# PSYCHOPHARMACOLOGY FUNDAMENTALS

**3rd Annual Critical Issues in Child & Adolescent Mental Health Conference**

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## Introduction

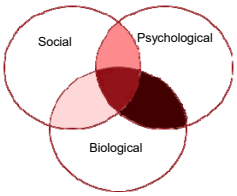
- Rady Children's Hospital
- UCSD Community Psychiatry Program
- All Cases discussed herein have been de-identified

## Overview

- Why do children and families seek help?
  - Bio-Psycho-Social factors
  - Diagnoses
- Psychopharmacology
  - Cases

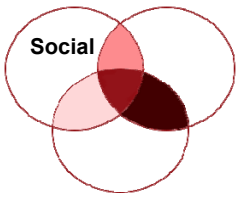
## Overview

- Why do children, adolescents and families seek help?



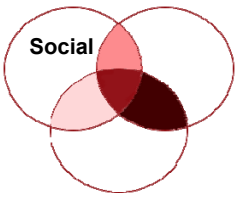

## Why seek help?

- Safety
  - Extra-familial
  - Intra-familial
- Family dynamics
- School
  - Success
  - Bullying




## Why seek help?

- Behaviors
  - Function within family
  - Function within school

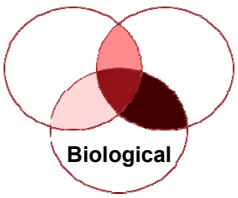


## Why seek help?

- Behaviors
  - Psychological function
- Emotion regulation
- Levels of arousal

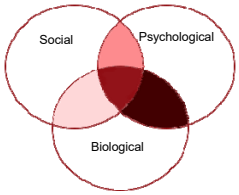

## Why Seek Help?

- Pro-drome
- Psychosis
- Substance abuse
- ADHD



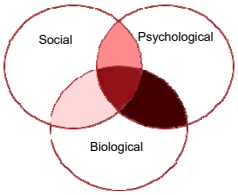

## Diagnoses

- Translating presenting problem into diagnosis can be difficult
- Our research tends to focus on diagnoses



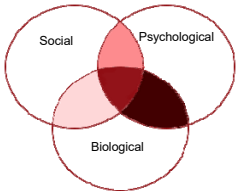

## Diagnoses

- Depression
- PTSD
- Anxiety
- Psychosis

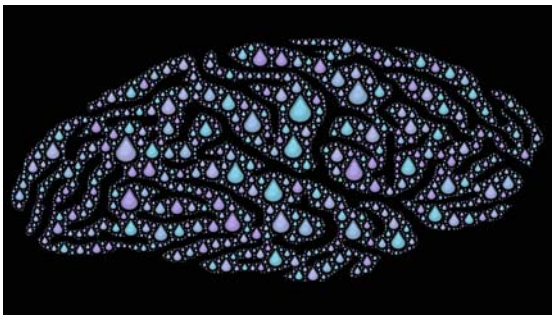


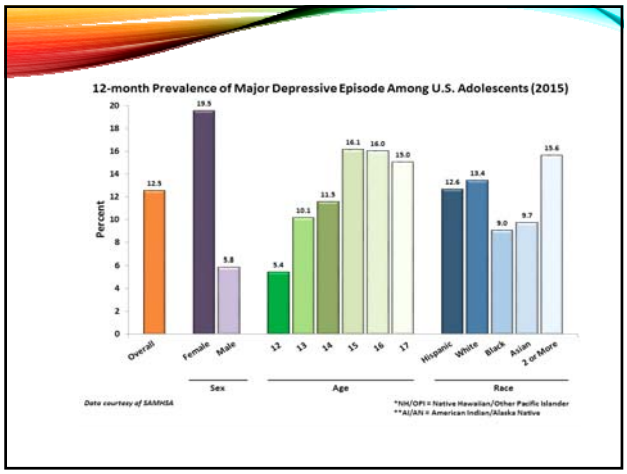

## Depression

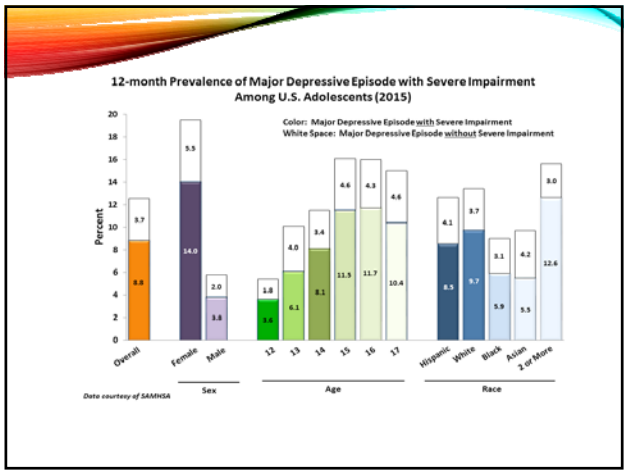
- 17 year old female admitted to the inpatient unit after an intentional ingestion of acetaminophen, reporting several months of sadness, hopelessness, and suicidal ideation.

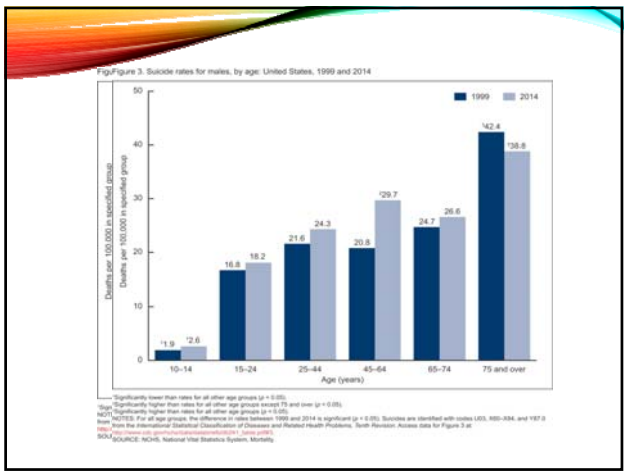



## Hypothetical Physiology of Depression






## Course of Pediatric Depression

- Episodic (Kovacs et al, 2016)
  - First episode ~ 37 weeks
  - Time between episodes decreases as time progresses
- More data needed

## Impact

- Quality of life
- Suicide – 6% of high school youth in San Diego reported a suicide attempt in 2009
- Self-injury – 24 % of high school youth reported self-injury
- Rates of suicide are rising
- Take overdose, suffocation and strangulation extremely seriously

## General Treatment Approach

- Understand that rates of depression are common
- Make use of brief screening tool
- Make therapy referrals for all cases of depression
- SSRIs – Fluoxetine, escitalopram, sertraline

## Symptoms (DSM5)

- Two weeks of LOW MOOD OR IRRITABILITY
- Or Anhedonia with >=3
  - Weight loss/ poor appetite
  - Sleep problems
  - Anergia
  - Worthlessness or guilt
  - Poor concentration
  - SI

## Pediatric Considerations

- Less Anhedonia
- Less psychomotor slowing

## Pediatric Considerations

- Irritability
- Increased sensitivity to failure, rejection
- Physical complaints, headache, stomach ache
- Absenteeism, poor school performance
- Thoughts of / running away
- Substance use

## Differential

- Bipolar disorder
- Substance Abuse
- Prodrome
- Trauma
- PMDD – Premenstrual
- Persistent Depressive Disorder

## Developmental Differences

- Preschool
- Children
- Teens

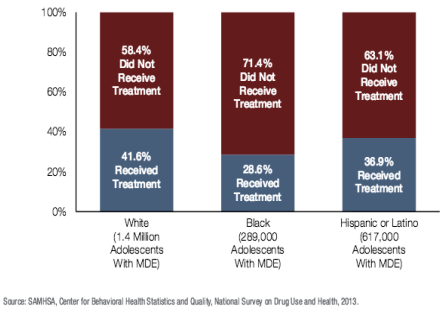
## Risks for Depression

- Genetics
- Physical Health
- Life events
- Family conflict
- Community or domestic violence

## Risks for Depression

- Learning disorder
- Hormone changes
- Substance abuse
- Bullying
- Trauma

## Treatment




Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2013.

## SSRIS

- Treatment of choice for anxiety and depression
- Generally safe
- Rare adverse effects can be serious, but managed with close monitoring
  - Suicidal Ideation (Black Box), Bleeding, Electrolyte abnormalities
- In general, neither initial nor regular labs are required

## SSRIS

- Therapy is essential
- Combination of CBT and SSRI can increase rate of response
  - ~ 60% with medication only to ~ 70% meds and CBT(March et al, 2004)

## SSRIS

- First Line: Big Three
  - Fluoxetine
  - Escitalopram
  - Sertraline
- Return in 1-2 weeks to see if tolerating, ask about SI.
- Up-titrate
  - *Week 8 – good response or maximal dose*

## Medications: SSRIS

- Second Line: A different one of the big Three
  - Fluoxetine
  - Escitalopram
  - Sertraline

## Common Side Effects:

- Headache, GI upset
- Black Box Warning: Suicidal Ideation

## Fluoxetine

- Fluoxetine 10 to 40 mg po daily (TADS Study; Cochrane Review)
- Statistically Sig Reduction in depressive symptoms when compared to placebo
- Highest rates of remission 23% - 57%
- FDA Approved
- Adolescents: Start at 10 mg, within 1-2 weeks increase to 20 mg, true target is remission
- School Age: Start lower 5; Use Liquid; go Slow

## Escitalopram

- Escitalopram 10 to 20 mg po daily (TADS Study; Cochrane Review)
- Statistically Sig Reduction in depressive symptoms when compared to placebo
- FDA Approved
- Adolescents: Start at 5 mg, increase to 10 mg, true target is remission, increase accordingly
- School age kids go slower

## Medications: SSRIS

- Lowest effective dose, target remission
- Symptomatic and tolerating? Increase
- Effect can take 3-5 Weeks per dose change
- Monitor weekly or bimonthly
  - Suicidal ideation
  - Mania or hypomania (SLEEP, personality change, etc.)

## Medications: SSRIS

- Use with other serotonergic medications can cause Serotonin Syndrome
- Risk Category C, present in breast milk
- Rare adverse effects can be serious: Suicidal Ideation (Black Box), Bleeding, Electrolyte abnormalities
- Labs as needed for Aes, prior history

## Adjunctive Treatments

- Vitamin D
- Omega 3
- Exercise
- Healthy Eating

## Alternative Treatments

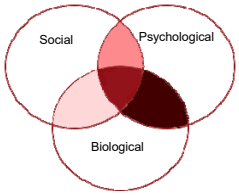
- SAMe – s-adenosylmethionine (Popper, 2013)
- Light Box

## Alternative Treatments

- St Johns Wort – Hypericum
  - Reasonable data (Popper, 2013)
  - CYP Inducer → Can reduce efficacy of OCPS
  - SSRI Aes

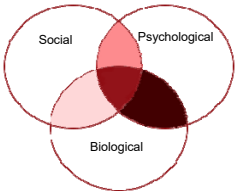
## PTSD

- 17 yo Female with extensive sexual abuse history, which occurred prior to adolescence
  - Presenting with nightmares, hypervigilance, hopelessness

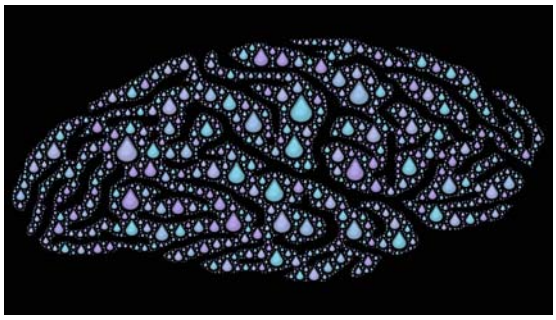



## Trauma

- Can present as PTSD
- Can be a relevant clinical factor, even if patient does not meet criteria for PTSD




## Hypothetical Physiology of Trauma



## Trauma

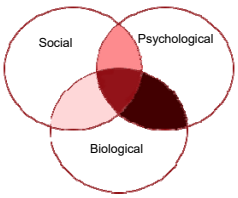
- Exposed to trauma
- 1 month or greater of the following symptom cluster
- >= 1 symptom of **Re-experiencing,**
  - Intrusive memories, nightmares, flashbacks, emotional or physiologic distress
- >= 1 symptom of **Avoidance**
  - Psychological or physical avoidance
- >= 2 **Negative cognitions**, negative moods
  - Amnesia, critical lens, negative affect, decreased interest in enjoyable activities, isolation.
- >= 2 symptoms **Hyperarousal**
  - Aggression
  - Hypervigilance

## Trauma

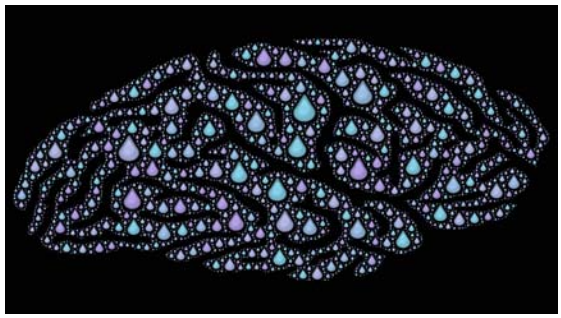
- Trauma Focused CBT
- SSRIs for mood component
- Prazosin for nightmares, sleep, hyperarousal (Akinsanya et al., 2017)

## Psychosis

- 15 year old female with a history of developmental delay,
  - Presenting to clinic with paranoia, racing thoughts and poor sleep




## Hypothetical Physiology of Psychosis



## Schizophrenia

- >=2 within a month
  - **Delusions**
  - **Hallucinations**
  - **Disorganized Speech**
  - Grossly Disorganized or Catatonic
  - Negative Symptoms
- Dysfunction for >= 6 Mo
- +/- Catatonia

## Psychosis

- Childhood Psychosis is rare : ~ 1/40,000
  - Duration of Untreated Psychosis (DUP)
- Psychotic symptoms are more common
- Key Triage Question: Primary versus Other
- Treat Underlying Condition

## Psychosis

- Talk with the Family
- Understand the concern
- Formulate a hypothesis
  - Use the Bio – Psycho – Social Model

## Psychotic Symptoms

Positive Psychotic Symptoms
- Perceptions
- Delusion
- Form of thought problems

Disorganized symptoms
- Odd behavior, appearance
- Bizarre thoughts
- Trouble with attention
- Personal hygiene

Negative Psychotic Symptoms
- Social withdrawal or decline in function
- Avolition
- Expression of emotion problems
- Experiences of emotion or self problems

Transient symptoms

## Diagnostic Possibilities

- Mood Disorder with Psychosis
- Substance or Medication Induced
- Schizotypal Personality Disorder
- Primary Psychoses

## Diagnostic Possibilities

- Primary Psychoses
  - Schizophrenia - Persistent
  - Schizophreniform – 6 months
  - Brief Psychotic Disorder – 1 month
  - Delusional Disorder
  - Schizoaffective Disorder

## What Does Psychosis Look Like?

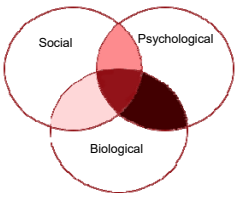
- Prodrome and Primary Psychoses
  - More (though not exclusively) sustained
  - Use your countertransference
    - "Odd", "things not adding up"
- Substance Induced
  - Timing!
- Mood Disorders
  - Mood Congruence

## Treatment Antipsychotics

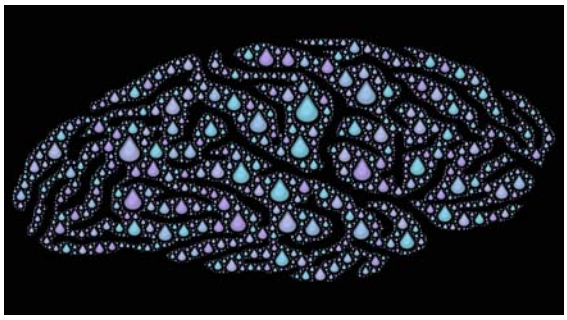
- Metabolic side effects
- Movement Side effects
  - Rarely, can be permanent
- Dangerous Side effects
  - NMS et al
- Cardiac
  - QTC

## Anxiety

- 18 year old male recently enrolled in local university, "I can't get myself to school", I am too worried about what people will say about me.



## Hypothetical Physiology of Anxiety



## Anxiety

- "Anxiety may become symptomatic at any age when it prevents or limits developmentally adaptive behaviors" (Evans et al., 2005)
- Distress + Dysfunction + Inflexibility
- Consistent patterns of
- Avoidance
- Anxiety in the absence of stimulus

## Anxiety

- Talk with the Family
- Understand the concern
- Formulate a hypothesis
  - Use the Bio – Psycho – Social Model

## Anxiety

- CBT
  - Anxiety scales followed by exposures targeting avoidance
- SSRIs

## Anxiety

- Children > Adolescents
  - Separation Anxiety
  - Selective Mutism
- Adolescents > Children
  - Panic Disorder
  - Social Anxiety Disorder
  - Generalized Anxiety
  - Specific Phobia

## Symptoms of Anxiety

- Panic Attacks
  - Abrupt occurrence of
    - Palpitations, trembling, sweating, cp, n/v, dizziness, chills, heat sensations, parasthesias, derealization / depersonalization, fear of dying or "going crazy"
- Sympathetic symptoms
- Somatic symptoms

## Anxiety

- Separation anxiety
  - > 4 weeks and >= 3 of
    - Developmentally inappropriate fear concerning separation for attachment figures
    - Persistent worry about bad things happening to attachment figures
    - Alterations in sleep, absenteeism, nightmares, somatic symptoms
  - CBT and SSRIs

## Anxiety

- Selective Mutism
  - > 1 month of consistent failure to speak in certain settings, that interferes with schooling, social relationships
  - Exposures, CBT
  - SSRI

## Anxiety

- Panic Disorder
  - Recurrent panic attacks
  - Fear of inducing attacks (> 1 Month)
  - Resulting change in behavior
  - Treatment: CBT and SSRIs (at least 3 RCTS)

## Anxiety

- Social Anxiety Disorder
  - Fear about social settings with PEERS (not just adults), out of proportion to context
  - Concern with scrutiny of others
  - CBT
  - SSRI > SNRI
  - Multiple RCTs

## Anxiety

- Generalized Anxiety Disorder
  - >= 6 mo of worry that is difficult to control and about many things
  - >= 1
    - Restlessness, fatigue, poor concentration, irritability, muscle tension, sleep probs
  - CBT
  - SSRI

## Anxiety

- Specific Phobia
  - > 6 Mo → Marked fear or anxiety of a thing that is out of proportion to associated danger
  - Can be expressed by tantrums, freezing or clinging
  - Impairing
- EXPOSURES
- Data for SSRI is less convincing, but exposures work so well, that we use medication less

## Depression References

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