

ORIGINAL ARTICLE

Autistic Traits in Patients with Obsessive-Compulsive Disorder at Zagazig University Hospitals

Rehab Mahdy, Shimaa Amin, Yomna Khalil

Department of Psychiatry, Zagazig University, Zagazig, Egypt.

Correspondence to Rehab S. Mahdy, Shoubak Basta, Zagazig City, Sharkia Governorate, Egypt

E-mail: rehab_saeed_2009@yahoo.com

Background	Compulsive behaviors describe obsessive-compulsive disorder (OCD) and autism-spectrum disorder. According to available data, up to 20% of those seeking treatment for OCD also have autistic characteristics. The effect of autistic characteristics on OCD is unknown.
Objective	To find the frequency of autistic traits in patients with OCD and its effect on clinical characteristics of OCD.
Patients and Methods	A case-control cross-sectional study design was employed. The Autism-Spectrum Quotient was used to assess autistic features in 60 adult outpatients with Diagnostic and Statistical Manual of Mental Disorders OCD diagnoses and 60 adults who were age and sex matched with the general population. Patients with OCD with and without autistic symptoms were compared regarding demographic and clinical criteria.
Results	Approximately 30% of patients scored above the clinical threshold of the Autistic-Spectrum Quotient. Patients with autistic features had a considerably higher level of OCD symptom severity as judged by the Yale-Brown Obsessive-Compulsive Scale ($P=0.04$) and a significantly higher level of insight impairment as measured by the Brown Assessment of Beliefs Scale ($P=0.001$).
Conclusions	Patients with OCD have a high frequency of autistic characteristics. Autistic features are linked to more severe OCD symptoms and a lack of insight.
Keywords	Autistic-spectrum disorder, Autistic traits, Obsessive-compulsive disorder. Egyptian Journal of Psychiatry 2024,

INTRODUCTION

Obsessive-compulsive disorder (OCD) is a heterogeneous neuropsychiatric disorder characterized by recurrent intrusive thoughts and repetitive ritualistic acts (Memis *et al.*, 2019). Meanwhile, patients with autism-spectrum disorder (ASD) experience significant social, communication, and behavioral challenges. However, definitions of the two disorders have started to blur together because of growing evidence that supports a phenomenological overlap between OCD and ASD (Stone and Chen, 2016).

Both people on the autism-spectrum (Dunn and Andrews, 2015) and those in the general population have autistic features (Whitehouse *et al.*, 2011). In general, people diagnosed with ASD score at the top of the autistic characteristic distribution; nonetheless, the autistic trait

distributions of autistic and neurotypical people overlap (Constantino and Todd, 2003).

Repetitive behavior can be seen in a variety of mental conditions and typically growing people, but it is a key feature of the neurodevelopment disorders ASD and OCD (Zandt *et al.*, 2009).

Some people believe that the stereotyped and rigid behaviors seen in autism are similar to the obsessions and compulsions seen in OCD (Hollander *et al.*, 2008). Individuals with autism, for example, frequently demand that things remain the same, such as attire, doing things at a specific time, or expressing things in a specific manner. These parallels continue to stoke debates over the link between autism and OCD (Ruzzano *et al.*, 2015).

Martin *et al.*, (2020), observed that roughly 25% of young adolescents with OCD also had an ASD diagnosis in the largest study of co-occurring OCD and ASD. So, in our study, we examined the presence of autistic traits in patients with OCD and their effect on OCD severity and insight.

PATIENTS AND METHODS

This is a case-control cross-sectional study performed in the outpatient clinic of the Psychiatry Department, Zagazig University Hospitals, Sharkia, Egypt, in the period between November 2020 and June 2021.

Approval was obtained from the Institutional Review Board (IRB) (Code: ZU-IRB#3124-30-11-2020).

The study included two groups: case group comprised 60 cases with OCD diagnosed according to Diagnostic and Statistical Manual of Mental Disorders (DSM5) and consecutively recruited from the outpatient clinic, and control group comprised 60 healthy volunteers from medical and paramedical staff at Zagazig University Hospitals.

Inclusion and exclusion criteria

Cases that met the OCD diagnostic criteria of DSM5, with an age range from 18 to 60 years, of either sex, who gave their informed consent to participate in the study were included. The control group comprised age-matched and sex-matched individuals from a healthy population who gave their informed consent to participate in the study.

We excluded individuals who met DSM5 criteria for any Axis I psychiatric disorder and those who refused to participate in the study.

Process

The diagnosis of OCD was made according to the DSM5 criteria by at least two expert psychiatrists based on extensive clinical interviews.

Full psychiatric examination was done using a semistructured interview developed and used in the Department of Psychiatry, Zagazig University, which included specific data regarding sociodemographic data and clinical characteristics of the disorder.

Yale-Brown Obsessive-Compulsive Scale (YBOCS) (Goodman *et al.*, 1989) was used to assess OCD illness severity.

Brown Assessment of Beliefs Scale: this clinician-recommended scale assesses a patient's understanding of their beliefs. Conviction, perception of others' beliefs, explanation of contrasting views, fixity of ideas, attempts to disprove ideas, insight, and/or delusions of reference are the seven dimensions. On a four-point Likert scale ranging from 0 to 4, all of the dimensions are rated (Eisen *et al.*, 1998).

Autistic-spectrum quotient (AQ) (Baron-Cohen *et al.*, 2001): The AQ was translated into Arabic by a licensed translation center for this study. After that, it was retranslated into English by another certified expert, and the English version was compared with the original (English) AQ version. Cronbach's coefficients were determined, and they were found to be very high (0.8). Three psychiatry professors approved the AQ Arabic version (face validity). The internal consistency of the Arabic version of the AQ was then tested by comparing the total score with each part of it.

Statistical Analysis

Data were checked, entered, and analyzed using SPSS, version 20. Data were expressed as mean and SD for qualitative variables and as numbers and percentages for categorical variables, which was done by a professional statistician.

The results were considered significant when the probability of error is less than 5% ($P < 0.05$) and nonsignificant when the probability of error is more than 5% ($P > 0.05$). The following tests were done when appropriate:

- (a) Descriptive analysis: mean and range.
- (b) χ^2 test.
- (c) t test.

RESULTS

Sociodemographic variables

Demographic characteristics of patients with OCD and healthy controls are presented in Table 1.

The ages of the OCD group ranged from 23 to 55 years, with a mean \pm SD of 35.5 \pm 5.8 years, whereas the ages of the control group ranged from 20 to 59 years, with a mean \pm SD of 37.2 \pm 5.12 years. The OCD patient group included 30 (50%) males and 30 (50%) females, whereas 26 (43.3%) males and 34 (56.7%) females were included in control group. There was no statistically significant difference between case and control groups regarding education, occupation, residency, and family history of psychiatric disorders ($P > 0.05$). The prevalence of autistic traits in cases (30%) was more than in controls (26.7%).

Clinical data of patients with obsessive-compulsive disorder (case group)

Clinical data of patients with OCD are presented in Table 2. Comparison between cases and control regarding total AQ scale results and subscales is presented in Table 3. The total AQ scale results are higher in cases than in controls. This difference is statistically significant ($P = 0.026$). Moreover, there was a highly significant difference between cases and controls in the attention switch subscale ($P < 0.001$).

Table 1: Demographic data of the two studied groups:

Items	Cases [n (%)]	Control [n (%)]	t test	P value
Age				
Mean±SD	35.5±5.8	37.2±5.12	0.66	0.5
Range	23–45	20–59		
Sex				
Male	30(50)	26(43.3)	0.27	0.6
Female	30(50)	34(56.7)		
Education				
Not educated	22(36.7)	10(16.7)		
Elementary	2(3.3)	6(10.0)	4.6	0.2
Secondary	14(23.3)	12(40.0)		
High	22(36.7)	24(33.3)		
Occupation				
Unskilled	38(63.3)	40(66.7)	0.15	0.92
Skilled	22(36.7)	20(33.3)		
Residency				
Rural	38(63.33)	24(40)	0.18	0.983
Urban	22(36.7)	36(60)		
Family history of psychiatric disorders	22(36.7)	0	0.004	0.947

*: P value is significant; **: P value is highly significant.

Table 2: Clinical data of patients with obsessive-compulsive disorder (case group):

Cases	N=60	
Age of onset (years)		
Mean±SD	23.8±3.9	
Range	15–34	
Duration of the disorder (months)		
Mean±SD	11.3±4.9	
Range	3–20	
Type of OCD		
Contamination	30	50.0%
Checking	10	16.7%
Religious	20	33.3%
Family history of psychiatric disorder		
Positive	22	36.7%
Negative	38	63.3%
Insight		
Poor	18	30%
Good	32	53.3%
Excellent	10	16.7%

OCD: obsessive-compulsive disorder.

Relation of the presence of autistic traits and positive family history of psychiatric disorder is presented in Table 5, showing that autistic traits are more common in

cases that had a positive family history of a psychiatric disorder than those who had not ($P=0.012$).

Correlation between insight and autistic traits is presented in Table 6. There was a highly significant negative correlation between insight and autistic traits ($P=0.001$). Therefore, the presence of autistic traits affects patient awareness of the disorder and their attempt to seek medication.

DISCUSSION

In our study, we revealed that 30% of the case group scored above the cutoff point of AQ. The total autistic trait score for the case group ranged from 13 to 31, with mean±SD of 21.7±6.7. These findings are in line with the findings of Anholt *et al.*, (2010), who found that patients with OCD presented with higher scores on autism symptoms than normal controls. These findings are also consistent with previous findings in pediatric OCD, implying a link between autism symptoms and OCD (Ivarsson and Melin, 2008).

In this study, total AQ scale results are higher in cases than in control. This difference is statistically significant ($P=0.026$). The most significantly affected AQ subscale is attention switch in cases than the control group as compared with other domains ($P<0.001$).

These results resemble those of Wikramanayake *et al.*, (2018), who revealed that the autistic traits that were the most strongly involved were problems with flexibly shifting

attention. Attentional set-shifting problems are observed on cognitive testing in OCD (Fineberg *et al.*, 2013), and similar abnormalities are also seen in ASD (Gioia *et al.*,

2002), suggesting that an area of neurocognitive overlap manifesting as cognitive inflexibility exists across these two separate disorders that may account for these findings.

Table 3: Comparison between cases and control regarding total Autism-Spectrum Quotient scale results and subscales:

	Cases	Control	t test	P value
Total AQ				
Mean±SD	21.7±6.7	16.4±5.5	2.27	0.026*
Range	13–31	3–28		
Social skills				
Mean±SD	4.7±1.9	3.8±2.2	1.61	0.1
Range	1–9	1–8		
Attention to details				
Mean±SD	3.7±1.2	3.1±1.9	1.4	0.15
Range	2–7	0–7		
Attention switch				
Mean±SD	6.1±1.5	3.3±2.3	5.46	<0.001**
Range	2–9	0–8		
Communication				
Mean±SD	3.7±1.6	3.9±2.2	0.4	0.68
Range	2–9	0–8		
Imagination				
Mean±SD	3.5±1.0	3.2±1.9	0.68	0.4
Range	2–7	0–7		

AQ: Autism-Spectrum Quotient; *: P value is significant; **: P value is highly significant.

Table 4: Relation between Autism-Spectrum Quotient subscales and severity of obsessive-compulsive disorder:

Severity subscale	Mild	Moderate	Severe	t test	P value
Imagination					
Mean±SD	3.7±1.7	3.5±0.8	3.4±0.5	0.2	0.7
Range	2–7	2–5	3–4		
Communication					
Mean±SD	2.5±0.5	3.8±1.7	4.6±0.9	7.2	0.0015**
Range	2–3	2–9	3–6		
Attention to details					
Mean±SD	2.8±0.7	3.8±1.3	4.3±0.9	5.2	0.001*
Range	2–4	2–7	3–6		
Attention switch					
Mean±SD	4.8±1.6	6.1±1.1	7±1.6	8.4	0.001**
Range	2–7	4–9	4–9		
Social skills					
Mean±SD	2.7±1.1	4.8±1.4	6±2.0	15.4	<0.001**
Range	1–4	3–8	2–9		

*: P value is significant; **: P value is highly significant.

Table 5: Comparison between patients with obsessive-compulsive disorder regarding family history of psychiatric disorder and presence of autistic traits:

Family history	Positive [n (%)]	Negative [n (%)]	χ^2	P
Without autistic traits	12 (54.5)	32 (84.2)	6.27	0.012*
With autistic traits	10 (45.5)*	6 (15.8)		

*: P value is significant; **: P value is highly significant.

Table 6: Correlation between symptom severity and insight and autistic traits:

	r	P value
Autistic traits and symptom severity	0.59	0.04*
Autistic traits and insight	-0.45	<0.001**

*: P value is significant; **: P value is highly significant.

Regarding the severity of OCD and autistic trait score on the AQ scale, we found a significant positive correlation between AQ score and OCD severity as patients scoring high on AQ have high scores on the YBOCS scale. Our results agree with the result of Anholt *et al.*, (2010), who mentioned that there was an overall positive correlation between AQ total scores and YBOCS severity scores, but disagree with the results of Hironori *et al.*, (2014) and Memis *et al.*, (2019). Hironori Mito found that the severity of OCD was linked to the existence of other mental disorders such as MDD and anxiety, implying that the effect of higher ASD features on OCD phenomenology, such as the severity of OCD symptoms, may be minor. Memis *et al.*, (2019), on the contrary, attributed the lack of significant associations between the present severity of OCD symptomatology and autistic features to the high proportion of patients who were taking antidepressants during the study period.

We also assessed which subscale was to be affected in every degree of severity. All subscales gave significant results, except the imagination subscale. Regarding the communication subscale, those with mild severity are the least patients to have been affected (communication subscale range was 2–3), whereas those with moderate and severe OCD were more affected (subscale range was 2–9 and 3–6, respectively). This indicates that patients with OCD experience a lack of communication, which is one of the essential features of ASD; this may refer to a high overlap between ASD and OCD.

Moreover, the attention to details subscale is affected; those with mild severity are the least patients to have been affected, with subscale range of 2–4, whereas higher subscale scores are obtained in patients with moderate and severe OCD (range is 2–7 and 3–6, respectively); this also ensures overlap, as patients with OCD focus excessively on their obsessions, and presence of autistic traits worsens that.

Attention switch is also significantly affected, as mild severity score on the subscale was 2–7, moderate severity

score on the subscale was 4–9, and severe severity score on the subscale was 4–9. This is consistent with Anholt *et al.*, (2010), who concluded that attention switching problems were the most significant predictors of OC symptom dimensions and symptom severity.

Lastly, social skills are also significantly affected; those with mild severity are the least affected (1–4). The subscale score range for moderate–severe OCD patients is 3–8 and for severe OCD patients is 2–9. This is in line with previous findings of Chasson *et al.*, (2011) and may be explained as a lack of social skills in OCD may be due to modest abnormalities in the theory of mind-related functioning, which is a hallmark of autism (Anholt *et al.*, 2010).

Regarding positive family history, our results revealed that the prevalence of autistic traits is more in patients with OCD who have a positive family history of psychiatric disorders. This is considered de novo in research. No study has assessed this point. However, additional research has found that ASD, schizophrenia, and bipolar illness have shared etiological variables and that having a parent with schizophrenia or bipolar disorder is linked to an elevated risk of ASD (Daniels *et al.*, 2008; Sullivan *et al.*, 2012).

Our results showed a significant negative correlation between insight and autistic traits. This finding supports and agrees with the notion that patients with autistic disorders often lack insight and agree with the results of Wikramanayake *et al.*, (2018).

These findings have important implications for clinical practice, as increased autism symptoms in patients with OCD may complicate treatment and limit treatment gains. So, cognitive-behavior therapy in these patients might demand a longer duration and require adaptations of standard treatment protocols. Further research on the effect of autism symptoms on treatment response to OCD is needed to confirm these hypotheses. Such ideas are further strengthened by the lack of social skills as reported by patients with OCD, a finding that implies that adding a social skills improvement module to standard cognitive-behavior therapy for OCD might increase overall treatment efficacy in OCD.

LIMITATIONS

Because of the small size of the study sample, the results should be regarded as preliminary. Therefore, it has low power, which makes it harder to detect potential differences. The instruments used in this study were all self-report questionnaires. This requires having adequately

developed introspective abilities. Furthermore, using the AQ as the key instrument to explore the presence of comorbid autism traits may not have been the most optimal choice.

CONCLUSION

Autistic features are frequently seen in patients with OCD, and their presence has previously been neglected. Insight, social skills, social communication, and cognitive flexibility can all be affected. The assessment of autistic traits should be important for understanding the complex relationships between OCD and ASD.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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