



The impact of COVID-19 on Student Emotional/Mental Health

Psychopharmacology

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A little Background



- According to the American Association of Pediatrics, the school functions as the mental health system for up to 80% of children who need help
- The CDC notes that schools are one of the most efficient systems for reaching children and youth to provide health services and programs, as approximately 95% of U.S. children and youth attend school
- Research shows that when students 'mental health needs are properly addressed, the likelihood of school success increases.

We know –

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- Behavioral health, which encompasses mental health, is as critical to academic success as physical well-being
- Undiagnosed, untreated, and inadequately treated mental illnesses significantly interfere with a student's ability to learn, to grow, and to develop.
- Schools, school nurses, and counselors have an essential role in addressing behavioral health disorders, promoting mental wellness, recognizing and enhancing protective factors, and referring to and collaborating with behavioral health support networks

And we also know –

- Behavioral health disorders that school-age children commonly experience include, but are not limited to, attention deficit hyperactivity disorders, mood disorders, depression, bipolar disorders, conduct disorders, anxiety disorders, panic disorders, eating disorders, psychotic disorders, and substance use disorders.
- Behavioral health disorders affect a significant number of America's school-age children and we see this every day
- According to a recent CDC study, 1 in 6 students had enough symptoms and impairment to be diagnosed with a childhood mental disorder



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How do we monitor our students during COVID 19 when -

- Many of you have not been receiving updated medical information on your students, particularly those with known mental and/or physical disorders. Nor have you been able to stay informed regarding important changes in the students' physical or social environment
- Even before, but particularly as students return to the classroom, the increase in requests for academic accommodations, testing, 504's and IEPs has been staggering.



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The incidence of mental health illness in all ages is staggering, and has increased significantly since the onset of the COVID-19 pandemic.

- **One in five youth have a mental health condition, with half of mental health conditions developing by age 14 and 75 percent by age 24**
- **Less than half of youth with mental health conditions received any kind of treatment in the past year.**
 - **7.1% of children aged 3-17 have a diagnosis of anxiety**
 - **3.2% of children aged 3-17 have a diagnosis of depression**
 - **It is estimated that 1 out of 6 U.S. children between the ages of 6 and 17 has a treatable mental health disorder, such as anxiety, depression, or ADHD.**

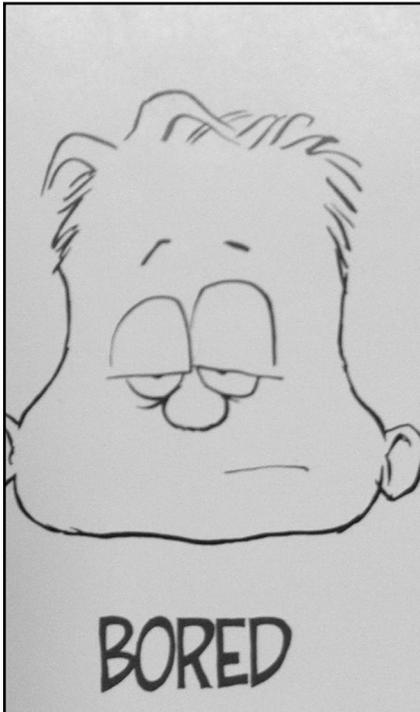
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Some COVID 19 effects – outside of school



- Before the Covid-19 lockdown, children and adolescents engaged with others and learned through mostly through one-to-one interactions with their teachers, coaches, and peers, teachers, and coaches.
- Home confinement has been associated with uncertainty and anxiety due to disruption of their education, physical activities and ability to socialize

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Being out of school -

- The lack of structure from school for such an extended period has led to disruptions in routine, boredom and lack of interesting and creative ideas for engaging in academic and extracurricular activities.
- Children have expressed low levels of interest and general lack of feeling because of not being able to play outdoors, not meeting friends and not engaging in the in-person school activities
- These children have become more clingy, more attention seeking and more dependent on their parents due to the long-term change in their routines

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DANGER

And so....

- Because of the prolonged confinement at home, there has been an increased use of internet and social media which predisposes young people to use the internet compulsively, access inappropriate content, and increases their vulnerability for getting bullied or abused.
- Also, during lockdown when schools, legal, and preventative services were not functioning fully, children were often not in a position to report violence, abuse and harm if they are in abusive homes.

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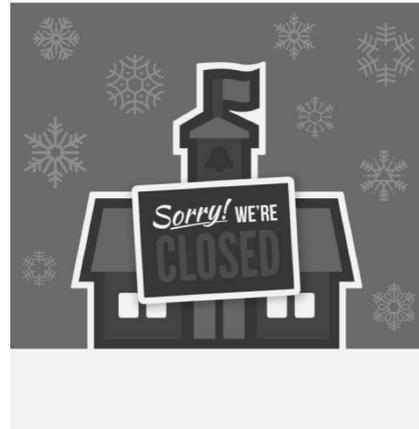
When schools closed -

- For students with disabilities, and this includes mental health disabilities, school closures meant an abrupt cessation of their in-person specialized instruction and related services, such as school-based counseling
- The public health crisis and resulting school closures were incredibly stressful and potentially traumatic for all students, but particularly so for students who are already struggling with existing mental health needs.
- Researchers have found that exposure to ongoing and unrelieved stress and repeated traumas can change a child's brain, making it easier to "fight or flee" from perceived dangers and harder to focus and learn.

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And we see -

- Increased symptoms of depression and anxiety in children and adolescents
- Significant and ongoing difficulties engaging in remote learning
- Lack of parental assistance and support due to -
 - Technology barriers
 - Demands of trying to make a living during the pandemic
 - Significant household stress



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COVID-19 Effects on Mental Health



- SAMSHA reports that research has shown that mental illness can develop in as little as 9 days of quarantine
- The CDC report from June 2020 revealed 40% of Americans reported experiencing significant emotional upheaval with anxiety, depression, trauma-related symptoms, increased substance use, and suicidal ideation.
- Significant increase in the percentage of individuals who reported having started or increased substance use to cope with stress or emotions related to COVID-19

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According to recent studies -

- The prevalence of symptoms of anxiety disorder is approximately three times that which was reported in the same time period in 2019
- The prevalence of depressive disorder is approximately four times that which was reported in the same time period in 2019
- Significant increase in the percentage of individuals who reported having seriously considered suicide in the preceding 30 days – almost twice the percentage as was reported in 2018
- Transformation of normal grief and distress into prolonged grief, major depressive disorder, and symptoms of posttraumatic stress disorder.



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Age related COVID 19 and lockdown effects



- Children and adolescents have a greater impact on emotional and social development from the lockdown compared to that in the grown-ups. Studies reveal that children feel uncertain, fearful and isolated during these current times
- They experience disturbed sleep, nightmares, poor appetite, agitation, inattention and significant separation related anxiety
- Studies found that younger children (3-6years old) were more likely to exhibit symptoms of clinginess and more fear of family members being infected than older children
- Older children (6-18 years old) were more likely to exhibit inattention and were persistently asking questions about COVID-19.
- The child's sense of the world as safe and predictable, and family/caretakers as protection may be disrupted.
- Caregivers/families may be overwhelmed and unable to address their children's fears and sadness.

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In the Emergency Room

Recent CDC research found emergency department visits related to mental health were:

Increased 24% for children aged 5 to 11

Increased 31% for children aged 12 to 17

Adolescents aged 12–17 years accounted for the **highest** percentage of mental health–related ED visits

Children aged 5–11 years were the **second highest** group.

Depression and anxiety are the most prevalent issues encountered

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As students return -

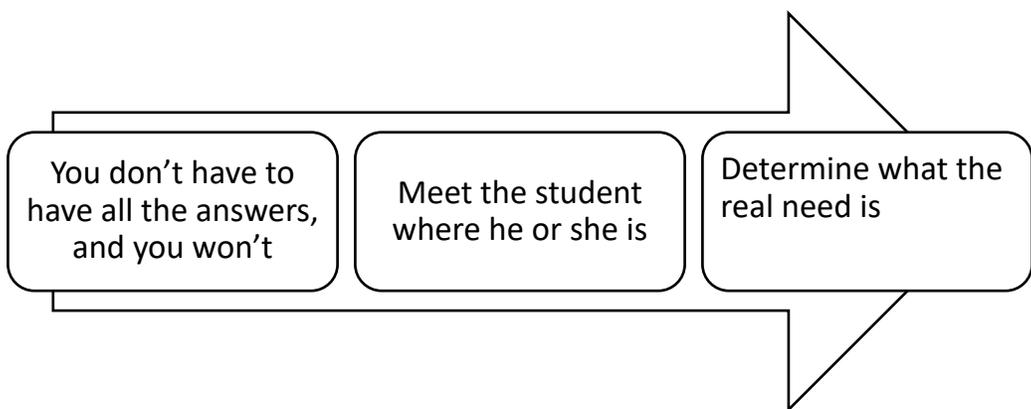
- Children with known mental health disorders are struggling with online learning, hybrid formats, and will struggle with a return to the classroom setting
- Children with depression and anxiety will have considerable difficulty adjusting back to school routines and attending classes in person after prolonged learning from home
- Children with special education needs, such as those with autism spectrum disorder, may experience significant difficulty and behavioral disturbances as they adjust back to the routines in the school setting, as well as resumption of services such as speech therapy, OT/PT, which likely were suspended for an extended period of time

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So how do we help?

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You don't have to have all the answers, and you won't

Meet the student where he or she is

Determine what the real need is

First step - Listen
First step - Listen

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Age Approaches – Early elementary grades



- Young children need brief, simple information
- Discuss steps we are all taking to keep people safe –
handwashing, social distancing, and mask wearing
- Assure the child that you and other adults are here in the school to help keep them safe

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Upper Elementary and Middle School Grades

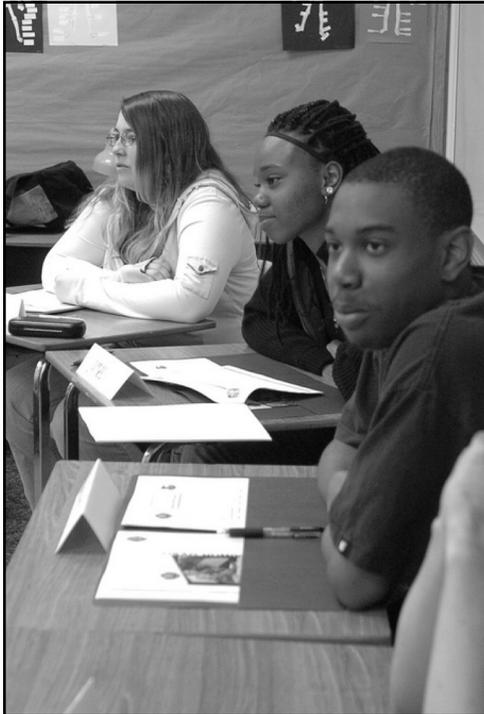
These students may be more open about their questions regarding their own safety and about the spread of COVID-19 to their school or their neighborhood

They may need some guidance on separating the truth from rumors and fears.

Talk to them about what is being done on a local, state, and national level to keep people safe and control the virus.



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Upper Middle School and High School Grades

- These students will have more in depth questions and concerns
- Be honest – provide accurate, factual information about the current status of COVID-19 and steps being taken to control it and keep people safe
- Refer them to appropriate and accurate websites for for COVID-19 facts and information, such as the CDC website

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Some informational websites



Mass.gov
resources and web pages

ed.gov
U.S. Department of Education
COVID-19 website

NASN.org – National Association of
School Nurses

Massgeneral.org – MGH Psychiatry
COVID-19 resources

NASOnline.org – National
Association of School Psychologists

CDC.gov

ChildMind.org

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Now let's switch gears a bit and talk about medications

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PSYCHOPHARMACOLOGY FOR
FREQUENTLY ENCOUNTERED MENTAL
HEALTH DIAGNOSES IN CHILDREN AND
ADOLESCENTS IN THE SCHOOL
SETTING

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Statistics

- **9.4% of children aged 2-17 years have received an ADHD diagnosis**
- **7.4% of children aged 3-17 years have a diagnosed behavior problem**
- **7.1% of children aged 3-17 years have diagnosed anxiety**
- **3.2% of children aged 3-17 years (approximately 1.9 million) have diagnosed depression**

<https://www.cdc.gov/childrensmentalhealth/data.html>

Statistics cont.

Having another disorder is most common in children with depression

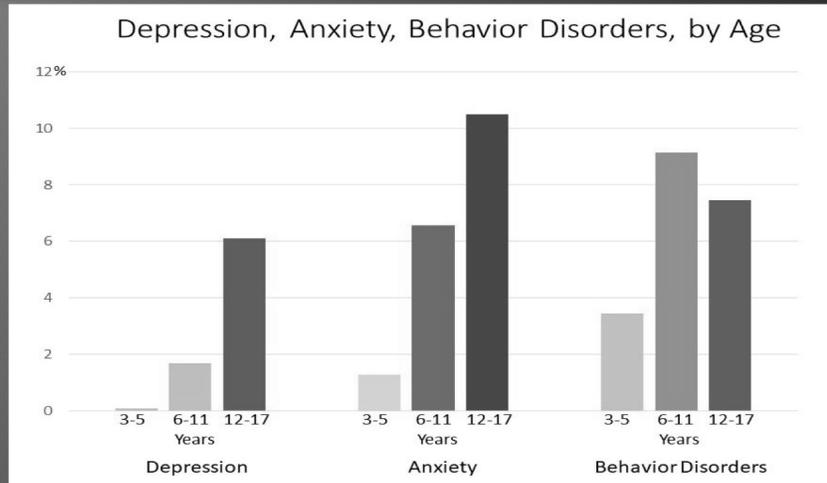
About 3 in 4 children aged 3-17 years with depression also have anxiety (73.8%)

Almost 1 in 2 children aged 3-17 years with depression have behavior problems (47.2%)



Ghandour RM, Sherman LJ, Vladutiu CJ, Ali MM, Lynch SE, Bitsko RH, Blumberg SJ. Prevalence and treatment of depression, anxiety, and conduct problems in U.S. children. *The Journal of Pediatrics*, 2018. Published online before print October 12, 2018 26

Mental Health Issues by age and diagnosis



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Adolescent Mental Health Facts

- Depression – 4th leading causes of illness and disability in ages 15-19
- Anxiety – 9th leading cause of illness and disability in ages 15-19
- Social withdrawal can exacerbate isolation and loneliness.
- Suicide is the third leading cause of death in 15-19-year-olds

<https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>

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Key Players In Mental Health Disorders



Neurotransmitters



Dopamine – major effects on mood, pleasure, and motivation



Serotonin – major effects on mood balance, happiness, regulation of sleep/wake cycle

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Key Players In Mental Health Disorders cont.



Norepinephrine – major player, along with serotonin, in mood management. Also improves energy level and attentiveness



Glutamate – major player cognition, emotions, sensory information, and motor coordination



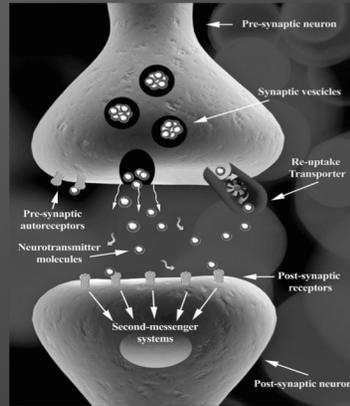
GABA – plays a major role in behavior, cognition, and response to stress

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ADHD - what is it?

At the base of ADHD is dopamine dysregulation

Neurotransmitter communication



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Neurotransmitters involved in ADHD



Dopamine is a neurotransmitter in the brain, along with serotonin and norepinephrine.



Reduced levels of the neurotransmitters serotonin and norepinephrine may also contribute to the development of ADHD.

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ADHD - what does it look like

3 subtypes of ADHD

ADHD - Predominantly Inattentive

ADHD - Predominantly Hyperactive

ADHD - Combined



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Predominantly Inattentive

- Makes careless mistakes
- Difficulty sustaining attention
- Does not seem to listen when spoken to directly
- Fails to follow through on tasks and instructions
- Exhibits poor organization
- Avoids/dislikes tasks that require sustained mental effort
- Frequently loses things necessary for tasks/activities
- Is easily distracted (including unrelated thoughts)
- Is forgetful in daily activities



American Psychiatric Association. Attention-deficit and disruptive behavior disorders. In: *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Arlington, VA: American Psychiatric Association; 2013.

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Predominantly Hyperactive

- Fidgets constantly
- Leaves seat
- Restlessness; need to move
- Difficulty engaging in quiet, leisurely activities
- “on-the-go”; acts as if “driven by a motor”
- Talks excessively
- Blurts out answers
- Has difficulty waiting his or her turn
- Interrupts or intrudes on others



American Psychiatric Association. Attention-deficit and disruptive behavior disorders. In: *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Arlington, VA: American Psychiatric Association; 2013.

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Combined Presentation

- Will exhibit symptoms of both Inattentive and Combined presentations. Symptoms may change over time.
- Combined Presentation is diagnosed if enough symptoms of both inattention and hyperactivity-impulsivity are present



American Psychiatric Association. Attention-deficit and disruptive behavior disorders. In: *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Arlington, VA: American Psychiatric Association; 2013

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Common Psychopharmacological Treatments

- Stimulants:
 - Methylphenidate - Ritalin, Concerta, Focalin
 - Amphetamine salts - Adderall, Evekeo, Adzenys, Mydayis
 - Dextroamphetamine prodrug - Vyvanse
- Nonstimulants:
 - Atomoxetine
 - Bupropion
- Alpha agonists:
 - Guanfacine
 - clonidine



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Stimulants

- Stimulants act by increasing the amount of dopamine and norepinephrine available
- Increased levels of dopamine and norepinephrine are believed to improve attention, concentration, executive function, and wakefulness.



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Stimulants cont.

Amphetamine salts and dextroamphetamine
- Adderall, Adderall XR, Dexedrine

Methylphenidate drugs - Ritalin, Concerta

Lisdexamfetamine - Vyvanse is a prodrug of dextroamphetamine that is not active until it has been absorbed in the intestinal tract and converted to dextroamphetamine.

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Timeline for effectiveness of stimulant meds

Methylphenidate	<ul style="list-style-type: none"> •Short acting (3-4h): Ritalin, Methylin •Intermediate-acting (6-8h): Ritalin-SR, Methylin ER, Metadate ER •Long-acting (8-10h): Ritalin LA, Metadate CD, Daytrana (patch) •Longest-acting (10-13h): Concerta
Jornay	unique formulation that is given in the evening and begins working in the morning; long-acting (10-12h)
D-methylphenidate	<ul style="list-style-type: none"> •Short acting (3-4h): Focalin •Long acting (8-10h): Focalin XR

http://www.uacap.org/uploads/3/2/5/0/3250432/stimulant_equivalency.pdf

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Timeline for effectiveness of stimulant meds cont.

Mixed amphetamine salts/
dextroamphetamine

- Short acting (4-5h) Adderall, Dexedrine IR, Evekeo, ProCentra
- **Probably twice as potent and lasts 4-5 hrs rather than Ritalin's 3-4 hrs
- Long acting (10h) Adderall XR, Adzenys XR, Dexedrine Spansules (8-10h)
 - Longest acting (up to 16h) Mydayis

Lisdexamfetamine

- Vyvanse – prodrug converted to dextroamphetamine

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Stimulant Side effects/adverse reactions

Side Effects

- Headache
- Insomnia
- Appetite suppression
- Weight loss
- Irritability
- Exacerbation of tics
- Overstimulation

Adverse Reactions

- Psychotic episodes
- Seizures
- Palpitations, hypertension, tachycardia
- Rare activation of hypomania, mania, SI
- Cardiovascular events including sudden death in those with pre-existing cardiac structural abnormalities



Need to monitor for signs of overuse/addiction

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Non-Stimulants

- | | |
|-------------|---|
| Guanfacine | <ul style="list-style-type: none"> • Short acting (4h): Tenex • Long acting (12h+): Intuniv, guanfacine ER
side effects include sedation, constipation, dizziness, and hypotension - monitor BP |
| Clonidine | <ul style="list-style-type: none"> • Short acting (3h): clonidine, catapres • Long acting (12h): KAPVAY
side effects include sedation, constipation, dizziness, and hypotension - monitor BP |
| Atomoxetine | <ul style="list-style-type: none"> • Long acting - given once daily: Strattera
can be given in the evening if it causes sedation |

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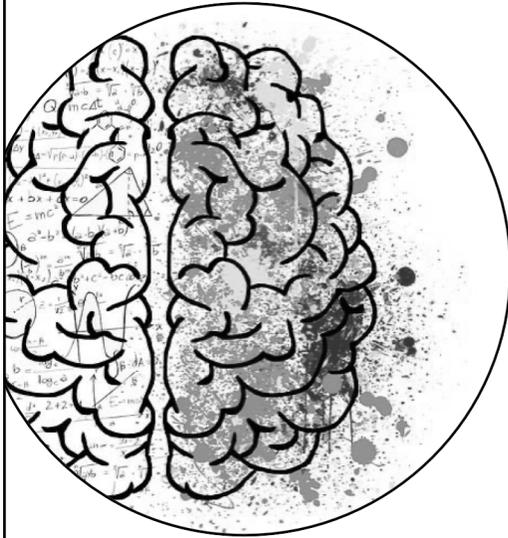
Anxiety

What you might see or hear about from students or staff:

- Psychosomatic Complaints
- Anger and Irritability
- Sadness
- Isolation and avoidance
- Fatigue
- Poor concentration
- School refusal
- Frequent questions



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What causes Anxiety?

Anxiety may develop from a variety of factors including genetics, brain chemistry, individual personality, and life events

Changes in levels of serotonin, dopamine, norepinephrine and GABA neurotransmitters are associated with anxiety

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Psychopharmacological Treatment

First Line Medication Treatment - SSRIs and SNRIs

SSRIs and SNRIs - eg Prozac (SSRI), Effexor (SNRI)

Potential side effects:

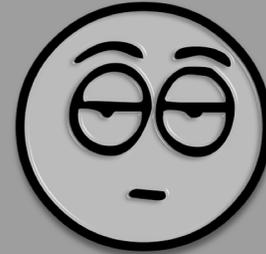
Disinhibition, agitation, and worsening of anxiety symptoms.

Physical side effect symptoms include headaches, GI upset, and sleep disturbance, including nightmares. Rare but potential for increased risk of suicidality

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Psychopharmacological Treatment cont.

- Other commonly prescribed medications for anxiety PRN -
 - Buspirone (Buspar) -Relatively short acting - generally requires 2-3 daily doses for maximum effect
 - Clonidine - Hypotensive - monitor BP; also may cause sedation and dizziness
 - Hydroxyzine - Side effects include sedation, dry mouth, and tremor



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Psychopharmacological Treatment cont.

Other medications occasionally prescribed for anxiety:

- Trazodone - Side effects include: sedation, dizziness, hypotension, N/V
- Benzodiazepines - Side effects include: sedation, dizziness, ataxia, confusion



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Depression

What you might see or hear about from staff:

- Uninterested in things previously enjoyed
- Helplessness or hopelessness
- Sadness or irritable
- Changes in eating patterns
- Changes in sleep patterns
- Changes in energy
- Difficulty paying attention
- Feelings of worthless, uselessness, or guilt
- Self-injurious or self-destructive behavior



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Psychopharmacological Treatment

First Line Medication Treatment - SSRIs, SNRIs, NDRIs

Examples: fluoxetine (Prozac), sertraline (Zoloft), bupropion (Wellbutrin)

Potential side effects:

Disinhibition, agitation, and worsening of anxiety symptoms

Physical symptoms include headaches, GI upset, and sleep disturbance, including nightmares.



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Psychopharmacological Treatment cont.

Other medications occasionally prescribed for treatment of depression.

These medications may be prescribed along with SSRIs/SNRIs or alone:

Trazodone

Antipsychotics

Mood stabilizers

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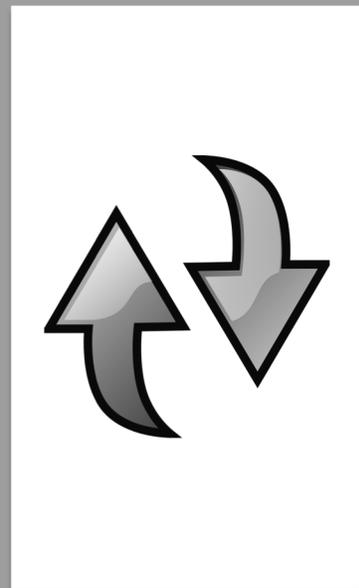
Bipolar Disorder

Two forms: Bipolar 1 and Bipolar 2

Bipolar 1 Disorder - manic episodes

Bipolar 2 Disorder - no manic episodes, may often look like depression

*Many individuals with Bipolar 2 disorder are diagnosed with depression because symptoms of elevated mood and hypomania are not recognized or not reported.

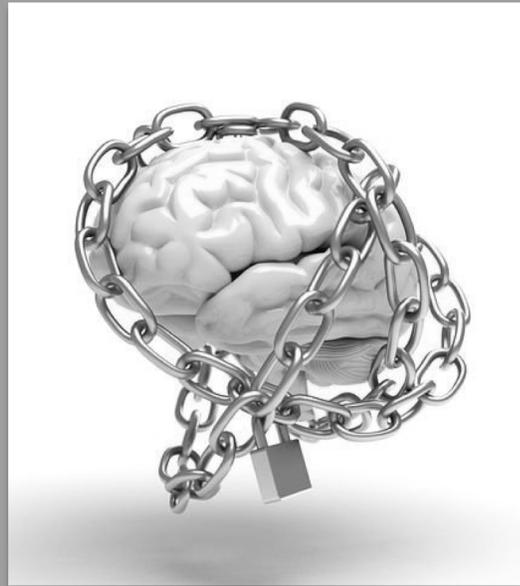


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Treatment Measures of Bipolar Disorder

Common medications used:

- Antipsychotics
- Mood Stabilizers



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Side Effects from Antipsychotics and Mood Stabilizers

Restlessness

Sedation

Increased appetite

Weight gain

N/V

Tremors

H/A

Memory problems

Acne

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Other mental health disorders seen in the school age/adolescent population

Autism Spectrum Disorder

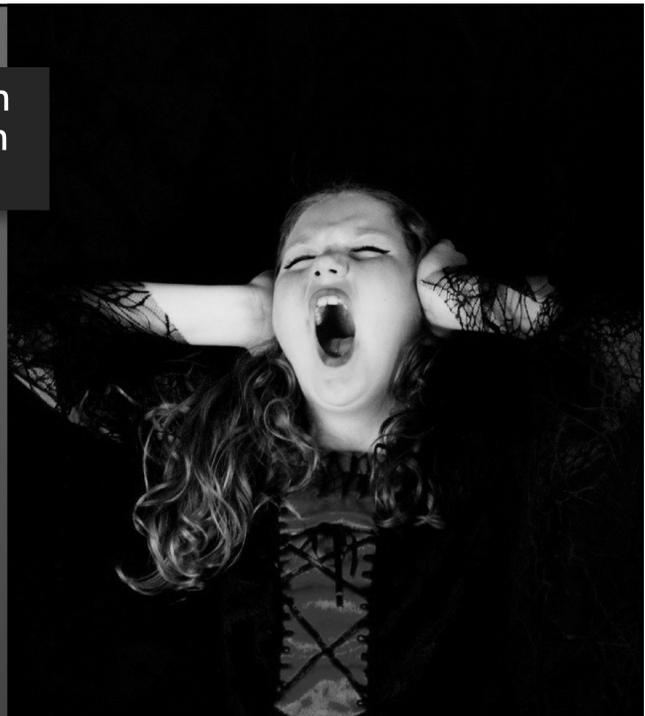
Tourettes



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Other mental health disorders seen in the school age/adolescent population cont.

- Oppositional Defiant Disorder
- DDMD - Disruptive Mood Dysregulation Disorder
- Conduct Disorder



Why are certain medications prescribed and why are meds changed?

- Diagnosis
- Mode of action
- Expected response
- Side effect profile - good and bad
- Insurance
- Not FDA approved but no other options
- Dosage differences



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Questions

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