

A Case Series of Psychosis in Neurodevelopmental Disorders: Phenomenology, Diagnosis and Treatment

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OBJECTIVES

People with neurodevelopmental disorders have a higher prevalence of psychosis than the general population.

Frequently, they access mainstream mental health services.

My talk will combine a case series with guidance for psychiatrists on the assessment and treatment of psychosis in people with neurodevelopmental disorders.

The session will highlight how different sub-specialties in psychiatry can learn from each other to improve treatment outcomes for people with neurodevelopmental disorders.

Outline

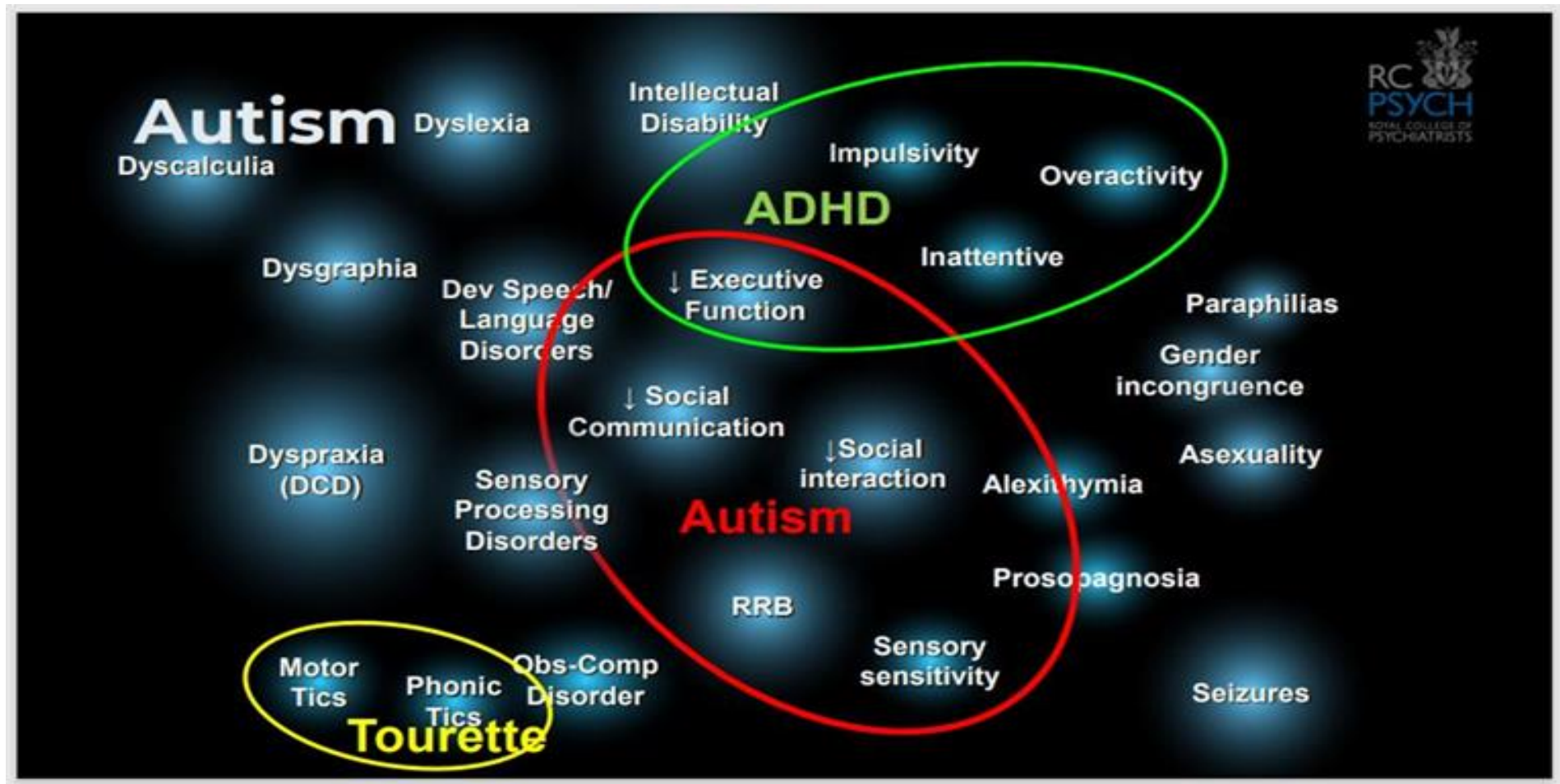
- Background
- Historical Considerations
- Diagnostic Considerations
- The At-Risk-Mental State
- Case Series
- Phenomenological Considerations
- Comments
- Conclusions

Background



- Neurodevelopmental disorders are behavioural and cognitive disorders arising during the developmental period that involve significant difficulties in the acquisition and execution of specific intellectual, motor, language or social functions.
- Categorised into Disorders of Intellectual Development, Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder, Primary Tics and Tic Disorders, et cetera

Although described as distinct clinical entities within most diagnostic systems, in clinical practice, neurodevelopmental disorders frequently overlap in terms of their core symptom domains, and they often co-occur.



ID and any mental illness

- Prevalence of mental illness within the adult ID population is between 20.1% - 23.4% compared to 16% of the adult general population (Shankar et al 2020)
- 21% of people with ID on GP records had a diagnosis of mental illness (Sheehan et al., 2015)
- Mental health problems in people with ID are often not recognised.
 - The complexity of multi-morbidity, communication needs, assessment, and diagnosis can lead to failure to recognize mental disorder.
 - This is compounded by diagnostic overshadowing

**Mental health
services for adults
with mild intellectual
disability**

ID and Psychosis

- Psychotic Illnesses are at least three times more prevalent in people with ID than the general population (Laura et al, 2022)
- Studies with a high proportion of people with ID report higher prevalence of psychotic illnesses. (Lai et al, 2019)

ASD and mental illness

Co-occurring psychiatric conditions are more frequent in the ASD population.

Prevalence rates for psychotic disorders ranging between 4 – 12%.

In ASD, older age was associated with higher prevalence of Schizophrenia, Bipolar and Depression.

In another study, higher rates of psychiatric conditions were found in family members of high functioning ASD people. (Robinson et al, 2014)

ASD and mental illness

Schizophrenia alone 3-6 times more common in people with ASD than in controls (Lai et al., 2019; Z. Zheng, Zheng, & Zou, 2018).

Up to 34.8% of ASD patients show psychotic symptoms (Chisholm et al., 2015)

The prevalence rates of ALTs and ASD in psychosis populations are much higher than in the general population.

ALTs: 9.6% to 61%, ASD: <1% to 52% across outpatient and inpatient populations. (Kincaid et al., 2017)

ADHD and mental illness

An approximately 5-fold increased risk of subsequent psychotic disorder in children with ADHD compared with controls (Nourredine et al., 2021)

29.2% children with ADHD (aged 7) vs 11.2% in the control group, experienced psychotic symptoms such as delusions and hallucinations at the age of 12 (Hennig et al;2017)

The pooled prevalence of ADHD in individuals with a psychotic disorder was 18.5% (Cheng et al., 2025)

16% of adults diagnosed with psychotic disorders were diagnosed with ADHD during childhood (Kim-Cohen et al, 2003)

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- People with ID and Psychosis are younger at first contact with mental health services compared with those with psychosis alone (23.8 vs 30years)
 - On Pdropfschizophrenia, Kraepelin and “Anglicizing” the Psychiatry Curriculum!
- 

'Pdropschizophrenie'
' revisited.
Schizophrenia in
people with mild
learning disability

Total of 101 Participants

- 39 subjects with mild learning disability and schizophrenia
- 34 control subjects with schizophrenia alone
- 28 control subjects with mild learning disability alone

The comorbid group had

- more negative symptoms,
- episodic memory deficits,
- soft neurological signs,
- epilepsy and
- receive more community supports than control subjects with schizophrenia.



Comorbidity

Complexity

Communication

Confusion!

Historical Considerations

Griesinger's Unitary Psychosis

1852 Bennedict Morel's *Démence Précoce*

1900s Kraepelin's Dementia Praecox and Manic-Depressive Psychosis

1911 Eugene Bleuler's 4As (Loosening of **Associations**, **Affective** Flattening, **Ambivalence** and **Autism**)

1940s Leo Kanner **Autism** (?early-onset form of schizophrenia)

1970s Michael Rutter: autism as a disorder, independent of schizophrenia



ASD vs SCZ- have divergent clinical profiles and natural histories

(American Psychiatric Association, 2013).

Feature	Autism Spectrum Disorder (ASD)	Schizophrenia (SCZ)
Typical Age of Diagnosis	Childhood	Late adolescence or early adulthood
Course of Condition	Stable or improving longitudinal course	Progressive course
Long-term Impairment	Less likely; may improve over time	Often includes persistent long-term impairment
Key References	Anderson, Liang, & Lord (2014); Fein et al. (2013); Lord et al. (2006)	Andreasen (2010)



Despite being different conditions,

- Co-occur more frequently than would be expected by chance
- People with ASD and Psychosis show similarly impaired performance on neurocognitive measures of social cognition
- They demonstrate similar abnormalities of functional connectivity in large-scale brain networks and
- Share some neuroanatomical findings.

Diagnostic Considerations

- The core symptoms of psychosis are often described as positive (hallucinations, delusions, and abnormal motor behaviour) and negative symptoms (such as reduced speech, poor motivation, loss of emotional expression, and loss of interest in previously pleasurable activities).
- Developmentally appropriate behaviours in ID/ASD may be misconstrued as delusions or hallucinations.
- Social interaction deficits in ASD or Negative Symptoms?
- Sensitivity due to previous adversities or Paranoia?
- Communication deficits or Formal Thought Problems?
- “Stimming” or Catatonia?

Key elements for the differential diagnosis of delusions in ASD and Psychosis.

Autism spectrum disorder

Impairment to understand the rules of common social interactions

Greater impairment in ToM

Difficulty in distinguish between their subjective perceptions and reality

Psychosis

Aberrant interpretation of others' mental states

Greater tendency to external attributions

Hostility bias

The At-Risk Mental State

- Majority of psychotic disorders do not develop de novo but after a period of non-specific or low-grade symptoms, or 'prodrome'.
- Criteria for identifying people at imminent high risk of developing a psychotic disorder, combines both clinical and genetic risk factors.
- **Attenuated Psychotic Symptoms (APS):** the presence of attenuated (subthreshold for a diagnosis of a psychotic disorder) psychotic symptoms within the previous 12 months
- **Brief Limited Intermittent Psychotic Symptoms (BLIPS):** a history of brief self-limiting psychotic symptoms in the previous 12 months, which resolve spontaneously (within 7 days)
- **Trait Group:** genetic vulnerability to psychotic disorder (either schizotypal personality disorder or family history of psychotic disorder in a first-degree relative).
- A drop in functioning or persistent low functioning for at least 1 month within the previous 12 months is required in all three groups.



Case Series

16 Men at the BCFS (Regional Medium Secure Forensic Unit for Men with NDDs)

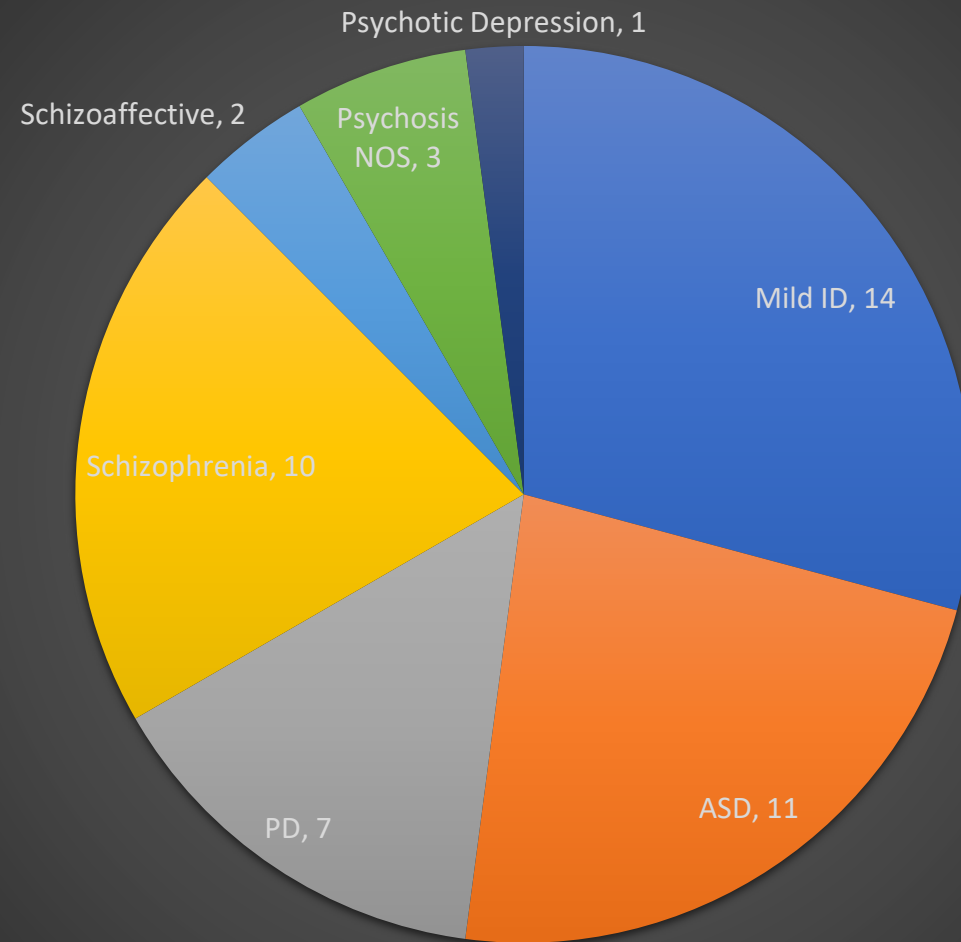
Age: Aged 24 to 61, Mean: 36, median: 35, mode: 37

Ethnicity: 94% White; 6% Mixed

Age at First Presentation with Psychotic symptoms: 10 -38 years, mean: 21years

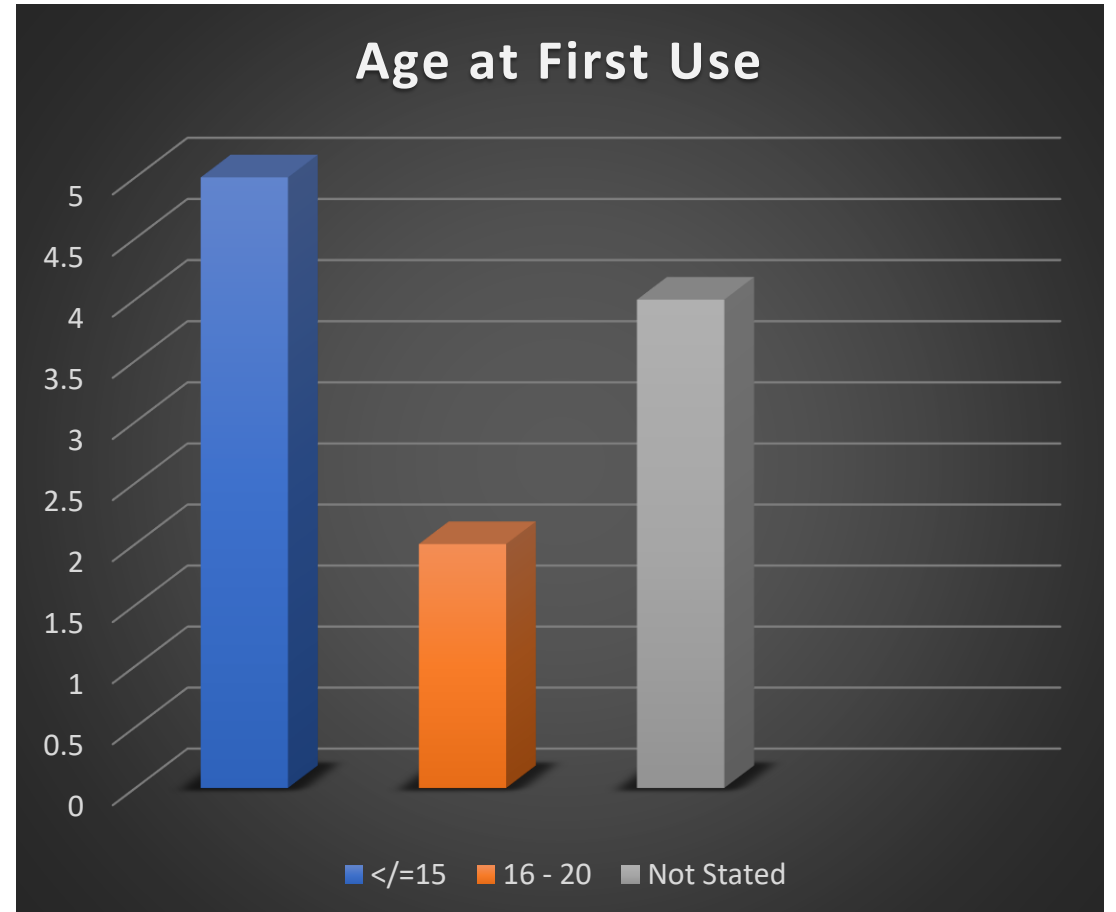
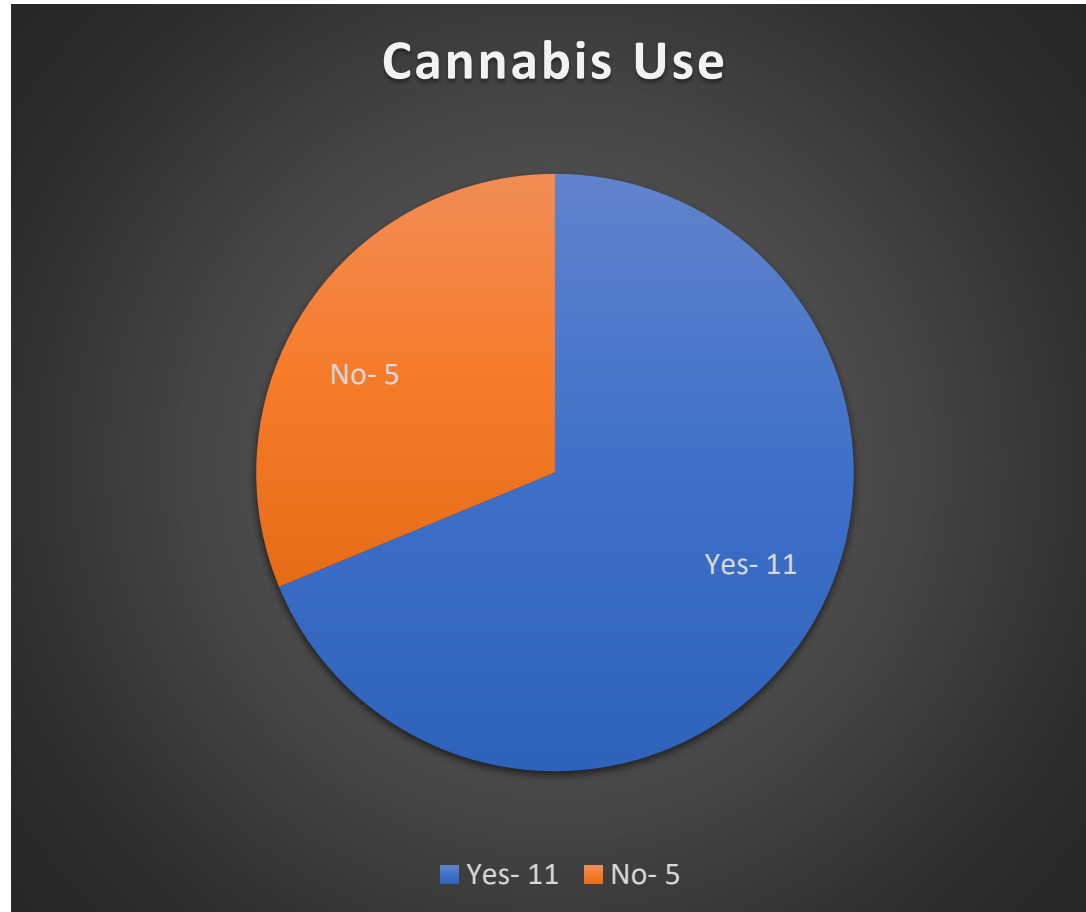
Time to Diagnosis of Psychotic Illness: 0 to 9years, mean 2.5years

Diagnoses



■ Mild ID ■ ASD ■ PD ■ Schizophrenia ■ Schizoaffective ■ Psychosis NOS ■ Psychotic Depression

Cannabis Use



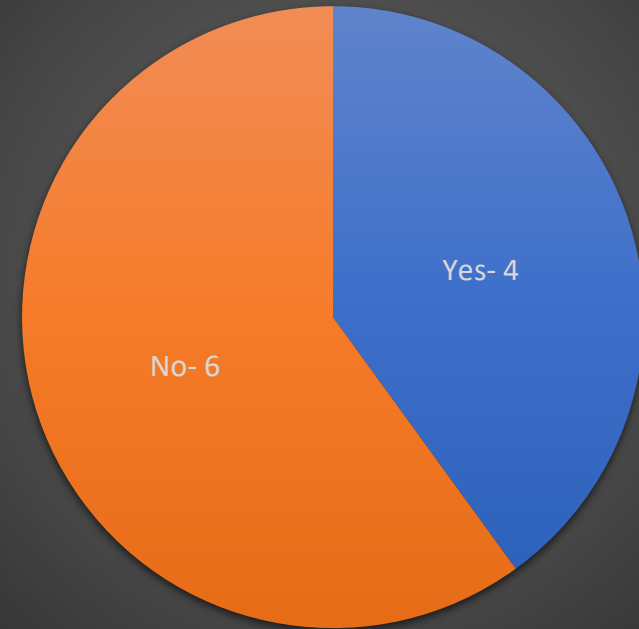
Genetic Risk

Family History of Mental Disorders



■ Present- 10 ■ Absent- 6

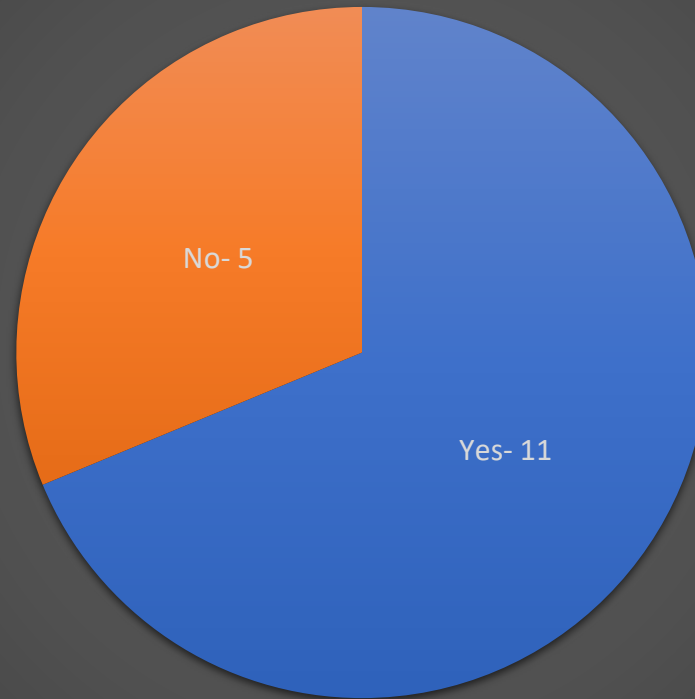
Documented Family History of Psychosis



■ Yes- 4 ■ No- 6

Attenuated Psychotic Symptoms

Attenuated Psychotic Symptoms



■ Yes- 11 ■ No- 5 ■

Qualitative Descriptions

DELUSIONS

- “bad thoughts” ... worries that people are “coming to get them”, “that their food has been tampered with”, “people had spat in their drink” or “staff had poisoned their food.”
- “...Staff are discussing me during team meetings.”
- Another reported not leaving his home as he felt anxious in crowds and believed people were talking about him in a derogatory manner.
- He stated he could not tell what people were saying but knew it was “not very nice”.
- Bizarre Ideas; Misidentification; Grandiose/Nihilistic Ideas
- Delusional Behaviour: wearing an armoured vest for safety, wearing earplugs due to worries about getting brain damage, wearing a beard for protection, and believing this will stop people stealing his DNA.

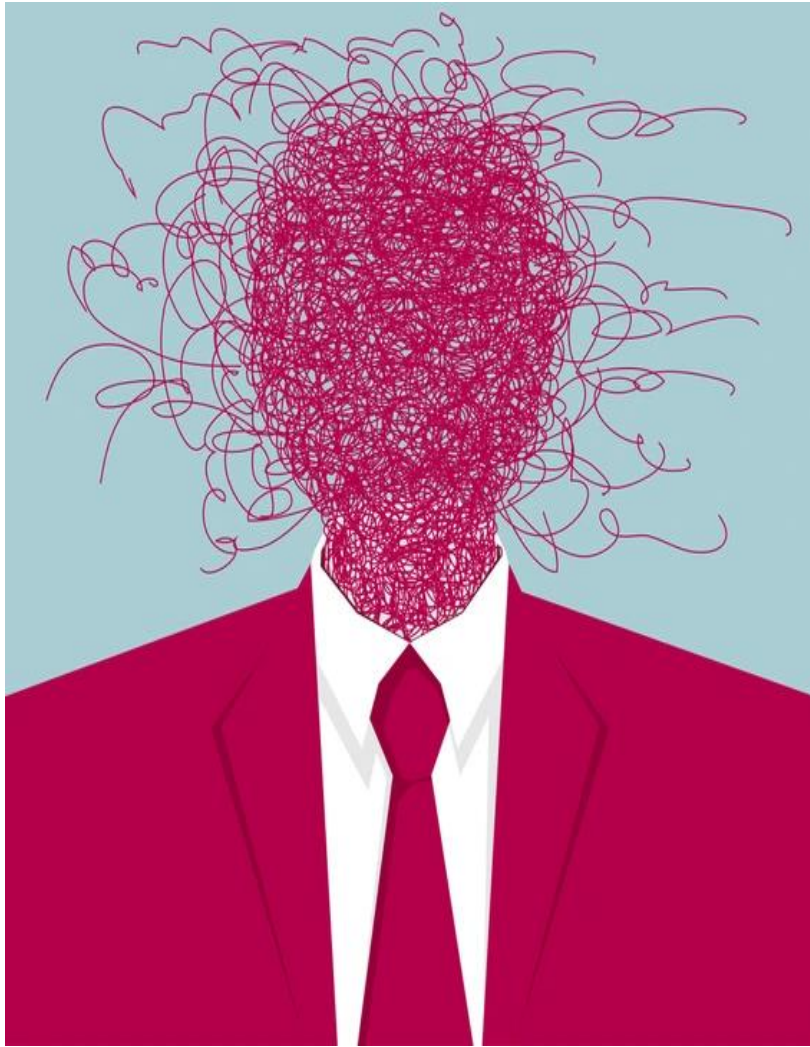
EXPERIENCES OF PASSIVITY/CONTROL

- Thought alienation difficult to clarify in this cohort
- Images being “inserted into my head”.
- Being controlled by Lucifer/“the devil is controlling my life.”
- Feeling like a robot, being controlled by the voices in my head.
- “witches hexing me”
- Accusing others of interfering with him
- Believes people are controlling his thoughts and actions and inserting thoughts and feelings into him.

HALLUCINATIONS

- Classical voices discussing or commenting on activities (3rd person).
- Voices commanding (2nd person Imperative).
- Difficulty reporting location of the voices.
- The content of the voices is often commands to harm self, others, or damage property.
- Voices may be familiar, a family member, other patients or members of staff leading to outbursts of violence.
- Unfamiliar (“hearing a witch’s voice”).
- Voices are often described as persistent. Less able to resist, worsening agitation/distress.
- Hallucinatory Behaviour: laughing inappropriately, carrying on full conversations with unseen people, or responding to stimuli not perceived by others but when asked directly they will deny the experience of hearing voices of unseen people.





Disorganised Thinking or Speech

- “thoughts as muddled up”
- “my head is screwed”.
- Observations may reveal muddled conversation, disjointed thoughts, speaking in unfamiliar language (which patient presumes is code), repetitive speech with minimal effective conversation, perplexity and loosening of associations.

Grossly disorganised behaviour

- Agitation and combativeness
- Outbursts of physical aggression directed at self, others, and property.
- Sometimes, impulsive or driven by perceptual experiences, perceived slight or paranoid ideas from or about other patients, family members, members of staff or members of the public.
- Unusual behaviours such as pulling lumps of hair out of the head, masturbating in communal areas.

Negative Symptoms

- Loss of motivation
- Changed sleep patterns
- Poor hygiene
- Reduced appetite
- Isolating in the room and not accessing communal areas

Phenomenological Considerations

Those with comorbid ID and psychosis show more observable psychopathology, negative symptoms, formal thought disorders and decreased functional abilities (Aman et al., 2016; Welch et al., 2011).

The DC-LD (Cooper et al., 2021) notes that for those with greater severity of intellectual disability, features of an acquired psychotic illness may include either a worsening in the frequency or severity of old behaviours or new behaviours, especially when they are odd, bizarre, or unusual for the individual.

The phenomenological task is to clarify in the patient with ID, objective reality (that includes the “normal alternate” reality of intellectual disability) and the “loss of reality contact” observed in psychosis, from one another.

TREATMENT

Lack of literature addressing the treatment of psychoses in the context of ASD or ID

Available data point toward the need of more intensive care for the ASD-P due to poorer response/more severe symptoms, concurrent behavioral issues or both

Clinical practice therefore continues to be guided by evidence from trials in the general population and from case reports, observational studies, retrospective chart reviews and prospective clinical investigation in PWID/ASD.

Treatment



Oral antipsychotic medication should be offered in conjunction with psychological interventions such as family therapy and individual cognitive behavioural therapy.



The first line treatment can be monotherapy with a second-generation antipsychotic like risperidone and the second line monotherapy with a different second-generation drug or a first-generation antipsychotic.



Clozapine can be equally effective in treatment resistant schizophrenia in those with Intellectual disability as in the general population.

Conclusions

- People with Neurodevelopmental disorders often develop psychosis at rates higher than in the general population.
- Diagnosis is complicated by various reasons such as communication difficulties, comorbidities, cultural differences, diagnostic overshadowing, and atypical presentations.
- The phenomenological task is to differentiate between the “normal alternate” reality of neurodevelopmental disorder and the “loss of reality contact” observed in psychosis.
- Ultimately a clinical judgement, positive outcomes following therapeutic trials confirms the diagnosis retrospectively.

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QUESTIONS



CLARIFICATIONS



COMMENTS