A Critical Curriculum on Psychotropic Medications

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Module 2
Increasing Use of Psychotropics
Public Health Concerns

Part A
Medicating Youth

Surveys and insurance databases show increasing use

5-8 million children in the U.S. (8-11% of all children) receive prescriptions for psychotropic medications

(Medco, 2006; St. Luke’s Health Initiatives, 2006)
Prescriptions of psychotropics to youths tripled in the 1990s and are still rising in this decade.

In some drug classes, rates in children rival adult rates.


Drug treatment without any other form of therapy is becoming the norm.


A worldwide phenomenon...

...but the proportion of children prescribed psychiatric drugs remains 2 to 20 times higher in the U.S., Canada, and Australia than in other developed nations.

(Wong et al. 2004)

In the U.S., “cultural” differences remain.

White children are twice as likely as Black and Latino children to receive prescriptions.
- Difference appears unrelated to socio-demographic, access, or clinical factors, and may relate to parental attitudes.

(Cooper et al. 2006; Dos Reis et al. 2005; Leslie et al. 2003)

“Off-label” use common.

The practice of administering medications for indications or age groups not approved by the FDA, as indicated on the drug’s “label”

(Vitiello, 2001; Zito et al. 2003)
75% of all medication use in children is off-label

(Vitiello, 2001; Zito et al. 2003)

Concerns about off-label use

“Bearing in mind that some off-label use is perfectly justifiable, it is fair to say that much of it is not justifiable. If there is not evidence presented to the FDA about a given indication, it is certainly a user-beware situation.”

-Jerry Avorn, M.D., Professor of Pharmacology, Harvard Medical School, and author, Powerful Medicines (2005)

Polypharmacy common

40% or more of all psychiatric drug treatments today involve polypharmacy

(Bhatara et al. 2004; Olfson et al. 2002; Safer et al. 2003)

Polypharmacy:
concomitant or multiple psychotropic medication use

Concomitant = ≥ 2 drugs taken on the same day
Multiple = ≥ 2 drugs taken during a given period

Concerns about polypharmacy

Basic empirical support of efficacy in children is lacking for most individual medication classes

No studies have established the safety and efficacy of combination treatments in children

(Bhatara et al. 2004; Jensen et al. 1999; Martin et al. 2002; Vitiello, 2001)
Increases behavioral toxicity

Behavioral toxicity = drug-induced adverse effects and behavioral changes, including apathy, agitation, aggression, mania, suicidal ideation and psychosis

(Safer, Zito & dosReis, 2003)

The “prescribing cascade”

Adverse effects are often confused with symptoms of disorders, leading to comorbid diagnoses, and even more complex drug regimens

(Safer, Zito & dosReis, 2003)

Examples of behavioral toxicity

<table>
<thead>
<tr>
<th>Study</th>
<th>Medications</th>
<th>Diagnosis</th>
<th>Age</th>
<th>Gender</th>
<th>Alert/Eq Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safer et al. (2003)</td>
<td>Risperidone, olanzapine, and antihypertensives</td>
<td>ADHD</td>
<td>9 Male</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Noda et al. (2003)</td>
<td>Paroxetine, citalopram, and antihypertensives</td>
<td>Adhd</td>
<td>10 Female</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Dothien et al. (2001)</td>
<td>Venlafaxine, and antihypertensives</td>
<td>ADHD</td>
<td>12 Male</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Pearle et al. (2001)</td>
<td>Bupropion, fluoxetine, and antihypertensives</td>
<td>ADHD</td>
<td>7 Male</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Tatarina et al. (2001)</td>
<td>Dehydroepiandrosterone, and antihypertensives</td>
<td>ADHD</td>
<td>15 Male</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

(Safer, Zito & dosReis, 2003)

Medicating Preschoolers

Use of most classes of psychotropics among 2-4 year-olds continues to increase

- Almost half of those receiving prescriptions received two or more medications

(Coyle, 2000; Rappleye, 2006; Zito et al. 2000)

Newer drugs top the list

Fastest increases have been in newer drugs without established efficacy or safety profiles

(Pathak et al. 2004; Rappleye, 2006; Zito et al. 2000)
2006: more than 1,100 Florida Medicaid children under age 6 received atypical antipsychotics

(St. Petersburg Times, 2007)

Concerns
Treatment of preschoolers with psychiatric drugs has barely been studied

(Rappley, 2006; Vitiello, 2001; Waller et al. 2005; Zito et al. 2000)

Insufficient evidence to...

- Provide guidelines for treatment
- Establish efficacy of treatment
- Guarantee safe use
- Evaluate short- and long-term consequences on development

(Rappley, 2006; Vitiello, 2001; Waller, Lewellen & Bresson, 2005; Zito et al. 2000)

Youths in Foster Care
More likely to be medicated

(May 30, 2007)

CBS Evening News
Are Drugs Being Misused On Foster Kids?

States wrestle with medicating foster kids
Critics worry psychiatric drugs flow too freely to forgotten children

For foster kids, oversight of prescriptions is scarce

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**National foster care**
Children in child welfare settings are 2 and 3 times more likely to be medicated than children in the general community

(Breland-Noble et al., 2004; Raghavan et al., 2005)

**Group homes**
After controlling for demographic and clinical factors, youths in group homes still twice as likely to be medicated than youths in therapeutic foster care

(Breland-Noble et al., 2004; Raghavan et al., 2005)

**Concerns in Florida**
Reports in 2001 and 2003 highlighted problems with:
- Medication without signed consent
- Medication without medical evaluations and proper follow-up monitoring
- High rates of polypharmacy

(Green, Hawkins & Hawkins, 2005; Florida Statewide Advocacy Council, 2003)

**Florida concerns led to law**
Senate Bill 1090 introduced in 2005 to restrict the state’s ability to medicate foster children without the proper consent of their parents or a judge and required improved tracking of these children

**“No List of Kids on Mood Drugs”**
Child welfare officials acknowledged lacking an accurate list of children in state care receiving psychiatric drugs
- Advocates called use of these drugs in children “chemical restraints” used to control behavior

(Pyramid Herald, September, 2006)

**Part B**
**Public Health Concerns**
Numbers of American children on psychotropics: 2006

**Stimulants**: 3.6 million  
**Antidepressants**: 2 million  
**Anticonvulsants**: 900,000  
**Antipsychotics**: 540,000

(Statistical data from Medco Health Solutions, 2006)

2006 FDA warning on cardiovascular effects also alerts doctors to stimulant-induced psychosis and hallucinations

The New York Times

2004: FDA issued a “Public Health Advisory” about *all antidepressants*, warning of drug-induced:
- Anxiety and panic attacks
- Agitation and insomnia
- Irritability and hostility
- Impulsivity and severe restlessness
- Mania and hypomania

FDA “black box” warns:

“Antidepressants increase the risk of suicidal thinking and behavior (suicidality) in short-term studies in children and adolescents with Major Depressive Disorder and other psychiatric disorders”

2005: FDA extends “black box” warnings to children and adolescents

2007: FDA extends “black box” warnings to young adults 18-24

FDA urges new warnings on antidepressants
Antipsychotics

Skyrocketing numbers despite safety concerns

Antipsychotics = Fastest rise

Number of non-institutionalized 6-18 year-olds on antipsychotics:

- 1993: 50,000
- 2002: 532,000

(Olfson et al. 2006)

Nationwide, antipsychotics typically prescribed to children for non-psychotic conditions

Most frequent diagnoses:
- disruptive behavior disorders, including ADHD (38%), and mood disorders (32%)
In Florida too...

2006: Only 8% of Florida Medicaid children receiving antipsychotics had a diagnosis of psychosis - Half were diagnosed with attention or conduct disorders

(St. Petersburg Times, 2007)

Antipsychotics = polypharmacy

77% to 86% of youths taking antipsychotics do so with other drugs

(Medco, 2006; Olfson et al. 2006)

Safety and efficacy unknown

“We don’t know the first thing about safety and efficacy of these drugs even by themselves in these young ages, let alone when they are mixed together.”

Dr. Steven Hyman, former NIMH director, Harvard University provost (2006)

Adverse effects of “atypicals”

<table>
<thead>
<tr>
<th>Atypicals</th>
<th>Clozapine</th>
<th>Risperidone</th>
<th>Quetiapine</th>
<th>Ziprasidone</th>
<th>Olezapine</th>
<th>Quetiapine</th>
<th>Ziprasidone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major symptoms reported</td>
<td>Severe</td>
<td>Mild</td>
<td>Severe</td>
<td>Moderate</td>
<td>Minimal</td>
<td>Severe</td>
<td>Moderate</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Mild</td>
<td>Minimal</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Hypertension</td>
<td>N/A</td>
<td>Severe</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Erythromelalgia</td>
<td>N/A</td>
<td>Minimal</td>
<td>Minimal</td>
<td>Minimal</td>
<td>Minimal</td>
<td>Minimal</td>
<td>Minimal</td>
</tr>
</tbody>
</table>

(Correll, 2006; USA Today, 2006)

medco

“Doctors need to be judicious when prescribing antipsychotic drugs to children. The use of these drugs can have the pediatric patient trading a behavioral condition for a lifelong metabolic condition that can lead to significant health complications”

—Robert Epstein, M.D., chief medical officer, Medco

Part C Expenditures Soar
2004: 17% of total drug spending for children was for psychotropics
- greater than cost of antibiotics and asthma drugs

State insurance increases likelihood of medication
Medicaid-enrolled children are more likely to:
- Receive psychotropics
- Be treated with multiple medications
- Receive medications as sole treatment

(Goodwin et al. 2001; Martin et al. 2002, 2003)

Use of newer antipsychotics grows faster
1996-2001: increased most dramatically in these Medicaid populations:
- Preschool children (61%)
- Ages 6-12 (93%)
- Ages 13-18 (116%)

(Cooper et al. 2004; Olfson et al. 2006; Patel et al. 2005)

Medicaid programs struggle to contain costs
1997 - 2004: Tripling of Medicaid spending on psychotropics attributed to the expanding use of expensive atypical antipsychotics

(Medicaid pays more for psychotropic drugs than other Federal buyers...)

(Duggan, 2005; Stagnitti, 2007; OIG, 2003)
Antipsychotics top Medicaid spending on psychiatric drugs

10 state Medicaid programs paid $562 million on 25 psychotropic drugs
- 67% of this total spent on nine antipsychotics

(Duggan, 2005; OIG, 2003; Stagnitti, 2007)

Average prescription price for top 2 antipsychotics, 1993 vs. 2001

1993: Haldol, Mellaril = $29
2001: Zyprexa, Risperdal = $286

(Duggan, 2005)

Florida Medicaid (fee-for-service) spending on atypical antipsychotic drugs, 2002-2007

$1.1 billion

(Farley, R., St. Petersburg Times, April 12, 2008)

Part D
Conclusions and Recommendations

Usage is increasing

Usage of all psychiatric drug classes has skyrocketed during past decade in all age groups, all ethnic/racial groups, all settings

Ongoing debate

Debate persists on whether disorders are under- or over-diagnosed, and under- or over-treated, with heated arguments from supporters and critics in professional and public discourse
Supporters argue...

- Up to 1/5 of youth have a “DSM-diagnosable disorder”
- Popularly-accepted causes of disorders are neurobiological
- Medications remove “blame”
- Stimulants greatly impact ADHD-like behavior

Critics reply...

- Medication use outpaces research evidence
- Growing use leads to increase in pediatric adverse effects
- Medicating the developing brain may lead to long-term negative changes in functioning
- No pathophysiological variable is associated with any DSM disorder

Fastest rise: Antipsychotics

Antipsychotics with serious adverse effects growing faster than any other drug class
- More frequently used in polypharmacy and for non-psychotic disorders, with no research evidence

Racial issues

*Black children*: fastest-growing group being prescribed antipsychotics
- Increase related to enormous rise in the diagnosis of bipolar disorder in this population

Soaring State Medicaid spending

Largest spending increases on antipsychotics
- Until now, states appear unable to contain such fast-rising drug costs

Young children

Children are particularly vulnerable to harm by psychiatric drugs because their brains are still developing
- Research is needed to track subtle changes in children’s developing personality resulting from drug’s impact on brain
Children in foster care

Little empirical evidence exists to support the use of drug interventions in traumatized children
- Clinicians need to consider risk/benefit analysis of drugs vs. evidence of effective psychosocial interventions

Experts recommend antipsychotics should not be considered first-line treatment for childhood trauma because of their serious adverse effects

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Module 2
The End

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