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Letter to the Editors

Personality traits in patients with obsessive-compulsive disorder

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This is a preliminary, unedited version of a manuscript that has been accepted for publication in the Brazilian Journal of Psychiatry. As a service to our readers, we are providing this early version of the manuscript. The manuscript will still undergo copyediting, typesetting, and review of the resulting proof before it is published in final form. The final version may present slight differences in relation to the present version.

Personality traits in patients with obsessive-compulsive disorder

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PROOF

Obsessive-compulsive disorder (OCD) is characterized by recurrent and persistent thoughts, urges, or images (obsessions), associated with repetitive behavior or mental rituals (compulsions), performed to alleviate the anxiety caused by the obsessions[1]. Furthermore, individuals with OCD have shown specific personality traits compared to healthy participants (HP)[2]. Identifying these traits is necessary to understand the daily functioning of patients, clarify the influence of OCD symptomatology on their personality, and also contribute to the development of different forms of treatment. Personality corresponds to a pattern of individual functioning, which is related to a combination of specific traits and shows relative stability in response to the environment, that is, a certain pattern of functioning that can be adaptive or maladaptive. Over time, different strategies for personality assessment have emerged, including structured interviews, projective techniques, and self-report instruments. Currently, personality traits are consistently evaluated using valid and reliable psychometric instruments, which aim to obtain a more accurate understanding of a broader range of aspects of the individual. In this context, the Minnesota Multiphasic Personality Test-2 (MMPI-2-RF) stands out, since it is composed of several self-administered scales and is broadly used worldwide for personality assessment[3,4].

The MMPI-2-RF includes the PSY-5 scale based on the dimensional model of personality psychopathology[4] that includes five main domains: introversion (low positive emotionality), psychoticism, neuroticism (negative emotionality), disinhibition, and aggressiveness. A recent meta-analysis showed that patients with OCD presented higher levels of neuroticism and reduced levels of extraversion and agreeableness[2], however, none of the 23 studies included in the meta-analysis used MMPI. A previous study conducted by our group replicated these findings in individuals with refractory OCD, who also exhibited greater neuroticism and less extroversion when compared to healthy participants (HP)[5].

This study's main goal was to compare participants with OCD and HP in the MMPI-2-RF PSY-5 domains. We formulated two sets of hypotheses, based on previous studies[2,5]: our primary hypothesis concerns personality trait differences between groups. Consistent with prior evidence, we expect that patients with OCD will show higher levels of introversion and neuroticism compared to healthy participants, with no significant differences anticipated for the remaining domains. As a secondary hypothesis, given that individuals with OCD tend to exhibit heightened self-monitoring, increased concern about internal states, and a meticulous, detail-oriented cognitive style, we predict that patients will score higher in the MMPI-2-RF validity indicators, as a tendency toward over-reporting.

This study received approval from the Ethics Committee of the Department of Psychiatry at the Federal University of São Paulo (CAAE: 86404218.5.3001.5514). All participants signed an informed consent form. Originally, the study included 50 patients with OCD, aged 18 to 60 years, of both sexes, and 153 HP individually matched by sex, age, and educational level, selected from the Brazilian normative sample of the MMPI-2-RF[6]. Patients were recruited from the Outpatient Clinic of the Obsessive-Compulsive Spectrum Disorders Project (PROTOC) at the Institute of Psychiatry, Faculty of Medicine, Hospital das Clínicas of São Paulo.

The sociodemographic questionnaire included items on sex, age, and education. The MMPI-2-RF consists of 338 self-administered items and has good psychometric indicators[3,6]. Quality control was performed using the following validity indicators: 'cannot say' (CNS) ≥ 18; 'variable response inconsistency' (VRIN-r) and 'true response inconsistency' (TRIN-r) ≥ 80; 'infrequent responses' (F-r) ≥ 120 and 'infrequent psychopathology responses' (Fp-r) >= 100.

Statistical analysis was performed using the JAMOVI software (2025, Version 2.6). Shapiro-Wilk normality test was conducted on the five MMPI-2-RF variables: as the data was not normally distributed (Supplementary Figure S1), a non-parametric Mann-Whitney test was used for group comparisons. Sociodemographic variables were analyzed using the chi-square test for categorical variables and the Student's t-test for continuous variables. The rank biserial correlation was used as a measure of effect size, and 0.05 was the level of statistical significance adopted in this study (alpha), corrected for multiple comparisons (five comparisons) according to Bonferroni correction.

Between-group comparisons in the original sample for over- and under-reporting scales are presented in the supplementary material (Supplementary Table S1). After quality control, 36 participants with OCD and 135 HP remained in the analyses, and there were no between-group differences in sociodemographic variables (sex, age, or educational level, Table 1). On the other hand, participants with OCD presented significantly higher scores in introversion and neuroticism (both p-values < 0.001) and lower aggressiveness scores (p-value = 0.047) when compared to HP, but similar scores in psychoticism and disconstraint (Table 1, Supplementary Figure S1). Analyses with the original sample yielded similar results, except for the psychoticism and aggressiveness domains, which showed changes in significance (Supplementary Table S2).

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Table 1. Average, standard deviation, and between-group comparison of sociodemographic and personality domains

	OCD (N = 36*)	**HP** (N = 135**)		
Variables	**M (DP)/N(%)**	**M (DP)/N(%)**	**Effect-size**	**p-value**
Sex (Female)	14 (39%)	51 (38%)	0.009	1.000[1]
Age	34.1 (11.2)	34.9 (10.7)	-0.057	0.599
Education Level			0.259	0.052[1]
Incomplete High School	1 (3%)	10 (7%)		
Complete High School	7 (19%)	41 (30%)		
Incomplete Higher Education	16 (44%)	28 (21%)		
Complete Higher Education	9 (25%)	27 (20%)		
Post-Graduation	3 (8%)	29 (22%)		
Personality Domains	**M (DP)**	**M (DP)**	**Effect-size[2]**	**p-value[3]**
Introversion	10.2 (4.6)	6.5 (3.7)	0.472	<0.001
Psychoticism	4.3 (2.5)	3.7 (2.8)	0.177	0.505
Neuroticism	12.5 (3.5)	8.4 (3.9)	0.489	<0.001
Disconstraint	4.5 (2.4)	5.0 (2.9)	-0.072	1.000
Aggressiveness	7.8 (2.8)	9.1 (3.0)	-0.281	0.047

[1] Fisher's exact test; [2] Rank-Biserial Correlation; [3] adjusted p-values using Bonferroni multiple correction for five comparisons (Mann-Whitney). *Post-hoc power analysis conducted with G*Power 3.1.9.7, assuming a one-tailed Mann-Whitney U, an alpha level of 0.05, and a medium effect size (d = 0.50) yields an estimated power (1 − β) of approximately 0.83.
** Homogeneity of variances between groups was tested for all variables using Levene's test, and none yielded a significant p-value.

This study aimed to compare personality traits between patients with OCD and healthy participants. Replicating previous findings[2,5], OCD patients differed from controls in levels of introversion and neuroticism, but also in aggressiveness. These differences suggest that personality traits actively influence the behavior of individuals with OCD, as each personality dimension can define specific patterns of attitudes and behavioral habits. However, traits related to psychoticism and disconstraint showed no significant differences between groups, indicating the specificity of certain personality traits that influence the behavior of individuals with OCD.

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As defined by the DSM-5, OCD is clinically characterized by significant distress and functional impairment, and our findings suggest that this impairment is meaningfully related to a specific personality profile. In particular, higher levels of introversion emerged as a robust result, consistent with previous evidence linking introversion to elevated obsessive–compulsive symptomatology[2,5]. Moreover, the interaction between introversion and neuroticism could also explain the excessive attention to obsessive thoughts[7]. Neuroticism refers to a tendency toward negative emotional responses characterized by heightened anxiety, tension, and worry[8], and has been well-documented in OCD literature[2]. Introversion, in turn, is a trait characterized by a tendency to avoid social contact, and a difference in this domain was also previously observed by our group in a study evaluating social skills in OCD[9].

In addition, the finding of lower aggressiveness aligns with well-established clinical observations that individuals with OCD rarely present as outwardly aggressive or assertive, despite frequently experiencing intrusive thoughts with aggressive content[1]. These thoughts are typically ego-dystonic and distressing, and have been linked to impulsiveness and emotional dysregulation rather than overt behavior. Accordingly, elevated anger suppression in OCD was associated with dysfunctional beliefs and maladaptive emotion regulation strategies[10], further integrating personality traits, emotional processes, and symptom expression within a coherent explanatory model.

The absence of significant differences between groups regarding psychoticism and loss of control can be interpreted from several perspectives. First, this specificity in participants with OCD suggests that the disorder is influenced by personality traits more directly related to its core symptoms, such as neuroticism and introversion[2,5]. Before quality control (QC), patients scored higher in psychoticism; however, as more patients than controls were excluded (18% vs 12%) due to infrequent, inconsistent, or overreported responses, this difference was no longer observed post–QC. Consistent with our hypothesis, patients reported symptoms with greater intensity or perceived them as more severe than they objectively are. It is important to note that thought problems are not exclusively psychotic in nature – some reflect cognitive patterns characteristic of OCD rather than those of the broader community. Regarding disconstraint, a domain characterized by

responsibility, caution, and self-discipline (considered the opposite of conscientiousness), the lack of group differences indicates that OCD personality traits are not associated with low or high levels of conscientiousness[11].

The main limitation of this study was not assessing the severity of obsessive-compulsive symptoms or anxiety and depression, as these symptoms could exacerbate dysfunctional personality traits. Therefore, while our findings suggest the possible existence of a personality profile associated with OCD, this limitation, as well as other factors, must be taken into account. It is possible that, given our sample size, we were underpowered to detect small effect size differences that only appear with a large number of subjects. Also, the use of self-report measures may have amplified the influence of metacognitive styles characteristic of OCD, such as heightened self-monitoring and symptom awareness, potentially inflating scores in domains like psychoticism, neuroticism, and introversion.

Although our results are consistent with previous studies, future research should further explore personality traits in patients with OCD using multimethod approaches (e.g., observer ratings, behavioral assessments, or implicit measures) to disentangle true personality differences from self-perception biases, thereby clarifying the boundary between enduring personality traits and state-dependent symptom expression. To gain a more comprehensive understanding, it is also recommended that a broader range of personality traits be examined, incorporating additional dimensions. By integrating these methodological refinements, subsequent research could better determine whether the trait elevations observed here reflect stable dispositional characteristics or dynamic responses to obsessive-compulsive symptomatology. In addition, the role of comorbidity and treatment status should be further studied in the personality domains of OCD patients.

Our findings highlight the significant role of personality traits in distinguishing patients with OCD from HP. Higher levels of neuroticism, introversion, and lower levels of aggressiveness suggest a distinctive personality profile in OCD that aligns with the literature that points to a strong presence of aspects of internalizing emotional dysfunction and neuroticism linked to OCD[2,12]. From a clinical perspective, these findings imply that therapeutic approaches for OCD may benefit from integrating personality-informed interventions. For instance, high neuroticism could be addressed through emotion regulation and distress tolerance techniques in

therapy settings, while pronounced introversion might guide clinicians to emphasize social skills training and graded exposure to interpersonal contexts. Both neuroticism and introversion could reinforce the emotional instability and social withdrawal often observed in OCD patients. Overall, these insights move beyond simple trait description, underscoring the potential for personality assessment to inform case conceptualization, tailor psychotherapeutic techniques, and anticipate treatment adherence or resistance.

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Disclosure

All the other authors report no biomedical financial interests or potential conflicts of interest.

Data availability

The data that support the findings of this study, as well as the JAMOVI file showing the analyses and results, are available from the corresponding author, MCB, upon reasonable request.

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MCB: Conceptualization, Data curation; Formal analysis; Writing – original draft. JARP, FC, NB: Data curation; Writing – review & editing. AMBF, APS, MQH: Writing – review & editing. TGL, LFC: Translation and adaptation; Writing – review & editing.

All authors have read and approved the final version submitted and take public responsibility for all aspects of the work.

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Supplementary material

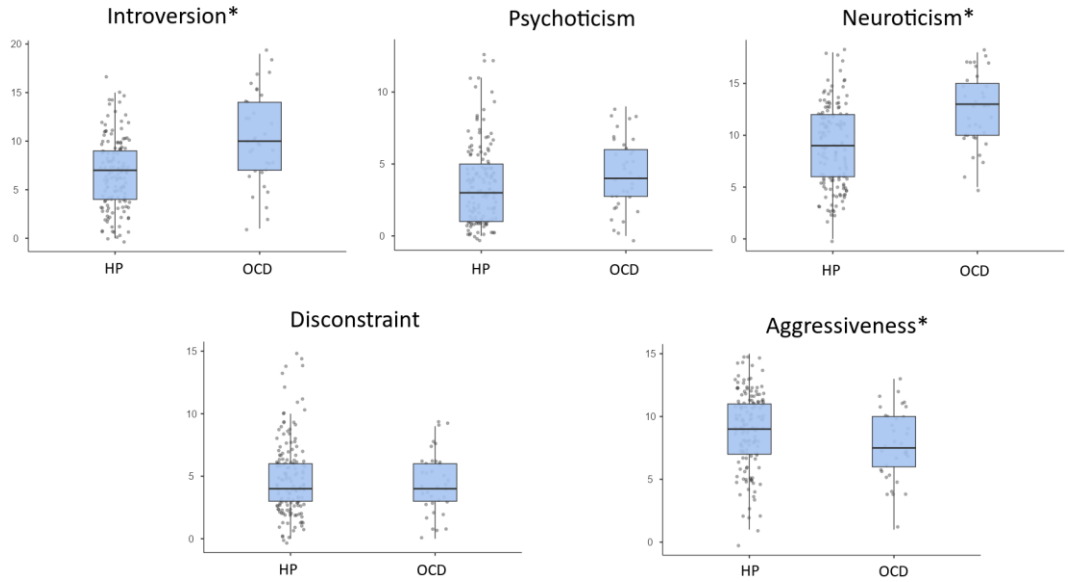


Figure S1. Comparison of MMPI-2-RF scale scores between healthy participants (HP) and patients with OCD. Domains that presented between-group differences are indicated with *.

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Table S1. Between group comparisons in over-reporting and under-reporting scales

	OCD (N = 50)	**HP** (N = 153)		
Variables	**M (DP)**	**M (DP)**	**Effect-size[1]**	**p-value[2]**
Variable Response Inconsistency (VRIN-r)	59.6 (9.8)	57.0 (9.4)	0.132	0.156
True Response Inconsistency (TRIN-r)	59.4 (7.7)	58.9 (7.8)	0.039	0.675
Infrequent Responses (F-r)	86.7 (23.8)	63.5 (17.4)	0.584	< 0.001
Infrequent Psychopathology Responses (Fp-r)	77.9 (22.2)	57.9 (13.0)	0.509	< 0.001
Infrequent Somatic Responses (Fs)	68.3 (21.7)	57.9 (16.3)	0.277	0.003
Symptom Validity (FBS-r)	67.5 (14.7)	58.2 (13.0)	0.390	< 0.001
Responses Bias Scale (RBS)	78.8 (16.1)	65.6 (12.3)	0.501	< 0.001
Uncommon Virtues (L-r)	58.8 (9.7)	61.0 (12.2)	-0.069	0.456
Adjustment Validity (K-r)	40.6 (8.4)	48.1 (9.5)	-0.441	< 0.001

[1] Rank-Biserial Correlation; [2] Uncorrected p-values (to be more sensitive to detect possible differences between groups).

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Table S2. Average, standard deviation, and between-group comparison of sociodemographic and personality domains (original sample).

	OCD (N = 50)	**HP** (N = 153)		
Variables	**M (DP)/N(%)**	**M (DP)/N(%)**	**Effect-size**	**p-value**
Sex (Female)	22 (44%)	61 (40%)	0.036	0.622[1]
Age	36 (10.7)	35 (10.8)	0.017	0.856
Education Level			0.180	0.265[1]
Incomplete High School	4 (8%)	12 (8%)		
Complete High School	11 (22%)	44 (29%)		
Incomplete Higher Education	16 (32%)	33 (22%)		
Complete Higher Education	13 (26%)	31 (20%)		
Post-Graduation	6 (12%)	33 (22%)		
Personality Domains	**M (DP)**	**M (DP)**	**Effect-size[2]**	**p-value[3]**
Introversion	10.0 (4.3)	6.7 (3.7)	0.432	<0.001
Psychoticism	5.7 (4.1)	3.7 (2.8)	0.304	0.006
Neuroticism	12.7 (3.5)	8.9 (4.0)	0.507	<0.001
Disconstraint	4.9 (3.3)	4.9 (3.1)	-0.012	1.000
Aggressiveness	8.5 (3.3)	8.9 (3.1)	-0.125	0.907

[1] Fisher's exact test; [2] Rank-Biserial Correlation; [3] adjusted p-values using Bonferroni multiple correction for five comparisons (Mann-Whitney).

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