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Psychiatric Disorders in Autism: Diagnosis and Treatment

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Objectives

- **To describe the occurrence of psychiatric conditions in autism spectrum disorders (ASD) across the life span.**
- **To discuss their etiology and phenomenology.**
- **To highlight the importance of their early diagnosis and treatment.**

Outline of the Presentation

- **Introduction**
- **Definition of ASD; Psychiatric Disorders and Comorbidity**
- **ASD+Common Psychiatric Disorders**
 - ASD+ADHD
 - ASD+Depression
- **ASD+Uncommon Psychiatric Disorders**
 - Psychotic Disorders
 - Catatonia
 - Other
- **Implications for treatment and outcome**
- **Conclusion**



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What is autism and what are autism spectrum disorders?

Introduction

- **In 1943, Leo Kanner, a child psychiatrist from Johns Hopkins University, USA, described 11 unusual children.**
- **These children did not have the inborn ability to relate to others (“lack of affective contact”).**
- **They also had ritualistic behaviors and a desire for sameness.**

Autism Spectrum Disorders (ASD): Introduction

- **In the DSM/ICD, autism is conceptualized as the main category in a group of disorders (ASD), all of which are characterized by**
 - reciprocal social deficits;
 - communication impairment; and
 - restricted range of interests.

Autism Spectrum Disorders (ASD): Introduction

- **ASDs are divided into the following types:**
 - Autistic Disorder
 - Asperger Syndrome
 - PDDNOS
 - (Rett's Syndrome
 - Disintegrative Disorder)

Autism Spectrum Disorders: Introduction

- **Although ASD start very early in life, they last throughout the life span.**
- **The prevalence of autism is estimated to be at least 1 in 1000. (1 in 150 according to some reports.)**
- **It occurs in all countries and cultures.**
- **25% of patients with autism have normal intelligence while 75% suffer from mental retardation.**
- **30% of patients suffer from epilepsy.**

Early signs of Autism: Summary

- **Poor eye contact**
- **Lack of shared enjoyment**
- **Use of a person as an inanimate object**
- **Distress at particular sensations**
- **Language delay or regression**
- **Postural abnormalities**
- **Ritualistic behaviors**
- **Inflexible play**

Etiology: Genetic Factors

- **Is the disorder inherited?**
- **Twin studies**
- **Variable expressivity**
- **Genetic heterogeneity**
- **Conclusion**
 - A genetic disorder
 - Mode of transmission complex

- **Etiology: Environmental Factors**
 - Viruses
(eg. Herpes; measles etc.)

Some cases of ‘late-onset’ autism reported after herpes encephalitis

- **Etiology: Environmental Factors**
 - Toxins
 - Thiomerosal (Mercury)
 - Valproate
 - Alcohol
 - Thalidomide
 - Other drugs

- **Etiology: Environmental Factors**
 - Birth complications
 - No clear association between autism and pregnancy/birth complications.
 - Birth complications probably result from the same factors that raise the risk for autism.

Differential Diagnosis: Autism versus other ASDs

- **Asperger Syndrome**
- **PDDNOS**
- **Rett Syndrome**
- **Disintegrative Disorder**

Differential Diagnosis: Autism versus other disorders

- **Mental Retardation**
- **Specific Language Impairment**
- **Reactive Attachment Disorder**
- **Obsessive Compulsive Disorder**
- **Normal shyness**
- **Schizophrenia**
- **ADHD**
- **Bipolar Disorder**

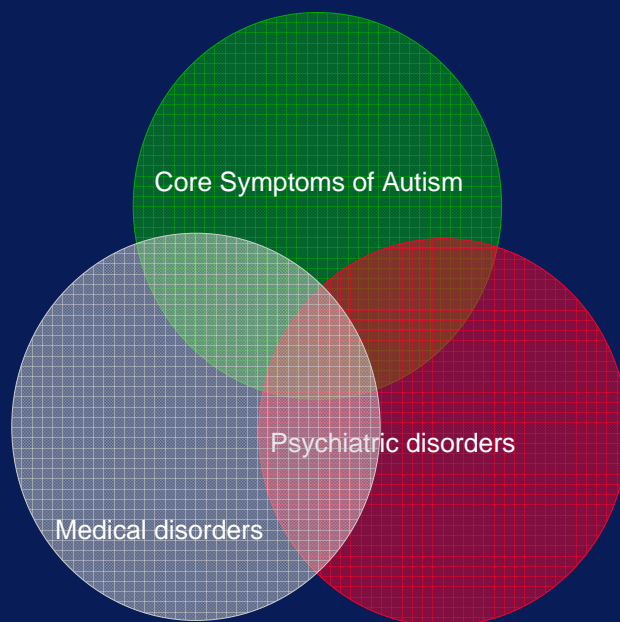
Multi-axial classification

- **Axis I: Clinical Disorder**
- **Axis II: Personality Disorder/Mental Retd**
- **Axis III: General Medical Condition**
- **Axis IV: Psychosocial Problems**
- **Axis V: Global assessment of functioning**

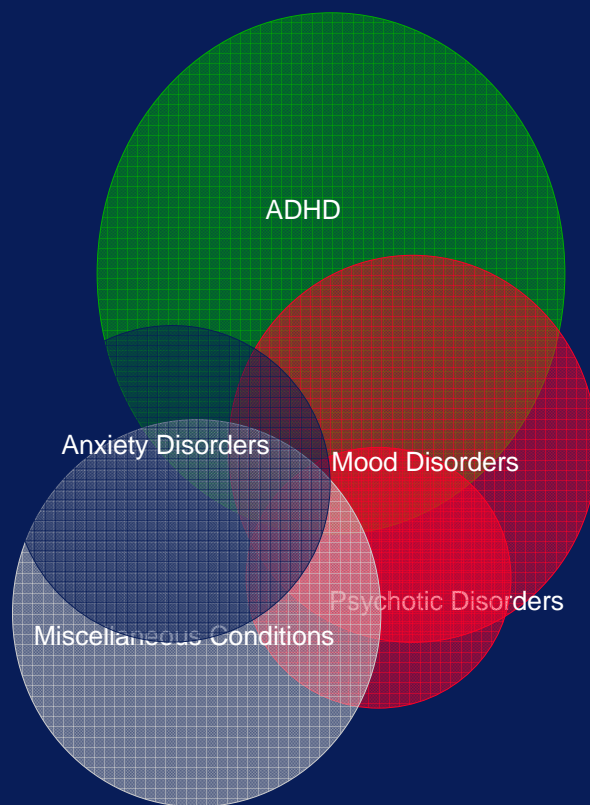
What is Comorbidity?

- **Occurrence of two or more conditions together**
 - Example: Heart Disease + Diabetes
 - Example: Autism + Epilepsy
- **The two conditions may or may not be linked to each other**
- **Types: True versus Artifactual**

Comorbidity of Autism



Psychiatric comorbidity of Autism



What are psychiatric disorders?

- **No universally accepted definition**
- **Any emotional or behavioral disorder that causes a significant degree of distress and impairment to the individual; to the family; or to the community.**



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Prevalence

- **109 children with autism (ADI-R; ADOS; expert clinician).**
- **5-17 years old.**
- **Mean full scale IQ: 82.5**
- **Modified K-SADS used.**
- **Only parents interviewed.**
- **72% had at least one DSM-IV psychiatric disorder.**

(Leyfer et al., 2006).



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- **About 65% of children and adolescents with Asperger syndrome suffer from an additional psychiatric disorders.**
 - **ADHD is the most common diagnosis in children with ASD while depression is probably the most common diagnosis in adolescents and adults.**

(Ghaziuddin et al., 1998; Gillberg and Billstedt, 2000)

- **Population-derived cohort of 10-14 year old.**
- **Parents interviewed.**
- **Questions focused on 3-month prevalence.**
- **Seventy percent of cases had at least one comorbid disorder and 41% had two or more.**
- **The most common diagnoses: social anxiety disorder (29.2%), ADHD (28.2% and ODD(28.1%).**
- **No association with MR or other risk factors.**

(Simoneff et al., 2008)

Prevalence rates of psychiatric disorders in ASD: Summary slide

- **In clinic-based studies, 60-70% of persons with ASD present with additional psychiatric disorders.**
- **In children, the most common diagnosis is ADHD (attention deficit hyperactivity disorder).**
- **In adolescents and adults, depression and other mood disorders are the most common.**

Prevalence studies: Limitations

- **Most studies are derived from clinic-based samples.**
- **Most studies have excluded lower functioning subjects.**
- **Limited data in adults.**
- **Disparate and inconsistent methods of diagnosis and assessment.**

Psychiatric Disorder in Relatives

- **Persons with ASD have relatives with psychiatric disorders.**
- **Compared to parents who have children with Down syndrome, parents with autistic children are more likely to have psychiatric disorders.**
- **These psychiatric disorders are usually depression and social phobia.**
- **The causes could be genetic or environmental or both.**



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ADHD in persons with Autism Spectrum Disorders

- **Main features are: attention deficit; impulsivity, and hyperactivity.**
- **Hyperactivity may or may not be present.**
- **Onset usually before 7 years of age.**
- **Males more commonly affected.**
- **Both genetic and environmental factors are involved.**

- **Occurs worldwide**
- **Persists into adolescence/adulthood in 40%**
- **Three main types: hyperactive; inattentive; combined.**
- **Girls present more commonly with the inattentive type**
- **Symptoms change over time and hyperactivity/impulsivity decreases with age**

Faraone et al. 2003. *World Psychiatry*, 2(2), 104-113

Kessler et al. 2005. *Biol Psychiatry*, 57,1,11332-1452

Comorbidity of ADHD: MTA study

- **ODD: 40%**
- **Anxiety Disorder : 34%**
- **Conduct Disorder: 14%**
- **Tic Disorders: 11%**
- **Mood Disorders: 4%**

- **However, relatively little is known about the occurrence of ADHD in ASD because:**
 - Studies of ADHD exclude subjects with ASD.
 - The DSM-IV and ICD-10 does not allow for the diagnosis of ADHD.

Symptoms of ADHD in ASD

- **Problems with attention often occur in children with autism.**
- **Autistic children have difficulty in processing information.**
- **These contribute to their social deficits.**
- **In clinic samples, at least 50% of patients referred for assessment of ASD suffer from comorbid ADHD.**
- **(At least 10% of patients referred for assessment of ADHD, suffer from ASD).**

Presentation of ADHD in ASD

- **Hyperactivity and impulsivity out of proportion to the level of autism.**
- **Symptoms often mixed with oppositional behavior and mood instability.**
- **Note: In some children with ASD, hyperactivity is replaced by hypo-activity in adulthood.**

Diagnosis of ADHD in ASD

- **Diagnose ADHD only if symptoms are severe and persistent.**
- **Rule out medical factors, such as, thyroid disorders.**
- **Rule out other psychiatric conditions, such as, anxiety disorders.**
- **Use appropriate rating scales.**

Treatment of ADHD in ASD

- **Treat both the symptoms of ADHD and those of ASD.**
- **Use medications with behavioral therapy and educational treatment.**
- **Stimulants form the mainstay of treatment.**

Medications in ASD+ADHD

- **In the USA, the most commonly used medications for the treatment of hyperactivity in ASD are the stimulants, such as, methylphenidate.**
- **Other medications include Strattera and atypical antipsychotic medications, such as, Risperidone.**
- **Atypical antidepressants, such as, Trazadone, are also used.**
- **No firm evidence that patients with ASD are more prone to side effects to stimulants.**



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Mood Disorders in persons with ASD

What are mood disorders?

- **Mood disorders are characterized by an abnormal disturbance of mood.**
- **Types include:**
 - Major Depression
 - Bipolar Disorder
 - Dysthymia
 - Depression NOS
 - Depression with psychotic features

Depression

- **Depression is a medical disorder characterized by a disturbance of mood, thinking, and behavior.**
- **The disturbance should last for at least 2 weeks and should result in a significant degree of impairment.**

- **The symptoms consist of:**
 - Depressed mood that is qualitatively different from normal sadness
 - Loss of interest in pleasurable activities
 - Problems with sleep and appetite
 - Difficulty in organizing and paying attention
 - Interpersonal difficulties (eg. Work and relationships).
 - Suicidal behavior
 - Psychosis in extreme cases

Prevalence

- **In western countries, the prevalence of depression is about 15%.**
- **Before puberty, the sex ratio is equal**
- **Females are more commonly affected after puberty.**

Depression in ASD: Prevalence

- **30% of referrals with high-functioning ASD (Asperger syndrome and normal-IQ Autism) are diagnosed with Depression.**

Ghaziuddin, 1998; 2005

Gillberg and Billstedt, 2000

Prevalence of Depression in ASD

- **High rates (~50%) in clinic patients with PDDNOS (Atypical autism)**

Mouridsen et al., 2007.

- **Across the life span, depression is probably the most common psychiatric disorder in persons with ASD.**

Ghaziuddin 2002; Matson et al., 2007.

- **However, there are no community-based studies.**

Symptoms of Depression in ASD

- **In higher functioning patients: depressed mood, increasing withdrawal.**
- **In lower functioning patients: weight loss, regression of skills.**
- **Special features: increase in morbid fixations, quasi-psychotic features, increase in obsessive features.**

Clinical features of Depression in ASD: Summary slide

High-functioning ASD	Low-functioning ASD
Persistent sadness	Change in behavior
Loss of interest in activities	Irritability
Depressive flavor to fixations	Crying spells
Statements about low self-esteem	Loss of interest
Suicidal thoughts/acts	Regression/loss of skills
Change in behavior	Weight loss
Crying spells	

Causes of Depression in persons with ASD

- **Exposure to stressful events, such as, bullying in school; change of educational programs; family problems etc.**
- **Depressed children with ASD are more likely to have a history of exposure to stressful events than non-depressed children.**
- **Therefore rule out depression as a cause of behavioral change if there is a history of exposure to recent negative life events.**

Ghaziuddin et al., 2002.

Causes of Depression in ASD

- **Some studies suggest that parents of children with ASD are more at risk of depression than those with other developmental disorders such as Down syndrome.**
- **Therefore, think of depression as a likely cause of behavioral change if there is a strong family history of depression.**

Causes of Depression in ASD: Summary slide

- **Genetic factors:**
 - Family history of mood disorders
 - Common genetic mechanisms?
- **Environmental factors/life events:**
 - Bullying and teasing in school
 - Social and sexual difficulties
 - Family discord
- **Combination**

Suicidal behavior in persons with ASD

- **Sometimes adolescents and adults with autism and Asperger syndrome commit suicide.**
- **The underlying cause is depression.**
- **Therefore, parents and professionals should take suicidal behavior and comments seriously.**

Suicidal behavior in ASD

Burt Bacharach's daughter commits suicide

New York Times, Fri Jan 5, 2007, 8:06 PM ET

- **The only child of pop songwriter Burt Bacharach and actress Angie Dickinson has committed suicide after a lifetime struggling with a form of autism.**
- **Nikki Bacharach, 40, died "quietly and peacefully" at her home in the northern Los Angeles municipality of Thousand Oaks on Thursday night, a statement said.**
- **She was diagnosed with Asperger Syndrome following her premature birth in 1966, and her father recounted her struggles that year in the song "Nikki."**

- **Obtain information from parents, teachers and others.**
- **Detailed psychiatric examination**
- **Rule out medical causes (eg. Thyroid dysfunction)**
- **In ASD without MR: Structured interviews possible (eg. SADS-PL); Rating scales (eg. Hamilton)**
- **In ASD with MR: difficult to use structured interviews; scales commonly used (eg. Reiss Scale; CDRS; Aberrant Behavior Checklist).**
- **Consensus and Best Estimate Diagnosis**

- **Combination of social/psychological and medical interventions.**
- **Antidepressants (eg. SSRIs) are most commonly used.**
- **In many children with a mixture of mood and hyperactive symptoms, antidepressants are combined with stimulants.**
- **Combination of cognitive behavior therapy (CBT) and medications in higher functioning subjects.**
- **In low-verbal persons, medications & supportive therapy.**
- **In refractory cases: augmentation strategies, mood stabilizers, ECT.**

Bipolar Disorder in ASD

Bipolar Disorder (Manic Depressive Illness)

- **Characterized by cycles of mood disturbance: depression followed by elation or irritability.**
- **Duration of the cycles varies.**
- **Usual age of onset is early adult life.**

Bipolar Disorder (Manic Depressive Illness)

- **Bipolar disorder is less common than Depression occurring in about 1-2% of the population.**
- **It is also caused by a combination of genetic and environmental factors.**
- **It is being increasingly diagnosed in children and adolescents.**

Bipolar Disorder and ASD

- **Some studies have suggested links between bipolar disorder and higher functioning autism and Asperger syndrome**

Bipolar Disorder and ASD

- **In one study, the rate of bipolar affective disorder in family members was 4.2%, higher than in the general population;**
- **It was significantly higher in families with Asperger's syndrome, suggesting an etiological link between Asperger's syndrome and manic depression.**

DeLong and Dwyer (1988)

Bipolar Disorder in ASD

- **Diagnosis depends on the presence of mood lability and a history of cyclical mood changes.**
- **History of onset is critical.**
- **Family history of mood disorders, especially bipolar disorder, is important.**
- **Use rating scales, such as, YMRS (Young Mania Rating Scale).**

Treatment of Bipolar Disorder in ASD

- **Mood stabilizers are the main drugs.**
- **These include lithium, depakote etc.**
- **A low dose of an antipsychotic medications, such as risperidone, often necessary in the acute stages.**
- **If mania occurs, hospital admission should be considered.**
- **Treat any environmental and social factors.**



ASD + Uncommon Psychiatric Disorders

Schizophrenia and Autism: Overlap and Differences

Schizophrenia in Autism/ASP

- **Schizophrenia is characterized by loss of reality, a history of hallucinations and delusions, usually occurring in late adolescence or early adulthood.**
- **Historical links and confusion with autism**
- **Initially, autism was called Infantile Psychosis and Childhood Psychosis**

Autism and Schizophrenia: Differences

- **Autism was initially described as Infantile Psychosis**
- **At one point autism was regarded the same as childhood schizophrenia**
- **Studies by Kolvin and others (1971) differentiated the two conditions**
- **Rutter (1970s) summarized the main differences between the two disorders**

Autism and Comorbid SZ

- Rarely, patients with autism can develop SZ
- The diagnosis is more easily made in higher functioning persons

Autism and Schizophrenia: Similarities

- **Early onset SZ (before 12 y) is characterized by language delay and developmental delays.**
- **Autistic-like features are seen in the premorbid histories of some children with schizophrenia.**

Autism and Schizophrenia: Similarities

- **Some high functioning adults with ASD may present with ‘positive symptoms,’ such as, bizarre behavior, thought disorder, and psychosis.**
- **Adults with autism resemble adults with negative schizophrenia (both disorders show: affective flattening, alogia, apathy, inattention and anhedonia) and motor abnormalities, such as, stereotypies.**

Autism and Schizophrenia: summary slide

- **While autism and schizophrenia are generally regarded as two distinct disorders, there are similarities between the two conditions which need to be explored.**

Catatonia in ASD

- **Catatonia is a disorder in which the patient becomes slow in his movements, regresses and loses his skills, and in some cases, becomes mute.**
- **It can occur secondary to depression and psychosis.**
- **Rarely, it can also result from medical conditions, such as, severe infections.**
- **If not treated, it can lead to starvation and death.**

Catatonia in ASD

- **Some patients (~15%) with autism develop catatonia during late adolescence and early adulthood.**

(Wing and Shah, 2007)

- **The symptoms often begin with obsessive slowing and an increase in compulsive behaviors.**
- **In severe cases, ECT may be necessary.**

(Doschke, 2007; Ghaziuddin et al., 2005)

- **Other Psychiatric Disorders in ASD**
 - Anxiety Disorders
 - Obsessive Compulsive Disorder
 - Generalized Anxiety Disorder
 - Simple Phobias
 - Selective Mutism
 - Sleep Disorders
 - Eating Disorders
 - Miscellaneous



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Violence, Crime, and Asperger Syndrome: **Any association?**

Violence, Crime, and AS

- **When Asperger used the label “autistic psychopathy,” he did not mean that his patients were psychopaths.**
- **However, some reports have suggested that patients with AS are prone to crime and violence.**
- **For example, the prevalence of AS was found to be increased in Broodmoor Hospital, UK.**

(Sragg and Shah, 1994)

Violence, Crime, and AS

- **However, these reports are based on special populations, such as maximum security hospitals or forensic clinics.**
- **Biased selection criteria. Unclear definition of violence/crime.**
- **Lax diagnostic criteria of Asp syndrome.**
- **No epidemiologic evidence that AS increases the risk of violent crime.**

(Ghaziuddin et al., 1991)

Violence, Crime, and AS

- **However, some patients with AS do commit crime.**
- **Certain types of offences, such as arson and petty stealing, appear to be more common.**

(Siponmaa et al., 2001)

Violence, Crime, and AS

- **Features:**
 - No attempt to conceal the behavior.
 - Naïve and difficult to understand.
 - Results from misreading of social cues.
 - Often the result of other factors such as depression and psychosis.
 - Behavior often based on special interests.

Violent Crime and Asperger Syndrome: the take home message

- **No firm evidence that patients with AS are at an increased risk of criminal violence.**
- **Need to rule out comorbid factors in those patients who indulge in crime.**



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Psychopharmacology of Autism Spectrum Disorders: Problems and Prospects

Medications in Autism

- **No medication is effective for the core symptoms of autism.**
- **Medications used only for the superadded comorbid symptoms.**
- **High levels of psychiatric comorbidity.**
- **Problems of hyperactivity, impulsivity, aggression, and abnormalities of mood common.**

(Ghaziuddin et al., 1998)

Psychiatric Disorders in ASD: Conclusions

- **Autism Spectrum Disorders (ASD) are life-long disorders.**
- **These disorders are more common than earlier believed**
- **A significant number (~50%) of patients with ASD suffer from additional psychiatric disorders.**
- **The most common diagnoses are ADHD and Depression/Mood Disorders.**
- **Standard treatments of ASD work better when comorbid disorders are treated in a timely and systematic manner.**
- **Treatment of comorbid disorders improves the quality of life of the affected individuals and reduces the burden of care of the families.**

Psychiatric Disorders in ASD: What is needed

- **Need population based studies.**
- **Need specific assessment tools especially in lower functioning individuals with ASD.**
- **Need more awareness among parents and professionals.**
- **Need to develop specialist services.**