducted along specific dimensions whose diagnostic significance has been established within the evidence-based medicine paradigm (Krueger et al. 2018). The Five-Factor Model (FFM) is suggested to assess the "personality" component (Boyette et al. 2013). This hierarchical construct includes five higher-order dimensions (extraversion, neuroticism, conscientiousness, agreeableness, and openness to experience), each comprising five lower-order traits (Digman 1990, 1997, Goldberg 1990). The Five-Factor Model

demonstrates convergent and discriminant validity across various populations (Costa & McCrae 2008), applicability in general and clinical populations of different ages (Costa et al. 2000, Roberts & DelVecchio 2000, De Fruyt et al. 2006), and cross-cultural applicability (Allik 2005, McCrae & Allik 2012). Despite some critical assessments (Hopwood et al. 2019), this model is widely used in research, allowing data comparison through meta-analyses to determine nosospecific personality traits (Ohi et al. 2016, Kotov et al. 2010).

Thus, despite the longstanding belief since 1900 that catatonia has its own psychology with symptoms symbolically analogous to underlying psychological factors (Shorter and Fink 2018), neither the categorical approach to personality disorder classification nor the widespread adoption of the Five-Factor Model has addressed catatonic syndrome. Research interest in this syndrome is experiencing a resurgence (Konoreva et al. 2019, Malin et al. 2020) given the relatively high prevalence rates of this syndrome (Fink & Taylor 2006, Grover et al. 2015) despite the lack of a consensus, agreed-upon, and universally accepted definition of this syndrome (Shorter & Fink 2018, Ungvari et al. 2010, Neznanov & Kuznetsov 2020).

According to our hypothesis, the structure of manifest psychoses may, to some extent, be influenced by certain personality anomalies. For instance, psychomotor anomalies of a behavioural or characterological nature may be involved in the development of catatonia (similar to the personality-depression interaction model (Klein et al. 2011)), while in hallucinatory-delusional psychoses without catatonia, such anomalies will be less pronounced.

The aim of this study is to analyse characterological anomalies and personality deviations in patients with catatonia by synthesizing categorical and dimensional methods.

MATERIALS AND METHODS

Study Design

This study was observational, cross-sectional, non-randomized, and a case-control design.

Inclusion Criteria:

- Informed consent to participate in the study;
- Meeting ICD-10 criteria for schizophrenia;
- Being in the recovery period after the first psychotic episode;
- Ability to understand instructions and provide adequate responses when completing questionnaires.

Exclusion Criteria: Severe somatic illness in the decompensation stage; verified signs of substance or alcohol abuse; pregnancy; refusal to participate; any symptoms that hinder the adequate perception of instructions and the completion of test tasks.

Between 2018 and 2019, approximately 500 patients were examined as part of the research program "Molecular and Neurophysiological Markers of Endogenous Diseases" conducted at the Mental-health Clinic No. 1 named after N.A. Alexeev. This study was approved by the Independent Interdisciplinary Committee for Ethical Review of Clinical Studies on July 14, 2017 (Protocol No. 12).

A total of 156 patients provided consent and were able to adequately respond to the diagnostic self-report questionnaires - the Five-Factor Personality Questionnaire (5PFQ) (Laptev et al. 2015) and Beck's Personality Belief Questionnaire (PBQ) (Fournier et al. 2012).

The study included 112 men and 74 women aged 18 to 56 years (mean age 29.8±6.8 years), all of whom were undergoing inpatient treatment between 2017 and 2019. All subjects provided written informed consent after a full explanation of the study procedures, in accordance with the Declaration of Helsinki principles for ethical medical research involving human subjects (1964, amendments up to October 2013).

All participants were diagnosed with schizophrenia (F20) according to ICD-10 criteria.

To minimise bias, all participants (both patients and healthy volunteers) were assessed using a standardized protocol. The diagnostic process spanned two days: on the first day, a clinical interview was conducted to determine the psychotic symptomatology and clarify objective information. On the second day, psychometric evaluations were carried out using standardized tools: the Positive and Negative Syndrome Scale (PANSS) (Kay et al. 1987), the Bush-Francis Catatonia Rating Scale (BFCRS) (Bush et al. 1996), the Simpson-Angus Scale (SAS) for extrapyramidal side effects (Simpson et al. 1970), and the Calgary Depression Scale for Schizophrenia (CDSS) (Addington et al. 2014). Clinical assessments were performed by two experienced psychiatrists, incorporating all necessary data (family interviews, medical records analysis, physical and laboratory test results, etc.). In cases of diagnostic disagreement, a consensus was reached through a panel discussion.

Between the first and second assessment days, as long as the patients were deemed capable of adequately understanding the experiment instructions, they were asked to complete the Five-Factor Personality Questionnaire (5PFQ) (Laptev et al. 2015) and the Beck's Personality Belief Questionnaire (PBQ) (Fournier et al. 2012) independently.

The sample was divided into two groups based on the results of psychopathological and psychometric assessments. A BFCRS score of at least 5 points was set as the threshold.

The main study group, the catatonia group (Cataton), included patients with catatonia (n=82, 35 females, 47 males, mean age 29.4±8.7 years), who exhibited stupor,

negativism, echophenomena, impulsivity, stereotypic movements, and/or catalepsy during psychosis, with a BFCRS score above 5 (Cohen et al. 1999, Kinrys & Logan 2001). Valid inclusion in the Cataton group was corroborated by the absence of symptoms on the SAS (Simpson et al. 1970) and CDSS (Addington et al. 2014).

The comparison group (nonCataton) consisted of 74 patients (39 females, 35 males, mean age 30.3±8.7 years), whose acute psychotic episodes did not include catatonic symptoms and met the criteria for hallucinatory-delusional syndrome.

The control group included 47 healthy volunteers (healthy control, HC) from among the staff Mental-health Clinic No. 1 named after N.A. Alexeev matched by age and gender, with no signs of mental disorders and no familial ties to the patients. After a brief interview with a psychiatrist, they also completed the questionnaires.

Statistical analysis of the data was conducted using Statistica 11 software. To determine the minimum sample size for the study groups at a significance level of ($p=0.05$), K.A. Otdel'novoy's method was employed (Otdel'novoy, n.d.). The Bonferroni correction was applied to assess the significance of differences between the three groups: $\alpha_{corrected} = \alpha_{original}/3$. Thus, the critical significance level for these comparisons was set at 0.017. The Kolmogorov-Smirnov test (K-S test) revealed that the distributions of certain traits deviated from normal, so non-parametric tests were used. The Mann-Whitney U-test was employed for comparing quantitative values between two groups, and the Kruskal-Wallis H-test (ANOVA) was used for three-group comparisons.

The results are presented as median values with standard deviation $M \pm \sigma$, and interquartile range – first

(lower) and third (upper) quartiles (Me [Q1; Q3]). The χ^2 test was used to compare the frequency of categorical variables between groups.

RESULTS

The main and comparison groups of patients without catatonia were matched on several socio-demographic parameters. A comparative analysis using the χ^2 test revealed no significant differences in any of these parameters (Table 1).

Additionally, no statistically significant differences were identified between the two patient groups in terms of the clinical and dynamic indicators of schizophrenia progression (Table 2).

Differences were observed when comparing the severity of symptoms between the two groups using psychometric tools. Statistically significant differences in these parameters indicate a reliable differentiation of the sample into representative groups for testing the study hypothesis (Table 3). In the Cataton group, BFCRS scores ranged from 5 to 35. In the nonCataton group, 57 patients had a score of 0, while the remaining cases did not exceed 4 points.

Statistical analysis identified a significant increase in total scores on the PANSS, PANSS-P, PANSS-N, PANSS-G, and several specific items of the psychometric tools. Detailed analysis is as follows:

- *Hostility (P7)*: Verbal or other manifestations of anger and hostility, including sarcasm, passive-aggressive behavior, threats, and overt attacks. The mean score in the Cataton group was 3.1 ± 1.7 (3.0 [2.0; 4]), while in the nonCataton group it was 2.0 ± 1.3 (1.5 [1.0; 3.0]). This parameter overlaps phenomenologically with the "Aggression" item on the BFCRS.

Table 1. Sociodemographic characteristics of patients in the survey sample

Indicators	Catatonic, n=82 (%)	nonCatatonic, n=74 (%)	p (χ^2)
Gender distribution			
Men	47 (57)	35 (47)	0.28
Women	35 (43)	39 (53)	
Family status			
Married	9 (11)	9 (12)	0.35
Divorced	5 (6)	9 (12)	
Never married	68 (83)	56 (76)	
Education			
Incomplete Secondary	3 (4)	3 (4)	1.00
Secondary	14 (17)	13 (18)	
Secondary special	14 (17)	13 (18)	
Incomplete special	20 (24)	17 (23)	
Special	31 (38)	28 (38)	
Labor status			
Student	12 (15)	7 (9)	0.13
Employed	15 (18)	23 (31)	
Unemployed	30 (37)	30 (41)	
Disabled	25 (30)	14 (19)	

Table 2. Clinical and dynamic characteristics of schizophrenia in patients of the studied groups

Indicators	Catatonic (n = 82) m ±σ; Me [Q1; Q3]	nonCatatonic(n = 74) m ±σ; Me [Q1; Q3]	p (U-test)
Average age at the time of examination (years)	29.4±8.7 29.4 [23.0; 33.8]	30.3±8.7 29.0 [25; 32.8]	>0.05
Average age of prodrome (years)	19.1 ±6.3 17.5 [14.0; 24 .0]	19.3±6.0 18.0 [15.0; 23.8]	>0.05
Average age of manifestation (years)	23.2±6.1 22.0 [18.3; 27.0]	24.2±6.7 22.5 [19.0; 27.0]	>0.05
Average age of first visit (years)	24.1±6.5 23.5 [19.0; 28.0]	24.7±7.3 23 .0 [19.3; 27.0]	>0.05
Average age of first hospitalization (years)	24.3±6.1 23.5 [19.0; 28.0]	25.5±7.1 24.5 [20.3; 28.8]	>0.05
Duration of illness from prodrome (years)	10.4±7.8 8.0 [4.3; 15]	11.0±8.1 8.5 [5.0; 16 .0]	>0.05
Duration of illness from manifestation (years)	6.2±7.4 3.5 [1.0; 9.0]	6.3±7.2 4 .0 [1.0; 9.0]	>0.05

Table 3. Psychometric characteristics of the mental status of patients, according to PANSS

Indicators	Catatonic (n= 82) m ±σ; Me [Q1; Q3]	nonCatatonic (n=74) m ±σ; Me [Q1; Q3]	p (U-test)
BFCRS	10.0±7.3 8 [4; 13.8]	0.4±0.1 0.0 [0.0; 0.3]	<0.001
PANSS total	106.0±22.1 104.0 [91.3; 118]	91.5±21.5 91 [79; 108]	<0.001
PANSS P	25.9±6.4 26.0 [22.0; 29.0]	20.5±7.9 19.0 [15.0; 27.0]	<0.001
PANSS N	28.7±9.4 28 [22.3; 35]	24.4±8 24.5 [19; 29.8]	0.006
PANSS G	51.5±11.3 49.5 [44; 59.8]	46.5±11.7 46 [39; 54.8]	0.009
P1	4.7±1.3 5.0 [4.0; 6.0]	4.2±1.8 5.0 [3.0; 6.0]	0.104
P3	3.2±2.2 5.0 [2.0; 6.0]	2.8±2.1 1.0 [1.0; 5.0]	0.04
P7	3.1±1.7 3.0 [2.0; 4]	2.0±1.3 1.5 [1.0; 3.0]	<0.001
N1	4.4±1.5 5.0 [3.0; 5.0]	3.8±1.4 4.0 [3.0; 5.0]	0.02
N2	4.2±1.5 4.0 [3; 5]	3.7±1.54 4.0 [3.0; 5.0]	0.04
N3	4.0±1.6 4.0 [3.0; 5]	3.4±1.4 4 [3.0; 4.0]	0.02
N4	4.1±1.5 4.0 [3.0; 5.0]	3.6±1.4 3.5 [3.0; 5.0]	0.02
N6	4.2±1.6 4.0 [3; 5]	3.2±1.4 3.0 [2.0; 4.0]	<0.001
N7	3.7±1.6 4.0 [3; 5]	3.2±1.4 3.0 [2.3; 4]	0.1
G5	3.0±1.6 3.0 [1.3; 4]	1.6±0.9 1 [1; 2]	<0.001
G14	3.4±1.7 3.0 [2.0; 4.0]	2.5±1.4 2.0 [1.0; 3.8]	<0.001

- *Lack of spontaneity and flow of conversation (N6):* Difficulty in normal speech communication due to apathy, helplessness, decreased volition, or thought disorders, leading to disrupted fluency and productivity of verbal contact. The mean score in the Cataton group was 4.2 ± 1.6 (4.0 [3; 5]), compared to 3.2 ± 1.4 (3.0 [2.0; 4.0]) in the nonCataton group. This parameter overlaps phenomenologically with the "Verbigeration" and "Perseveration" items on the BFCRS.
- *Mannerisms and posturing (G5):* Unnatural movements and/or postures, resulting in clumsy, dysplastic, or eccentric behavior. The mean score in the Cataton group was 3.0 ± 1.6 (3.0 [1.3; 4]), compared to 1.6 ± 0.9 (1 [1; 2]) in the nonCataton group. This parameter overlaps phenomenologically with the "Mannerism" item on the BFCRS.
- *Poor impulse control (G14):* Impaired regulation and control of internal impulses, leading to sudden, unmodulated, arbitrary, and purposeless release of tension and emotions without considering possible consequences. The mean score in the Cataton group was 3.4 ± 1.7 (3.0 [2.0; 4.0]), compared to 2.5 ± 1.4 (2.0 [1.0; 3.8]) in the nonCataton group. This parameter overlaps phenomenologically with the "Impulsivity" and "Stereotypy" items on the BFCRS.

A comparative analysis of the three groups (H-test) revealed differences in three PBQ parameters: "Avoidant," "Dependent," and "Borderline." Pairwise comparison (U-test) indicated that these differences pertained to the clinical groups (primary and comparison) compared to the control group, with no correlation between these personality traits and the presence or absence of catatonia (Table 4).

The comparative analysis of the three groups (H-test) also identified differences in one 5PFQ factor: "Expressiveness – Practicality," with the most significant contribution from the parameter "Insensitivity – Sensitivity." Patients with catatonic symptoms showed the lowest scores on this parameter (9.96 ± 2.84 [9.0; 11.0]) compared to the control group (11.51 ± 2.16 [11.0; 13.0]), with p (H-test) = 0.0049.

No other significant differences were found through statistical analysis. However, a detailed examination of the 5PFQ results indicated some specific trends. Considering that the total scores on this tool can range from 15 to 75 points, with "average scores" for normal distribution falling within the 41-50 range (scores between 51-75 indicate a predominance of externalizing personality factors, and scores between 15-40 suggest a significant contribution of internalizing personality factors).

Participants in all three groups did not show a shift towards either pole of introversion-extraversion, scoring less than 50 points in total for this factor. The Cataton group scored 45.56 ± 12.04 (46.5 [41.5; 52]), the nonCataton group scored 45.97 ± 9.78 (45.0 [39.0; 52.0]), and the healthy control group scored 48.54 ± 10.14 (48.0 [43.0; 56.0]).

Neuroticism was similarly expressed in all three comparison groups: Cataton 44.92 ± 13.33 (48.0 [42.0; 53.0]), nonCataton 49.94 ± 13.59 (49.0 [41.0; 63.0]), and healthy control 49.23 ± 11.58 (47.5 [41.0; 58.0]), with scores falling within the average range (Table 5).

DISCUSSION

The results of this observational cross-sectional case-control study suggest the presence of certain personality traits distinguishing patients with catatonia from those with schizophrenia without catatonia and from healthy volunteers. However, the dysfunctional personality beliefs categorized as anxious, avoidant, and borderline appear nonspecific regardless of the presence or absence of catatonic symptoms.

Our findings do not entirely replicate previous research indicating that patients with schizophrenia exhibit more pronounced introversion and neuroticism compared to healthy volunteers (Camisa et al. 2005, Gurrera et al. 2000, Herran et al. 2006, Pillmann et al. 2003). Additionally, a common profile of high psychoticism, low agreeableness, low conscientiousness, and low openness was noted. This discrepancy may be due to potential biases in selecting healthy control volunteers from among psychiatric clinic staff. Comparing patients with individuals from other social spheres might reveal differences in personality factors.

While not statistically significant, there is a noted trend of patients with catatonia gravitating towards internalizing personality factors. It is known that internalizing and externalizing disorders do not inherit as discrete, genetically determined syndromes but develop under the influence of various genetic aberrations and environmental factors (Kendler et al. 2003). Therefore, understanding the risk factors for catatonia necessitates considering numerous confounding variables, including perinatal, environmental, toxic, and autoimmune factors. Childhood traumatic experiences are more frequently associated with the development of catatonia in adulthood rather than with dissociative disorders (Ross & Browning 2016), with catatonia developing in patterns akin to post-traumatic stress disorder (Biles et al. 2021). Furthermore, variations in catatonia should be considered based on etiology, phenomenology, and treatment response (Espí Forcen et al. 2022).

CONCLUSIONS

We anticipate that our future research will focus on exploring the development of catatonia in light of these considerations. Additionally, it is essential to develop methodologies for empirically testing all hypotheses regarding the coexistence of "personality" and "psychopathology" (Krueger & Tackett 2003, Kang et al. 2023, Akiskal et al. 1983): the common cause hypothesis,

Table 4. Comparative indicators of PBQ questionnaire values in patients with schizophrenia and catatonia, without catatonic symptoms and the control group

PBQ values	Catatonic (n=82)		nonCatatonic (n=74)		Control (n=49)		Catatonic vs nonCatatonic	p (U-test)		df=2; p (H-test) Catatonic vs nonCatatonic vs Control
	m ±σ; Me [Q1; Q3]	m ±σ; Me [Q1; Q3]	m ±σ; Me [Q1; Q3]	m ±σ; Me [Q1; Q3]	m ±σ; Me [Q1; Q3]	Catatonic vs nonCatatonic		Control		
Avoidant	18.63±10.87 18.0 [10.0; 27.0]	21.22±10.35 22.5 [11.0; 30.0]	14.58±7.72 13.5 [9.5; 18.0]			0.119	0.001	0.015	0.0019	
Addictive	24.18±12.42 24.0 [15.0; 33.0]	21.38±10.62 26.0 [18.5; 34.0]	17.44±9.43 16.0 [10.5; 22.5]			0.354	0.001	0.001	<0.001	
Passive-aggressive	25.66±11.43 26.0 [19.0; 43.0]	26.85±11.13 26.5 [20.0; 35.0]	23.42±6.15 24.0 [18.0; 28.0]			0.634	0.068	0.107	0.1442	
Obsessive-compulsive	31.56±12.52 32.0 [24.0; 39.0]	31.62±10.31 32.0 [25.5; 38.0]	29.04±7.12 29.0 [25.0; 34.0]			0.838	0.102	0.094	0.1765	
Antisocial	20.94±12.10 20.0 [12.0; 27.0]	21.38±11.19 20.0 [11.0; 30.5]	20.18±8.99 19.5 [13.0; 26.0]			0.857	0.666	0.725	0.8963	
Narcissistic	19.19±13.15 16.0 [9.5; 28.0]	17.62±12.91 16.0 [6.5; 28.0]	14.35±8.58 13.5 [8.0; 19.0]			0.387	0.320	0.052	0.1637	
Histrionic	22.71±11.27 22.0 [15.0; 31.0]	23.72±10.77 22.5 [14.0; 32.0]	19.60±7.23 19.0 [15.0; 25.0]			0.970	0.087	0.066	0.0783	
Schizoid	23.41±11.95 24.0 [15.0; 30.5]	25.18±8.70 25.5 [20.0; 25.0]	19.32±9.26 19.0 [14.0; 23.0]			0.591	0.662	0.855	0.8380	
Paranoid	24.20±11.14 24.0 [18.0; 31.0]	23.04±11.54 24.0 [15.0; 31.5]	24.03±12.07 22.0 [19.0; 25.0]			0.952	0.048	0.016	0.0490	
Borderline	19.99±10.38 19.0 [14.5; 26.0]	20.89±9.60 22.0 [14.0; 28.5]	15.75±8.12 15.0 [11.0; 17.0]			0.502	0.003	0.004	0.004	

Table 5. Indicators of personality radicals in patients with schizophrenia and catatonia, without catatonic symptoms and the control group (according to 5PFQ data)

Indicators	Catatonic (n=82) m ±σ; Me [Q1; Q3]	nonCatatonic (n=74) m ±σ; Me [Q1; Q3]	Control (n=49) m ±σ; Me [Q1; Q3]	Catatonic vs nonCatatonic	p (U-test) nonCatatonic vs Control	df=2; p (H-test)	
						Catatonic vs Control	nonCatatonic vs Control
Introversion - Extraversion	45.56±12.04 46.5 [41.5; 52]	45.97±9.78 45.0 [39.0; 52.0]	48.54±10.14 48.0 [43.0; 56.0]	0.814	0.230	0.272	0.4083
Passivity - activity	9.71±3.16 10.0 [8.0; 11.5]	8.81±2.63 9.0 [7.0; 11.0]	10.41±3.08 11.0 [7.0; 13.0]	0.084	0.020	0.310	0.0488
Submission - dominance	9.04±3.09 9.0 [7.0; 11.0]	10.10±2.81 10.0 [8.0; 13.0]	10.46±2.78 10.0 [8.0; 12.0]	0.137	0.741	0.051	0.1055
Isolation - sociability	9.40±3.64 9.5 [7.0; 12.0]	8.68±3.62 9.0 [6.0; 12.0]	9.54±3.12 10.0 [7.0; 12.0]	0.325	0.359	0.888	0.5541
Avoidance - experience seeking	8.15±2.89 9.0 [7.0; 10.0]	7.77±2.65 7.0 [6.0; 10.0]	8.38±2.42 8.0 [7.0; 10.0]	0.263	0.261	0.911	0.4427
Attention avoidance - attention seeking	9.25±2.69 9.0 [8.0; 11.0]	10.61±2.62 11.0 [8.0; 13.0]	9.74±2.47 10.0 [8.0; 11.0]	0.045	0.202	0.488	0.1257
Benevolence - Antagonism	53.04±14.23 54.0 [48.5; 62.0]	54.74±9.45 55.0 [49.0; 63.0]	54.33±9.03 57.0 [49.0; 61.0]	0.807	0.864	0.739	0.9363
Warmth - indifference	11.08±3.31 11.0 [10.0; 14.0]	12.10±2.57 13.0 [10.0; 15.0]	11.31±2.83 12.0 [9.5; 14.0]	0.174	0.232	0.958	0.3425
Cooperation - competition	10.77±3.27 11.0 [9.5; 13.0]	11.13±2.77 12.0 [9.0; 14.0]	11.34±2.21 11.0 [10.0; 13.0]	0.858	0.822	0.613	0.8821
Gullibility - suspicion	9.52±3.20 10.0 [8.0; 11.0]	9.35±2.95 9.0 [7.0; 12.0]	9.38±2.97 10.5 [7.0; 12.0]	0.559	0.836	0.936	0.8756
Understanding - misunderstanding	10.87±3.33 11.0 [9.5; 13.0]	10.77±2.33 11 [9; 12]	10.95±2.25 11.0 [10.0; 13.5]	0.582	0.841	0.668	0.8264
Respect for others - self-respect	10.81±2.84 11.0 [10.0; 13.0]	11.39±2.12 12.0 [10.0; 13.0]	11.38±2.05 12.0 [10.0; 13.0]	0.307	0.822	0.466	0.5553
Conscientiousness - Impulsivity	51.17±13.78 52.0 [45.5; 59.5]	51.77±10.91 51.0 [43.0; 61.0]	53.67±10.99 54.5 [49.0; 61.0]	0.756	0.369	0.295	0.5109
Neatness - carelessness	9.48±3.36 9.5 [7.0; 12.0]	9.65±2.97 10.0 [8.0; 12.0]	9.97±3.06 10.0 [8.0; 12.5]	0.799	0.615	0.451	0.7300
Persistence - lack of persistence	10.75±3.22 11.0 [9.0; 13.0]	10.77±3.23 11.0 [9.0; 3.0]	11.72±2.68 12.0 [10.0; 14.0]	0.989	0.206	0.104	0.2290
Responsibility - irresponsibility	10.94±3.11 11.0 [9.0; 13.0]	11.13±2.45 11.0 [9.0; 13.0]	11.74±2.54 12.0 [11.0; 13.0]	0.932	0.183	0.149	0.2661

Table 1. Continues

Indicators	Catatonic (n=82) m ±σ; Me [Q1; Q3]	nonCatatonic (n=74) m ±σ; Me [Q1; Q3]	Control (n=49) m ±σ; Me [Q1; Q3]	Catatonic vs nonCatatonic	p (U-test) nonCatatonic vs Control	df=2; p (H-test)	
						Catatonic vs Control	nonCatatonic vs Control
Self-control - impulsiveness	9.77±3.34 10.0 [8.0; 12.0]	9.71±2.56 10.0 [8.0; 12.0]	9.82±2.81 10.0 [8.0; 12.0]	0.796	0.986	0.782	0.9475
Foresight - carelessness	10.23±3.02 10.0 [9.0; 12.0]	10.52±2.85 10.0 [8.0; 13.0]	10.41±2.57 11.5 [8.0; 12.0]	0.951	0.827	0.955	0.9968
Neuroticism - Calmness	44.92±13.33 48.0 [42.0; 53.0]	49.94±13.59 49.0 [41.0; 63.0]	49.23±11.58 47.5 [41.0; 58.0]	0.243	0.741	0.398	0.4617
Anxiety - carelessness	9.38±3.51 10.0 [7.0; 12.0]	10.45±3.20 11.0 [9.0; 13.0]	10.23±3.03 10.0 [8.0; 12.0]	0.174	0.662	0.318	0.3391
Tension - relaxation	8.71±2.98 10.0 [7.5; 11.0]	9.87±2.66 10.0 [8.0; 12.0]	8.85±2.81 9.0 [7.0; 11.0]	0.169	0.113	0.583	0.2202
Depression - comfort	9.19±3.05 10.0 [8.0; 11.0]	10.29±3.13 10.0 [9.0; 13.0]	10.28±2.53 10.0 [9.0; 12.0]	0.146	0.813	0.194	0.2467
Self-criticism - self- sufficiency	9.29±2.91 9.0 [8.0; 11.0]	9.90±3.19 9.0 [7.0; 12.0]	9.90±2.61 9.0 [8.0; 12.0]	0.615	0.939	0.540	0.7893
Emotional lability - stability	8.35±3.28 9.5 [6.5; 11.0]	9.42±3.43 10.0 [7.0; 13.0]	9.97±3.22 9.0 [7.0; 12.5]	0.245	0.615	0.111	0.2209
Practicality - Expressiveness	50.06±12.76 51.5 [47.0; 58.0]	52.29±8.17 53.0 [45.0; 57.0]	55.97±8.65 57.0 [51.5; 63.0]	0.884	0.048	0.009	0.0152
Conservatism - curiosity	9.67±3.26 10.0 [9.0; 11.5]	9.90±2.49 10.0 [9.0; 12.0]	11.05±2.46 11.0 [10.0; 13.0]	0.865	0.060	0.032	0.0607
Realism - curiosity	10.48±3.41 11.0 [9.0; 13.0]	11.19±3.64 13.0 [8.0; 14.0]	11.87±2.85 12.0 [11.0; 14.0]	0.228	0.666	0.037	0.1099
Clumsiness - artistry	11.10±3.38 12.0 [10.0; 13.5]	10.77±2.87 10.0 [9.0; 13.0]	11.67±2.78 13.0 [10.5; 14.0]	0.321	0.159	0.380	0.2970
Insensitivity - sensitivity	9.96±2.84 10.0 [9.0; 11.0]	10.90±2.30 11.0 [9.0; 13.0]	11.51±2.16 12.0 [11.0; 13.0]	0.189	0.168	0.001	0.0049
Rigidity - plasticity	8.85±2.80 9.0 [8.0; 11.0]	9.52±2.50 10.0 [8.0; 11.0]	9.87±2.21 10.0 [8.0; 11.0]	0.421	0.683	0.169	0.3663

the continuum spectrum hypothesis, the personality as a precursor to disorder hypothesis, the predisposition model, the hypothesis of pathoplastic interaction, and the theory of "scarring" of personality following mental disorders.

Compliance with principles of bioethics:

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Natalia Zakharova: Study design development, protocol formulation, clinical assessment of patients, data analysis, manuscript writing.

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Maria Kaydan: Clinical and psychometric assessment of patients, data processing and analysis.

Maria Skurinova: Participant instruction for self-report questionnaires, psychometric assessment of patients, data processing.

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