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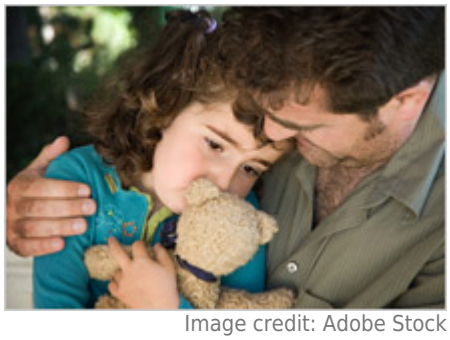
Anxiety Disorders in Children and Youth: Information for Psychiatry Residents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Case: Adolescent with Anxiety

J. is a 17-yo female referred by her primary care provider due to problems with anxiety.

She lives with her mother, father and younger sister. Father is often away on business for weeks at a time.

Recent stressors include her boyfriend breaking up with her, because she had sent some sexually explicit text messages to another classmate. This classmate shared those with the school, leading her to feel embarrassed and ashamed.

She has seen her primary care provider, who has prescribed an SSRI, but with minimal effect.

Due to struggles with anxiety, despite an SSRI, she is referred to you.

What are you going to do?

Etiology

Having just enough fears and worries is normal and protective, as it helps the person avoid dangers. However, when fears and worries become excessive to the point where they cause impairment, it is known as "anxiety".

Individuals with anxiety have an autonomic nervous system that is more easily triggered into fight, flight or freeze.

Main neurotransmitters involved:

- NE,
- 5HT,
- GABA-A

SSRIs work by stimulating 5HT receptors

- 5HT1 stimulation → Decreased depression/anxiety
- 5HT2: stimulation → Agitation, anxiety, insomnia, akathisia, sexual dysfunction
- 5HT3: stimulation → Nausea / vomiting / ? drowsiness

Anxiety During the Lifespan

Age	Common Triggers and Fears
Infants	• Sensory stimuli in their immediate environment, e.g. loud noises; sudden movements
Toddlers	• Separation anxiety • Phobias (e.g. fears of insects, storms, the dark, monsters), as toddlers are able to walk and explore the world around them
Preschoolers (ages 3-5)	• Fear being alone, dark, monsters • Safety fears • Mastery fears
School-age (ages 6-12)	• Fear supernatural phenomena (e.g. ghosts), • Performance and competency worries: Situations under which they are being evaluated or judged, including social situations • Social worries about rejection • Worries about becoming ill / injured or disasters
Adolescents (age 12-18)	• Social competence and evaluation by others • Main worries are now social rather than physical.

Epidemiology

Anxiety disorders affect 15-20% of adolescents and are the most prevalent psychiatric condition in children/adolescents (Kessler, 2012; Merikangas, 2010).

Gender

- Female > Male (except for OCD) (Kessler, 2012; Merikangas, 2010)

Clinical Presentation

Typically, young people with anxiety disorders experience problems at home and school, which lead them to be brought to be seen by health care providers.

Assessment / History of Anxiety

Ask parents

- Symptoms: “Does your child worry a lot about the little things that others might not worry about?”
- Impairment: “Does the anxiety get in the way of things?”

Ask the child:

- Symptoms: “Do you get anxious a lot? Do you worry a lot?”
- Impairment: “Does the anxiety get in the way of things?”

If these screening questions are positive, consider exploring more in-depth for mood and/or anxiety disorders:

- Tell me about the anxiety…
- What makes you anxious?
- What is your worst fear?
- What does the fear/anxiety stop you from doing?
- When did it start? Acute or chronic?
- What triggers the anxiety?
- What makes it better?

- What makes it worse?
- Somatic symptoms
    - Any problems with sleep, energy, appetite, concentration?

Which Type of Anxiety Condition?

Generalized Anxiety Disorder	Is your child a worrier in general? Is there anxiety in many areas? E.g. home, school, body concerns, peers, etc.
Panic Disorder	Are there episodes of anxiety that appear to be “out of the blue”?
Specific (Simple) Phobia, e.g., bees, dogs, water	Fear of specific things such as the dark, insects, animals, etc.?
Separation anxiety disorder	Fear of being away from parents or caregivers?
Social anxiety disorder (aka Social phobia)	Excessive shyness? Fear of social situations with distress or avoidance?
Selective mutism	Failure to speak in a specific social situation, e.g. school

DSM-5 Criteria for Generalized Anxiety Disorder

Criteria	Screening questions
1. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance).	How long have there been problems with anxiety?
2. The individual finds it difficult to control the worry.	Is it hard to control the worries?
3. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms having been present for more days than not for the past 6 months): Note: Only one item required in children. • Restlessness, feeling keyed up or on edge. • Being easily fatigued. • Difficulty concentrating or mind going blank. • Irritability. • Muscle tension. • Sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep).	Any of the following symptoms?
4. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.	
5. The disturbance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition (e.g., hyperthyroidism).	
6. The disturbance is not better explained by another medical disorder, e.g. • Anxiety or worry about having panic attacks in panic disorder, • Negative evaluation in social anxiety disorder [social phobia], • Contamination or other obsessions in obsessive-compulsive disorder, • Separation from attachment figures in separation anxiety disorder, • Reminders of traumatic events in posttraumatic stress disorder, • Gaining weight in anorexia nervosa, • Physical complaints in somatic symptom disorder, • Perceived appearance flaws in body dysmorphic disorder, • Having a serious illness in illness anxiety disorder, • Delusional beliefs in schizophrenia or delusional disorder).	Any other conditions? • Panic attacks • Social anxiety disorder • OCD • Troubles separating from parents? • Anorexia nervosa

DSM-5 Criteria for Panic Disorder

Criteria	Possible screening question
1. Recurrent unexpected panic attacks -- A panic attack is an abrupt surge of intense fear or intense discomfort that reaches a peak within minutes, and during which time four (or more) of the following symptoms occur: ◦ Palpitation, pounding heart, or accelerated heart rate ◦ Sweating ◦ Trembling or shaking. ◦ Sensations of shortness of breath or smothering. ◦ Feelings of choking. ◦ Chest pain or discomfort. ◦ Nausea or abdominal distress. ◦ Feeling dizzy, unsteady, light-headed, or faint. ◦ Chills or heat sensations. ◦ Paresthesias (numbness or tingling sensations). ◦ Derealization (feelings of unreality) or depersonalization (being detached from oneself). ◦ Fear of losing control or “going crazy”. ◦ Fear of dying.	Do you ever get periods out of the blue of sudden anxiety? Tell me when you notice from start to finish… Do you notice any of the following: • Worries ◦ Worries about dying? • Cardiovascular ◦ Heart beating or racing • Respiratory ◦ Short of breath? • GI ◦ Nausea / vomiting • MSK ◦ Any problems with arms/legs? • Neurologic ◦ Any numbness or tingling sensations?
2. At least one of the attacks has been followed by 1 month (or more) of one or both of the following: • Persistent concern or worry about additional panic attacks or their consequences (e.g., losing control, having a heart attack, “going crazy”). • A significant maladaptive change in behavior related to the attacks (e.g., behaviors designed to avoid having panic attacks, such as avoidance of exercise or unfamiliar situations).	Since the first episode of anxiety, have you had worries about having another? Does the fear stop you from doing activities?
3. The disturbance is not due to medications, substance use, or a medical condition (e.g. hyperthyroidism, cardiopulmonary disorders).	Any other medical issues? E.g. medications, substance use, hyperthyroidism
4. The disturbance is not better explained by a different mental health condition	Other conditions • Panic attacks do not occur only in response to feared social situations, as in social anxiety disorder; • In response to circumscribed phobic objects or situations, as in specific phobia; • In response to obsessions, as in obsessive-compulsive disorder; • In response to reminders of traumatic events, as in posttraumatic stress disorder; or in response to separation from attachment figures, as in separation anxiety disorder.

Differential Diagnosis (DDx)

Medical DDx

Physical conditions that may present with anxiety like symptoms include:

Cardiovascular	Anemia Postural orthostatic tachycardia syndrome (POTS) (in adolescents) • Any problems with fatigue, lightheadedness, anxiety that appears triggered by being upright? • Is there an increased HR of 20-40 bpm in the standing position (compared to sitting or lying)? Cardiac dysrhythmias In adults • Acute coronary syndrome (ACS) • Hypertension • Congestive heart failure (CHF)
Endocrine	Hypo/hyperthyroidism Hypo/hyperadrenalism, e.g. Addison's disease Pheochromocytoma (less common) Diabetes / Hypoglycemia
Neurologic	Migraines Seizure disorders Tumors Delirium In adults • Stroke, • Multiple sclerosis
Respiratory	Asthma In adults • COPD, pulmonary embolism (PE)
Allergies	Mast Cell Activation Disorder
Medication-induced	Stimulants Steroid use (adrenal or glucocorticosteroids)
Diet	Caffeine from energy drinks, soda drinks, coffee / tea
Toxins	Heavy metal including lead toxicity
Others	Cancer Pain in young children Excessive technology use, leading to overstimulation

Psychiatric Differential Diagnosis (and Comorbidity)

Condition	How it may appear similar to anxiety	How to distinguish?
Attention deficit hyperactivity disorder (ADHD)	Restlessness, social withdrawal, anxiety from constantly not meeting expectations.	Troubles paying attention? Troubles sitting still? Needing to move? Getting bored easily? Needing more sensory stimulation?
Psychotic disorders	Paranoia, restlessness, social withdrawal.	Any hallucinations? Any delusions? Any fears that appear excessive or illogical?
Autism spectrum disorder (ASD)	Anxiety from struggling with social skills, sensory overload, anxiety over routines and sensory overload.	Are there problems seeing other's perspectives and relating to others? (With anxiety, youth generally has good social skills in small settings, e.g. 1:1).
Learning disabilities	Anxiety due to learning difficulties compared to others.	Are there problems with learning?
Bipolar disorder	Restlessness may appear to be anxiety.	Are there periods of increased mood with decreased need for sleep?

Depression	Inattention, sleep problems, physical complaints may overlap with anxiety.	Which came first? Anxiety or depression?
Substance use	Substance use withdrawal may lead to anxiety symptoms.	Which came first? Anxiety or substance use?

Physical Exam (Px)

There is no diagnostic physical exam for anxiety conditions. Physical exam is important to help rule out contributory medical conditions, and can also show signs consistent with anxiety conditions.

General	Signs of sympathetic nervous system (SNS) activation may be seen Vitals may show elevated HR, blood pressure Generalized anxiety disorder (GAD): Tremor, elevated heart rate, rapid breathing, sweaty palms, restlessness Panic disorder: During acute panic, classic signs of sympathetic activation
Head	Loss of hair on the head, or eyebrows may indicate hair pulling (trichotillomania)
Skin	Excoriations from compulsive skin picking (excoriation disorder) Signs of excessive hand washing (obsessive compulsive disorder)

Investigations

If indicated, consider the following:

Postural vitals	Postural tachycardia can be seen in conditions such as postural orthostatic tachycardia syndrome (POTS)
CBC, differential	Anemia, WBC elevation may indicate infection
Electrolytes	Chronic illness
Liver enzyme tests	Chronic illness
Renal function tests (BUN/Cr)	
Monospot	Infectious mononucleosis
TSH	Hyperthyroidism
Pregnancy test	Pregnancy
B12, folate, vitamin D	Nutritional deficiencies
Toxicology Screen, e.g. cannabis, stimulant abuse	Stimulant use can cause autonomic arousal resembling anxiety

Course of Illness

Anxiety disorders in children/youth generally tend to be chronic and persistent (Wehry, 2015).

Severity may “wax and wane” (Wittchen, 2000).

By late adolescence or early childhood, patients may often develop additional conditions such as depressive or substance use disorders (Wehry, 2015).

Management

Low intensity, self-help and self-directed interventions include

- Healthy Lifestyle Interventions
  - Healthy nutrition
    - Caregiver information about nutrition and mental health
  - Sleep
    - Caregiver information about healthy sleep in adolescents
  - Nature time and physical activity
    - Caregiver information about nature
  - Limiting overstimulation from screen time
    - Caregiver information about technology overuse
  - Encouraging healthy connections and relationships
- Expressive, creative strategies
  - People need to be busy, and have activities that give a sense of meaning, or purpose.
  - It can be help to channel one's anxious energy into other activities, such as
    - Working on a project
    - Arts, such as visual arts, movement, etc.
- Reflection and exploration strategies
  - Journaling
  - Self-monitoring
  - Talking to others
- Mindfulness-based strategies and therapies
  - Anxiety involves worries about the past or future.
  - Mindfulness involves accepting the present moment, in a non-judgmental fashion.
  - Mindfulness includes meditation, breathing and visualization
  - This includes
    - Self-directed such as watching an internet video on relaxation, a yoga app, or going to the local yoga studio.
      - Information about mindfulness for adults in general
      - Information about mindfulness for parents
- Bibliotherapy
  - Providing a workbook for parents has been shown helpful (Rapee, 2006)
- E-therapies
  - Generally consist of 10-12 computerized CBT sessions, done with the support of a therapist.
  - Child e-Therapy for anxiety
    - Examples of systematically evaluated programs include
      - BRAVE for Children-Online
      - Camp Cope A Lot: The Coping Cat, which was shown equivalent to face-to-face CBT (Kendall,2010).
  - Adolescent E-Therapy
    - BRAVE for Teenagers-Online (Spence, 2011)
    - Cool Teens (Wuthrich, 2012)
    - Think, Feel Do (Stallard, 2011)

More Intensive Interventions

Mindfulness-based therapies

- Formal therapies such as seeing a professional for mindfulness-based therapies are effective for anxiety (Burke, 2010) such as
    - Mindfulness-based stress reduction
    - Mindfulness-based CBT

Cognitive behavioural therapy (CBT)

- Elements of CBT generally include
    - Education of child and caregivers about anxiety;
    - Coping strategies for anxiety, such as relaxation training and diaphragmatic breathing;
    - Cognitive restructuring by identifying and challenging anxiety-provoking (anxiogenic) thoughts;
    - Coming up with more calming thoughts;
    - Exposure to feared situations or stimuli, such as having the patient visualize the stimuli, or using live exposure (i.e. in vivo).
    - Examples of specific programs:
        - Kendall's Coping Cat, a manualised CBT program.

School Intervention

Given that anxiety can impair function at school, and given that school interventions can help with anxiety, it is important to liaise with the school.
Consider

- Liaising with the school.
    - Ask the parent/youth who is the best person to call.
    - Give that person a call during an appointment (so that the parent/youth can give verbal permission).
    - Thank the person for their support of the student.
    - Ask that person what their concerns are, and how you might be helpful. In general, they will ask for your advice on strategies to support the youth.
    - Writing a letter with recommendations about strategies to support your student with anxiety.

Management: Medications

For moderate to severe anxiety that has not responded to non-medication approaches, consider SSRIs (Kodish, 2011).

Medications for Anxiety in Adolescents

1st line SSRI

- Sertraline
    - Evaluated in Childhood Anxiety Multimodal Study (CAMS)
- Fluvoxamine
- Fluoxetine

2nd line SSRI

- Choose an SSRI that has not already been tried

3rd line SNRI, NRI

- Venlafaxine (XR) (shown helpful in trial on generalized anxiety disorder (GAD)

Note: The following SSRIs are FDA approved for anxiety in children/adolescents:

- Generalized anxiety disorder
  - Fluoxetine (aged 7-17)
  - Sertraline (aged 5-17)
  - Fluvoxamine (age 6-17)
- Selective mutism
  - Fluoxetine (age 6-11)
- Social phobia
  - Fluvoxamine (aged 6-17)
  - Paroxetine (aged 8-17)
- Separation anxiety disorder
  - Fluoxetine (aged 7-17)
  - Fluvoxamine (aged 6-17)

Medication Table: SSRI Medications in Children/Adolescents

Medication	Dosage
Sertraline (Zoloft)	Age 6-12: Start 25 mg daily x 1 week; then 50 mg daily; max dosage 200 mg Age 13-17: Start 50 mg daily x 1-week, then increase by 50 mg weekly; max 200 mg daily
Fluoxetine (Prozac)	Age 6-12: Start 5 mg daily as liquid, or 10 mg capsule alternating days; max 20 mg daily. Age 12-18: Start 10 mg daily; increase up to 60 mg (for OCD).
Fluvoxamine (Luvox)	Age 6-12: Start 25 mg daily; target therapeutic range 50-200 mg daily in children; max 200 mg daily. Age 12-18: Start 25-50 mg daily; target range 50-300 mg daily in adolescents; max 300 mg daily
Citalopram (Celexa)	Age 6-12: Start 5 mg daily; target therapeutic range is 10-20 mg daily; max 20 mg daily Age 12-18: Start 10 mg daily; target range is 20-40 mg daily; max 40 mg daily
Escitalopram (Cipralex)	Age 6-12: Start 5 mg daily; target therapeutic range is 5-10 mg daily; max 10 mg daily Age 12-18: Start 5 mg daily; target range is 10-20 mg daily; max 40 mg daily

Case, Part 2

J. is a 17-yo female referred by her primary care provider due to problems with anxiety.

She has seen her primary care provider, who has prescribed an SSRI, but with minimal effect.

Due to struggles with anxiety, despite an SSRI, she is referred to you.

As her psychiatrist, you do the following:

- Provide psychotherapy, which includes elements of mindfulness-based CBT.
- You provide interpersonal interventions to strengthen her relationship with parents, as feeling securely attached helps improve a sense of safety and calm.
- You switch to a second SSRI, which similarly improves her symptoms.

Quiz

1. You are seeing a 17-yo teenager with anxiety, who has already been tried on an SSRI. What is your next step?

1. Add cognitive behaviour therapy (CBT) -- CORRECT!
2. Add a low dose antipsychotic medication
3. Try another SSRI
4. Try Valerian Root for anxiety.

2. Your patient does not respond to a trial of ~ 5 sessions of CBT. What now?

1. Add another trial of SSRI -- CORRECT!, or
2. Venlafaxine, or
3. Fluoxetine, or
4. Atypical antipsychotic such as risperidone or aripiprazole.

Where to Refer in Ontario

Where else can you refer parents with anxiety in the province of Ontario?

- Accredited children's mental health agencies (e.g. MCYS funded agencies)
- Hospitals (i.e. MOHLTC funded)
- Private practice professionals
- Psychiatrists
- Psychologists
- Certified clinical counselors (CCC)
- Registered psychotherapists (RP) (in Ontario)

Is the child attending school?

- School mental health and addictions nurse (school MHAN)

Practice Guidelines

The following are common referenced guidelines for the treatment of anxiety in children and youth.

- NICE (2013a) -- Appraised as being high quality (Bennet, 2018)
- Katzman et al. (2014)
- Connolly et al. (2007)
- Baldwin et al. (2005)

References

Bennett K, Courtney D, Duda S, Henderson J, Szatmari P: An appraisal of the trustworthiness of practice guidelines for depression and anxiety in children and youth. *Depress Anxiety.* 2018; 38:530-540.

Burke CA. Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emergent field. Journal of Child and Family Studies. 2010;19.2:133–144. https://link.springer.com/article/10.1007/s10826-009-9282-x

Creswell C, Waite P, Cooper PJ Assessment and management of anxiety disorders in children and adolescents Archives of Disease in Childhood 2014;99:674-678. https://adc.bmj.com/content/99/7/674.info

Khanna M, Kendall P. Computer-assisted cognitive behavioral therapy for child anxiety: Results of a randomized clinical trial. J Consult Clin Psychol 2010;78:737–45.

Kessler RC, Petukhova M, Sampson NA, Zaslavsky AM, Wittchen HU. Twelve-month and lifetime prevalence and lifetime morbid risk of anxiety and mood disorders in the United States. Int J Methods Psychiatr Res. 2012;21(3):169–84.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4005415/

Merikangas KR, He JP, Burnstein M, Swanson SA, Avenevoli S, Cui L, Benjet C, Georgiades K, Swendsen J. Lifetime prevalence of mental disorders in U.S. adolescents: results from the National Comorbidity Survey Replication—Adolescent Supplement (NCS-A) J Am Acad Child Adolesc Psychiatry. 2010;49(10):980–9.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2946114/

Rapee RM, Abbott M, Lyneham J, et al. Bibliotherapy for children with anxiety disorders using written materials for parents: a randomized controlled trial. J Cons Clin Psychol 2006;74:436–44.

Spence SH, Donovan CL, March Set al. A randomized controlled trial of online versus clinic-based CBT for adolescent anxiety. J Consult Clin Psychol 2011;79:629.

Stallard P, Richardson T, Velleman S, et al. Computerized CBT (Think, Feel, Do) for depression and anxiety in children and adolescents: outcomes and feedback from a pilot randomized controlled trial. Behav Cogn Psychother 2011;39:273–84.

Wittchen H-U, Lieb R, Pfister H, Schuster P. The waxing and waning of mental disorders: evaluating the stability of syndromes of mental disorders in the population. Compr Psychiatry. 2000a;41(suppl. 1):122–132. 2.
https://www.ncbi.nlm.nih.gov/pubmed/10746914

Wuthrich VM, Rapee RM, Cunningham MJ, et al. A randomized controlled trial of the cool teens CD-ROM computerized program for adolescent anxiety. J Am Acad Child Adolesc Psychiatry. 2012;51:261–70.

Practice Parameter for the Assessment and Treatment of Children and Adolescents With Anxiety Disorders, J. Am. Acad. Child Adolesc. Psychiatry, 2007;46(2):267-283.

Resources for Patient Education

Websites

- Anxiety Canada
  http://anxietycanada.com
- TeenMentalHealth
  http://www.teenmentalhealth.or...
- Mindful Self-Compassion for Teens
  Self-Compassion for Teens (MFY) Meditations
- Mind Masters 2 (resources for parents/professionals to use with children)
  https://www.ottawapublichealth.ca/en/professionals-and-partners/iecmh.aspx#Mindmasters-2

Books

  - My Anxious Mind: A Teen's Guide to Managing Anxiety and Panic by Michael Tompkins & Katherine Martinez
  - Sitting Still Like a Frog by Eline Snel
  - What To Do When You Dread Your Bed by Dawn Huebner
  - What To Do When You Worry Too Much by Dawn Huebner
  - What To Do When Your Temper Flares by Dawn Huber

Apps

- Mindshift (https://www.anxietycanada.com/resources/mindshift-cbt/)
- Be Safe (https://besafeapp.ca)

- Headspace
  https://www.headspace.com
- Simple Habit (meditation app)
  A 5-minute app to help busy people with meditation.
  https://www.simplehabit.com

Online support

  - Bounce Back (https://bouncebackontario.ca)
  - Big White Wall (https://www.bigwhitewall.com/?lang=en-ca&from=ca/)

About this Document

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