Adolescents and Adults with ASD and Obsessive Compulsive Disorder

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5.1 Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental disorder with social/communicative dysfunctions, restricted interest, and repetitive behaviours. These symptoms usually appear in the early years of life. ASD is known as a 'spectrum' disorder because there is a wide variation in the type and severity of symptoms people experience. In addition to the core symptoms of autism, comorbid psychiatric illnesses are highly prevalent, aggravating impairment and complicating diagnosis and treatment. Among psychiatric disorder, there is a considerable evidence that patients with ASD frequently present a comorbid obsessive-compulsive disorder (OCD), which might be a result of a common neurological dysfunction located on the basal ganglia [1].

5.2 Epidemiology

Reports on the prevalence of obsessive-compulsive disorder in ASD patients have varied significantly across the years, due to different reasons. Three elements should be considered when it comes to precisely determine the prevalence of ASD/OCD: changes in classification methods, clinical aspects of the two disorders and assessment issues.

- Current prevalence rates using the *DSM-5* (*Diagnostic and Statistical Manual of Mental Disorders-Version 5*) are yet to be established. Most of the data available are derived from studies based on *DSM-IV*: OCD is classified as an anxiety

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disorder and there is not a separate categorical diagnosis of 'Hoarding Disorder'. Considering the high prevalence of hoarding behaviours in ASD patients, there is a need of future research with a specific focus on these symptoms to understand if hoarding is a manifestation of a real OCD or of a hoarding disorder, as defined in *DSM-5*.

- Due to the 'spectrum' nature of autism, ASD's manifestations vary depending on age and on the level of development. When this continuum nature is considered, dimensional rather than categorical approach may be more preferable in order to examine the correlation between OCD and ASD. As a result, many authors have come to focus on traits/symptoms and not on disorders as defined on *DSM*, with a resulting risk of overestimating this comorbidity. On the other hand, assessment challenges exist also with individuals who are verbally fluent: despite average language skills, patients may be unable to describe their emotional and internal states or recognise the connection between obsessions and compulsions due to deficits in emotion recognition or insight. Furthermore, overlapping symptoms and the uncommon presentation of comorbid illness in ASD contribute to underestimate the real prevalence of the association of ASD/OCD.
- Many studies use assessment tools not designed for such patients.

Regarding children and adolescents with OCD, the prevalence of autism spectrum disorder varies from 4% to 8%, while diagnosis of obsessive-compulsive disorder has been found in 17% of subjects diagnosed with ASD. In adult OCD patients, up to 35% of the subjects exhibited autistic traits [2]. However, most of the research into the relationship between autism and OCD has been performed in paediatric patients with autism spectrum disorder, with a resulting insufficient awareness of the prevalence rates in adult samples. This might partly due to a lack of knowledge of adult clinicians regarding childhood-onset disorders with the consequence that ASD symptoms are often underestimated [3].

5.3 Psychopathology

As mentioned before, autism spectrum disorder and obsessive-compulsive disorder shared some clinical features. For that reason, it might be difficult to distinguish phenomenological characteristics of these two disorders. Only a precise knowledge of the psychopathology of these conditions, associated with a careful assessment process of differential diagnosis, can help clinicians to recognise such patients. While psychopathology of ASD has been discussed before, we will now focus on OCD.

Obsessive-compulsive disorder is a common, chronic, and long-lasting disorder in which a person has uncontrollable, reoccurring thoughts (obsessions) and behaviours (compulsions). These symptoms can interfere with all aspects of life.

Obsessions are repeated thoughts or mental images that cause high level of anxiety. Common symptoms include fear of contamination, unwanted and forbidden thoughts involving sex, religion and harm; aggressive thoughts; having things

symmetrical or in a perfect order. Obsessions are defined by three psychopathological features:

- Persistence: obsessions continue to occur in patient's mind.
- Ego-dystonia: obsessions are in conflict or dissonant with the subject's characteristics and will.
- Incoercibility: patients cannot control their thoughts, even when those thoughts or behaviours are recognised as excessive.

Compulsions are repetitive behaviours that a patient performs to reduce anxiety, generated by the obsessive thought. Common compulsions include excessive cleaning and/or handwashing; ordering and arranging things in a particular and precise way and repeatedly checking on things. Compulsion features are:

- Intent: patients perform compulsions consciously.
- Purpose: the aim of the compulsion is to reduce the distress generated by the obsession.
- Repeatability.

In the last years, a considerable effort has been put into identifying distinct symptom dimensions within obsessive-compulsive disorder. Most of these works have been based on adult samples and factor analysis of the Yale Brown Obsessive Compulsive Scale (Y-BOCS). Five dimensions have been identified as the most frequent: (1) contamination: a fear of contamination due to dirt, germs, viruses and a multitude of other substances or items, including chemicals, radioactivity, greasy or sticky substances, bodily excretions (urine, faeces), bodily secretions (sweat, saliva, mucus, tears, etc.) and blood associated with washing compulsion; (2) harming: fear of harming oneself or others, with compulsion of control; (3) symmetry/ordering: symmetry obsessions are characterised by the need for things to be perfect, exact or 'just right', symmetrical or correctly aligned, and related compulsions include ordering and arranging, evening up or aligning things and touching or tapping; (4) pure obsessions: usually sexual and religious obsession; (5) hoarding: persistent difficulty discarding or parting with possessions, regardless of their actual value [1]. Data of literature are not clear regarding the impact of ASD symptoms and OCD phenomenology in terms of clinical expression and severity. Regarding paediatric samples, patients with ASD and OCD were found to be less likely to have washing/checking symptoms, dimensions and magical thinking [4]; however, adult OCD/ASD samples showed elevated levels of checking and ordering. Other studies reported non-significant differences in obsessive-compulsive dimensions between comorbid ASD/OCD and OCD-only subjects. Furthermore, some authors suggest that patients with obsessive-compulsive disorder and autism are more likely to have hoarding symptom dimensions [5, 6]. Two different hypotheses could be advanced to explain the occurrence of hoarding symptoms in ASD/OCD subjects. First of all, hoarding symptoms are usually common in the secondary form of obsessive-compulsive disorder. As observed in patients affected by bipolar disorder, secondary

OCD shows high rates of hoarding symptoms. In these subjects, obsessive compulsive symptoms should be interpreted as a phenotypic expression of a more severe form of the mood disorder, with specific consequences on management and treatment of these patients. Secondly, ASD subjects without a comorbid OCD often experience intense and restricted interests, which may lead them to acquire and collect items, and have psychosocial characteristics, including attachment to objects, social isolation and impairments. These features may be related to difficulties in discarding items or to a lack of insight regarding problematic aspects of hoarding's behaviour. From this perspective, a comorbid obsessive-compulsive disorder contributes to reveal some clinical features already present in ASD patients [5]. However, more studies and discussions are needed to examine such clinical issues. Furthermore, preliminary data suggest that ASD/OCD subjects show the highest rates of comorbid psychiatric disorder, such as major depressive disorder and anxiety disorder, and medical comorbidities, like tic disorder [5]. All these aspects contribute to complicate the diagnostic assessment and treatment.

5.4 Differential Diagnosis

The similar behavioural profiles of autism spectrum disorder and obsessive-compulsive disorder present the potential for confusion regarding diagnoses and intervention efforts. In particular, restricted and repetitive behaviours (RRBs), defined as frequent behaviours that occur in a manner that is both inappropriate to the situation and context, tend to develop with some similarity in both illness and play an important role in the functional impairments of both patient groups. In ASD, RRBs are stereotyped movements, repetitive use of specific objects, ritualistic habits and restricted interests (abnormal preoccupation with a particular object or topic in terms of specificity and intensity with which it is expressed), with the first ones being linked to compulsions and the last to obsessions in OCD. Restricted interests/obsessions and repetitive behaviours/compulsions are topographically quite similar. Therefore, in order to precisely differentiate subjects with ASD and OCD and to identify the group of patients with a co-occurring ASD/OCD, it is important to focus on some clinical elements: age of onset of the disorders, cognitive and language skills, the ego-syntonic/ego-dystonic nature of the symptoms and phenomenological features of RRBs, such as anxiety and executive functions.

- Age of onset: due to the different nature of these two illness (neurodevelopmental vs. psychiatric disorder), while ASD begins in the first years of life, age of onset of OCD presents distinct peak in childhood and in adulthood, with a typical age of onset of 19 years. Therefore, restricted and repetitive behaviours occurred in the early years should direct clinicians to a possible diagnosis of autism, especially when they are associated with other clinical features such as cognitive and language deficit. However, because ASD patients show a great variation in the type and severity of symptoms, subject without a severe cognitive disability and with mild RRB symptoms might not be recognised until they become adult. At

that time, these individuals could be misdiagnosed as affected by obsessive-compulsive disorder.

- Cognitive and language skills: patients with autism spectrum disorder commonly have some difficulties in communication, social interactions, and cognitive functions. These deficits concern both verbal and non-verbal communication and both receptive and expressive skills, with a wide range from patients with normal IQ and normal communications abilities to subjects with severe impairment. In fact, some children with autism show a good grasp on comprehension, but lack expressive skills and vice versa. It is also reported that patients with autism present difficulty with non-verbal communication. Furthermore, subjects with autism often fail to understand words or phrases that are abstract or that have a double meaning and tend to interpret things very literally. Instead, patients with obsessive-compulsive disorder usually present normal cognitive and communication skills, and as a result, the presence of RRBs in a young individual with social and cognitive impairment should direct the diagnoses on ASD. However, because ASD patients show a great variation in the type and severity of symptoms, subjects with autism could not have a severe cognitive disability and, with mild RRBs symptoms, they might not recognise until they become adult and misdiagnosed as affected by OCD.
- Ego-syntonic/ego-dystonic nature of the symptoms: another clinical element that could help psychiatrists to differentiate the two disorders is the ego-syntonic nature of RRBs in ASD compared to those present in OCD. In contrast to the distress experienced with obsessions and compulsions in OCD, subjects with ASD may not struggle against their repetitive behaviours. In many patients with ASD, the RRBs are preferred activities and frustration and protest may occur when the subject is asked to stop the behaviour. However, as mentioned before, because ASD individuals usually have cognitive and communication impairments, they might be unable to differentiate such feelings, especially during childhood, with a resulting more complicated process of differential diagnosis.
- Anxiety: the role of anxiety underlines the distinctions between these two illnesses. As explained before, individuals affected by OCD feel anxiety as a result of obsessive thoughts, images or doubt, while compulsions relieve that anxiety. In ASD patients, the way in which anxiety is related to RRBs is not clearly defined: some authors suggest that RRBs could perpetuate the presence of anxiety, while others interpret RRBs as a form of relief. The going assumption is that insistence behaviours may function as an anxiety-reduction technique performed as a consequence of stressful events. This hypothesis comes from the observation that events that claim anxiety are usually followed by engagement with insistence on sameness behaviours [4].
- Executive functioning: ASD and OCD both experience significant deficit in executive functioning. However, despite both disorders show similar impairments in different cognitive constructs, some elements could be recognising as typical features of different diagnosis. In particular, some authors suggest that deficit in cognitive flexibility and set-shifting (ability to appropriately switch between different concepts or behaviours) are consistently associated with the

presence of RRBs in ASD. Regarding obsessive-compulsive disorder, researchers report that problems with inhibition are more present in such patients. Poor inhibition seems to reflect a function of lowered control which corresponds to the automaticity that accompanies performance of compulsions in OCD. Indeed, despite inhibition is specifically related to total severity scores of the Y-BOCS (Yale Brown Obsessive Compulsive Scale), this correlation is highly related to compulsion scores and only weakly related to obsession scores [4].

5.5 Assessment

Assessment of obsessive-compulsive disorder in autism is a real challenge for clinicians. Some clinical features of ASD, such as cognitive disability, social impairments with deficit in communication, lack of insight and ability to recognise emotions may complicate the evaluation process. Therefore, some recommendations could be made. For individuals with intellectual disability, defined by IQ $\leq$ 70, with language deficit, the diagnostic process should rely on information obtained by caregivers or teacher. However, even for caregivers it could be hard to recognise anxiety or obsessive-compulsive symptoms in ASD patients: repetitive behaviour, such as arm or hand-flapping, finger-flicking or repetitive use of an object, may appear to be part of OCD. Even in individuals with adequate language skills and cognitive ability, the diagnostic process should be performed with the presence of caregivers. Indeed, deficit in emotion recognition or insight could complicate the use of self-report instruments as well as the ability of clinicians to understand precisely the internal state of the patient. Moreover, there is a lack of assessment tools specifically designed to evaluate obsessive-compulsive symptoms in adult ASD individuals. Regarding youth patients, the modified version of the Children's Yale Brown Obsessive Compulsive Scale for autism (CYBOCS-ASD) has been shown to be a reliable measure to evaluate repetitive behaviours in autistics subjects. The original CYBOCS is a clinician-rated interview designed to rate the severity of obsessive and compulsive symptoms in children and adolescents aged 6–17 years. It can be administered by a clinician or by a trained interviewer in a semi-structured fashion. The ratings depend on the child's and parent's reports, but the final rating is based on the clinical judgement of the interviewer. The evaluation of each item should be done thinking about the prior week up until, and including, the time of the interview. It contains separate checklists for obsessions and compulsions, five severity items for obsessions and five for compulsions. The severity items are scored from 0 (not present) to 4 (extreme), yielding an obsession score of 0 to 20, a compulsion score of 0 to 20 and a total of 0 to 40. As mentioned before, due to the difficulty to evaluate obsessions in individuals with ASD, the modified version (CYBOCS-ASD) is composed only of the five compulsion items (time spent, interference, distress, resistance and control) and has more items in the compulsion checklist. The revised instrument has demonstrated reliability and validity and has also sensitivity to change [7].

5.6 Treatment

International guidelines suggest pharmacological and psychological approach, sometimes in combination, as a first line treatment of Obsessive Compulsive Disorder [8].

Regarding medications, drugs approved by the Food and Drug Administration (FDA) to treat OCD include high doses of SSRI and clomipramine:

- Clomipramine, for adults and children 10 years and older
- Fluoxetine, for adults and children 7 years and older
- Fluvoxamine, for adults and children 8 years and older (not approved in Italy for paediatric population)
- Paroxetine, for adults only
- Sertraline, for adults and children 6 years and older

Treatment response, defined by a reduction of the YBOCS's score $\geq$ 35% compared to baseline, should be evaluated following 12 weeks at effective dose. In patients with lack of response, this treatment may be associated with low-doses of antipsychotics.

Regarding psychological interventions, cognitive behavioural therapy (CBT) is the only psychotherapy approved for individuals affected by OCD. The most studied and validated type of behavioural technique is the exposure and response prevention (ERP). ERP involves gradually exposing subjects to a feared object or obsession, such as dirt. As a result, individuals learn healthy ways to cope anxiety and learn to manage obsessions and compulsions.

Treatment of patients with a comorbid ASD/OCD is a real challenge for clinicians.

Research on the use of SSRI and clomipramine in such individuals is lacking. Moreover, most of the studies have investigated the use of these drugs in mixed samples of patient with ASD and anxiety disorders, as classified in *DSM-IV*, without considering OCD as a different disease. However, two important considerations could be advanced:

- Prescribing antidepressants to ASD/OCD patients should be approached cautiously. Indeed, some evidences suggest that such patients are particularly vulnerable to the behavioural activation of these drugs, with a resulting increased level of energy, disinhibition and sleep disorders to the point of psychomotor agitation [9].
- Considering a hierarchical approach, as observed in other psychiatric disorders such as bipolar disorder (BD) and major depressive disorder, secondary OCD should be interpreted as a phenotypic expression of a more severe form of the main disorder. As a result, in ASD/OCD individuals, therapeutic interventions should target the principal disease (autism), with a resulting improvement of the comorbid disorder associated.

Regarding CBT, behavioural treatment for individuals with OCD and ASD has received less attention in comparison with CBT in patients with ASD and anxiety disorders. Some research studies suggest that obsessive-compulsive symptoms can improve with such treatment [10]; however, most CBT trials have been conducted with moderate to high functioning patient, with adequate communication skills, and it is unclear if this treatment is appropriate for lower functioning individuals. Regardless CBT in ASD/OCD subjects, authors tend to focus on which components of CBT work best and for whom. Due to the specific features of autistic patients, some clinical issues should be underlined:

- Psychological treatment for patients with ASD should be personalised and individualised to suit the clinical presentation, interests, cognitive and social skills of the patients and may demand longer duration.
- The use of special interests may facilitate therapeutic participation and alliance, especially in paediatric population.
- CBT may require some level of focus on social skills deficit. One of the key differences between the use of standardised CBT and ASD-specific treatment protocols is the addition of social skills training components adapted to the baseline level of communication abilities.
- CBT may include direct intervention to improve independent daily living skills, associated with concomitant psychoeducation strategies addressed to the family members, for the purpose of reducing family accommodation.

In conclusion, pharmacological and psychological interventions for OCD patients can be used in ASD/OCD with a close clinical monitoring and a more personalised approach, in order to develop ASD-specific CBT protocols. However, large-scale double-blind, placebo-controlled trials are needed to establish the real effectiveness of these strategies in such patients.

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