

A Mixed Bag: Psychiatric Comorbidities

Alison Fong, BSc, MD Candidate Class of 2023

Dr. Anamaria Richardson



Land Acknowledgement

I would like to acknowledge that I live, work and play on the unceded traditional territories of the Coast Salish peoples – sk̓wx̓wú7mesh (Squamish), selílwitulh (Tsleil-Waututh), and x̓wməθk̓wəy̓əm (Musqueam) nations.

Learning Outcomes

1. To appreciate the prevalence of mental health conditions in children with autism and intellectual disability, and the impact they have on them and their families.
2. To gain some understanding of treatment options available.
3. To address some methods of complementary and alternative medicine.

78% of children with autism have at least 1 mental health condition

By ages 3-5 years, 45% will have 1 or more conditions

By ages 12-17 years, 86% will have 1 or more conditions

Girls 2x more likely to have anxiety

Children with intellectual disability 4x more likely to have behavior/conduct problem

Children with childhood adversity more likely to have anxiety and ADHD

Most Common

- Behavior/conduct problem

More Common

- ADHD
- Anxiety Disorders
- OCD
- Mood Disorders
- Sleep Disorders (talk on September 13th, 2021)

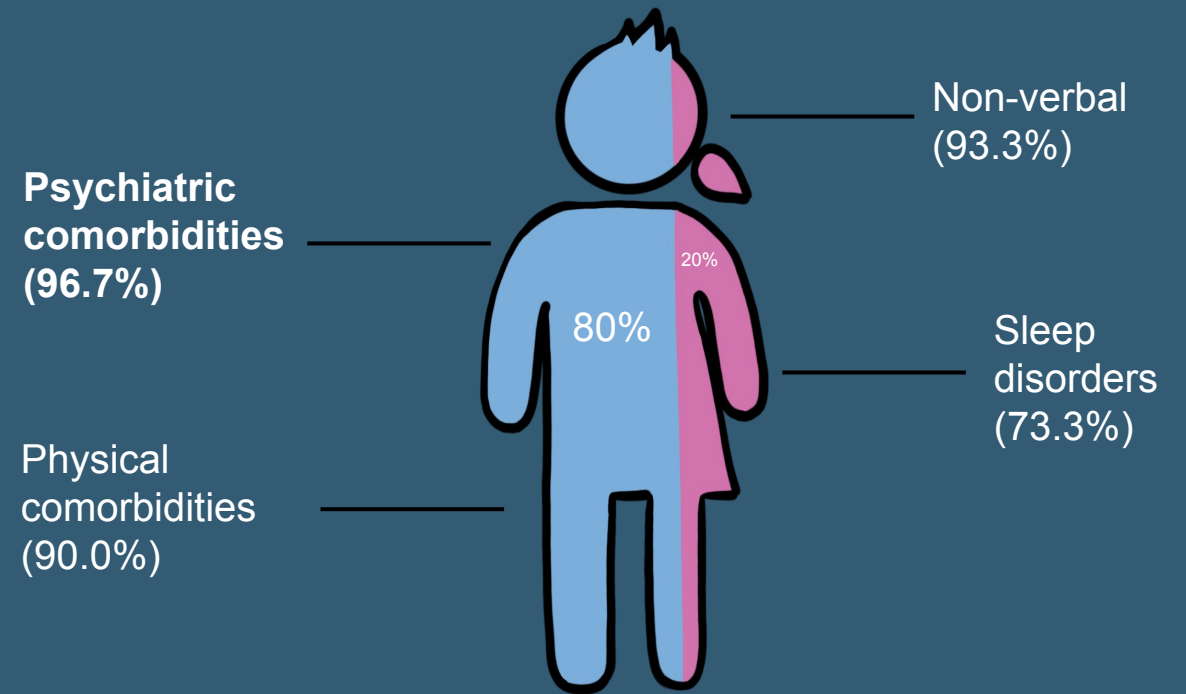
Less Common

- Schizophrenia
- Catatonia
- ARFID (talk on January 10th, 2022)

Non-exhaustive list

**Psychiatric
comorbidities are
positively associated
with SIB severity.**

**SIB Clinic at
BCCH**



ADHD and ASD: Overview

More than 50% of children with ASD also have ADHD

Up to 50% of children with ADHD also have ASD traits

Children with both ASD and ADHD have more:

- Severe autistic symptoms
- Difficulties with social and communication skills
- Difficulties with self care
- Difficulties with adaptive and executive functioning skills
- Problematic internalizing behaviors (I.e. Anxiety, depression)
- Maladaptive disruptive behaviors (I.e. Tantrums, aggression, emotional dysregulation)
- Stereotypic and repetitive behaviors
- Comorbid psychiatric disorders (I.e. Schizophrenia, bipolar, depression, anxiety)
- Learning difficulties
- Specific language impairment

ADHD and ASD: Treatment

Non-pharmacological

- Psychoeducation
- Parent/carer interventions
 - Support vs Mediated
- Individualized Education Plans (IEP's)
- Environmental interventions
 - Functional Behavioral Analysis
- Physiological interventions
- Others: narrative therapy and cognitive behavioral therapy

Pharmacological

- Psychostimulants
- SNRI's
- Alpha-2 adrenergic agonists
- Atypical antipsychotics

Psychostimulant s

Example

- Methylphenidate

Mechanism of Action

- Central nervous system stimulant – increases levels of dopamine and noradrenaline
- Beneficial effects in ADHD thought due to actions in the prefrontal cortex

Efficacy

- Reduced hyperactivity with medium – large effect size
- Small effects on inattention
- Medium effect size on total ADHD symptoms

Adverse Effects

- Appetite suppression
- Insomnia
- Irritability
- Depressive symptoms
- Social withdrawal
- *Does NOT worsen repetitive behavior or oppositional behavior*

Other Medications

SNRI's



Also good for social anxiety

Alpha-2 Adrenergic Agonists



Many adverse effects

Atypical Antipsychotics



Less evidence, since primary use is for irritability and aggression, but may decrease hyperactivity

SNRI

Efficacy

- Small to medium effect on hyperactivity
- Small to medium effect on inattention
- Medium to large effect on total ADHD symptoms

Example

- Atomoxetine

Mechanism of Action

- Inhibits reuptake of norepinephrine in the prefrontal cortex

Adverse Effects

- Decreased appetite
- Abdominal discomfort
- Nausea

Alpha-2 Agonists

Example

- Guanfacine

Mechanism of Action

- Thought to strengthen working memory, reduce distraction, improve attention and impulse control
- Exact mechanism for ADHD benefits unknown

Efficacy

- Large effect on hyperactivity, inattention, and total ADHD symptoms

Adverse Effects

- Drowsiness
- Fatigue
- Decreased appetite
- Tearfulness
- Irritability and anxiety
- Decreased blood pressure and heart rate

Atypical Antipsychotics

Example

- Aripiprazole
- Risperidone

Mechanism of Action

- Dopamine-stabilizing effect

Efficacy

- Aripiprazole
 - Medium to large effect on hyperactivity
 - Improved emotional and cognitive functioning
 - No effect on social functioning
 - Reduced caregiver strain
- Risperidone
 - Mixed results
 - Descriptive studies showed significant improvement in hyperactivity, but long-term studies showed no improvement

Adverse Effects

- GI effects (I.e. Vomiting, changes in appetite)
- Drowsiness
- Tremor
- Drooling
- Weight gain

ADHD and ID: Overview

ADHD is the most common neurodevelopmental disorder comorbid with ID

- Prevalence 3-4 times higher

Lower intellectual functioning can affect attention and behavior, leading to diagnostic overshadowing

Children with both ADHD and ID:

- ADHD symptoms tend to be more severe and less likely to remit with age
- Higher rates of agitation, SIBs, stereotypic behaviors
- Generally impaired adaptive functioning

ADHD and ID: Treatment

Non-pharmacological

- Same as for ADHD and ASD

Pharmacological

- Same as for ADHD and ASD

RCTs have shown 45-66% response rate to methylphenidate in ADHD/ID children

- IQ > 50 predicts a better response to stimulants
- Severely low IQ levels predict a poorer response
- ADHD/ID children at higher risk for adverse effects such as tics and social withdrawal

Anxiety Disorders: Overview

40-66% of children with ASD also have AD

3-22% of children with ID also have AD

Most common in children with ASD and typical cognitive/language abilities

Separation Anxiety Disorder

Social Phobia

Agoraphobia

Panic

Disorder

GAD

Unspecified Anxiety Disorder

Anxiety Disorders: Overview

40-66% of children with ASD
also have AD

3-22% of children with ID also
have AD

Most common in children with
ASD and typical
cognitive/language abilities



What drives
anxiety?

Anxiety Disorders and ASD: Treatment

Non-pharmacological

- CBT
 - Sensory redirection or sensory activities
 - Routine and structure
 - Neurofeedback

Pharmacological

- SSRI's
 - Alpha-adrenergics
 - Short acting benzodiazepine

SSRI

Example

- Fluoxetine
- Escitalopram
- Fluvoxamine
- Paroxetine
- Sertraline

Mechanism of Action

- Regulating serotonin activity

Efficacy

- Inconsistent results for relief of anxiety

Adverse Effects

- Headaches
- Insomnia
- Appetite changes
- Agitation
- Abdominal discomfort
- Hyperactivity
- Impulsivity

OCD-Related Disorders: Overview

Diagnosed in 2.6-37.2% of children with ASD

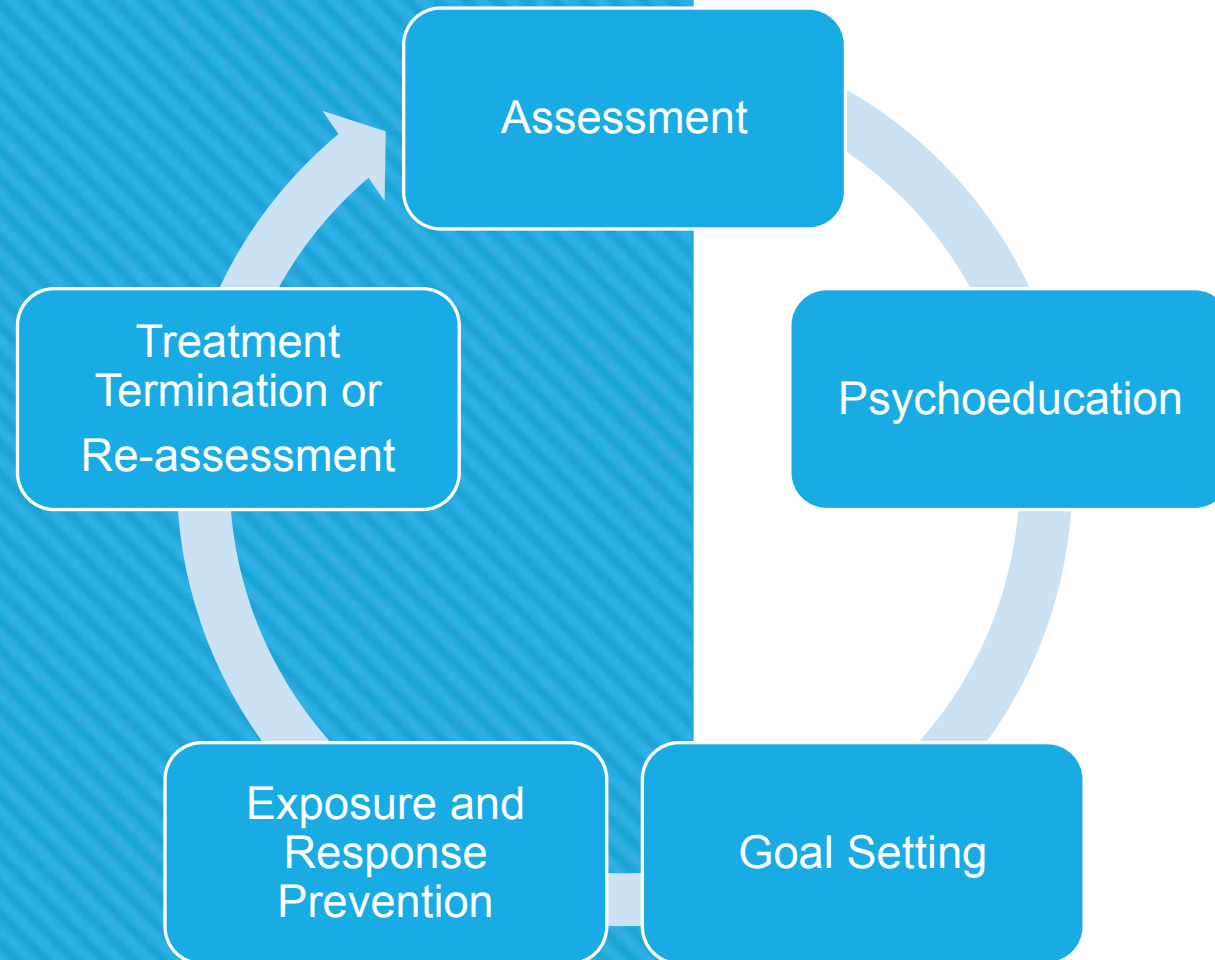
Obsessions

Recurrent, unwanted, persistent thoughts/images/urges that cause distress

Compulsions

Repetitive behaviors or thoughts with rigid rules performed to reduce anxiety

CBT



- Very effective
- BIACA (Behavioral Interventions for Anxiety in Children with Autism) – very effective, maintained at 3 months
- Coping Cat – very effective, maintained at 2 months

Mood Disorders

Depression

- 12-33% of children with ASD
- 1.5% of children with ID
- Presents with changes in affect, sleep, participation, eating
- At higher risk for attempted suicide
- Interventions include CBT and SSRI's
 - Small scale RCT for CBT showed significant improvement in depression at 4 weeks post intervention, but not maintained at 3 months
 - Case study showed significantly lower depression scores on combination therapy

Bipolar disorder

- 6-21% of children with ASD
- Difficult to diagnose bipolar disorder in children with ASD with limited language
- Gradual catatonia
- Interventions include mood stabilizers, anticonvulsants, atypical antipsychotics in conjunction with CBT
- Consider ECT in severe refractory cases

Catatonia

- Psychiatric syndrome of disturbed motor functions
- First recognized in 1874
- Occurs in 12-20% of people with ASD
- Readily treatable with ECT
- Can provide life-changing improvement in children with severe refractory SIB in the setting of ASD



Complementary and Alternative Medicine (CAM)

- In a sample of 248 families, 70% had tried at least 1 CAM, 50% were currently using a CAM
- Most frequently used CAM's:
 - Special diets (29%)
 - Vitamins (27%)
 - Animal therapy (24%)
 - Auditory integration training (16%)
 - Music therapy (16%)
 - Chelation (11%)

Unclear whether children are
benefitting from these
treatments

National Center for Complementary and Integrative Health

Omega-3

Little to no evidence

Probiotics

Little to no evidence

Secretin

Strong evidence
that it is not
effective

Adverse effects
include tantrums,
hyperactivity,
aggression, flushing

National Center for Complementary and Integrative Health

Vitamin B6
and Mg

No evidence

Chelation

No evidence

Adverse effects
include
hypocalcemia, renal
impairment and
death

Music
Therapy

Improves social
communication,
interaction, and
adaptation skills

Take-Home Messages

1. Psychiatric comorbidities are common, and you are not alone.
2. Treating a psychiatric condition can help improve core symptoms of autism.
3. Self injurious behaviors may be related to catatonia, which is a readily diagnosed and treatable condition.
4. Consider the evidence available for complementary and alternative medicine.

Thank you!

□ Questions?

□ Please email sstephens@fsibc.com



Bibliography

- Banneyer K, Fein R, Storch E. Adapting cognitive behavioral therapy for children with autism spectrum disorder and comorbid anxiety and obsessive-compulsive disorders. In: ; 2020:125-140. Accessed Jul 29, 2021.
- Christon LM, Arnold CC, Myers BJ. Professionals' reported provision and recommendation of psychosocial interventions for youth with Autism Spectrum Disorder. *Behav Ther*. 2015;46(1):68–82.
- Clark B, Bélanger SA. ADHD in children and youth: Part 3—Assessment and treatment with comorbid ASD, ID, or prematurity. *Paediatr Child Health*. 2018;23(7):485-490. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6199634/>. Accessed Jul 29, 2021. doi: 10.1093/pch/pxy111.
- Ghaziuddin M, Ghaziuddin N. Bipolar disorder and psychosis in autism. *Child and Adolescent Psychiatric Clinics of North America*. 2020;29(3):433-441. <https://www.sciencedirect.com/science/article/pii/S105649932030016X>. Accessed Jul 29, 2021. doi: 10.1016/j.chc.2020.02.004.
- Hyman SL, Levy SE, Myers SM. Identification, evaluation, and management of children with autism spectrum disorder. *Pediatrics*. 2020;145(1). Accessed Jul 29, 2021. doi: 10.1542/peds.2019-3447.
- Kerns C, Renno P, Storch E, Kendall P, Wood J. *Anxiety in children and adolescents with autism spectrum disorder*. Academic Press; 2017. <https://learning.oreilly.com/library/view/anxiety-in-children/9780128052679/>. Accessed Jul 29, 2021.
- Nadeau J, Sulkowski ML, Ung D, et al. Treatment of comorbid anxiety and autism spectrum disorders. *Neuropsychiatry (London)*. 2011;1(6):567-578. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3809000/>. Accessed Jul 29, 2021.
- Postorino V, Kerns CM, Vivanti G, Bradshaw J, Siracusano M, Mazzone L. Anxiety disorders and obsessive-compulsive disorder in individuals with autism spectrum disorder. *Curr Psychiatry Rep*. 2017;19(12):92. Accessed Jul 29, 2021. doi: 10.1007/s11920-017-0846-y.
- Rodrigues R, Lai M, Beswick A, et al. Practitioner review: Pharmacological treatment of attention-deficit/hyperactivity disorder symptoms in children and youth with autism spectrum disorder: A systematic review and meta-analysis. *Journal of Child Psychology and Psychiatry*. 2021;62(6):680-700. <https://acamh.onlinelibrary.wiley.com/doi/abs/10.1111/jcpp.13305>. Accessed Jul 29, 2021. doi: 10.1111/jcpp.13305.
- Young S, Hollingdale J, Absoud M, et al. Guidance for identification and treatment of individuals with attention deficit/hyperactivity disorder and autism spectrum disorder based upon expert consensus. *BMC Med*. 2020;18(1):146. Accessed Jul 29, 2021. doi: 10.1186/s12916-020-01585-y.