Pediatric Bipolar Disorder
1. Review the current DSM-5 definition and criteria for bipolar disorder
2. Highlight major historical developments in the scientific understanding of bipolar disorder
3. Illustrate the evolution of bipolar diagnosis on the DSM
4. Review the literature on pediatric bipolar disorder
5. Present a new theoretical model for pediatric bipolar disorder
• Current DSM-5 definition and criteria for bipolar disorder
What is Bipolar Disorder?

- “Also known as manic-depressive illness, is a brain disorder that causes unusual shifts in mood, energy, activity levels, and the ability to carry out day-to-day tasks.” NIH
DSM-5 Classification of BP

- Bipolar I – (Depression & Mania)
- Bipolar II – (Depression and Hypomania)
- Cyclothymic Disorder
- Substance/Medication-Induced Bipolar and Related Disorders
- Bipolar and Related Disorder Due to Another Medical Condition
- Other Specified Bipolar and Related Disorder
- Unspecified Bipolar and Related Disorder
Bipolar Disorder in the DSM-5

- DSM-5 highlights that children and adolescents who experience bipolar-like symptoms may not meet criteria for BP-I, BP-2, and cyclothymic disorders. However, they may meet criteria for Other Specified Bipolar and Related Disorder.
Bipolar I — DSM-5 Criteria

- Manic Episode – may have been preceded by and many be followed by hypomanic or MD episodes.

- A. A distinct period of abnormally and persistently elevated, expansive or irritable mood and persistently increased goal-directed activity or energy, lasting at least 1 week and present most day, nearly every day.

- B. During the period of mood disturbance and increased energy or activity (three or more) of the following symptoms (4 if the mood is only irritable) are present...
Bipolar I – Manic Episode

- Inflated self-esteem or grandiosity
- Decreased need for sleep
- More talkative than usual or pressure to keep talking
- Flight of ideas or subjective experience that thoughts are racing.
- Distractibility
- Increase in goal-directed activity or psychomotor agitation
- Excessive involvement in activities that have a high potential for painful consequences

- C. The mood disturbance is sufficient severe to cause marked impairment in social or occupational functioning or requires hospitalization...or there are psychotic features.

- D. The episode is attributable to the physiological effects of a substance or another medical condition.
Hypomanic Episode

A. A distinct period of abnormality and persistently elevated, expansive or irritable mood and persistently increased activity energy or energy, lasting at least 4 consecutive days and present most day, nearly every day.

B. During the period of mood disturbance and increased energy or activity (three or more) of the following symptoms (4 if the mood is only irritable) are present...

- Same list of symptoms as Mania

C. The episode is associated with an unequivocal change in functioning that is uncharacteristic of the individual when not symptomatic.
Cont...Hypomania

- D. The disturbance in mood and the change in functioning are observable by others.

- E. Episode is not severe enough to cause marked impairment in social or occupational functioning or necessitate hospitalization...

- F. Episode is not attributable to the use of a substance...
Features a child who has been playing since 1:30am - 10:30am. Video taken around 10:30am.

http://www.youtube.com/watch?v=Y4GYwymtbUU
Manic Depressive Episode

- A. Five (or more) of the following symptoms have been present the same 2-week period and represent a change in previous functioning; at least one of the symptoms is depressed mood or loss of interest or pleasure.
  - Depressed mood most of the day
  - Markedly lost of interest or pleasure in all, or almost all
  - Significant weight lost
  - Insomnia or hypersomnia
  - Psychomotor agitation or retardation nearly everyday
  - Fatigue or loss of energy
  - Feelings of worthlessness...guilt
  - Diminished ability to think or concentrate...
  - Recurrent thoughts of death, suicidal ideation...

- B. Symptoms cause significant distress or impairment.

- C. The episode is not attributable to a substance or another medical condition.
Bipolar II Disorder

- Criteria have been met for at least one hypomanic episode and at least one MD episode.

- There has never been a manic episode.

- The occurrence of hypomanic and MD is not better explained by schizoaffective disorder.

- The symptoms of depression or the alternation between periods (MD and hypomania) causes clinically significant distress or impairment.
Diagnostic Coding

- Specifiers for BP-I and BP-II*:
  - Current or Most Recent Episode*
  - Severity: Mild, Moderate, Severe*
  - With psychotic features
  - In partial remission, full remission*
  - With anxious distress*
  - With mixed features*
  - With rapid cycling*
  - With melancholic features
  - With atypical features
  - With mood-congruent psychotic features*
  - With mood-incongruent psychotic features*
  - With catatonia*
  - With peripartum onset*
  - With seasonal pattern*
Other Specified Bipolar and Related Disorder

- This Dx is used when symptoms of Bipolar Disorder Spectrum are present, but do not meet criteria for any one in particular.

- Clinicians can specify the reasons why symptoms do not meet criteria for other BPs, by using the other specified designation:
  - Short-duration hypomanic episodes (2-3 days) and MD episodes
  - Hypomanic episodes with insufficient Sxs and MD episodes
  - Hypomanic episode without prior major depressive episode
  - Short-duration cyclothymia (less than 24 months)
DSM-5 Model

**Biological**
- Genetic Predisposition

**Environment**
- Separated, divorced, etc.
- High-income countries

**Culture**
- African American and Whites
- Afro-Caribbeans

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**BP-I**
- Suicide Risk

**BP-II**
- Suicide Risk

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**Gender Differences**
- Females: \( \uparrow \) risk - rapid cycling, mixed episodes, depressive symptoms, eating disorders, alcohol abuse

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**Comorbidity**
- Approximately 75% have anxiety disorders (GAD, Panic disorder, PTSD, social phobia)
- \( \uparrow \) 50% ADHD, ODD, CD, SA

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**Gender Differences**
- Females: \( \uparrow \) hypomania with mixed depressive symptoms, rapid cycling, postpartum psychosis

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**Comorbidity**
- 60% have at least 3 or more co-occurring mental conditions
- 75% have an anxiety disorder
- In children, \( \uparrow \) rate of occurring anxiety disorder, and anxiety disorder precedes BP.
What is the prognosis of child diagnosed with bipolar disorder?

http://www.youtube.com/watch?v=WYxO8ljpF9k
• Literature Review of pediatric bipolar disorder
BP Runs in Families...

- One of the most hereditable psychiatric conditions as evidenced by twins and other studies.

- Higher concordances for BP among MZ twins, compared with DZ twins; estimated heritability >80% (Craddock and Jones, 1999).

- If one parent has BP, the risk of a child to have BP is between 10-25%; higher risk if both parents have BP (Goldstein et al., 2010; Goldwin & Jamison, 2007).

- Risk increases during young adulthood (Birmaher et al., 2009).

- First-degree relatives of youth with BP are at higher risk of developing BP...compared with families of health children or children with MDD or ADHD (Geller et al., 2006)
Genetics

The study with the largest sample of pedigrees with BP found:

- Two chromosomal regions that meet stringent criteria for genomewide significance ($P < .05$) on chromosomes 17q and 6q, and
- Three regions with suggestive evidence of linkage ($P < .10$) on chromosomes 2p, 3q, and 8q.

- Sample: 1,152 individuals and 250 families; 10 sites.

Dick et al., 2003
Perinatal Risk Factors

- Prenatal exposure to drugs or birth complications, increase the risk of having a child with BP diagnosis more than six-fold (Pavuluri et al., 2006).
Pediatric BD Onset

- > 50% of adults with bipolar report onset of symptoms in childhood (Perlis et al., 2009).

- Age 15 to 19 years old (Goodwin & Jamison, 2007).

- Average age of onset in US is reported as 19.4 years versus 25.2 years in European samples (Post et al., 2008).

- However, BP has a lifelong onset; condition could flourish in children and adults as old as over 60 years of age.
Prevalence

- 1996 – BP was the least frequent diagnosis (in-patient children), BUT in 2004 – was the most frequent diagnosis (Blader & Carlson, 2007).

- Based on a recent meta-analysis the rate of BP spectrum disorders in youth is 1.8%, and for BP-I 1.2%; no significant rate difference among UK and US (Van Meter, Moreira, Youngstrom, 2011).
  - 1-3% prevalence rate (Birmaher, 2013)

- This is consistent with other studies (Stringaris et al., 2010; Kozloff et al., 2010)

- Bipolar I and Bipolar NOS are more common in children than Bipolar II (Birmaher et al., 2006)
Depression or Mania…
Which Emerges First?

- Depression seems to flourish first in youth, and the rate of conversion to BP is 32%–50% (Ghaemi, 2008; Lewinsohn et al., 2000).

- This is higher than the conversion rate for adults (12.6% to 20%) (Akiskal et al., 1995; Ghaemi, 2008).

- A prospective study followed 1,037 subjects from childhood through age 26 (Kim-Cohen et al., 2003).
  - Clinical interviews at age 11, 13, 15, 16, 18, 21, and 26.
  - Diagnoses between ages 11 and 15 for those becoming manic included: conduct disorder (38%), anxiety (35%), and depression (20%).
Comorbidity

Bipolar disorder is often accompanied by other psychiatric disorders (20%-80%).
- Disruptive Behavior Disorders
- ADHD
- Anxiety Disorders
- Substance Abuse Disorders

Children vs. Adolescents

C. ADHD and Oppositional Defiant Disorder > common
A. Conduct and Substance Abuse Disorders > common

Birmaher, 2013)
Common comorbidity in children and youth with BP:

- N=446, 7-17 y/o; BP 1=260, BP 2=32, BP NOS=154
- At least 1 lifetime AD (44%), most commonly separation anxiety (24%), and GAD (16%)
- 2 or more AD, nearly 20%
- AD predated the onset of BP; those with BP 2 were more likely to have comorbid AD, longer duration of sxs, more severe ratings of depression, and family hx of depression.

Sala, R. et al. (2010)
Comorbidity: Conduct Disorder & Psychosis

CD
- High rates of conduct disorder reported among youth with BP (Weller et al., 2004).
  - 42%-69% of clinic-referred youth with BP also had CD.

Psychosis
- Co-occurrence rate is between 16% to 60% (Pavuluri et al., 2004)
  - Delusional grandiosity, persecutory and religious delusions, hallucinations, and thought disorder.
Comorbidity - ADHD

- Most common comorbid condition among youths with BP; studies report 60%-98% rates (Evans et al., 2005; Geller et al., 1998).

- **Uncommon in children with ADHD:** (Hassan, A. et al., 2011)
  - UK sample: n=200, 170 M, 30 F; 6-18 y/o, mean 11.15, SD 2.95
  - Only a 9-year-old boy, met diagnostic criteria for both ICD–10 hypomania and DSM–IV bipolar disorder not otherwise specified.
Main Features of BP in Youth

- Tend to show mixed episodes rather than distinct episodes of mania and depression. Tend to describe their mood episodes as feeling “tired but wired” (Biederman et al., 2004).
  - Sample: 298 children with BP, none with clear-cut mania or depressive episodes.

- Tend to cycle fairly frequently from one mood state to the next. Family members describe it as “mood swings” (Biederman et al., 2004; Geller et al., 2000).

- Onset – typically develops slowly over time.

- Often show chronic and continuous mood problems.
Cost to Society and Individuals with BP

- High rates of suicide, substance abuse, and neurocognitive deficits associated with poor school functioning (Pavuluri et al 2005; Tolan and Dodge 2005).

- Risk of suicide attempt is increased by severe features of BP illness and comorbidity (Goldstein et al., 2005).

- Nearly one-half of individuals with bipolar disorder attempt suicide (Jamison, 1999).

- Worldwide, it currently accounts for 14 million years of healthy life lost owing to mortality and disability, nearly as much as schizophrenia (WHO, World Health Report 2002).
Does BP exist in younger children?

- Duffy (2007) – argues lack of supporting evidence for the hypothesis that BD, as currently defined, exists in very young children.
  - In some cases, there may be nonspecific prodromal symptoms, including anxiety and sleep and cognitive disturbances antecedent to the manifestation of BD.

- BD often starts in adolescence with an episode of major depression.

Duffy, A. (2007)
• Theoretical model for pediatric bipolar disorder
Core Patterns of BP Disorder

Malhi, G. S. et al 2009
Stratified Model of BP Disorder

Malhi, G. S. et al 2012
Pediatric Bipolar Disorder Model

- Biological
  - Genetic Predisposition
  - Prenatal Risk Factors
  - Neurophysiological Factors
  - Gender Differences

- Environmental Factors & SES
  - Cultural Factors
  - Familial Factors

- Major Depression Episode/Sex
- Anxiety Sex
- Other BPD-type Sex

BP-I
- Mania & BD
- Episodes: Current, Most Current Episode
- Severity: Mild, Moderate, Severe

BP-II
- Hypomania
- Episodes: In Partial Remission, Full Remission

Comorbid Conditions
- ADHD, Anxiety Disorders (GAD, Panic disorder, PTSD), social phobia, ODD, CD, SA

Specifiers
- With psychotic features; With anxious distress; With mixed features; With rapid cycling; With melancholic features; With atypical features; With mood-congruent psychotic features; With catatonia; With peripartum onset; With seasonal pattern

Effect of Illness
- Family Conflict
- Occupational conflicts
- Poor school performance
- Low income

Suicide Risk
High mortality rate