

PSYCHIATRIC COMORBIDITY OF ADULTS WITH AUTISM SPECTRUM DISORDERS

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Abstract

Object: Relatively little is known about the psychiatric comorbidity of adults with autism spectrum disorders (ASD).

Method: This report describes the clinical correlates of psychiatric symptoms in a group of 38 subjects referred with a presumptive diagnosis of ASD.

Results: Ten subjects did not meet the criteria of ASD and were excluded from the series. The diagnoses most likely to be mistaken for ASD were refractory depression and anxiety disorders. Out of the remaining 28 subjects (18 males, 10 females; age range 18 to 57 years), 21 suffered from additional psychiatric disorders, most commonly depression.

Conclusions: Additional psychiatric conditions, in particular depression, are common in adults with autism spectrum disorders. Implications of these findings are discussed.

Key words: Autism – Asperger Syndrome – Psychiatric Comorbidity – Depression

Declaration of interest: None

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Introduction

Autism is a pervasive developmental disorder characterized by a distinct pattern of social deficits; communication impairment and rigid ritualistic interests (APA 1994). Although classified as a psychiatric disorder, interest in the psychiatry of autism is only now beginning to emerge (King and Bostic 2006). For a long time after Kanner's initial description of autism over 60 years ago (Kanner 1943), research was devoted mainly to exploring its biological roots and to disproving the psychogenic theories of its causation. For instance, it was believed that autistic children were not capable of forming attachments with their care-givers and that they lacked the cognitive maturity necessary to experience affective states, such as, happiness and sadness. However, it is now generally believed that autistic persons can not only experience emotions and feelings, but also develop a wide range of distinct psychiatric disorders (Gillberg and Billstedt 2000, Ghaziuddin et al. 1998). While no systematic population based studies of the psychiatric comorbidity of autism have been undertaken, clinic based studies suggest that 50-70% of children with autism and Asperger's syndrome, especially those who are higher functioning, suffer from additional psychiatric disorders, in particular attention deficit hyperactivity disorder (ADHD) and depression (Ghaziuddin et al. 1998).

Several factors have possibly contributed to the increase in interest in the psychiatric comorbidity of autism. First, the diagnostic boundaries of autism have been broadened and newer categories have been introduced, such as Asperger syndrome (APA 1994). As a result, many patients, especially those with normal intelligence and reasonably good verbal skills, are now being referred to and seen by mental health professionals. Second, it is now being recognized that traditional factors, such as, the level of intelligence and the presence of good communication alone, are not sufficient for a good outcome, and that psychiatric abnormalities can have an adverse effect on the prognosis. Third, there has been a gradual lessening of stigma attached to psychiatry. Finally, increasing attention is being paid to adults with this condition, especially those who are mildly affected (Ghaziuddin 2005).

However, most of the data on the psychiatry of autism are derived from studies done in children and adolescents. Studies of adults have mostly consisted of isolated case reports (Clarke et al. 1999) or of follow-up studies of children diagnosed with ASD. Thus, Howlin and colleagues (2000) followed up a group of 19 children with autism first seen at the age of 7-8 years. At the age of 23-24 years, one subject out of the 19 gave a history of having developed an affective disorder; one at the age of 15 years developed catatonia and another showed a sudden increase in disruptive

behaviors, thought to be affective in nature (Howlin et al. 2000). In a study of psychiatric comorbidity of Asperger syndrome, out of 15 subjects aged 13 years and above, eight had a diagnosis of depression and one each of ADHD, obsessive-compulsive disorder, Tourette syndrome and tic-disorder (Ghaziuddin et al. 1998). Mouridsen and colleagues (2007) examined a sample of consecutively referred children with atypical autism (PDDNOS) drawn from two University clinics in Denmark. 89 subjects with atypical autism were compared with normal population controls. As adults, about 70% of the subjects developed a comorbid psychiatric disorder compared to about 11% in the control group, with the most common diagnosis being schizophrenia (Mouridsen et al. 2007). The diagnosis of atypical autism was based on information contained in the charts. No information about the occurrence of psychiatric disorders in persons with autism or Asperger syndrome was provided in this study (Mouridsen et al. 2007). Summarizing 35 studies involving 200 higher functioning patients with autism spectrum disorders, aged 14 years and older, Howlin (2000) concluded that a variety of psychiatric disorders occurred in this population, the most common being affective disorder. However, most studies have examined small groups of subjects often using retrospective methods and disparate diagnostic criteria. In view of the increasing numbers of adults with autism spectrum disorders, there is an urgent need to investigate more fully the correlates of comorbidity in this population. It was with this aim that the present study was undertaken.

Material and Methods

The study was conducted at the University of Michigan medical center in the USA. Consecutive referrals to the Asperger Syndrome Clinic (based in the Section of Child and Adolescent Psychiatry) over a five-year period (Dec 2001-Dec 2006) were examined. The primary reason for referral was to rule out a diagnosis of Asperger syndrome or some other form of ASD. To be eligible for inclusion in the study, subjects had to have a presumptive diagnosis of an autism spectrum disorder (ASD); and had to be at least 18 years of age. Having a comorbid psychiatric disorder was not a

requirement to be included in the study. Each subject received a neuropsychological assessment; a speech and language evaluation; and a detailed psychiatric interview. Care-givers were also asked to complete the Autism Behavior Checklist (ABC, Krug et al. 1980). Based on all the information available, a diagnosis of ASD was given according to the DSM-IV (APA 1994). For the purpose of this study, the terms PDD and ASD were used interchangeably.

A hierarchical approach was adopted to diagnose ASD based on the DSM-IV criteria (1994). Subjects were first considered for a diagnosis of autistic disorder and then for Asperger syndrome. If the full criteria of autistic disorder or of Asperger syndrome were not met, then a diagnosis of PDDNOS was given. It is important to note that a subject with PDDNOS had to have social impairment of the autistic kind as one of the core deficits along with communication impairment or ritualistic behaviors. Alternatively, the subject was required to have deficits in all the three areas of socialization, communication and play but in a sub-threshold manner. Thus, the definition of PDDNOS used in this study was consistent with the wording used in the DSM-IV-TR (2000).

Diagnosis of psychiatric disorders was based on the DSM-IV criteria (1994). Psychiatric records and information from schools and social services were examined and a detailed psychiatric examination was conducted. All the subjects were examined by the first author (MG). Information was supplemented with chart reviews conducted by the second author. Those who met the criteria for any psychiatric disorder at the time of evaluation or during the previous 12 months, were rated as positive for having a psychiatric illness. Permission to review the charts was obtained from the Institutional Review Board of the University of Michigan.

Results

38 subjects were referred during the index period (December 2001 to December 2006) with a presumptive diagnosis of autism or Asperger syndrome. On evaluation, ten subjects did not have features consistent with a diagnosis of ASD, and were, therefore, excluded

Table 1. *Psychiatric Comorbidity of Adults with ASD*

Number	28
Sex ratio (m:f)	18:10
Subtypes of ASD	Asperger syndrome: 14; PDDNOS: 8; Autism: 6
Age range (mean, SD) years	18-57 years (26.5, 11.3)
Psychiatric Disorders	21 (80%) out of 28
Types of psychiatric disorders	Depression 14; Anxiety Disorders: 6; ADHD: 5; Psychosis: 2; Catatonia: 1; Tourette Syndrome: 1
Types of medical disorders	Seizure Disorder: 2; Mild Mental Retardation: 2; Duchenne Muscular Dystrophy: 1; Hypercholesterolemia: 1; Deep Vein Thrombosis: 1; Esophageal achalasia: 1
Family history of psychiatric illness	Positive in 16 (57%) out of 28 subjects.

Note: Some subjects had more than one diagnosis.

from the study. The diagnosis most likely to be mistaken for ASD was chronic refractory depression, following by anxiety disorders. Making a diagnosis of ASD in severely depressed or anxious subjects is extremely difficult, since features such as poor eye contact; restricted affect; monotonous voice; slowed movements etc. may occur in both severe depression and ASD, stressing the need for eliciting a reliable early developmental history in such cases.

The final sample consisted of 28 subjects (18 males 10 females; age range, 18-57 years; mean age 26.5 years; SD 11.3 years). Of these, 14 subjects were diagnosed with Asperger syndrome; 8 with PDDNOS and 6 with autism. 21 (80%) of subjects met the criteria of having a psychiatric disorder (at the time of evaluation or in the 12 months prior to the evaluation). The most common diagnosis was depression. 14 subjects had a diagnosis of depression which included major depression; dysthymia; depression not otherwise specified; and bipolar disorder. Six subjects had an anxiety disorder (social phobia; obsessive compulsive disorder; generalized anxiety disorder) and five had an attention deficit hyperactivity disorder (ADHD). Two subjects had a first episode of psychosis and one each had catatonia and Tourette syndrome. This is illustrated in Table 1.

Discussion

This study describes the pattern of psychiatric comorbidity in a group of adults with ASD. 21 (80%) out of 28 subjects had symptoms of an additional psychiatric disorder, either at the time of evaluation or in the 12 months prior to the referral. Although some subjects had more than one psychiatric disorder, the most common diagnosis was depression and other mood disorders (n=14) followed by anxiety disorders (n=6). These findings are broadly consistent with studies of comorbidity in children and adolescents with ASD (Ghaziuddin et al. 1998, Gillberg and Bilstedt 2000). Six subjects had evidence of anxiety disorders, including OCD. The diagnosis of OCD in the setting of autism remains controversial. In this study, only one subject received a clear diagnosis of OCD. Likewise, only one patient was given a diagnosis of Tourette syndrome.

Only five subjects showed evidence of ADHD in this sample, as opposed to findings from studies of children with ASD where ADHD is the most common diagnosis (Ghaziuddin et al. 1998; Gillberg and Bilstedt 2000). This probably reflects the fact that as in the general population, autistic subjects who show symptoms of hyperactivity and impulsivity as children often grow out of these symptoms as they grow older (Ghaziuddin 2005). It was not clear from the data if adults who had a diagnosis of depression showed a history of ADHD as children, nor was any relationship apparent between ADHD in children and any subtype of mood disorder, such as bipolar disorder, in adulthood.

Two subjects developed psychosis in late adolescence. One subject had marked mood symptoms and his psychosis was probably manic in nature. In the other subject the diagnosis was not clear. Thus, our findings are consistent with earlier reports that have

suggested that a small number of autistic individuals develop psychosis for the first time during late adolescence and early adulthood (Stahlberg et al. 2004).

One subject developed catatonia. There has been increasing recognition of the occurrence of catatonic features in some patients with ASD. Wing has drawn attention to the phenomenological similarities between autism and schizophrenia, and has suggested that about 17% of patients with autism develop catatonia (Wing and Shah 2006). Catatonia in the setting of autism can occur both as a symptom of an underlying psychiatric disorder, such as severe depression, or as an independent disorder with no underlying etiology (Ghaziuddin et al. 2005). While the findings of the present study do not allow us to conclude that autistic individuals are at risk of developing catatonia, nevertheless they underscore the need to be alert to the possibility that some autistic individuals who show regressive behavior during late adolescence and early adulthood may be in the process of developing catatonia.

The study did not attempt to explore the causes of mental illness. However, a positive psychiatric history was present in 16 subjects. On the other hand, 13 of those with a psychiatric diagnosis had a positive family history as opposed to nine with no family history. This finding emphasizes the need for clinicians to pay particular attention to the presence of family psychiatric history while evaluating adults with ASD.

Out of the 22 subjects who had an additional psychiatric disorder, 14 had a primary diagnosis of Asperger syndrome, 6 of autism and 8 of PDDNOS. The fact that the clinic had a special interest in persons with Asperger syndrome probably explains the excess of this group of subjects in the sample. Because of the small numbers of subjects in each group, it is not possible to conclude if a particular subtype of ASD is more vulnerable to developing psychiatric disorders than others. Likewise, since no controls were used, the findings cannot be used to support the hypothesis that the prevalence of psychiatric disorders is greater in persons with ASD than in the general population.

Although the main purpose of the study was to examine psychiatric disorders, a few patterns emerged about the presence of comorbid medical conditions. Only two subjects had a history of seizure disorder, consistent with the view that seizures in the ASD population tend to be more common in those with cognitive impairment and mental retardation. Older subjects showed a variety of medical illnesses such as hypertension and hypercholesterolemia. Interestingly, one subject with Asperger syndrome had Duchenne muscular dystrophy. This association has not been reported previously although two reports have described the occurrence of Myotonic dystrophy (Steinert's muscular dystrophy) in subjects with Asperger syndrome (Blondis et al. 1996).

While these findings are important from a clinical and research point of view, they should only be regarded as tentative. First, the sample size was small. This is because the clinic served mostly children and adolescents and no concerted effort was made to recruit adults. Second, the main reason for referral was to clarify a diagnosis of Asperger syndrome, as a result of which the sample consisted mostly of higher functioning individuals with only two showing mild

mental retardation. This also explains why the occurrence of associated medical conditions was low with only two subjects suffering from seizure disorder and one with Duchenne muscular dystrophy. Third, structured interviews were not used for the diagnosis of ASD or of comorbid psychiatric disorders. Fourth, the data were derived from a series of clinic-based subjects referred to a special clinic and not from a population-based study. Its findings, therefore, cannot be generalized to other samples of adults with ASD. Despite these limitations, however, they strongly suggest an association between ASD and comorbid psychiatric disorders. Clinicians should be aware that adults with ASD suffer from several types of psychiatric disorders across their life span, which contribute to their overall impairment and worsen their long-term outcome. Depression and other mood disorders form the most common psychiatric disorders in adults with ASD while age-related medical disorders, such as hypertension, also emerge, underscoring the need for their timely diagnosis and treatment. Systematic population-based studies of the psychiatric comorbidity of adults with ASD are urgently needed.

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