Psychiatric Medications

Positive and negative effects in the classroom
Introduction

- According to the National Survey of Children’s Health for 2009-2010, a little over 15% of the children and adolescents under the age of 18 in the United States were identified as Children With Special Health Care Needs (CSHCN).
- Of those, 4.8% were identified as having emotional, behavioral or developmental (EBD) difficulties.
Introduction

• In Mississippi, the total number of children identified as CSHCN was higher at a little over 16% and those identified as EBD were 4.9%

• This translates into 37,483 children in Mississippi with special needs due to emotional, behavioral and developmental difficulties.
Introduction

• In the 2011-2012 survey, the numbers rose.

• Nationwide, almost 20% of children under the age of 18 were on medication of some kind for EBD problems.

• In Mississippi, it was estimated that 11.2% of children between the ages of 6-11 and 13.2% of children between the ages of 12-17 were taking medications for EBD difficulties.
Introduction

- This means that in any given classroom of 30 students, up to 3-6 will be taking medication for emotional, behavioral or developmental (EBD) problems.
- Medication effects vary widely and change over time.
- This poses one more challenge facing teachers today.
Common Medications

From stimulants to sedatives
ADHD

Stimulants
Noradrenergic Agents
Alpha 2 Receptor agonists
Stimulants

Methylphenidates
- Short acting
- Long Acting

Amphetamines
- Short Acting
- Long Acting
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<th>Methylphenidates</th>
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<td>Ritalin</td>
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<td>Metadate</td>
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<td><strong>Long Acting</strong></td>
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<td>Concerta</td>
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<td>Focalin XR</td>
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<td>Daytrana</td>
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Amphetamines

- Short acting:
  - Adderall
  - Dexedrine

- Long Acting:
  - Adderall XR
  - Vyvanse
Short Acting Stimulants

- Onset within 15 to 30 minutes
- Last 3 ½ to 4 hours
- Can be associated with rebound
- Can be associated with increased irritability and agitation in students with bipolar illness, anxiety disorders such as OCD, and autistic spectrum disorders
- Increase the frequency of tics in Tourette’s Syndrome
- Increase the frequency of skin picking, hair pulling and OCD symptoms in vulnerable children.
Rebound
Long Acting Stimulants
Long Acting Stimulants

- May take longer to start working (more than ½ hour)
- Last 8 to 13 hours, Daytrana patch lasts 3 hours after removal
- Feelings of being “shut down”
- Weight loss and appetite loss
- Irritability, rebound, increased OCD symptoms and tics also increase in vulnerable individuals
Noradrenergic Agents

- Atomoxetine (Strattera) and bupropion (Wellbutrin) last for 24 hours but can take 7-10 days to start working.
- Strattera can cause stomach aches and appetite loss
- Both can increase mood swings in bipolar patients
- Wellbutrin can reduce seizure threshold
Alpha 2 Receptor Agonists

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<td>• Guanfacine (Tenex)</td>
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Sedation
Clonidine

- Short acting form is a pill and lasts about 4 hours
- Long acting form comes as a patch or as a pill (Kapvay)
- Sedation is the major side effect, in fact it is used to help some children who have difficulty falling asleep.
Guanfacine

- Short acting form must be given 2-3 times a day for full coverage.
- Sedation gets better over time, but can take weeks to clear.
- Must taper dose and not stop it suddenly due to rebound tachycardia and hypotension.
- Intuniv is a 24 hour version and must be increased by 1 mg per week.
- Most people require up to 4 mg daily to be effective.
Serious Intuniv Side Effects

Dizziness

Fainting
Depression and Anxiety

SSRIs
SNRIs
Benzodiazepines
In 2005, Rosenbaum et al estimated that one in 20 children in the United States have depression and many of these have an anxiety disorder as well (Depression and Anxiety in Children and Adolescents, in Medscape Psychiatry and Mental Health, 10/25/2005).

11-69% of anxious children also had depression and 15-75% of depressed children also had anxiety.
Depression and Anxiety

• Greater than 50% of depressed children will go on to have a recurrent episode of depression in adulthood (Rosenbaum et al, 2005)

• Up to 40% of those with early onset depression will develop bipolar disorder over time (Rosenbaum et al, 2005)
Common symptoms

Frustration

Hopelessness

Symptoms of depression in children may include apathy, irritability and persistent sadness.
Suicide is the third leading cause of death in adolescents.

It is estimated that 500,000 adolescents will attempt suicide and 2000 will succeed.

Controversy exists whether or not antidepressants cause suicide after the FDA issued a black box warning about suicide in people under the age of 18 taking antidepressants.
Suicide

• In 2003, the FDA issued a black box warning about the risk of suicide in people under the age of 18 and the number of prescriptions written for SSRIs dropped by almost 2/3.

• Unfortunately, after this warning, the suicide rate for this age group rose for the first time in 10 years.
SSRIs

- Fluoxetine (Prozac)
- Sertraline (Zoloft)
- Citalopram (Celexa)
- Escitalopram (Lexapro)
- Fluvoxamine (Luvox)
Side Effects of SSRIs

Impulsivity
Silliness
Talking too much
“Zippiness”
Irritability
Mood Swings
SNRIs

• Less common in children and include medications such as venlefaxine (Effexor), desvenlafaxine (Pristiq), and duloxetine (Cymbalta)

• Can also cause mood swings, increased irritability, and agitation

• Can cause headaches

• Acute withdrawal causes tearfulness, dizziness and nausea
Benzodiazepines

Alprazolam (Xanax) and clonazepam (Klonopin) as well as lorazepam (Ativan) sometimes used in children
Benzodiazepines

- Higher abuse potential
- Sedation, slurring of speech, disinhibition can occur
- Sudden withdrawal can cause tachycardia and in severe cases, seizures
Bipolar Disorder

Antipsychotics
Anticonvulsants
Lithium
Symptoms in children are mixed

Rage is very common and grandiosity can be difficult to distinguish in younger children, especially those who are creative. Mood states fluctuate more rapidly in bipolar children and adolescents.
Bipolar Disorder

- To complicate the picture, most children and adolescents with bipolar illness take multiple medications.

- Bhangoo et al found that children treated for bipolar disorder were treated with a mean of up to 3-5 medications at any given time and had a mean of up to 6-9 trials of previous medications (JAACAP, December 2003, 13 (4): 515-522).
Comorbidity

Many children suffer from multiple disorders with overlapping symptoms. This means that they may be treated with medications for bipolar disorder, ADHD and anxiety at the same time.
Antipsychotics

- Include medications such as aripiprazole (Abilify), risperidone (Risperdal), olanzepine (Zyprexa), and quetiapine (Seroquel)

- Primary side effects are sedation and weight gain

- Sedation can take weeks to get better
Ravenous appetite
Serious Side Effects

• Symptoms such as fever, muscle rigidity, difficulty swallowing, difficulty speaking or turning of the head to one side require immediate attention

• Long term side effects such as tardive dyskinesia are less common at this stage of treatment
Anticonvulsants

- Anti-seizure drugs are often used to treat bipolar disorder
- Also, seizure disorders are not uncommon in children and adolescents
- These include drugs such as valproic acid (Depakote), oxcarbazepine (Trileptal), lamotrigine (Lamictal), and carbazepine (Tegretol)
- Sedation, weight gain and cognitive blunting can be seen
- Serious side effects include rash, nausea, vomiting and ataxia
Cognitive Effects
Stevens Johnson Syndrome
Lithium

A naturally occurring element
Common side effects

Increased thirst
Frequent trips to the bathroom
Tremor (trouble with handwriting)
Nausea

Severe side effects: vomiting, diarrhea, ataxia, tremulousness, delerium
Autistic Spectrum Disorders
Unpredictable Responses
Autistic Spectrum Disorders

- In the 2011-2012 National Survey of Children’s Health, the prevalence of Autism nationwide was estimated at 1.8%, with over one million children affected.

- 0.4% were told they had autism previously but did not have it.

- These children could have been children “on the spectrum”
The most commonly used medication for autistic children with irritability, agitation and explosiveness is risperidone (Risperdal).

There are no medications that are beneficial for the core symptoms of autism, although substances like oxytocin may show promise in the future.
Symptomatic Treatment

• This means that most treatment of children with an autistic spectrum disorder are treated symptomatically.

• Children with an autistic spectrum disorder often have paradoxical responses to medications
Conclusion
Teaching the medicated child

Therapeutic effects and side effects vary over time. Many children are on medication in the modern classroom and many take multiple medications at once. In addition to all of the other challenges associated with teaching today, understanding of the effect of medications on learning can be complicated.