Obsessive–Compulsive Disorder (OCD) and Autism Spectrum Disorder (ASD): Clinical Fingerprints of the Comorbidity

Luca Pellegrini *, Gabriele di Salvo, Gianluca Rosso, Giuseppe Maina, Umberto Albert

Posted Date: 25 March 2026

doi: 10.20944/preprints202603.1984.v1

Keywords: stereotypies; OCD; ASD; compulsions; obsessions; comorbidity; repetitive behaviors; autism; obsessive-compulsive disorder

 doi:10.20944/preprints202603.1984.v1

Article

Obsessive–Compulsive Disorder (OCD) and Autism Spectrum Disorder (ASD): Clinical Fingerprints of the Comorbidity

Luca Pellegrini [1,2,3,4,*], Gabriele di Salvo [5,6], Gianluca Rosso [5,6], Giuseppe Maina [5,6] and Umberto Albert [1,2]

[1] Department of Medicine, Surgery and Health Sciences, UCO Clinica Psichiatrica, University of Trieste, Trieste, Italy
[2] Department of Mental Health, Psychiatric Clinic, Azienda Sanitaria Universitaria Giuliano-Isontina – ASUGI, Trieste, Italy
[3] School of Life and Medical Sciences, University of Hertfordshire, Hatfield, UK
[4] Centre for Psychedelic Research and Neuropsychopharmacology, Imperial College London, London, UK
[5] Department of Neurosciences "Rita Levi Montalcini", University of Turin, Turin, Italy
[6] Psychiatric Unit, San Luigi Gonzaga University Hospital, Orbassano, Turin, Italy
* Correspondence: luca.pellegrini@units.it; Tel.: +39 0403997318

Abstract

Background: Obsessive–compulsive disorder (OCD) frequently co-occurs with autism spectrum disorder (ASD), but the prevalence and clinical correlates of this comorbidity remain incompletely understood. **Methods:** We examined a clinical sample of 603 patients with a primary diagnosis of OCD, of whom 149 (24.7%) presented with comorbid ASD. Sociodemographic variables, clinical characteristics, comorbidities, and obsessive–compulsive symptom dimensions were compared between patients with and without ASD. **Results:** Patients with OCD+ASD were significantly younger at assessment and reported an earlier onset of both obsessive–compulsive symptoms and full-blown disorder. A family history of affective disorders was more frequent in this subgroup. While overall symptom severity (Y-BOCS, HAM-D, HAM-A) was comparable, OCD+ASD patients reported higher exposure to stressful and traumatic life events, including severe trauma. Severe traumatic events, in particular, were found to be a predictor of ASD in our OCD cohort. Comorbidities were also distinct: onychophagia (66.4% vs. 0.4%) and trichotillomania (8.7% vs. 0%) were markedly more prevalent in the OCD+ASD group, as were Cluster B personality disorders (18.1% vs. 11.4%). Phenomenologically, OCD+ASD patients more often exhibited religious and somatic obsessions, as well as checking and repetition compulsions. **Conclusions:** OCD with comorbid ASD represents a clinically distinct subgroup, characterized by greater vulnerability to trauma, earlier onset, unique symptom profiles, and specific comorbidities. Recognition of these features, and in particular severe traumatic experiences, is crucial for early detection of ASD in individuals with OCD, personalized treatment planning and improved outcomes.

Keywords: stereotypies; OCD; ASD; compulsions; obsessions; comorbidity; repetitive behaviors; autism; obsessive-compulsive disorder

Introduction

Obsessive–compulsive disorder (OCD) and autism spectrum disorder (ASD) are two frequently co-occurring conditions with partially overlapping clinical features. OCD is defined by the presence of recurrent intrusive thoughts and repetitive behaviors aimed at preventing or neutralizing perceived threats, whereas ASD is characterized by persistent deficits in social communication and restricted, repetitive patterns of behavior, interests, or activities [1]. Despite their distinct nosological

 doi:10.20944/preprints202603.1984.v1

definitions, repetitive behaviors are central to both conditions, creating challenges in differential diagnosis and management when they co-occur [25].

Epidemiological evidence indicates that the co-occurrence of ASD and OCD is not incidental. A large Danish register study demonstrated that individuals with OCD were over 13 times more likely to have ASD compared to the general population, with 6.6% of OCD cases carrying an ASD diagnosis versus 0.5% of controls. The same study showed familial co-aggregation, suggesting shared liability across the disorders [9]. In clinical cohorts, prevalence estimates are even higher: a systematic review and meta-analysis found that approximately 9–12% of children and adolescents with OCD also meet criteria for ASD [2]. Among adults, rates vary substantially, but a UK outpatient study reported that 27.8% of OCD patients fulfilled diagnostic criteria for ASD and nearly half exceeded threshold scores for the presence of autistic traits on self-report measures [12]. Beyond categorical diagnoses, autistic traits, as measured by the Adult Autism Subthreshold Spectrum (AdAS Spectrum), are consistently elevated in OCD populations and are associated with greater symptom severity and impairment [3].

The clinical presentation of OCD in the context of ASD often differs from OCD alone. Studies suggest that symmetry obsessions, repetition and ordering compulsions, checking behaviors, and hoarding are particularly common in individuals with this comorbidity [2,8]. In addition, somatic obsessions - such as heightened preoccupation with bodily sensations (e.g., heartbeat, swallowing, breathing, or blinking) - appear to be more prevalent in ASD+OCD presentations than in OCD without ASD [3,5,8]. These symptoms may reflect the increased sensory sensitivities frequently reported in ASD and can lead to compulsive monitoring, reassurance seeking, or repetitive behaviors aimed at alleviating discomfort [3,8]. Repetition rituals are also observed more frequently, sometimes overlapping with autistic restricted and repetitive behaviors (RRBs).

Differentiating between compulsions and RRBs is clinically critical: compulsions in OCD are performed to reduce distress or prevent feared outcomes and are typically ego-dystonic, whereas RRBs in ASD are often ego-syntonic, intrinsically rewarding, and linked to sensory stimulation or circumscribed interests [25]. Indeed, there is the risk of overdiagnosis of ASD in OCD and viceversa, due to the overlapping clinical manifestations and apparently identical symptoms. Furthermore, co-occurring ASD is associated with poorer insight, a greater likelihood of compulsions occurring without corresponding intrusive obsessions, and difficulties distinguishing anxiety-driven rituals from routine-based rigidity [12]. Neurocognitive studies in ASD highlight deficits in attentional shifting and cognitive flexibility that that are also typical of obsessive-compulsive disorder [3]. Functionally, individuals with OCD and ASD traits typically experience more pervasive impairment across social, educational, and occupational domains than those with OCD alone [3,4].

Treatment outcomes are also affected by this comorbidity. Cognitive–behavioral therapy with exposure and response prevention (CBT-ERP) remains the gold standard for OCD, but both youth and adults with co-occurring ASD tend to show lower response and remission rates compared to those with OCD alone [6,11]. Adapted protocols - emphasizing concrete language, visual supports, caregiver involvement, and flexible pacing - have been proposed to improve outcomes [7]. Pharmacological interventions, particularly selective serotonin reuptake inhibitors (SSRIs), remain first-line in pharmacotherapy, although tolerability and efficacy appear more variable in ASD–OCD comorbidity [8].

The aim of this study is to investigate whether patients with a diagnosis of OCD have a different clinical profile according to the co-occurrence of ASD. We hypothesize that the comorbidity would be characterized by specific and diverse symptom patterns and clinical nuances that are essential for accurate diagnosis and treatment planning.

 doi:10.20944/preprints202603.1984.v1

Methods

Data

The data were for this cross-sectional investigation derived from a long-term observational study including patients with OCD [24,26]. The sample included individuals directed to the Department of Neuroscience at the University of Turin aged 18 years and older with a primary diagnosis of OCD (DSM-5) and a Yale-Brown Obsessive-Compulsive Scale score of at least 16, indicating moderate OCD.

Evaluation and Assessment Procedures

The data were gathered by means of a systematic face-to-face interview and a semi-structured interview used by our research group in prior investigations [24,26].

Certified and experienced psychiatrists conducted clinical examinations of patients. The interview format addressed the following areas:

- Sociodemographic information such as age, gender, marital status, educational attainment, and employment position.
- Clinical manifestations of Obsessive-Compulsive Disorder (OCD): obsessions and compulsions as identified by the symptom checklist of the Yale-Brown Obsessive Compulsive Scale Symptom Checklist [28]. Symptoms severity of OCD was assessed via the Yale-Brown Obsessive Compulsive Scale. These symptoms must induce significant discomfort, persist for over one hour everyday, or interfere with daily activities. The age of symptom onset was defined as the age at which the patient first observed obsessive and/or compulsive symptoms. The age at which the condition started was recorded within one month of the first manifestation of obsessive and compulsive symptoms that resulted in significant discomfort, used excessive time (exceeding one hour daily), or disrupted the patient's routine daily activities. Duration of untreated illness (DUI) was defined as the period from the beginning of symptoms to the initiation of the first acceptable therapy, which consists of suitable medicine administered at minimum effective doses for a sufficient duration, in accordance with international criteria. OCD onset was deemed sudden when symptoms attained a clinically relevant intensity within one week of initiation. All other forms of onset were deemed insidious.
- Psychiatric comorbidities were evaluated by using semi-structured interviews (SCID-5) carried out by experienced psychiatrists. Special emphasis was deserved to affective disorders, obsessive-compulsive and related disorders, and associated conditions, including body-focused repetitive behaviours (BFRBs). ASD diagnosis was established according to DSM-5 criteria (or DSM-IV-TR equivalent) based on developmental anamnesis and collateral history, supported by clinical assessment. Personality status was assessed using the Italian version of the Structured Clinical Interview for DSM-5 Axis II Disorders.
- Severity of obsessive–compulsive symptoms was rated with the Yale–Brown Obsessive–Compulsive Scale (Y-BOCS) [28]. The Y-BOCS contains 10 clinician-rated items (0–4 each; total 0–40) and shows high internal consistency (Cronbach's α = 0.88–0.91) and excellent inter-rater reliability (ICC > 0.85) across languages, including the Italian version (α = 0.91). Depressive and anxiety symptoms were assessed using the Hamilton Depression Rating Scale [30] and the Hamilton Anxiety Rating Scale [31]. Furthermore, any stressful life events (SLEs) among the 61 events identified by the Paykel Scale of stressful life events [27] that occurred during the twelve months before OCD onset were recorded. The chronology of these occurrences was meticulously documented, and severe stressful life events (sSLEs), classified within the top 20 on the Paykel scale, were recognised.

 doi:10.20944/preprints202603.1984.v1

Ethics

All individuals included provided written informed consent, which was authorised by our ethics committee, allowing the utilisation of their clinical data for research purposes under the condition of anonymous management. A formal request was made to the ethics committee (Comitato Etico Interaziendale Azienda Ospedaliera-Universitaria San Luigi Gonzaga di Orbassano) for access to the clinical records of all patients with OCD who provided consent; the protocol was approved by the institutional ethics committee (protocol number 0007375).

Statistics

The sociodemographic and clinical characteristics of the patients were presented as mean and standard deviation for continuous variables, and as frequency and percentage for categorical categories. The sample was categorised into two subgroups based on the presence of ASD. The sociodemographic and clinical characteristics were examined using Student's t-test and the Chi-Squared Test. The data analysis was conducted via JASP (Version 0.16.3), a complimentary statistical software developed by the University of Amsterdam (JASP Team, 2022). Normality was evaluated by assumption checks utilising the Shapiro-Wilk test. Matched Samples Student t-tests were used to analyse variances under the assumption of normality. In instances of observed deviations from normality, the Mann-Whitney U test was used. Chi-Squared Test statistics were used to identify variations in categorical variables. In an exploratory analysis, we examined whether traumatic life events predicted ASD comorbidity in OCD after accounting for relevant clinical covariates. A multivariable logistic regression model was specified with ASD diagnosis (yes/no) as the dependent variable and exposure to traumatic events (yes/no) and severe traumatic events (yes/no) as the primary predictors. Age, sex, OCD severity (Y-BOCS total score), depressive symptoms (HAM-D), anxiety symptoms (HAM-A), and total number of stressful life events (Paykel score) were included as covariates. Odds ratios (ORs), 95% confidence intervals (95% CIs), and p-values were reported. The statistical significance was established at $p < 0.05$. To account for multiple comparisons, p-values were corrected using the Benjamini–Hochberg False Discovery Rate (FDR) method. FDR correction was applied separately within each table (sociodemographic variables; clinical and phenomenological variables). Statistical significance after correction was set at $p < 0.05$.

Results

A total of 603 patients with a primary diagnosis of OCD were included in the analysis, of whom 149 (24.7%) presented with comorbid ASD and 454 (75.3%) did not.

Sociodemographic Characteristics

Patients with OCD+ASD were significantly younger than those with OCD alone (mean age 32.7 vs. 35.8 years, $p = 0.020$). No differences were observed in sex distribution, employment status, or educational attainment between groups. Family history of affective disorders was more frequently reported among patients with OCD+ASD (40.9% vs. 31.3%, $p = 0.030$), while family history of OCD and anxiety disorders did not differ significantly between groups (see Table 1).

Table 1. Sociodemographic characteristics and family history.

Variable	OCD + ASD N = 149	OCD without ASD N = 454	p-value*	p-FDR &
Females - N (%)	61 (40.9)	214 (47.1)	p = 0.188	0.439
Employed - N (%)	68 (45.6)	223 (49.1)	p = 0.461	0.645

 doi:10.20944/preprints202603.1984.v1

Age – mean years (SD)	32.74 (11.60)	35.79 (12.72)	**p = 0.020**	0.140
Education – mean years (SD)	12.90 (3.59)	12.65 (3.54)	p = 0.576	0.672
Family history of OCD - N (%)	33 (22.1)	87 (19.2)	p = 0.428	0.749
Family history for affective disorders – N (%)	61 (40.9)	142 (31.3)	**p = 0.030**	0.105
Family history for anxiety disorders – N (%)	18 (12.0)	54 (11.9)	p = 0.951	0.951

*: comparative analyses of the sociodemographic variables between the groups (OCD + ASD vs OCD without ASD). Chi-Squared Test statistics was employed to detect differences on categorical variables. Paired Samples Student t-tests were used to examine variations on continuous variables where normality could be assumed; in cases where departures from normality were observed, the Mann-Whitney U test was adopted. Statistical value was set at $p < 0.05$. &: FDR: Benjamini–Hochberg False Discovery Rate. In bold: significant results.

Clinical Characteristics

Patients with OCD+ASD exhibited a significantly earlier onset of both obsessive–compulsive symptoms (mean 15.4 vs. 17.2 years, $p = 0.004$) and full-blown disorder (20.2 vs. 22.4 years, $p < 0.001$), while the duration of untreated illness did not differ significantly.

Overall severity of obsessive–compulsive, depressive, and anxiety symptoms—as measured by the Y-BOCS, HAM-D, and HAM-A—was comparable between the two groups. However, patients with OCD+ASD reported a significantly higher burden of stressful life events as measured by the Paykel Scale of stressful life events [27] (mean 12.7 vs. 11.1, $p = 0.021$) and more frequent exposure to traumatic events (64.2% vs. 49.4%, $p = 0.007$), including severe trauma (28.5% vs. 18.8%, $p = 0.014$) (see Table 2).

Table 2. Selected clinical characteristics.

Variable	**OCD + ASD N = 149**	**OCD without ASD N = 454**	**p-value***	**p-FDR &**
Age at symptoms onset – mean years (SD)	15.42 (7.84)	17.16 (8.23)	**p = 0.004**	**p= 0.011**
Age at disorder onset – mean years (SD)	20.17 (8.05)	22.44 (8.73)	**p < 0.001**	**p = 0.010**
Type of onset			p = 0.836	p = 0.836
Abrupt – N (%)	41 (27.5)	121 (26.7)		
Insidious – N (%)	108 (72.5)	333 (73.3)		
Duration of Untreated Illness (DUI) – mean months (SD)	123.41 (132.01)	107.20 (115.19)	p = 0.532	p = 0.626
Paykel Scale of Stressful Life Events§ – mean total score (SD)	12.67 (13.87)	11.10 (15.70)	p = 0.021	p = 0.038
Number of traumatic life events§ - mean (SD)	1.17 (1.15)	1.02 (1.34)	**p = 0.021**	**p = 0.042**
At least one traumatic event§ - N (%)	95 (64.2)	222 (49.4)	**p = 0.007**	**p = 0.018**
At least one severe traumatic event§- N (%)	41 (28.5)	81 (18.8)	**p = 0.014**	**p = 0.031**
Y-BOCS – mean total score (SD)	24.86 (6.14)	24.17 (6.33)	p = 0.143	p = 0.179

 doi:10.20944/preprints202603.1984.v1

HAM-D - mean score (SD)	11.34 (6.61)	10.96 (6.34)	p = 0.556	p = 0.618
HAM-A - mean score (SD)	12.65 (7.20)	11.59 (6.40)	p = 0.141	p = 0.188
Religious obsessions Yes - N (%)	46 (30.9)	87 (19.2)	**p = 0.003**	**p = 0.017**
Somatic obsessions Yes - N (%)	59 (60.4)	110 (24.2)	**p < 0.001**	**p = 0.007**
Checking compulsions - Yes - N (%)	112 (75.2)	301 (66.3)	**p = 0.043**	p = 0.066
Repetition compulsions - Yes - N (%)	92 (61.7)	210 (46.3)	**p < 0.001**	**p = 0.020**
Major Depressive Disorder			p = 0.722	p = 0.760
Yes - N (%)	43 (23.1)	138 (21.8)		
Anxiety Disorders			p = 0.081	p = 0.116
Yes - N (%)	44 (29.5)	102 (22.5)		
Onychophagia			**p < 0.001**	**p = 0.004**
Yes - N (%)	99 (66.4)	2 (0.4)		
Trichotillomania			**p < 0.001**	**p = 0.005**
Yes - N (%)	13 (8.7)	0 (0)		
Obsessive-Compulsive Personality Disorder (OCPD)			p = 0.557	p = 0.860
Yes - N (%)	26 (17.5)	70 (15.4)		
Cluster B Personality Disorders			**p = 0.036**	p = 0.060
Yes - N (%)	27 (18.1)	52 (11.4)		

*: comparative analyses of the sociodemographic variables between the groups (OCD + ASD vs OCD without ASD). Chi-Squared Test statistics was employed to detect differences on categorical variables. Paired Samples Student t-tests were used to examine variations on continuous variables where normality could be assumed; in cases where departures from normality were observed, the Mann-Whitney U test was adopted. Statistical value was set at $p < 0.05$. &: FDR: Benjamini–Hochberg False Discovery Rate. §: Data available for N=144 OCD+ASD patients and N=430 OCD only patients. In bold: significant results. Y-BOCS: Yale–Brown Obsessive–Compulsive Scale; HAM-D: Hamilton Rating Scale for Depression; HAM-A: Hamilton Anxiety Rating Scale; MDD: Major Depressive Disorder; ASD: Autism Spectrum Disorder;.

Regarding comorbidities, the prevalence of major depressive disorder and other anxiety disorders did not diverge significantly, although comorbid anxiety disorders tended to be numerically higher in the OCD+ASD group (29.5% vs. 22.5%, $p = 0.081$). By contrast, body-focused repetitive behaviors were strikingly more prevalent in OCD+ASD patients, with onychophagia reported in 66.4% compared with 0.4% of OCD-only patients ($p < 0.001$) and trichotillomania observed in 8.7% compared with none ($p < 0.001$). Cluster B personality disorders were also more common in the OCD+ASD subgroup (18.1% vs. 11.4%, $p = 0.036$) (see Table 2), whereas no difference was seen in frequency of obsessive-compulsive personality disorder (OCPD) diagnosis.

Obsessive–Compulsive Symptom Profile

Phenomenological analysis revealed significant differences in the content of obsessions and compulsions. Patients with OCD+ASD were more likely to present religious obsessions (30.9% vs. 19.2%, $p = 0.003$) and somatic obsessions (60.4% vs. 24.2%, $p < 0.001$). With regard to compulsions, checking (75.2% vs. 66.3%, $p = 0.043$) and repetition (61.7% vs. 46.3%, $p < 0.001$) were significantly more common among patients with OCD+ASD. No significant differences were found for type of onset (abrupt vs. insidious) (see Table 2).

After FDR correction, as regards to sociodemographic factors, age and family history for affective disorders lost significance. In terms of clinical characteristics, the associations with Cluster

 doi:10.20944/preprints202603.1984.v1

B personality disorders and checking compulsions did not remain statistically significant, although showing a trend (p = 0.060 and p = 0.066, respectively).

In an exploratory multivariable logistic regression model including age, sex, OCD severity, depressive and anxiety symptoms, and overall stressful life events, severe traumatic events remained independently associated with ASD comorbidity (OR = 1.7; 95% CI = 1.1–2.6), whereas the association with any traumatic event was attenuated and no longer reached conventional significance levels (see Table 3).

Table 3. Multivariable logistic regression model of predictors for ASD in the OCD population.

Variable	Coefficient (β)	SE	z	OR	95% CI	p-value
Intercept	-2.057	0.555	-3.708			**<0.001**
Traumatic events	0.364	0.194	1.857	1.44	0.98 – 2.11	0.063
Severe trauma	0.529	0.220	2.402	1.70	1.10 – 2.61	**0.016**
Age	-0.003	0.008	-0.360	1.00	0.98 – 1.01	0.720
Female sex	-0.367	0.196	-1.871	0.69	0.47 – 1.02	0.063
Y-BOCS	0.018	0.015	1.250	1.02	0.99 – 1.05	0.211
HAM-D	0.009	0.016	0.578	1.01	0.98 – 1.04	0.564
HAM-A	0.027	0.015	1.835	1.03	1.00 – 1.06	0.065
Paykel scale total score	-0.001	0.010	-0.128	1.00	0.98 – 1.01	0.898

SE: standard error; OR: odds ratio; 95% CI: 95% confidence interval. In bold: significant results.

Discussion

The present study provides new insights into the co-occurrence of obsessive–compulsive disorder and autism spectrum disorder, as we found a prevalence of ASD in patients with OCD as high as 24.7% (149 out of 603 individuals). This is in line with the study conducted in UK by Wikramanayake and colleagues in a clinical setting, while the prevalence found in the population studies is indeed much lower [9]. This difference could be in relation to the fact that patients recruited from tertiary specialised clinical settings are different than individuals at a population level, as they have a more elevated degree of complexity, multifaceted presentations and are resistant to multiple treatments. Moreover, we should embrace the hypothesis that patients diagnosed with OCD as per DSM criteria might conceptually have ASD as primary diagnosis and secondary obsessive-compulsive manifestations, which are indeed different in nature, onset, etc. than the symptoms we find in OCD without ASD.

Our findings demonstrate that the subgroup of patients with OCD+ASD is clinically distinct from those with OCD alone, presenting a specific pattern of sociodemographic, clinical, and phenomenological characteristics that warrant careful consideration.

The key finding of our research is the increased exposure to traumatic life events, including severe trauma, among patients with OCD+ASD. This higher prevalence of traumatic experiences may be interpreted in several ways. Individuals with ASD are known to be more vulnerable to bullying, social exclusion, and stressful interactions due to impaired social communication and difficulties in emotion regulation [19]. Moreover, the co-occurrence of OCD may exacerbate these vulnerabilities by adding rigidity, amplified threat perception, and maladaptive coping strategies, thereby intensifying the psychological impact of trauma. Severe traumatic events, in particular, were found to be a predictor of ASD in our OCD population (Table 3); given the exploratory nature of this analysis, however, the result should be interpreted cautiously. This observation highlights the potential importance of integrating trauma-informed approaches into the clinical management of this subgroup [14].

Another consistent finding is the earlier age at onset of both obsessive–compulsive symptoms and full-blown disorder in patients with OCD+ASD. This observation aligns with previous reports indicating that an early manifestation is often associated with more severe, chronic, and treatment-resistant trajectories [17,20]. Early emergence of symptoms in the context of ASD may reflect

 doi:10.20944/preprints202603.1984.v1

underlying neurodevelopmental vulnerabilities, including cognitive inflexibility and heightened sensitivity to uncertainty, which might predispose and/or overlap with clinical features typical of OCD [15]. Moreover, the early onset might merely be due to the presence of the repetitive and restricted behaviours (again we should take into account the possibility that these might be interpreted as obsessive-compulsive manifestations) and the high level of anxiety typical of individuals with ASD at a young age.

The clinical picture of OCD+ASD patients is further characterized by a higher prevalence of body-focused repetitive behaviors, such as onychophagia and trichotillomania [34]. These behaviors may represent a behavioral overlap between the stereotypies typically seen in ASD and the compulsions of OCD [32]. Neurobiological models support the hypothesis of shared circuitry alterations involving cortico–striato–thalamo–cortical loops and habit-forming mechanisms, which may explain the convergence of these phenomena [16]. This co-occurrence of disorders pose a question and cast doubt on the challenges of the diagnostic process based on DSM criteria: are we measuring an independent disorder or the repetitive restricted behaviours? There is a need, in the future, for more nuanced diagnostic tools to disentangle this complicated matter. Moreover, the identification of such comorbidities suggests the need for specific therapeutic strategies, possibly combining behavioral interventions targeting habit reversal with standard OCD treatments.

In terms of phenomenology of obsessions and compulsions, our data reveal that religious and somatic obsessions, as well as repetition compulsions, are more common in patients with OCD+ASD (the higher frequency of checking compulsion in the ASD+OCD group showed a significant trend). These findings point toward a different qualitative expression of the disorder in the presence of ASD traits. Religious and somatic themes may reflect the concrete and detail-focused thinking style associated with ASD, as well as intensified preoccupation with bodily sensations and rules [15]. Similarly, the predominance of repetition rituals may arise from the combination of OCD-related intolerance of uncertainty and ASD-related cognitive rigidity [13]. These differences suggest that clinicians should carefully assess symptom content in order to tailor treatment approaches more effectively. Nonetheless, we should also keep in mind the possibility that the obsessive-compulsive symptoms might be an epiphenomenon of the ASD, and not an independent disorder.

Interestingly, the OCD+ASD group displayed a trend toward higher rate of comorbid Cluster B personality disorders, a finding that has potential clinical implications. The combination of emotional dysregulation, impulsivity, and interpersonal difficulties with the rigidity and repetitive behaviors of OCD+ASD may contribute to particularly multifaceted clinical presentations. Such comorbidity can complicate treatment planning, therapeutic alliance, and long-term prognosis, requiring a more integrated and flexible approach to care [21]. On the other end, no difference was noted in terms of frequency of obsessive-compulsive personality disorder (OCPD) in the two groups, somehow confirming the finding by previous studies such as the one by Gadelkarim and colleagues [33].

Despite these qualitative differences, global symptom severity as measured by Y-BOCS, HAM-D, and HAM-A scores did not differ significantly between groups. This suggests that ASD comorbidity does not necessarily increase the quantitative burden of obsessive–compulsive, depressive, or anxiety symptoms. Instead, it appears to shape the disorder's clinical expression and course in more nuanced ways. From a clinical perspective, this highlights the need to go beyond severity scores and consider phenomenological differences when formulating diagnoses and treatment plans.

Limitations

This research has some shortcomings that need acknowledgement. First, the cross-sectional methodology precludes causal conclusions about the link between OCD and ASD; longitudinal studies are required to clarify whether early onset, trauma exposure, and specific phenomenology predict different trajectories of illness and treatment response in OCD+ASD. Neuroimaging and genetic studies may also help disentangle the shared and distinct mechanisms underlying this comorbidity. Second, all participants were sourced from a single clinical centre, perhaps leading to

 doi:10.20944/preprints202603.1984.v1

an over-representation of more severe or complicated cases, including those with neurodevelopmental comorbidities, so diminishing external validity. Third, we did not use an a-priori power calculation. Fourth, we relied on clinical diagnoses, although conducted by psychiatrists with vast experience in OCD and associated disorders, without using reliability metrics (e.g., kappa coefficient among interviewers). Notwithstanding these constraints, the substantial sample size and use of structured diagnostic interviews enhance confidence in the validity of the primary results. Nonetheless, the current study offers new evidence regarding the clinical characterisation of OCD patients with ASD, emphasising a unique phenotype.

Clinical Implications and Future Directions

The present findings underscore the importance of recognizing OCD+ASD as a distinct clinical subtype, characterized by early onset, increased vulnerability to trauma, unique obsessive–compulsive contents, and specific comorbidities. Clinicians should systematically evaluate possible ASD in patients with early-onset or trauma-exposed OCD, paying particular attention to traumatic experiences, content of obsessions and presence of body-focused repetitive behaviors.

Pharmacological treatment may need to be adapted, considering evidence that selective serotonin reuptake inhibitors (SSRIs) may be less effective in the presence of prominent ASD traits, and that augmentation strategies could be more frequently required [35].

Cognitive–behavioral therapy (CBT) should be tailored to account for cognitive rigidity and concrete thinking styles, with trauma-informed care being particularly relevant for this subgroup, given the higher exposure to adverse life events.

Recognition of these features may ultimately contribute to more effective diagnosis, clinical management and improved outcomes for this complex population.

References

1. *Diagnostic and Statistical Manual of Mental Disorders: DSM-5™, 5th Ed*; Diagnostic and statistical manual of mental disorders: DSM-5™, 5th ed; American Psychiatric Publishing, Inc.: Arlington, VA, US, 2013; pp. xliv, 947; ISBN 978-0-89042-554-1.
2. Aymerich, C.; Pacho, M.; Catalan, A.; Yousaf, N.; Pérez-Rodríguez, V.; Hollocks, M.J.; Parellada, M.; Krebs, G.; Clark, B.; Salazar de Pablo, G. Prevalence and Correlates of the Concurrence of Autism Spectrum Disorder and Obsessive Compulsive Disorder in Children and Adolescents: A Systematic Review and Meta-Analysis. *Brain Sci* **2024**, *14*, 379, doi:10.3390/brainsci14040379.
3. Dell'Osso, L.; Nardi, B.; Bonelli, C.; Amatori, G.; Pereyra, M.A.; Massimetti, E.; Cremone, I.M.; Pini, S.; Carpita, B. Autistic Traits as Predictors of Increased Obsessive-Compulsive Disorder Severity: The Role of Inflexibility and Communication Impairment. *Brain Sci* **2024**, *14*, 64, doi:10.3390/brainsci14010064.
4. Griffiths, D.L.; Farrell, L.J.; Waters, A.M.; White, S.W. ASD Traits Among Youth with Obsessive-Compulsive Disorder. *Child Psychiatry Hum Dev* **2017**, *48*, 911–921, doi:10.1007/s10578-017-0714-3.
5. Jacob, S.; Landeros-Weisenberger, A.; Leckman, J.F. Autism Spectrum and Obsessive-Compulsive Disorders: OC Behaviors, Phenotypes and Genetics. *Autism Res* **2009**, *2*, 293–311, doi:10.1002/aur.108.
6. Murray, K.; Jassi, A.; Mataix-Cols, D.; Barrow, F.; Krebs, G. Outcomes of Cognitive Behaviour Therapy for Obsessive-Compulsive Disorder in Young People with and without Autism Spectrum Disorders: A Case Controlled Study. *Psychiatry Res* **2015**, *228*, 8–13, doi:10.1016/j.psychres.2015.03.012.
7. Flygare, O.; Andersson, E.; Ringberg, H.; Hellstadius, A.-C.; Edbacken, J.; Enander, J.; Dahl, M.; Aspvall, K.; Windh, I.; Russell, A.; et al. Adapted Cognitive Behavior Therapy for Obsessive-Compulsive Disorder with Co-Occurring Autism Spectrum Disorder: A Clinical Effectiveness Study. *Autism* **2020**, *24*, 190–199, doi:10.1177/1362361319856974.
8. Lewin, A.; Wood, J.; Gunderson, S.; Murphy, T.; Storch, E. Phenomenology of Comorbid Autism Spectrum and Obsessive-Compulsive Disorders Among Children. *Journal of Developmental and Physical Disabilities - J DEV PHYS DISABILITIES* **2011**, *23*, doi:10.1007/s10882-011-9247-z.

 doi:10.20944/preprints202603.1984.v1

9. Meier, S.M.; Petersen, L.; Schendel, D.E.; Mattheisen, M.; Mortensen, P.B.; Mors, O. Obsessive-Compulsive Disorder and Autism Spectrum Disorders: Longitudinal and Offspring Risk. *PLoS One* **2015**, *10*, e0141703, doi:10.1371/journal.pone.0141703.
11. Elliott, S.J.; Marshall, D.; Morley, K.; Uphoff, E.; Kumar, M.; Meader, N. Behavioural and Cognitive Behavioural Therapy for Obsessive Compulsive Disorder (OCD) in Individuals with Autism Spectrum Disorder (ASD). *Cochrane Database Syst Rev* **2021**, *9*, CD013173, doi:10.1002/14651858.CD013173.pub2.
12. Wikramanayake, W.N.M.; Mandy, W.; Shahper, S.; Kaur, S.; Kolli, S.; Osman, S.; Reid, J.; Jefferies-Sewell, K.; Fineberg, N.A. Autism Spectrum Disorders in Adult Outpatients with Obsessive Compulsive Disorder in the UK. *Int J Psychiatry Clin Pract* **2018**, *22*, 54–62, doi:10.1080/13651501.2017.1354029.
13. Anholt, G.E.; Cath, D.C.; van Oppen, P.; Eikelenboom, M.; Smit, J.H.; van Megen, H.; van Balkom, A.J.L.M. Autism and ADHD Symptoms in Patients with OCD: Are They Associated with Specific OC Symptom Dimensions or OC Symptom Severity? *J Autism Dev Disord* **2010**, *40*, 580–589, doi:10.1007/s10803-009-0922-1.
14. Dell'Osso, L.; Carpita, B.; Gesi, C.; Cremone, I.M.; Corsi, M.; Massimetti, E.; Muti, D.; Calderani, E.; Castellini, G.; Luciano, M.; et al. Subthreshold Autism Spectrum Disorder in Patients with Eating Disorders. *Comprehensive Psychiatry* **2018**, *81*, 66–72, doi:10.1016/j.comppsych.2017.11.007.
15. Dell'Osso, L.; Nardi, B.; Bonelli, C.; Amatori, G.; Pereyra, M.A.; Massimetti, E.; Cremone, I.M.; Pini, S.; Carpita, B. Autistic Traits as Predictors of Increased Obsessive-Compulsive Disorder Severity: The Role of Inflexibility and Communication Impairment. *Brain Sci* **2024**, *14*, 64, doi:10.3390/brainsci14010064.
16. Fineberg, N.A.; Day, G.A.; de Koenigswarter, N.; Reghunandanan, S.; Kolli, S.; Jefferies-Sewell, K.; Hranov, G.; Laws, K.R. The Neuropsychology of Obsessive-Compulsive Personality Disorder: A New Analysis. *CNS Spectr* **2015**, *20*, 490–499, doi:10.1017/S1092852914000662.
17. Ivarsson, T.; Melin, K. Autism Spectrum Traits in Children and Adolescents with Obsessive-Compulsive Disorder (OCD). *J Anxiety Disord* **2008**, *22*, 969–978, doi:10.1016/j.janxdis.2007.10.003.
18. Spek, A.A.; van Ham, N.C.; Nyklíček, I. Mindfulness-Based Therapy in Adults with an Autism Spectrum Disorder: A Randomized Controlled Trial. *Res Dev Disabil* **2013**, *34*, 246–253, doi:10.1016/j.ridd.2012.08.009.
19. Mehtar, M.; Mukaddes, N.M. Posttraumatic Stress Disorder in Individuals with Diagnosis of Autistic Spectrum Disorders. *Research in Autism Spectrum Disorders* **2011**, *5*, 539–546, doi:10.1016/j.rasd.2010.06.020.
20. Russell, A.J.; Mataix-Cols, D.; Anson, M.; Murphy, D.G.M. Obsessions and Compulsions in Asperger Syndrome and High-Functioning Autism. *The British Journal of Psychiatry* **2005**, *186*, 525–528, doi:10.1192/bjp.186.6.525.
21. Raja, M.; Azzoni, A. Comorbidity of Asperger's Syndrome and Bipolar Disorder. *Clin Pract Epidemiol Ment Health* **2008**, *4*, 26, doi:10.1186/1745-0179-4-26.
24. Albert, U.; Maina, G.; Ravizza, L.; Bogetto, F. An Exploratory Study on Obsessive-Compulsive Disorder with and without a Familial Component: Are There Any Phenomenological Differences? *Psychopathology* **2002**, *35*, 8–16, doi:10.1159/000056210.
25. O'Loghlen, J.; McKenzie, M.; Lang, C.; Paynter, J. Repetitive Behaviors in Autism and Obsessive-Compulsive Disorder: A Systematic Review. *J Autism Dev Disord* **2025**, *55*, 2307–2321, doi:10.1007/s10803-024-06357-8.
26. Bramante, S.; Maina, G.; Borgogno, R.; Pellegrini, L.; Rigardetto, S.; Albert, U. Assessing Suicide Risk in Patients with Obsessive-Compulsive Disorder: A Dimensional Approach. *Braz J Psychiatry* **2023**, *45*, 28–37, doi:10.47626/1516-4446-2022-2632.
27. Baratta, S.; Colorio, C.; Zimmermann-Tansella, Ch. Inter-Rater Reliability of the Italian Version of the Paykel Scale of Stressful Life Events. *Journal of Affective Disorders* **1985**, *8*, 279–282, doi:10.1016/0165-0327(85)90027-8.
28. Goodman, W.K.; Price, L.H.; Rasmussen, S.A.; Mazure, C.; Fleischmann, R.L.; Hill, C.L.; Heninger, G.R.; Charney, D.S. The Yale-Brown Obsessive Compulsive Scale. I. Development, Use, and Reliability. *Arch Gen Psychiatry* **1989**, *46*, 1006–1011, doi:10.1001/archpsyc.1989.01810110048007.
30. Pancheri, P.; Picardi, A.; Pasquini, M.; Gaetano, P.; Biondi, M. Psychopathological Dimensions of Depression: A Factor Study of the 17-Item Hamilton Depression Rating Scale in Unipolar Depressed Outpatients. *J Affect Disord* **2002**, *68*, 41–47, doi:10.1016/s0165-0327(00)00328-1.

 doi:10.20944/preprints202603.1984.v1

31. Maier, W.; Buller, R.; Philipp, M.; Heuser, I. The Hamilton Anxiety Scale: Reliability, Validity and Sensitivity to Change in Anxiety and Depressive Disorders. *Journal of Affective Disorders* **1988**, *14*, 61–68, doi:10.1016/0165-0327(88)90072-9.
32. Lochner, C.; Fineberg, N.A.; Zohar, J.; van Ameringen, M.; Juven-Wetzler, A.; Altamura, A.C.; Cuzen, N.L.; Hollander, E.; Denys, D.; Nicolini, H.; et al. Comorbidity in Obsessive-Compulsive Disorder (OCD): A Report from the International College of Obsessive-Compulsive Spectrum Disorders (ICOCS). *Compr Psychiatry* **2014**, *55*, 1513–1519, doi:10.1016/j.comppsych.2014.05.020.
33. Gadelkarim, W.; Shahper, S.; Reid, J.; Wikramanayake, M.; Kaur, S.; Kolli, S.; Osman, S.; Fineberg, N.A. Overlap of Obsessive-Compulsive Personality Disorder and Autism Spectrum Disorder Traits among OCD Outpatients: An Exploratory Study. *Int J Psychiatry Clin Pract* **2019**, *23*, 297–306, doi:10.1080/13651501.2019.1638939.
34. Pellegrini, L.; Di Salvo, G.; Rosso, G.; Maina, G.; Albert, U. Onychophagia in Obsessive-Compulsive Disorder (OCD): Prevalence and Clinical Characterisation. *Brain Sci* **2025**, *15*, 1228, doi:10.3390/brainsci15111228.
35. van Steensel, F.J.A.; Bögels, S.M.; Perrin, S. Anxiety Disorders in Children and Adolescents with Autistic Spectrum Disorders: A Meta-Analysis. *Clin Child Fam Psychol Rev* **2011**, *14*, 302–317, doi:10.1007/s10567-011-0097-0.