An Educator's Guide to Pediatric Bipolar Disorder

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What is Bipolar Disorder?

DIAGNOSIS

Bipolar disorder is a hereditary illness believed to occur in at least 1 - 2 % of the adolescent and adult population, with bipolar spectrum disorders believed to occur in 5 - 7 %. The number of children diagnosed with bipolar disorder is rising as doctors begin to recognize signs of the disorder in children. Children with bipolar disorder are at risk for school failure, substance abuse and suicide. The lifetime mortality rate (from suicide) is higher than some forms of cancer.

Proper treatment is often delayed because the disorder is frequently misdiagnosed. It is suspected that a significant number of children diagnosed in the United States with severe behavior problems or attention-deficit disorder with hyperactivity (ADHD) in particular those who do not respond to treatment have bipolar disorder instead of, or along with, ADHD. In 2001, The National Institute of Mental Health (NIMH) convened a consensus conference of experts who agreed that bipolar disorder could, in fact, be diagnosed in children before puberty using the Diagnostic and Statistical Manual for Mental Disorders, Fourth Edition (DSM-IV.)

At this time there is no biological test that identifies psychiatric disorders, and distinguishing bipolar disorder from other psychiatric conditions can be difficult. The disorder is often suspected by a knowledgeable parent, psychiatrist, pediatrician, psychologist, therapist, or social worker based on information and observations from the patient, family members, and others who know the child well. Only a clinician with good clinical experience in diagnosing children with psychiatric disorders or psychiatrist can formally diagnose bipolar disorder. For a parent, the diagnosis of bipolar disorder in a child can be traumatic, but also provides relief and an explanation for the child's behavior as well as a road map for effective treatment.

Obtaining the correct diagnosis is necessary before proper treatment can begin. For children, receiving the proper diagnosis and treatment poses a great challenge. A comprehensive psychiatric diagnosis performed by a mental health clinician consists of a multi-axis evaluation as defined by the DSM IV. Each of the five axes refers to a specific aspect of psychopathology and functioning and assists clinicians in planning treatment and predicting outcomes. Taken together, the information on all the axes indicates the multifaceted nature of human emotion and behavior. The parents of a child returning to school from a psychiatric hospitalization or long-term care facility may choose to share this diagnostic information with selected members of the child's study team.

A classroom teacher who understands the diagnostic axes can better adapt to changes in the child's level of functioning. Classroom accommodations and modifications should be flexible so they can be adjusted to reflect current level of functioning. Teachers who make assignments within the child's present capabilities can reduce stresses that can trigger an episode of instability. Similarly, raising expectations in response to a child's increasing wellness can ensure that the child does not develop "learned helplessness."

The diagnostic axes include:

- **Axis I - Clinical Disorders**: This includes all disorders that are the focus of clinical attention, except for Mental Retardation and Personality Disorders.

- **Axis II - Personality Disorders and Mental Retardation**: A personality disorder is a persistent pattern of behaviors that deviate from societal expectations, leading to distress or impairment for the individual. Examples include borderline personality disorder and dependent disorder. Mental Retardation, usually caused by problems in the development of the brain of an unborn child, results in significantly impaired intellectual functioning that is accompanied by limitations in adaptive functioning. Mental Retardation
affects all aspects of the individual's life.

- Axis III - General Medical Conditions: Aspects of the patient's overall physical health that are relevant to treatment or management of the disorder. For examples, severe allergies to dairy products can sometimes cause rages. Low blood sugar or diabetes can cause irritability. A low thyroid level can cause an individual to develop symptoms of depression. It is important for educators working with a student to be aware of the child's general health concerns.

- Axis IV - Psychosocial and Environmental Problems: Difficulties in the home or school environment such as a death or serious illness in the family, loss of a parent's employment, poor school performance, being bullied, or a divorce in the family that may be affecting the child's ability to function.

- Axis V - Global Assessment of Functioning: A clinician's judgment of the individual's overall level of functioning, expressed as a number from 1 to 100. This assessment can help teachers determine when a child can handle being challenged and when an expectation for the child's behavior and performance needs to be modified. The Children's Global Assessment Scale (CGAS) applies the measurement specifically to the psychological, social and school functioning for children aged 6-17.

**Behavioral Symptoms**

Until recently, doctors rarely diagnosed bipolar disorder in childhood because they were unaware that its symptoms in children can differ from the more widely recognized adult form. Symptoms may be present since early childhood, or may suddenly emerge in adolescence or adulthood. This are beyond the normal mood fluctuations, temper outbursts, fantasies, etc. associated with normal child development.

Bipolar disorder influences mood, energy, thinking and behavior. Unlike adults, who experience episodes of distinct "highs" and "lows," many children with the disorder suffer from an ongoing, continuous mood disturbance that is a mix of mania and depression. This produces chronic irritability and few periods of wellness or clearly discernible episodes. Moreover, since many children with bipolar disorder have other psychiatric disorders such as ADHD it is difficult for parents and clinicians to clearly see distinct episodes of mania or depression. It is important for clinicians to look at the cardinal symptoms of the disorder such as the elevated/expansive mood, grandiosity, decreased need for sleep, racing thoughts and increases in goal directed activities as identifiers of the episodicity of mania to distinguish between the two disorders.

Although not all children with severe tantrums have bipolar disorder, many children with bipolar disorder often had uncontrollable, severe tantrums or rages out of proportion to any event. Some children with this disorder exhaust their self-control during the school day and therefore exhibit more severe symptoms in the relative safety and privacy of the home.

**Symptoms of mania include:**

- Elevated, expansive or irritable mood
- Decreased need for sleep
- Racing thoughts
- Pressure to keep talking
- Inflated self-esteem or grandiosity
- Excessive involvement in pleasurable but risky activities
- Increased physical and mental activity
- Hallucinations and/or delusions (persistent false ideas not shared by family or friends)
- Increase in goal directed activity

**Symptoms of major depression include:**

- Pervasive sadness or irritability
- Crying spells or tearfulness
- Sleeping too much or inability to sleep
- Agitation or too quiet
- Withdrawal from activities formerly enjoyed
- Drop in grades and inability to concentrate
- Thoughts of death and suicide
- Low energy
- Significant change in appetite (low or high) with the accompanying change in weight
- Poor concentration, diminished ability to think, indecisiveness
- Feelings of worthlessness or exaggerated feelings of guilt
- Sometimes symptoms of psychosis (hallucinations or delusions)

For many children, a loss or other traumatic event may trigger a first episode of depression or mania. Later episodes may occur independently of any obvious stresses, or may worsen with stress. Puberty is a time of higher risk for the onset or worsening of symptoms. In girls, the onset of menses may trigger the illness, and symptoms often vary in severity with the monthly cycle. Once the illness emerges, episodes tend to recur especially without treatment increasing in severity often called the kindling effect.

**Bipolar Disorder, the Brain and Learning**

Many of the frustrating or objectionable behaviors displayed by students with bipolar disorder are actually symptoms of neurological instability in the brain rather than willful misconduct. Understanding the biological nature of bipolar disorder is helpful in appreciating the degree to which behavior is affected by the physiology of the brain.

Using increasingly sophisticated neuroimaging technology, scientists have documented physical differences in the brain that are associated with bipolar disorder. While it was thought the disorder resulted from a "chemical imbalance," researchers can now also identify specific areas of the brain that are affected by the illness.

**Parts of the brain that affect learning**

**Dorsolateral Prefrontal cortex** - located in the frontal lobe of the brain, it is one of three sections that specialize in conscious voluntary behavior. Executive functions are regulated here, including the ability to plan, solve complex problems, and express and control emotions. It is in this portion of the brain that the skills needed to be successful in school are located.

**Orbital frontal cortex**- located in the prefrontal cortex, it regulates social behaviors as well as ones ability to read emotional cues from others. It assists in decision making as well as complex problem solving. In a school situation a child may have difficulty following the social norms of the classroom, playground or cafeteria as well having difficulty reading peer and teachers facial expressions to help regulate their response or reactions throughout the day.

**Amygdala** - an almond-shaped mass of gray matter that controls automatic, emotional and sexual behavior. It lies in the front part of the temporal lobe of the cerebrum, in front of the hippocampus. The ability for a child to demonstrate self control and self monitoring within the classroom would be compromised during periods of instability. The amygdala is essential in coordinating information between the various lobes of the brain as well as responding to primitive emotions sometimes referred to as survival impulses. Functional MRI's are showing an increase activation in this area for persons with bipolar disorder as well as some indication of size differences.
**Hippocampus** - a neural structure, which is involved in motivation and emotion. As the "filing cabinet" of the brain, it performs the central role in the formation of memories. It consists of gray matter and is shaped like a seahorse. The hippocampus is essential in converting working memory into long term memory. During periods of instability information presented may not be retained or learned. This is one of the primary causes of the "learning gaps" that are frequently seen in children with bipolar disorder. In the classroom, this would be seen as an inability to begin or finish assignments, recall information, and complete homework.

**Thalamus** - a component of the forebrain that sends sensory information to the cerebral cortex, where complex thought processes, emotions, and problem-solving occur. It impacts how the child is able to respond to sensory stimuli in the classroom as well as organize multi-step and complex material. Functional MRIs indicate a smaller size in person's with bipolar disorder.

**Basal nuclei (also known as basal ganglia)** - a group of cell bodies located in the white matter of the cerebral hemisphere, functioning primarily to organize motor behaviors. A smaller basal nuclei may cause clumsiness, poor coordination skills as well as difficulty completing physical education activities.

**Caudate nucleus** - located in the basal nuclei, it is the primary site of initiation of movement. During periods of instability a child may be unable to awaken for school, or appears to be unable to begin any assignments or activities.

**Gray matter** - a generic term given to the tissue in the central nervous system including cell bodies, dendrites, and axons. Gray matter forms most of the cortex and nuclei of the brain, the columns of the spinal cord, and the bodies of ganglia.

**Ventral Brain System** - located at the bottom of the brain, it is responsible for sending out signals to the different cells of the body. It is believed in a brain with bipolar disorder there are 28% more cells than a healthy brain. The ventral brain system coordinates all unconscious movements and regulates our vital body functions such as breathing, heart rate, etc.

**Brain Chemistry**
In order for chemical messages to be transmitted properly from one neuron (nerve cell) to another, neurotransmitters--molecules carrying the chemical message--must be generated, sent from, and delivered to the right destination cells. A complex balance of brain chemicals allows the efficient passage of these messages within the system to produce organized thought, movement, emotion, and behavior. Scientists have pinpointed four primary brain chemicals that are affected by bipolar disorder, which disturbs the normal flow of information between neurons and thus interfering with normal activity, feelings, and thought.

**Monoamine oxidase** - an enzyme that breaks down the brain chemicals noradrenaline, dopamine and serotonin. The action of this enzyme affects the availability of these other chemicals to perform their respective functions. In general, a shortage of monoamines results in depression; an excess can cause mania.

**Serotonin** - one type of the neurotransmitter molecules that carry signals between neurons to communicate and coordinate diverse body functions. Proper levels of serotonin ensure smooth and accurate communication of the messages between neurons. An imbalance in serotonin interferes with message delivery, results in constant, repeated, exaggerated worry or tension. An irregularity in serotonin is often seen as depression, which has such physical symptoms as fatigue, trembling, muscle tension, headaches, and nausea. In the classroom, you may see a child who is tired, or complains of frequent stomach aches and headaches.

**Dopamine** - a neurotransmitter responsible for movement, emotional response, and the ability to experience pleasure and pain. The largest area of the brain that uses dopamine is the basal ganglia or substantia nigra, which plays a major role in controlling body movements. An imbalance dopamine is found to bring about disturbances in thought, mood, and sense of self and feelings about one's relationship with the external world. Delusions, disorganized thinking, and hallucinations can occur when dopamine is low. A child with fluctuating dopamine levels might behave in a very grandiose, belligerent, combative manner with the teacher, or may be fearful of activities in the classroom for no apparent reason.
Noradrenaline (also called norepinephrine) - a neurotransmitter that controls alertness and the sleep cycle, and regulates drive and motivation. When noradrenaline levels are unbalanced, depressive symptoms can occur, and drive and motivation fall. A student with irregular noradrenaline levels may have difficulty starting and finishing assignments in class and at home, appearing disinterested in work, and seeming to be unwilling to put effort in or even trying to begin work. Some children, particularly during winter months, may even lack the ability to wake up and get dressed to attend school until treatment can reestablish a balance of noradrenaline in the brain.

**Comorbid Conditions in the Classroom**

Children with bipolar disorder usually have additional conditions. The most frequent comorbid, or co-occurring conditions are Attention Deficit/Hyperactivity Disorder (ADHD) and Anxiety disorder occurring in as many as 60% of children identified on the bipolar spectrum. These coexisting disorders can further impair a child's learning, communication and emotional/behavioral functioning. Improvement in one condition sometimes unmasks coinciding problems from another.

**Anxiety disorders**

Definition: A neurological condition characterized by overwhelming and persistent feelings of worry and fear that may interfere significantly with the ability to engage in everyday activities and relationships. According to the U. S. Surgeon General, anxiety disorders are the most common type of neurobehavioral disorder among children and adolescents. One large-scale study found that as many as 13 percent of children between the ages of 9 and 17 experienced an anxiety disorder within the previous year. Some of the diverse conditions that are classified as anxiety disorders include separation anxiety, panic disorder, social phobia, obsessive-compulsive disorder (OCD), post-traumatic stress disorder (PTSD), and generalized anxiety disorder (GAD).

**Attention-deficit/hyperactivity disorder (ADHD)**

Definition: At least 4 to 6 percent of the U.S. population may have ADHD, a pervasive neurobehavioral syndrome usually characterized by distractibility, poor attention span, forgetfulness, and difficulty with concentration and organization. Researchers have classified three subtypes of ADHD: inattentive type, hyperactive type, and combined type.

Recent research shows that ADHD is much more common in girls than previously thought. Because girls are less likely to exhibit hyperactivity and impulsiveness, their symptoms are often harder to recognize than those in boys. Many girls with ADHD struggle with its more subtle symptoms and are never diagnosed, or they may be diagnosed much later in life.

According to advocacy group Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD), about 1 to 3 percent of the school-aged population has the full ADHD syndrome, without symptoms of other disorders. Another 5 to 10 percent of school-aged children have a partial ADHD syndrome or have additional disorders such as anxiety and depression. Approximately 20 to 30 percent of those with ADHD also have a specific learning disability. Many symptoms are common to both ADHD and bipolar disorder; the two conditions can be hard to tell apart.

**Learning Disabilities**

Learning disabilities interfere with the ability to take in, process, store, or produce information, creating a discrepancy between a person's overall cognitive ability when compared with performance in specific domains.

**Communication Disorders**

Communication disorders interfere with the ability to make oneself understood and to take in information provided by others. These disorders can affect speech or language, or both.

**Pervasive developmental disorders (PDD)**

Children with pervasive developmental disorders (PDD) have difficulty understanding and using language, understanding the feelings of others, or, more generally, understanding the world around them.

**Seasonal Affective Disorder (SAD)**

Seasonal Affective Disorder is a type of depression that has a seasonal pattern.

**TREATMENT APPROACHES**
A child with bipolar disorder needs medical treatment, but medication is just one element of an effective treatment plan. It is equally important for the child to be surrounded as much as possible by supportive people in settings that minimize daily stress. An effective treatment plan for bipolar disorder requires three essential elements:

- Medication
- Lifestyle and environmental changes
- School accommodations

Bipolar disorder is a chronic, lifelong condition. However, medications can help alleviate and reduce symptoms so they are less intrusive, smooth out mood fluctuations, reduce anxiety and distractibility, and increase frustration tolerance. Because stress is a trigger that intensifies bipolar symptoms and causes a decline in overall level of functioning, lifestyle and school changes should be made to reduce stress.

**MEDICATION**

Children with bipolar disorder are treated with psychotropic medications many of which have side effects that may include physical discomfort and cognitive impairment, which may (or may not) diminish over time. Sometimes a change in dosage brings on new side effects that may persist or diminish over time. Side effects that may be associated with medication include:

- Nausea
- Increased or decreased appetite
- Excessive thirst
- Frequent urination
- Disinhibition
- Irritability
- Aggression (rare)
- Diarrhea or constipation
- Dry mouth
- Cognitive dulling
- Hyperactivity
- Muscle tremors
- Drowsiness
- Fidgeting or pacing
- Restlessness
- Chills or hot flashes (rare)
- Vision problems
- Weight gain

**LIFESTYLE AND ENVIRONMENTAL CHANGES**

While clinical research shows medication management is essential in treating bipolar disorder, successful treatment requires that the medication is accompanied by lifestyle and environmental changes. These changes have to do with the family’s understanding and accepting the illness as a chronic medical condition, participating in psychosocial therapies, and creating effective family and community support networks.
Counseling services and psychoeducation help the child deal with the effects of the illness, and therapy for other family members can help the family cope and reduce tensions at home. In addition, researchers have demonstrated that keeping a consistent sleep schedule, getting regular exercise, and maintaining a healthy diet can be particularly important for an individual with bipolar disorder.

A child with bipolar disorder needs a supportive and caring, consistent, yet flexible environment providing predictability and emotional stability. Parents should choose recreational and other activities for the child with these criteria in mind. They should also ensure that the child is not burdened with more activities than he or she can comfortably handle. There needs to be sufficient time in the child's schedule to recover from the stresses that a child with bipolar illness endures during ordinary activities.

In school a child with bipolar disorder needs to be provided a consistent predictable schedule with advance notice of schedule changes as well as time to prepare for transitions throughout the day. Working with the parent to adjust homework requirements as needed to ensure that the child is able to get needed sleep, participate in psychoeducational programs and individual therapies as needed.

**SCHOOL ACCOMMODATIONS**

Schools can support the needs of children with bipolar disorder in a variety of ways, including helping with social skills development, ensuring physical comfort in the classroom, modifying the daily schedule as needed, making academic accommodations as needed, and reinforcing positive behavior as appropriate. These supports are helpful during times of stability as well as periods of instability, and they can be adjusted as appropriate to reflect the current level of functioning. All adults at school who interact with the student should be made aware of the child's illness and should understand the importance of maintaining a supportive, low-emotional response and a low-stress environment.

It is not uncommon for children with bipolar disorder to feel overwhelmed by seemingly ordinary events and challenges. By providing designated "safe" adults to whom children can turn, and "safe places" where they can seek refuge in times of emotional crisis, schools can help to defuse these crises.

To strengthen everyday coping skills, schools can provide training in:

- Social skills
- Conflict resolution
- Anger management
- Problem-solving skills
- Self-esteem development
- Students with bipolar disorder may need some modifications in their schedule and flexibility in procedural rules in the classroom. Typical accommodations for children with bipolar disorder allow:
  - Unlimited bathroom use
  - Access to water as needed
  - Shortened schedule
  - Late start as needed
  - Consistent schedule
  - Notice before any transition or change in schedule
  - Permission to move around when needed
  - Naps as needed for primary education students
  - Positive behavioral intervention plan
Because stress triggers instability, it is important to reduce stress by ensuring that all necessary academic supports for identified learning disabilities are put into place. Even in the absence of identified learning disabilities, the school can ease the pressure of academic demands by offering:

- Modified or shortened homework (at parents’ request or discretion)
- Modified or shortened classroom assignments
- Testing in small groups or one on one
- Extended deadlines for assignments
- Regular home/school communication via an assignment notebook

A good student management plan can help students perform well and develop appropriate behavioral habits. The following guidelines will help:

- Expectations (rules) must be simple, clear, and phrased in positive or neutral language. Examples are: keep hands and feet to self; raise hand to speak; walk in the hall.
- Issue the child only one specific direction or command at a time. (Example: ask the student to complete 10 math problems instead of to complete all homework.)
- Tailor identified target behaviors to the child.
- Accommodate the child's fluctuating level of stability with a menu of behavioral and academic expectations.
- Reward the child for positive behavior.
- Expect the best from the child - the student may have behaved poorly in the past. If others respond to improved behavior with lingering bias from prior behavior, the child will not be able to demonstrate new social skills. Allow previous mistakes to stay in the past and focus on the present only.
- Focus on the big picture and ignore the minor issues; it is impossible to change everything at once. (Example: if a child is working on refraining from being verbally and physically abusive, redirecting him or her for chewing on a shirt sleeve or pencil is counterproductive to your goal.)
- Create opportunities for the child to be successful and share their talents and gifts to help foster development of a positive relationship with self and others.

Please check our Education Corner for more about the educational issues of children with bipolar disorder. For additional mental health information and resources for educators go to SchoolMentalHealth.org.

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