Major Depressive Disorder in Children & Adolescents

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Part One

Foundations of Major Depressive Disorder

Objectives:

* Identify the features of Major Depressive Disorder (MDD) in children and adolescents, including subtypes, risk factors, protective factors, and the course of illness
* Recognize the differential diagnoses for MDD that should be considered

Prevalence of MDD

* Preschoolers – **2%** (few studies)
* Children – **2%** (male to female ratio 1:1)
* Adolescents – **4-8%** (male to female ratio 1:2)
* A more recent study in 2015 shows that rates of MDD are rapidly increasing in youth, with **12.7% of youth ages 12-17 having MDD**
* By age 18 the prevalence is the same as adults – **20%** (male to female ratio 1:2)

Why Do Children Get Depressed?

* **Environmental Stressors –** can contribute
  * After the age of 12, 50–60% of MDD is related to environmental stressors
* **Genetic Factors –** Runs in families
  * ~ 50% of adolescent depression is related to genetic factors
* **Psychological disposition –** Optimist vs. pessimist
* **Biological factors** – multiple genes that can cause a person to be pre-disposed to develop depression under stress

DSM-5 Depressive Disorders

* Major Depressive Disorder
* Disruptive Mood Dysregulation Disorder (core feature of DMDD is chronic, severe, persistent irritability manifested as frequent temper outbursts or an irritable angry mood)
* Persistent Depressive Disorder (Dysthymia)
* Premenstrual Dysphoric Disorder (mood lability/dysphoria that occurs during the premenstrual phase of the cycle)
* Substance/Medication Induced Depressive Disorder
* Depressive Disorder due to another medical condition
* Unspecified Depressive Disorder (depressive symptoms that do not meet full criteria of the other disorders)

DSM-5: Major Depressive Disorder

Five or more symptoms are present during the same 2-week period and represent a change in previous functioning

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* **Depressed Mood AND/OR Loss of Interest or Pleasure for at least 2 weeks**
  * **Can be Irritable Mood instead of Depressed Mood in Children/Adolescents**

AND

* Decreased Motivation
* Increased or Decreased Sleep
* Significant Weight Loss/Increased or Decreased Appetite
* Psychomotor Agitation/Retardation
* Decreased Energy/Fatigue
* Feelings of worthlessness or excessive/inappropriate guilt
* Diminished ability to concentrate/Indecisiveness
* Recurrent thoughts of Death, Recurrent Suicidal Ideation. Suicide Attempt, Suicide Plan
* Significant distress and impairment in social occupational other functioning
* Symptoms not only due to conditions drugs/alcohol, or a medical conditions
* Not explained by another psychiatric disorder
* There has never been a manic or hypomanic episode

MDD Specifiers

* Single Episode
* Recurrent Episode
* Mild
* Moderate
* Severe
* With Psychotic Features
* In Partial Remission
* In Full Remission

MDD Subtypes

* **MDD with mixed features –** MDD plus with 3 or more manic/hypomanic symptoms (but not enough criteria to meet for Bipolar 1/Bipolar 2)
* **Seasonal Affective Disorder –** regular temporal relationship with a particular time of the year, most common in the fall/winter, hypersomnia, low energy, CHO cravings, may respond to light treatment
* **Melancholic Features –** loss of pleasure, lack of reactivity, profound despondency, early am wakening, inappropriate guilt, anorexia/weight loss, psychomotor agitation/retardation, depression that is worse in the a.m.
* **Atypical Features –** mood reactivity, weight gain, increased appetite, increased sleep, interpersonal rejection sensitivity, heavy leaden feeling

MDD Subtypes

* **Anxious Distress –** worried, keyed up, tense , might lose control, difficulty concentrating , fear that something awful may happen, unusual restlessness
* **Psychotic Features –** delusions or hallucinations, can be mood congruent or mood incongruent
* **Catatonia –** stupor, grimacing, mannerisms, agitation, posturing, negativism (no response), echolalia (mimicking speech), echopraxia (mimicking movements) waxy flexibility (slight resistance to positioning), stereotypy (repetitive non-goal directed movements), catalepsy (induction of a posture)
* **Peripartum Onset –** onset of mood symptoms occurs during pregnancy or the four weeks following delivery , occurs in **3-6%** of women, often presents with anxiety, can occur with or without psychotic features (worry of infanticide)

MDD Symptoms by Age

* Preschoolers – Dysphoria, Anhedonia, Irritability, Acting Out, Somatic Complaints
* School Age – Dysphoria, Lack of Fun, Irritability, Acting Out, Somatic Complaints, Decreased Energy
* Adolescents – Isolation, Boredom, Irritability, Acting Out, Decreased Energy, Somatic Complaints, Sleep Disturbance, Change in Appetite

** Delusions are rare but increase with age

MDD is Hard to Diagnose

* Difficulty in the child verbalizing the symptoms; most likely will not say I am depressed or sad
* Children are flexible; they may look fine playing a video game, but with more questioning/observation you find out that they are feeling sad
* Co-morbid disorders occur in 40-70% of youth with MDD; SUD, ADHD, Anxiety Disorders, Eating Disorders, Personality Disorders
* Environmental issues that are stressful can cloud the picture

MDD Often Goes Undiagnosed or Untreated

* Depression can be more of an internal problem vs. the externalization seen in Disruptive Disorders
* Not knowing when help is needed
* Stigma associated with mental health disorders
* Symptom Overlap (e.g., anxiety and depression)
* Clinical Biases – may not consider depression in a younger child
* About 13% of youth are diagnosed with MDD by age 18, but roughly 66% of youth with MDD do not receive mental health treatment for the disorder

Differential Diagnoses

* **Bipolar Disorder –** look for a history of manic or hypomanic symptoms, family history (25% risk if a parent has Bipolar Disorder), psychotic symptoms.
* **Disruptive Mood Dysregulation Disorder –** persistent irritability with temper outbursts
* **Premenstrual Dysphoric Disorder –** symptoms present in the final week before the onset of menses and start to improve within a few days after the onset of menses
* **Disruptive Behavior Disorders –** ADHD, ODD, Conduct Disorder
* **Anxiety Disorders**
* **Personality Disorders –** e.g., Borderline, Antisocial
* **Substance Use Disorders**
* **Grief –** predominant affect is emptiness or loss
* **Autism Spectrum Disorder**
* **Medical/Neurologic Illnesses –** Hypothyroidism, Mononucleosis, Anemia, Sleep Apnea
* **Medications –** Corticosteroids, Beta-Blockers, Birth Control, Benzodiazepines, Stimulants (Ritalin), Anticonvulsants (Topamax, Tegretol)

Course of Illness

* Average duration is 7-9 months
* In two years, 90% have achieved remission
* 50% relapse (same episode of illness comes back)
* 40% have a recurrence (new episode) in 2 years
* 70% have a recurrence in 5 years
* 6-10% have a chronic course
* Can be continuous into adulthood

Risk Factors Include…. Keep an Eye on these Children

* Anxiety Disorders frequently precede the onset of MDD
* Irritability
* ADHD, ODD, Conduct Disorder
* Sleep Problems
* Negative Cognitive Distortions
* Difficulty with emotional regulation
* Low positive affect
* Medical Illnesses

Protective Factors

* Positive Parent-Child Relationship
* Parental Supervision & Monitoring
* Pro-Social Peer Group
* Connection to School
* Higher IQ
* Participation in sports, religion, and physical activity

Part Two

Suicide in Children & Adolescents

Objective:

* Discuss suicide in children and adolescents, including statistics, risk factors, warning signs, and suicide prevention

Suicide – The #2 Cause of Death in the United States

* Suicide is the 2nd leading cause of death for children, adolescents and young adults, ages 10-24 (#1 = unintentional injuries; #3 = homicides).
* Accounts for 400 deaths in youths ages 10-14 years old.
  * However, it accounts for more than 5000 deaths per year in adolescents and young adults ages 15-24.
  * For each completed suicide there are several thousand attempts.
* There has been a 24% increase in the suicide rate in the US from 1999 to 2014.
  * The largest percent increase has been in girls ages 10-14; tripling between 1999-2014.
* However, males still have the higher number of suicide deaths in ages 10-24.

Suicide – The #2 Cause of Death in the United States

* The majority of children & adolescents who attempt suicide have a significant mental health disorder, usually depression.
* Suicide accounts for more deaths than any major single medical illness.
* Firearms is the most common suicide method, followed by suffocation, poisonings, falls and other in adolescents over age 14.
* Suffocation is the most common method in ages 10-14, followed by firearms and poisoning.
* 60% of first suicide attempts are planned.

Ideation, Plans, Attempts: 2014 National Youth Risk Behavior Survey

* 17% seriously have considered attempting suicide
* 13.6% have ideation with a plan
* 8% have reported making a suicide attempt within the prior year
* 2.7% have made a suicide attempt requiring medical intervention

* All higher in girls than boys

Some Risk Factors for Suicide

* MDD Diagnosis (32-54%)
  * Also occurs in Bipolar Disorder (20%), SUD (27-62%), Anxiety Disorders (27%), Eating Disorders (4%), Schizophrenia (4%)
* Previous Suicide Attempt
  * The strongest predictor of an adolescent suicide attempt is the number of previous suicide attempts
* Use of drugs/alcohol
* Chronic non suicidal self injury
* Personality Disorders – Borderline & Antisocial
* Family Conflict and Family History of Suicide
* Adverse Childhood Experiences such as sexual assault, physical abuse
* Exposure to Violence
* Impulsivity, Aggression, Disruptive Behaviors
* Access to Firearms
* Bullying and Acute Loss or Rejection
* Depression, Hopelessness, Helplessness

Risk Assessment

* **#1 is the Clinical Interview of child, guardian, family and collateral contacts.**
* Augment with tools such as:
  * Columbia Suicide Severity Rating Scale – measures severity and intensity of suicide
  * Harkavy-Asnis Suicide Scale
  * Beck Depression Inventory
  * Suicidal Intent Scale
  * Child Adolescent Suicide Potential Index

High Risk Groups for Suicidal Behaviors

* Alaska Native and American Indian Youth
* Young adults with substance use problems
* Children of depressed parents
* Youth and young adults who identify as sexual or gender minorities

Children vs. Teens

* **Among younger children**, suicide attempts are often impulsive
  * Associated with feelings of sadness, confusion, anger or problems with attention and hyperactivity
* **Among teens**, suicide may be seen as a solution to their problems
  * Associated with feelings of stress, self-doubt, pressure to succeed, financial uncertainty, disappointment and loss

Warning Signs in Children

* Changes in eating or sleep habits
* Frequent or pervasive sadness
* Withdrawal from friends, family, and regular activities
* Frequent complaints about physical symptoms often related to emotions such as stomachaches, headaches, or fatigue
* Decline in the quality of schoolwork
* Preoccupation with death and dying
* Not planning for future events
* Giving away belongings

Warning Signs in Teens

* Drug or Alcohol Use
* Violent Actions
* Severe Rebellious Behavior
* Running Away
* Unusual Neglect of Appearance
* Marked Personality Change
* Loss of Interest in Activities

Anecdotal: Look for Warning Signs….

What is written on social media

* Types of pictures drawn
* Conversations with peers including suicide pacts
* Written poetry, stories, journals
* Websites/Social media platforms visited
* Significant change in dress or grooming
* Suicide notes
* Assess the developmental understanding of suicide
  * Some younger children do have an understanding of the finality of death
  * Average understanding usually between ages 5-7 but understanding can occur as young as 3 yrs of age

Open Suicide Statements

Children & Adolescents may make openly suicidal statements:

"I wish I were dead."

"I won't be a problem for you much longer."

"Nothing matters."

Ask Questions

Rather than putting thoughts into your child's head, asking questions can provide assurance that someone cares and will give the child a chance to talk about feelings.

A. Are you feeling sad or depressed?
B. Are you thinking about hurting or killing yourself?
C. Have you ever thought about hurting or killing yourself?

Err On The Side Of Caution!!!

* Any child or adolescent with suicidal thoughts of plans should be immediately evaluated by a trained mental health professional.
* Depression and suicidal feelings are treatable mental disorders.
* Children & adolescents need to have the illness recognized and diagnosed with a plan for appropriate treatment.

Treatment for Suicide Attempts

* Acutely, must evaluate risk of suicide and need for a higher level of care if safety is unpredictable and if removal from a stressful environment is indicated
* Written safety plan which assesses suicide intent, methods for maintaining safety, and no access to lethal means
* Focus on protective factors such as sources of support (familial and non-familial), positive affect
* Focus on interventions with risk factors, such as promoting healthy sleep, addressing SUD
* Focus on motivation for treatment and coordination with other services
* Close monitoring and follow-up!!! R/O medical issues such as overdoses

Suicide Prevention

* Educate youth on how to cope with stress and develop emotional and behavioral self regulation via school and family programs
* Educate youth about avoiding substance use
* Enhance accessibility to mental health care, public education to reduce stigma
* Educate caretakers about the accessibility of firearms
* Development of universal screening monitoring methods
* Greater understanding of socio-cultural risk factors such as social media

Part Three

Pharmacotherapy

Objective:

* Review current anti-depressant medications prescribed for children and adolescents with MDD

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Anti-Depressant Medications

Selective Serotonin Re-uptake Inhibitors (SSRIs)

INHIBIT THE REUPTAKE OF SEROTONIN

* Citalopram – Celexa
* Escitalopram – Lexapro
* Fluoxetine – Prozac
* Fluvoxamine – Luvox
* Paroxetine – Paxil
* Sertraline – Zoloft

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Anti-Depressant Medications

Selective Norepinephrine Re-uptake Inhibitors (SNRIs)

* Venlafaxine – Effexor
* Duloxetine – Cymbalta
* Desvenlafaxine – Pristiq

Tricyclic Anti-depressants (TCAs)

* Clomipramine – Anafranil
* Desipramine – Norpramin
* Nortriptyline – Pamelor

Anti-Depressant Medications

Atypical Anti-depressants

* Bupropion – Wellbutrin
* Mirtazapine – Remeron
* Vilazodones – Viibryd
* Vortioxetine – Trintellix
* Trazodone – Desyrel

Treatment Refractory depression is sometimes augmented with anti-psychotic medication (SGA)

FDA Approved Anti-Depressants

* Lexapro (Escitalopram): 10mg–40mg
  * FDA approved in ages 12-17
  * Start with **5mg**
* Prozac (Fluoxetine): 20mg–80mg
  * FDA approved in ages 8-18
  * Start with **10mg**

* These are average dose ranges; in children, start with low doses and use the lowest possible dosage.

Non-FDA Approved Anti-Depressants

* **Celexa (Citalopram):** 20mg–40mg ; start with 10mg
* **Paxil (Paroxetine):** 20mg–60mg ; start with 10mg
* **Zoloft (Sertraline):** 50mg–200mg; start with 25mg–50mg
* **Fluvoxamine (Luvox):** 50mg–150mg; start with 25mg
* **Cymbalta (Duloxetine):** 40mg–60mg; start with 20mg
* **Effexor XR (Venlafaxine XR):** 150mg–225mg ; start with 37.5mg/day
* **Wellbutrin (Bupropion):** 150mg–300mg; start with 100mg
* **Strattera (Atomoxetine):** not effective in MDD; used for ADHD

Others That Are Sometimes Used Though Not FDA Approved

* **Effexor –** causes sedation and dizziness, diastolic hypertension; some evidence that it may help
* **Trazodone –** usually used as an adjunct for sleep; serious adverse effect of priapism (sustained and painful erection in males)
* **Remeron –** used as an adjunct for sleep; weight gain
* **Wellbutrin –** may reduce the seizure threshold daily
  * Doses should not exceed 300mg in children
  * A single dose should not exceed 150mg
  * Should not be used in co-morbid Eating Disorders
  * Used to treat ADHD

Not Usually Used In Children And Adolescents

* **MAOIs**
  * Anti-depressants introduced in the 1950s
  * Not used very much in children and teens due to dietary restrictions and safety concerns
  * Used only in treatment-resistant depression
  * Certain foods/drug interactions can cause lethal hypertension (Nadal, Marplan, Parnate, Eldepryl, Azilect, Manerix)
  * *Example:* Prozac should not be taken with or within 6 weeks of taking an MAOI
  * *Example:* Avoid foods with high levels of tyramine, dopamine and tryptophan, such as aged cheeses, yogurt, cured meats, fermented sausages, sauerkraut, etc.
* **Tricyclic anti-depressants**
  * Not effective in MDD in youth
  * Sometimes low doses can be helpful for migraines
  * May be used as an augmenting agent (Amitriptyline, Nortriptyline), for OCD (Clomipramine), and ADHD (Desipramine)

Some Side Effects of SSRIs/SNRIs

* Gastrointestinal- stomach pain, nausea, indigestion
* Dizziness
* Headaches
* Increased or Decreased Sleep
* Fatigue
* Nightmares
* Decreased Libido, Erectile Dysfunction
* Increased or Decreased weight
* Sweating
* Easier Bruising

Usual Well Tolerated But Beware of …

* **Behavioral Activation:** disinhibition, restlessness, impulsiveness, garrulousness
  * Look for the development of mania or hypomania
  * Usually occurs early in treatment
  * These symptoms can occur any time between 2 weeks and one year after the initial exposure to the SSRI
  * In these children (particularly under the age of 12) 21% had a family history of Bipolar Disorder

Usual Well Tolerated But Beware of …

* **Drug-Drug Interactions:** Cytochrome P450 enzymes primarily found in the liver affect the way drugs are metabolized
* **Switching from Prozac to another SSRI:** A gap of 4-7 days is recommended
* **Serotonin Syndrome:** Use of SSRIs with an MAOI, L-tryptophan, or lithium can raise plasma serotonin levels
  * Serious and potentially fatal syndrome with a constellation of symptoms:
    * Diarrhea
    * Restlessness
    * Extreme agitation, hyperreflexia, autonomic instability with rapid fluctuations in vital signs
    * Seizures, myoclonus (involuntary muscle jerk) , hyperthermia, shivering and rigidity
    * Delirium, coma, status epilepticus, cardiovascular collapse, and death

SSRIs are Usually Well Tolerated but Beware of …

* **Discontinuation Syndrome:** flu like syndrome from abrupt discontinuation
  * Characterized by dizziness, moodiness, nausea, vomiting, myalgia, irritability, and fatigue
  * More likely with the shorter acting SSRIs
  * A slow taper is recommended
* **Black Box Warning:** increased suicidal ideation and behavior in children treated with anti-depressants
  * In June 2003, a warning came out in the UK about the possible increased risk of suicidal ideation/suicide in children taking the drug Paxil (SSRI)
  * US FDA, in response to this report, issued a black box warning in 2004 for the use of anti-depressants in young people under the age 25
  * There is an increased risk difference in comparison to adults of 1-2%
  * The current thought is that the use of SSRIs protect against suicide

Anti-Depressant Maintenance

* MDD – Continue for 6-12 months after symptomatic relief
  * Can consider a slow taper after 12-24 months of euthymic mood/affect
* Chronic, severe, recurrent depression – longer period of prophylaxis
  * May consider a trial of a slow taper after several years

Non-Responders

* Recheck the diagnosis
* Inadequate dose or duration
* Nonadherence
* Side Effects
* Co-occurring conditions: medical issues, abuse, school issues, parental psychopathology
* Poor fit between patient and the therapist

Resources

American Academy of Child & Adolescent Psychiatry

www. aacap.org

American Academy of Pediatrics

www.aap.org