Autism and Mood Disorders: Assessment & Intervention

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Brief Introduction

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- Clinical Senior Instructor, Case Western Reserve University/University Hospitals of Cleveland

Monarch Center for Autism
- Preschool & Day School (ages 3-21)
- Transition Education Program (ages 14-21)
- Monarch Boarding Academy / residential treatment facility (ages 8-21)
- Adult Day & Residential Services (ages 18+)
Disclosures

• I have no financial disclosures.
Overview

- Co-morbid mood disorders can occur in children and young adults with Autism Spectrum Disorders (ASD). Identification and treatment of these symptoms can be challenging.
Objectives

- Define diagnosis of mood disorders as described by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)
- Identify symptoms in people with Autism Spectrum Disorder (ASD)
- Discuss differential diagnosis of mood disorders (i.e., how to distinguish a particular disorder or condition from others that present similar clinical features)
- Identify ways to treat individuals with a dual diagnosis of ASD and mood disorders
- Examine a case study highlighting a student with a dual diagnosis of ASD and a possible mood disorder
- Question & Answer
Our Student (Case Study)

• “RG” is a 16 year old male of Chinese decent, with a diagnosis of Autism Spectrum Disorder, Level 3 with Intellectual Disabilities (ID) and Learning Disabilities (LD).

• He was admitted to Monarch Center for Autism (residential treatment facility) for aggressive behaviors in the home, and a desire for increase in speech and communication that was not available in his home district.

• He had lived with his family prior to admission to Monarch Center for Autism.

• Parents did not have access to ongoing providers who worked frequently with children on the autism spectrum.

• A language barrier between the family and providers complicated his previous care.
Our Student (Deficits)

• Transitioned from home to Monarch Center for Autism (but residential and school) without aggression.

• Apparent Deficits included:
  – Speech
  – Social Interactions
  – Motivation to complete activities at Monarch Center for Autism
Our Student (Changes in Behavior)

- Increased aggression
- Increased vocalization
- Increased refusal to complete tasks
- Withdrawal into his room
- Refusal to talk with parents
- Change in sleep
- Worse in some environments versus others
Our Student (Changes in Behavior)

- The school team and residential team independently became concerned about these changes in behaviors. There was consensus that RJ was deteriorating. However, the etiology of these changes was not clear.
Our Student (Etiologies)

- Was RG angry with staff?
- Was RG upset that he was in a residential living environment?
- Was the honeymoon period over?
- Was there another function for the behavior?
  - e.g., escape-avoidance
- Was this a result of communication?
- Or was RG depressed/manic/psychotic?
What are Mood Disorders?

• According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5):
  – DMDD (Disruptive Mood Dysregulation Disorder)
  – MDD (Major Depressive Disorder)
  – Premenstrual Dysphoric Disorder
  – Substance/Medication Induced
  – Unspecified/Other specified Depressive Disorder
  – Bipolar Disorder (Type 1 and Type 2)
  – Cyclothymic Disorder
  – Due to Another Medical Condition
  – Unspecified/Other specified
DSM 5: Major Depressive Disorder

- Depressed mood
- Decreased interest
- Changes in weight or appetite
- Changes in sleep
- Psychomotor changes (observable by others)
- Fatigue/decreased energy
- Feelings of worthlessness or guilt
- Decreased ability to concentrate
- Recurrent thoughts of death or suicidal ideation

Major Depressive Disorder

• Prevalence

  – Adults: ~7%
    • Females (1.5-3) : Males (1)
  – Adolescents: ~ 5.7%
    • Females (7.4%) to Males (4%)

DSM 5: Bipolar 1 Disorder

Manic Episode

• 3 of following present (4 if mood is only irritable)
  – Inflated self-esteem or grandiosity
  – Decreased need for sleep
  – Increased talkativeness/pressure to talk
  – Flight of ideas/racing thoughts
  – Distractibility
  – Increased goal directed activity/psychomotor agitation
  – Engagement in high risk activities

Bipolar Disorder “NOS”

• Prevalence
  
  - Adults:
    
    • ~2.8% of U.S. adults in the past year
    • Males (2.9%) and Females (2.8%)
  
  - Adolescents
    
    • ~ 2.9% of adolescents
    • Females (3.3%) and Males (2.6%)

Prevalence of Autism Spectrum Disorder

**Identified Prevalence of Autism Spectrum Disorder**

**ADDM Network 2000-2010**

Combining Data from All Sites

<table>
<thead>
<tr>
<th>Surveillance Year</th>
<th>Birth Year</th>
<th>Number of ADDM Sites Reporting</th>
<th>Prevalence per 1,000 Children (Range)</th>
<th>This is about 1 in X children...</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1992</td>
<td>6</td>
<td>6.7 (4.5 - 8.8)</td>
<td>1 in 150</td>
</tr>
<tr>
<td>2002</td>
<td>1994</td>
<td>14</td>
<td>6.6 (3.3 - 10.6)</td>
<td>1 in 150</td>
</tr>
<tr>
<td>2004</td>
<td>1996</td>
<td>8</td>
<td>8.0 (4.6 - 9.8)</td>
<td>1 in 125</td>
</tr>
<tr>
<td>2006</td>
<td>1998</td>
<td>11</td>
<td>9.0 (4.2 - 12.1)</td>
<td>1 in 110</td>
</tr>
<tr>
<td>2008</td>
<td>2000</td>
<td>14</td>
<td>11.3 (4.8 - 21.2)</td>
<td>1 in 88</td>
</tr>
<tr>
<td>2010</td>
<td>2002</td>
<td>11</td>
<td>14.7 (14.3 - 15.1)</td>
<td>1 in 68</td>
</tr>
</tbody>
</table>

Prevalence of an ASD with Co-Morbid Mental Health Conditions

- Recent studies have suggested that nearly 3 out of 4 individuals with Autism Spectrum Disorder meet criteria for another Axis I disorder
- These disorders include phobia (44%), OCD (37%), ADHD (28%)
- Additional review of registry data found comorbidity rates of ADHD (38.1%), Anxiety (26.2%), MDD (~11%), Bipolar disorder (5.2%)

Common Co-Occurring Conditions

ADHD
- Hyperactivity
- Inattentive
- Impulsivity
- Disorganized
- Lack of focus
- Talks Excessively
- Fidget and squirm

Mood
- Mood swings/instability
- Irritability
- Aggression
- Irregular sleep patterns
- Appetite changes
- Elevated mood
- Hopelessness
- Fatigue/low energy
- Trouble concentrating

Oppositional Defiant Disorder
- Angry
- Irritable
- Argumentative
- Defiant behavior
- Defies rules
- Refuses to comply
- Vindictive

Anxiety
- Concentration
- Isolation
- Loss of enjoyment
- Fatigue
- Sleep Issues
- Sadness
- Worry

OCD
- Repetitive behaviors
- Rituals
- Obsessive thoughts
- Compulsive behaviors
- Need for control
- Inflexibility
- Inability to manage change

https://www.autismspeaks.org/what-autism/treatment/treatment-associated-psychiatric-conditions
Major Depressive Disorder in Individuals with Autism

- Diagnostic criteria is the same across individuals with Autism
- Prevalence:
  - Research is not clear
  - Studies have cited between 1.4%-38%
  - No gold standard for diagnosis
- Gender differences:
  - Research is not clear
- Genetic:
  - Most depressed children with ASD had a family history of depression

## Autism and Mood: Signs & Symptoms

<table>
<thead>
<tr>
<th>Traditional signs and symptoms of depression including characteristics that may be seen in childhood depression include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Depressed mood, sadness, tearfulness</td>
</tr>
<tr>
<td>• Irritability*</td>
</tr>
<tr>
<td>• Anhedonia</td>
</tr>
<tr>
<td>• Insomnia or hypersomnia</td>
</tr>
<tr>
<td>• Psychomotor agitation or retardation (behavioral problems*)</td>
</tr>
<tr>
<td>• Fatigue or loss of energy</td>
</tr>
<tr>
<td>• Social withdrawal</td>
</tr>
<tr>
<td>• Weight loss not associated with dieting / change in appetite</td>
</tr>
<tr>
<td>• Increased guilt or worthlessness</td>
</tr>
<tr>
<td>• Somatic complaints*</td>
</tr>
<tr>
<td>• Lack of brightening*</td>
</tr>
<tr>
<td>• Diminished ability to concentrate; indecisiveness</td>
</tr>
<tr>
<td>• Recurrent thoughts of death or suicidal ideation</td>
</tr>
<tr>
<td>• Play characterized by themes of suicide or death*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional signs and symptoms that may be present in ASD-affected children who are experiencing depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Aggression</td>
</tr>
<tr>
<td>• Mood lability</td>
</tr>
<tr>
<td>• Hyperactivity</td>
</tr>
<tr>
<td>• Decreased adaptive functioning or self-care</td>
</tr>
<tr>
<td>• Regression of previously learned skills</td>
</tr>
<tr>
<td>• Increased compulsiveness</td>
</tr>
<tr>
<td>• Fluctuations in autistic symptoms including both increased stereotypic behavior and decreased interest in preoccupations/restricted interests</td>
</tr>
<tr>
<td>• Self-injurious behavior</td>
</tr>
<tr>
<td>• Catatonia</td>
</tr>
<tr>
<td>• Overall marked change in behavior from baseline not otherwise specified by above characteristics</td>
</tr>
</tbody>
</table>

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3154372/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3154372/)
Diagnostic Complexities

- Communication
  - Limited or non-verbal status
  - Echolalia
- Co-morbid Intellectual Disability
  - Processing or other Learning Disability
- Limited baseline social/emotional reactivity
- Family Distress
Does the Child Meet or Nearly Meet DSM-IV-TR Criteria for Major Depressive Disorder?
(Five or more of the following during a two week period, at least one of the symptoms is 1 or 9):
1. Depressed mood most of the day
2. Markedly diminished interest in nearly all activities
3. Significant weight loss not associated with dieting
4. Insomnia or hypersomnia nearly every day
5. Psychomotor agitation or retardation nearly every day
6. Fatigue or loss of energy nearly every day
7. Feelings of worthlessness or inappropriate guilt nearly every day
8. Diminished ability to think or concentrate; indecisiveness
9. Recurrent thoughts of death / suicidal ideation

Consider Intervention for Comorbid Depression

Explore alternative manifestations and risk factors for depression in ASD: Is there a Marked Change in Behavior from Baseline?

Yes
No

Minimal appreciable evidence of depression per current knowledge

Does the Child have Phrase Speech?

Yes
No

Domain #1
Predisposing Factors to Depression in Youth with ASD
- Family history of depression or mood disorders
- Significant life change
- Depressogenic life event
- Developmental or occupational transition associated with compromised sense of world or self

Multi-informant assessment of risk for depression using criteria from Domains 1, 2, and 3

Domain #2
Behavioral changes often associated with depression in youth with ASD
- Decrease in self-care
- Increase in self-injurious behavior
- Labile moods / increased frequency temper tantrums or agitation
- Intensification of autistic symptomatology or decreased interest in preoccupations/restricted interests
- Decreased adaptive functioning
- Regression

Domain #3
Risk factors for Depression in Verbal Youth with ASD
- Insight into ASD and its imposed handicaps
- Seeks friendship but frequently unsuccessful
- Awareness of social marginalization
- Awareness of being bullied or teased by peers
- Perceives self as incompetent
- Exhibits traits of learned helplessness or perceives disabilities as out of his/her control
- Situational / environmental anxiety combined with emotion regulation difficulties

The signs and symptoms depicted above have been associated with depression in youth with ASD, and are organized here in a proposed strategy for characterizing depression in ASD. This and any other algorithm for diagnosis of depression in ASD await further research before they can be relied upon to definitively guide clinical care.
Our Student (Symptoms)

- Let’s revisit our student, RG.

<table>
<thead>
<tr>
<th>ASD Symptoms</th>
<th>Possible MDD Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal Social Reactivity</td>
<td>New Onset Withdrawal</td>
</tr>
<tr>
<td>Limited Verbal Communication</td>
<td>Decrease in communication with family</td>
</tr>
<tr>
<td>Restricted Interests</td>
<td>Increase (?) in aggression</td>
</tr>
<tr>
<td>Restricted Food Interests</td>
<td>Decreased Interest in previously enjoyable activities</td>
</tr>
</tbody>
</table>

• Decrease in communication with family
• Increase (?) in aggression
• Decreased Interest in previously enjoyable activities
Bipolar Disorder in Individuals with Autism

• Prevalence:
  – Studies have shown prevalence range from 1.4%-30%
  – 60% of children were described as irritable; ~30% had elevated moods

Comorbidity of Bipolar Disorder Type 1 & Autism

- **Prevalence:**
  - In one study looking at comorbidity, 37% of youth who met criteria for BPD type 1, met criteria for ASD
  - Another study looking at longitudinal course of bipolar disorder in ASD, 7% of comorbid BPD in ASD

- **Familial:**
  - Relatives of patients with ASD, have a doubled risk of Bipolar disorder (10%) versus those without

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Symptoms of Bipolar Disorder & Autism

- Increased aggression and irritability
- Changes in sleep
- Changes in appetite
- Psychosis
- Increased hyperactivity/psychomotor agitation
Diagnostic Complexities

- Communication
  - Limited or non-verbal status
  - Echolalia

- Co-morbid Intellectual Disability
  - Processing or other Learning Disability

- Limited baseline social/emotional reactivity

- Family distress
Diagnostic Complexities

• Children with ASD
  – Can be hyperactive
  – Can be distractible
  – Already can have disturbances in sleep
  – Can appear “psychotic” with scripting

Our Student

- Let’s revisit our student, RG.

<table>
<thead>
<tr>
<th>ASD Diagnosis</th>
<th>Bipolar Disorder Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor sleep</td>
<td>Decreased need for sleep</td>
</tr>
<tr>
<td>Irritability</td>
<td>Irritability</td>
</tr>
<tr>
<td>Aggression</td>
<td>Aggression</td>
</tr>
</tbody>
</table>
Suicidal Ideation in Children with Autism

• Study has reviewed the risk of suicidal ideation in children with Autism.

• Findings include:
  – Comorbid psychiatric conditions were highly predictive of suicide attempt with >50% of the children having suicidal ideation
  – IQ was not correlative

• Study found that risk factors for suicidal ideation include:
  – Over the age of 10
  – African American/Hispanic
  – Male
  – Lower SES

Differential Diagnosis of Mood Disorders

- Symptoms of Autism
- Medical
  - Is the patient in pain?
  - Is the patient having seizures?
  - Are there other neurologic/ autoimmune/ rheumatologic (other) diseases presenting as changes in mood?
  - Does the child have additional co-morbid psychiatric issues?
  - Substance Use?
- Sensory
  - Sensory seeking
  - Hypersensitivity to sensory changes
- Communication
- Environmental
- Co-morbid psychiatric diagnosis
How to Treat Individuals with a Dual Diagnosis of ASD & Mood Disorders

• Assessment
  • Multiple informants is Key!
  • If you can, take your time and gain assessments over a period of time
  • Assess for medical complications
  • Assessment for Suicidal Ideation/Acute Risk

• Non-pharmacological Interventions
  • Behavioral Interventions
  • Sensory Interventions
  • Therapy
• Involvement of psychiatric professionals

How to assist with mood difficulties...

1. Does your student have an effective way to communicate what s/he needs?

2. Does your student know what different moods look and feel like?

Student's safety ZONE SYSTEM

<table>
<thead>
<tr>
<th>Green zone</th>
<th>Yellow zone</th>
<th>Red zone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warning</strong> zone</td>
<td><strong>High Risk</strong> zone</td>
<td></td>
</tr>
</tbody>
</table>

**Green zone**
- Go on YouTube for 30 minutes once your entire schedule is completed for the shift and for 10 tokens (30 minutes per shift).
- Play basketball.
- Go out in the community.
- Use your cell phone when appropriate.
- Listen to music in your room.

**Yellow zone**
- Listen to the radio.
- Use your cell phone when appropriate.
- Play basketball.
- Staff's discretion about safety in the community.
- Use your cell phone when appropriate.

**Red zone**
- No community for 24 hours.
- Listen to the radio.
- Use your phone when appropriate.
- Play basketball.

Example

<table>
<thead>
<tr>
<th>Looks Like</th>
<th>Feels Like</th>
<th>I Can Try to</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Kicking or hitting</td>
<td>My head will explode</td>
</tr>
<tr>
<td>4</td>
<td>Screaming or hitting</td>
<td>Nervous</td>
</tr>
<tr>
<td>3</td>
<td>Quiet, rude talk</td>
<td>Bad mood, grumpy</td>
</tr>
<tr>
<td>2</td>
<td>Regular kid</td>
<td>Good</td>
</tr>
<tr>
<td>1</td>
<td>Playing</td>
<td>A million bucks</td>
</tr>
</tbody>
</table>

https://www.5pointscale.com/more_sweet_scale.htm
The Zones of Regulation

Does your student know how to regulate his/her emotions and behaviors?

Helping teachers and other professionals know when a student is in the “learning zone.”

https://www.socialthinking.com/Products/Zones%20of%20Regulation
Taking it a step further...

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calm</td>
<td>Calm and collected</td>
<td>Getting there</td>
<td>So close to being there</td>
<td>Furious</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go about my day</td>
<td>Ignore if I need.</td>
<td>Talk with a trusted staff.</td>
<td>Go to room.</td>
<td>Read the Bible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Step away from the information at hand (room, gym, off unit if it’s an option).</td>
<td>Go to gym.</td>
<td>Pray.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Go off unit if an option.</td>
<td>Isolate myself from others.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Read the Bible.</td>
<td>Talk to roommate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pray.</td>
<td>Talk to trusted staff.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Journal my thoughts for next therapy session.</td>
<td></td>
</tr>
</tbody>
</table>

I am currently feeling ____________________.

I am at a number # ________ on my scale.

**What should I do to manage this feeling?**
Circle a coping skill:
1. Step away from the situation.
2. Take a walk around the building.
3. Take deep breaths.
4. Pray
5. Talk to a staff
6. Draw
7. Journal

**Is this an appropriate coping skill to use at this time?**
If **YES**, proceed.
If **NO**, pick an alternative solution.

**Did this help me?**
If **YES**, continue on with programming.
If **NO**, use another skill.

Take them everywhere...
One word on Cognitive Behavioral Therapy...

- Traditionally, therapeutic strategies are often adapted to fit ASD
- One study found CBT focused on feelings and stress reduction decreased depressive symptoms in ASD population

Pharmacological Management in Autism

• Basic Considerations
  – Medications should be used in combination with other modalities
  – Assessment should be performed by trained professional (pediatrician, DB pediatrician, child and adolescent psychiatrist)
  – If complicated or more than one suspected co-morbidity, want to consider a specialist
  – Changes in behavior with medication should be tracked and monitored for response/side effects
Pharmacological Management in Autism

• Basic Considerations (continued)
  – With medications:
    • Start Low and go Slow
    • But you may not always end up there!
    • FDA approved (very little!)
    • Off label (most!)
    • Should always be used in combination with non-pharmacological treatments because this is best practice.
Pharmacological Management of Major Depressive Disorder in Autism

- In typically developing children, SSRI are first line pharmacologic treatment for MDD
- Limited studies of SSRI use in ASD
  - These studies do not use depression as primary outcome
  - Most studies focus on repetitive behaviors, obsessions, self-injury, core features of autism
- Cochrane Review of Tricyclic Antidepressants in ASD
  - Review of three studies
  - Data mixed with increased risk of significant side effects including sedation

Williams K et al. Cochrane Database Systemic Review 2013 Aug 20; (8): CD004677
Pharmacological Management of Major Depressive Disorder in Autism

- Case studies have shown variable response to SSRI in depression
  - There is increase in side effects
- RCT data is lacking!

Pharmacological Management of Bipolar Disorder in Autism

• RCT data is lacking!

• Atypical Antipsychotics
  – Risperidone and Aripiprazole are FDA for irritable behaviors in autism
  – Used to target mood symptoms in autism
  – Used treatment of bipolar disorder in typical developing children:
    • FDA Approved: Risperdone, Aripiprazole, Olanzapine, Quetiapine, Asenapine

Pharmacological Management of Bipolar Disorder in Autism

- Lithium
  - Case studies showed positive response
- Depakote
  - Case studies showed positive response in ID
- Side effects
  - As with antidepressants, more sensitive
  - One study, approximately 30% of children with DD on antipsychotics had dyskinsea

What to do When Supports/Interventions Prove Ineffective

1. Stop and reassess
2. Gather opinions from multiple sources, informants
3. Questions to ask:
   - Incorrect conceptualization?
   - Something in environment has changed?
   - Has something I have done (via medications) made things worse?
   - Which supports are working? Which are not?
4. Have honest and open dialogue with parents regarding response
5. Call for re-enforcements!
Our Student (Treatment)

• RG’s Clinical Course
  – As a team, we sat down with residential and school staff, and openly discussed symptoms/concerns/questions
  – Found that in certain environments, he was more prone to comply with requests and was less withdrawn
  – Examinations of those environments showed they were providing a shorter course of work and then reinforcement
  – Residential team encouraged parents to visit more often and complete schedules while he was in their care
  – Staff became more adept at detecting his protest behavior and language, and they were able to provide appropriate breaks
References

10. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3154372/
11. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3154372/
References

19. https://www.5pointscale.com/more_sweet_scale.htm
20. https://www.socialthinking.com/Products/Zones%20of%20Regulation
Acknowledgements

- Jennifer O’Keefe
- Hanna Dixon
- Stacy Cianciolo
- Dr. Erum Ahmad
Question & Answer
Monarch Center for Autism

- Preschool
- Day School
- Transition Education Program
- Extended School Year Program
- Boarding Academy
- Adult Autism Program
- Adult Support Living Residences
- Free Webinar & e-newsletter Series
- Online Resource Center
- Welcoming Spaces Program

- Web: www.monarchcenterforautism.org
- Telephone: 216.320.8945 or 1-800-879-2522
- Address: 22001 Fairmount Boulevard, Shaker Heights, Ohio 44118
- Join our e-newsletter mailing list: http://www.monarchcenterforautism.org/contact-us/join-our-email-list
- Facebook: www.facebook.com/monarchcenterforautism
- Twitter: www.twitter.com/monarchohio