

The hidden faces of autism and misdiagnosis in the lifespan: Clinical observations in adults with Autism Spectrum Disorders

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Abstract

Autism Spectrum Disorder (ASD) includes early-onset developmental disorders characterized by symptoms ranging from impaired social communication skills, stereotyped behaviors, impairment in social interactions, to poor language development. Although the autistic condition is stable across the life span, a substantial number of adult ASD patients may be undiagnosed or misdiagnosed as having other mental disorders. Twenty-three ASD adult patients underwent clinical examination and were assessed by the following psychodiagnostic instruments: the RAADS-R, the Y-BOCS, and the Rorschach inkblot test. The mean RAADS total score was higher than cut-off threshold (126 ± 43 ; cutoff = 65). Y-BOCS total scores were moderately high (21 ± 9 ; cutoff = 7). Rorschach protocols were characterized by a mean productivity (number of responses: 23 ± 12), a concrete intelligence with

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traits of meticulousness ($D = 39\%$, $Dd = 8\%$), inaccurate formal perception with falls of representation ($F- > F+$), poor attention to human contents, and perseveration and devitalization as particular phenomena. Adult ASD patients are characterized by peculiar psychopathological features that can be effectively investigated with the use of both psychometric and projective methods. An accurate investigation of behavioral and clinical features and personality traits, should integrate the diagnostic pathway of those adult subjects often presenting with comorbid psychiatric disorders and symptoms heterogeneity.

Keywords: Autism Spectrum Disorders; Misdiagnosis; Autistic symptoms; Comorbidity.

1. Introduction

Autism Spectrum Disorder (ASD) includes early-onset developmental disorders characterized by a wide range of symptoms ranging from impaired social communication skills, repetitive and stereotyped behaviors, impairment in social interactions, to poor language development (APA, 2013). The construct of autism has been changed over time, moving from Bleuler's original concept of autism as a fundamental symptom of schizophrenia; later, Leo Kanner (1943) put emphasis on compromised relational skills and on peculiar stereotypic behaviors. Finally, Hans Asperger (1944) provided a similar clinical description wherein symptoms onset occurred later, language ability was preserved, and subtle motor deficits were more frequent.

The clinical framework in which autism has been classified has similarly changed: being firstly listed as an infantile form of schizophrenia in the DSM-II (APA, 1968), later it has been conceived as a Pervasive Developmental Disorder in the following edition of the Manual (APA, 1980). Even though the description of the syndrome dates back to the early '40s, it was not until 1994 that the Asperger syndrome was officially recognized, in DMS-IV (APA, 1994). Actually, Asperger's syndrome and Autistic Disorder are not considered distinct entities in DSM-5 (APA, 2013): the categorical classification has been superseded by the dimensional classification, thus delineating a single nosographic entity with a particular stress on the continuity of the autistic spectrum. However, some authors argue that newly adopted diagnostic criteria are excessively limited, poorly exhaustive, and may result in excluding from an ASD diagnosis those subjects with mild form of autism, less functional impairments, or symptoms under the clinical threshold (Mc Partland, Reichow, & Volkmar, 2012; Vannucchi, Masi, Toni, Dell'Osso, Marazziti, & Perugi, 2014).

At present, diagnosis of ASD is stable across the lifespan, and growing interest has been devoted to the adult courses of these states. ASD in adult people still continue to be misdiagnosed (Szatmari, Archer, Fisman, Streine, & Wilson, 1995; Arora, Praharaj, Sarkhel, & Sinha, 2011; Roy, Prox-Vagedes, Ohlmeier, & Dillo, 2015); possible reasons are the significant differences in phenotypic expressions, associated with high rates of comorbidity with other psychiatric disorders, such as psychotic, mood, anxiety, and stress-related disorders (Simonoff, Pickles, Charman, Chandler, Loucas, & Baird, 2008; Lugnegård, Hallerbäck, & Gillberg, 2011; Dell'Osso, Dalle Luche, & Maj, 2016).

It has been observed that a thorough medical history, and a scrupulous psychological evaluation, possibly integrated by clinical rating scales and neuropsychological instruments may ameliorate diagnostic accuracy of ASD (Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003; Tantam & Girgis, 2009).

In order to better identify even more subtle perceptual, thought, and affective impairments, the selection of a projective method seems useful for the peculiar apperceptive and representational attributes that provide information about the inner world of patients, whereas rating scales usually allow for only exploring the subject's conscious areas (Dykens, Volkmar, & Glick, 1991; Wagner & Rinn, 1994; Ghaziuddin, Leininger, & Tsai, 1995; Wagner, Wagner, Hilsenroth, & Fowler, 1995; Wagner, 1998; Holaday, Moak, & Shipley, 2001). The Rorschach test is one of the most widely employed projective tests, and it has been used to analyze subconscious personality features, emotional and affective characteristic, and also cognitive, perceptual and relational functioning. In samples of ASD patients, Rorschach protocols evidenced poor reality testing, perceptual distortions, and areas of cognitive slippage, as shown by incongruous and fabulized combinations, which refer to difficulties in perceptual synthesis and integration, inappropriate logic, pointing at problems in abstraction and concrete cognitive style, and deviant responses (Dykens *et al.*, 1991). These findings, overall, are consistent with the observed difficulties with complex perceptual processes involving synthesis, integration, and judgment. In adolescents, Rorschach examination has evidenced perseverations with cognitive inflexibility, lower numbers of human movement responses, and fewer color responses, indicating that these patients may not have the required psychological resources for coping with the demands of complex socialized environments (Holaday *et al.*, 2001). A more recent study has shown that Rorschach test may be a useful tool for differentiating patients with schizophrenia (SZ) and ASD; although SZ and ASD shared several features of thought pathology, ASD subjects showed more vulnerability to stressors, better recognition and lesser perception distortions (formal quality) than SZ patients (Kishimoto, Yamamuro, Iida, Ota, Tanaka, Kyo *et al.*, 2016).

Based on this background, the present study was aimed to explore main clinical features in a sample of ASD patients by using psychometric and projective tools, in order to better define the potential usefulness of these instruments in detecting psychopathologic, cognitive, emotional/affective, perceptual and relational dimensions related to ASD.

2. Methods

2.1. Participants

All subjects (18-55 years old) consecutively admitted to the Outpatient Psychiatry Unit of the University Hospital of Messina, Italy, between May 2014 and November 2015, for mood/bipolar/anxiety/obsessive-compulsive/psychotics/personality/impulse-control disorders alone or in comorbidity, who met ASDs criteria as defined by the DSM-5, were included in the study. Patients with IQ < 80, significant concurrent medical illnesses, and organic brain disorder were excluded. The final study sample was formed by twenty-three subjects (male 83%; mean age = 28 ± 8.6 years). As attested by the medical histories, clinical symptoms were detected at school age (10 ± 4 years); however, only three subjects out of the total sample had received a diagnosis of ASD during their childhood and/or adolescence. Table 1 shows descriptive features of the sample.

Table 1 - Descriptive data of the sample ($N = 23$)

| Variables | <i>M</i> | <i>SD</i> |
|-------------------------------|----------|-----------|
| Age (years) | 28 | 8.6 |
| Gender (% ♂) | 83% | |
| Education (years) | 13 | 2 |
| Age at ASD detecting (years) | 10 | 4 |
| Entry diagnosis (n; %) | | |
| Mood disorder | 6; 26,1% | |
| Bipolar disorder | 3; 13% | |
| Anxiety disorder | 2; 8,7% | |
| Obsessive-compulsive disorder | 4; 17,4% | |
| Psychotic disorder | 4; 17,4% | |
| Personality disorder | 8; 34,7% | |
| Impulse-control disorder | 3; 13% | |

All the patients provided written informed consent after a full explanation of the protocol design, which had been approved by the local ethics committee and was conducted according to the Declaration of Helsinki.

2.2. Instruments

The psychodiagnostic assessment comprised:

- The *Ritvo Autism Asperger Diagnostic Scale-Revised – RAADS-R* (Ritvo, Ritvo, Guthrie, Ritvo, Hufnagel, McMahon *et al.*, 2011), a reliable, established, and easy-to-administer self-rating scale useful to assist clinicians for diagnosing ASD in adults, including those subjects affected by mild or subclinical ASD. The scale consists of four subscales based on DSM-IV-TR criteria: Social Interaction, Circumscribed Interests, Language, and Sensory Motor Symptoms. Patients completed RAADS-R in the presence of a clinician. Validation studies have shown that the sensitivity of this instrument ranges from 73% to 97% (Andersen, Näswall, Manouilenko, Nylander, Edgar, Ritvo *et al.*, 2011; Ritvo *et al.*, 2011);
- The *Yale-Brown Obsessive Compulsive Scale – Y-BOCS* (Goodman, Price, Rasmussen, Mazure, Fleischmann, Hill *et al.*, 1989), a clinician-rated, 10-item scale for assessing the severity of obsessive-compulsive (O-C) symptoms with separate subtotals for obsessions and compulsions. In addition, other O-C dimensions, such as insight, avoidance, slowing down, sense of responsibility, and pathological doubt are explored.
- The *Rorschach inkblot test* (Rorschach, 1921), a projective tool suitable for examination of personality. It consists of a standard series of ten inkblot pictures printed on cards: five of the cards are monochrome, two contain two colors, and three display various colors. By means of the interpretation of the answers given to each card, it is possible to explore a wide range of personality dimensions, including affective and emotional functioning, self-image, relational styles, thought organization, perceptual accuracy, and psychological patterns and resources. The standard Passi Tognazzo procedures for administering and scoring the test were adhered to (Passi Tognazzo, 1994). The Rorschach test was administered by two certified psychologists, who were blind to the participants' diagnoses and specifically trained in the Rorschach standard administration and scoring procedures.

3. Results

RAADS-R and Y-BOCS scores are shown in Table 2. The mean RAADS-R total score was higher than the cut-off threshold (126 ± 43 ; cutoff = 65); regarding RAADS-R subscales, high scores (61 ± 24 ; cutoff = 31) were observed at Social Relatedness subscale. Y-BOCS total scores resulted moderately high (21 ± 9 ; cutoff = 7).

Table 2 - RAADS-R and Y-BOCS mean scores of the study sample

| Instruments | <i>M</i> | <i>SD</i> | Cutoff |
|-----------------------------|----------|-----------|--------|
| RAADS-R | 126 | 43 | 65 |
| I. Language | 11 | 6 | 4 |
| II. Social Relatedness | 61 | 24 | 31 |
| III. Sensory-Motor | 28 | 11 | 16 |
| IV. Circumscribed Interests | 26 | 9 | 15 |
| Y-BOCS | 21 | 9 | 7 |

With regards to Rorschach test results, protocols were characterized by a mean productivity (number of responses: 23 ± 12), a basically concrete intelligence with traits of meticulousness ($D = 39\%$, $Dd = 8\%$). The formal perception was inaccurate and negative, with failures of representation ($F- > F+$). Globally, the attention towards the human contents was poor; in contrast, the perception of animals and animal movements was higher than normal, and these findings were related to processes of emotional immaturity and maladaptive relational patterns. Phenomena of recurrence of thought were recorded, with persevering representation and indexes of low mood i.e., perseverations and content devitalizations (Tab. 3).

Table 3 - Results of the Rorschach test: main indexes

| Variables | <i>M</i> | <i>SD</i> |
|---------------------|----------|-----------|
| Number of Responses | 23 | 12 |
| Details % (D%) | 39 | 17 |
| Small details (d%) | 8 | 11 |
| Positive Form (F+%) | 22 | 14 |
| Negative Form (F-%) | 27 | 21 |

| | | |
|-----------------------|----|----|
| Human movement (M%) | 7 | 6 |
| Animal movement (FM%) | 10 | 12 |
| Human content (H%) | 8 | 8 |
| Animal content (A%) | 40 | 24 |
| Banal response (B%) | 14 | 12 |
| <hr/> | | |
| Particular phenomena | | |
| <hr/> | | |
| Choc | 3 | 1 |
| Perseveration | 4 | 4 |
| Devitalization | 1 | 1 |
| Denial | 1 | 1 |
| <hr/> | | |

4. Discussion

The aim of the present study was to explore peculiar psychopathological profiles based on rating scales and Rorschach test performances in a sample of subjects with ASD. During their medical history, all the subjects had received heterogeneous diagnoses, particularly schizophrenia, bipolar disorder, depression, and personality disorders. Although the treatment of ASD is generally non-pharmacological and essentially supportive, all admitted subjects were under pharmacological treatment: 17 subjects with antipsychotics, 11 with antidepressants, 8 with mood stabilizers and 8 with benzodiazepines.

The presence of ASD symptoms was supported by high RAADS-R total scores, with a main impairment in social relatedness and interactions. With reference to the obsessive-compulsive symptoms, all subjects scored moderately high on Y-BOCS scale; this finding is consistent with data from the literature, since restricted, stereotyped and repetitive behavioral patterns, interests and activities are included within the criteria of the autistic spectrum disorder (APA, 2013). Moreover, this behavioral profile is comparable to that found in obsessive-compulsive disorder (OCD) (Passi Tognazzo, 1994; Jacob, Landeros-Weisenberger, & Leckman, 2009; Anholt, Cath, Van Oppen, Eikelenboom, Smit, & Van Megen, 2010). On the other hand, it should be highlighted that autistic traits were also found in some cases of resistant OCD (Russell, Mataix-Cols, Anson, & Murphy, 2005; Bejerot, 2007). The apperceptive framework of the subjects' Rorschach protocol presented peculiarities potentially correlated with their cognitive

profile. The new approach of the recognition and classification of perception variables was analyzed in this study.

The quite considerable number of responses demonstrates the subjects' difficulties of representation and image recovery. The latter is an apperceptive feature commonly present in subjects suffering from obsessive symptoms. This association is consistent with our findings, since the examined sample was characterized by moderately severe degrees of obsessive compulsive symptoms. Similarly, to what generally emerges from OCD psychograms, the protocols were globally characterized by the poor ability of integrating pieces of information (i.e.: details) in a global and synthetic representation; moreover, the high percentage of banal responses and the perseverative tendencies further pointed to the cognitive rigidity of study subjects. The accentuated tendency of subjects towards concrete and meticulous responses was remarked both by the fact that responses were essentially involving details, and by their lack of form quality. These conditions were not due to intellectual disability, since IQ was comprised within the normal range, rather to the incapacity of creating representations, consistent with a poor development of Theory of Mind (Baron-Cohen, 2009). The presence of particular phenomena such as devitalization of the contents, color projection, and perseverations was another feature of our sample's protocols. The most frequent phenomenon in the Rorschach protocols was devitalization, which may suggest the presence of a depressive core; it can be hypothesized that such depressive features might be related to social withdrawal (Baron-Cohen, Leslie, & Frith, 1985; Roy *et al.*, 2015).

Perseverative responses, along with low-form levels, are usually found also in organic diseases or weak intelligence that, in our sample, were excluded prior the inclusion in the study.

The elaboration and responses to the ambiguous stimuli of the Rorschach test were checked against the clinical symptoms of the sample. The distortion of the imaginative processes, meticulousness and stinginess were associated with negative form perception and perseverations of contents. It can be hypothesized that the deficit of the imaginative forms of thought was associated with poor cognitive flexibility.

Furthermore, the subjects' relational and communicational deficits were further supported by the Rorschach test, as indicated by the poor perception of human figures in contrast to the high number of animal responses, which together highlight difficulties in social adaptation (Stewart, Barnard, Pearson, Hasan, & O'Brien, 2006).

It is quite difficult to compare our findings with the available literature, since, differently from the present study, the Rorschach test has been scored according to Exner's comprehensive system (CS, Kishimoto *et al.*, 2016). It has been claimed that autism is characterized by a peculiar cognitive style having specific deficits and strengths (Ruta, Mugno, D'Arrigo, Vitiello, & Mazzone, 2010). The scrupulous attention to details, better defined as weak central coherence, although indicative of the subject's incapacity to combine parts of information in a global representation, may nevertheless be regarded as an intellectual potential. Indeed, according to the empathizing-systemizing theory (Frith, 1989; Baron-Cohen, 2009), excessive attention to detail should not be regarded as deficit, rather as a skill. Due to their advanced systemizing skills, consisting in the ability to analyze systems by identifying their underlying rules and regularities, individuals with Asperger syndrome rapidly learn how systems work. Among neurodevelopmental disorders, Autism spectrum disorder is one of the most frequent; beyond its significant heterogeneity in phenotypic and prognostic features, the disorder persists and remains constant in adulthood. Current diagnostic criteria may compromise the identification of those clinical pictures of ASD that, even less severe, also request clinical attention and treatment. Thus, an accurate clinical and psychodiagnostic investigation of behavioral features, personality traits, and social avoidance symptoms should integrate the diagnostic pathway of those adult subjects often presenting with comorbid psychiatric disorders, symptoms heterogeneity, and pharmacological poor response and/or resistance (Crucitti, Pagano Dritto, Di Perri, Gallo, Conti, & Bruno *et al.*, 2015).

The present study shows a number of limitations, mainly the small sample size and the lack of a control group, which does not allow to infer generalization of the results; furthermore, although the Rorschach is an acknowledged psychometric instrument, few studies exist in assessment of autism. Beyond limitations, our findings suggest that the use of a projective method, such as the Rorschach inkblot test, may provide additional clinical information on thought (cognitive slippage) and perceptual distortions, and on reality testing that can broaden the assessment offered by standard instruments. Future studies encompassing larger samples than that considered in this study should be carried out to further support the usefulness of associating specific scales and projective methods for reaching a better diagnostic accuracy of adult ASD patients.

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