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# 21 Behavioral and Psychiatric Disorders in Children with Disabilities

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Upon completion of this chapter, the reader will

- Understand that individuals with developmental disabilities have a relatively high prevalence of psychiatric disorders
- Be able to describe the types and symptoms of psychiatric disorders among people with developmental disabilities
- Be able to discuss interventions in children who have a dual diagnosis of a developmental disability and a psychiatric disorder

Children with developmental disabilities face all of the challenges faced by children with typical development and manifest the range of psychiatric illnesses that typically developing children do, but they may also face psychiatric illnesses specific to their disorder. The presence of a developmental disability, especially intellectual disability, often alters the symptomatic presentation of psychiatric disorders and makes accurate diagnosis more difficult. Recognition of these problems with developmental transitions and psychiatric disorders is crucial for caregivers of these children. When these disorders go unrecognized or untreated, children can fail in educational and social settings, be unmanageable at home, and show aggression and self-injury. These comorbid conditions may ultimately determine children's outcome and placement. If the conditions are identified early, however, treatment can be started and long-term adverse effects minimized. It is a distinct challenge for parents and individuals who work with children with disabilities to be alert to the possible presence of a psychiatric disorder and obtain early diagnosis and treatment. This chapter addresses developmental transitions, as well as identification and treatment of behavioral and psychiatric disorders in children with disabilities.

## **WILLIAM**

William, age 14, has Asperger syndrome, attention-deficit/hyperactivity disorder (ADHD), and obsessive-compulsive disorder (OCD). He was in a special educational setting for high school students with Asperger syndrome and was being treated with two **antipsychotic medications**, a mood stabilizer, a **stimulant**, and the selective **serotonin reuptake inhibitor** (SSRI) fluoxetine (Prozac). He had been stable for a long period with resolution of his previous psychiatric symptoms, so the family asked that his medication regimen be simplified. In consultation with his family, the child psychiatrist began slowly tapering off the mood stabilizers, antipsychotic medications, and the SSRI. Eight months into this process, the school and parents noted that William had become withdrawn and sad over 4 weeks. He was crying at school, not eating lunch or dinner, no longer playing or reading favorite books, not sleeping at night, and saying that he was a bad person who should be dead. The psychiatrist restarted William on a higher dose of Prozac (which had originally been prescribed to treat OCD symptoms). Over the next 2 weeks, William started smiling and eating again. His sleep improved, and he was back to being himself by the end of 4 weeks.

## PREVALENCE AND CAUSES OF PSYCHIATRIC DISORDERS AMONG CHILDREN WITH DEVELOPMENTAL DISABILITIES

In their landmark study of the epidemiology of childhood psychiatric disorders on the Isle of Wight, Rutter, Graham, and Yule (1970) found emotional disturbances in 7%–10% of typically developing children. Yet, 30%–42% of children with intellectual disability demonstrated psychiatric disorders (Rutter et al., 1970). In a Swedish study, Gillberg et al. (1986) found that 57% of children and adolescents with mild intellectual disability and 64% with severe intellectual disability met diagnostic criteria for a psychiatric disorder (Gillberg et al. 1986). Additional studies have confirmed these results, indicating a four- or five-fold increase in the prevalence of psychiatric disorder in children with intellectual disability and the absence of any decline in frequency with age (Borthwick-Duffy, 1994; Bregnan, 1991; Koller et al., 1983).

Children both with and without developmental disabilities are at risk for the same types of psychiatric disorders. However, certain maladaptive behavior disorders—stereotypic movement disorder (i.e., repetitive, self-stimulating, nonfunctional motor behavior, which may include self-injurious behavior [SIB]) and pica (i.e., the persistent ingesting of nonfood items)—are found principally among individuals with severe to profound levels of intellectual disability.

In some cases, the cause of psychiatric disorders in individuals with developmental disabilities is the direct result of a biochemical abnormality. For example, in the inborn error of metabolism Lesch-Nyhan syndrome (see Appendix B), abnormalities in the dopamine neurotransmitter system cause affected individuals to exhibit a compulsive form of SIB (Zimmerman, Jinnah, & Lockhart, 1998). In other cases, conditions that affect the developing brain are risk factors for psychiatric disorder. Among such conditions are prenatal exposure to alcohol sufficient to cause alcohol-related neurodevelopmental disorder (see Chapter 5), congenital infections, Chapter 6, such as rubella (which is associated with autism spectrum disorders [ASDs]), and perinatal or neonatal hypoxic-ischemic encephalopathy (brain disorders due to lack of oxygen or blood flow) (see Chapter 4). The increased risk of psychiatric disturbance in neurobiological disorders may be attributable to factors such as irritability, affective instabil-

ity, distractibility, and communication impairments (Feinstein & Reiss, 1996). Risk may also increase in the presence of conditions such as epilepsy, developmental language disorders, and sensory impairments, which are independently associated with an increased incidence of psychiatric disorders.

The cause of most psychiatric disorders among children with developmental disabilities is likely, however, to be a complex interaction among biological (including genetic), environmental, and psychosocial factors. For example, a young man who has sustained a significant traumatic brain injury (see Chapter 30) with resulting cognitive impairment may become depressed because of a combination of neurotransmitter changes due to brain injury, a familial predisposition to depression, his parents' grief, and his own despair over loss of previous abilities.

## PSYCHIATRIC DISORDERS OF CHILDHOOD AND ADOLESCENCE

The following sections cover a number of psychiatric disorders described in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)* (American Psychiatric Association, 2000). Two important disorders, ASDs and ADHD, are not discussed here because separate chapters are devoted to these conditions (see Chapters 23 and 24).

### Oppositional Defiant and Conduct Disorders

In order for a child to be diagnosed with oppositional defiant disorder (ODD), there must be a pattern of negative, hostile, and defiant behaviors lasting for at least 6 months. Children must have at least four of the following eight symptoms: 1) often loses temper, 2) often argues with adults, 3) often breaks rules or fails to comply with adult requests, 4) deliberately annoys people, 5) blames others for one's mistakes, 6) is touchy or easily annoyed, 7) is angry and resentful, and 8) is spiteful and vindictive. These behaviors must occur outside of a psychotic or mood disorder, and they must cause impaired function at home and/or school. This diagnosis is usually given to preadolescent children.

To be diagnosed with a conduct disorder (CD), an individual must demonstrate a pattern of behavior in which other people's rights are violated, norms are ignored, or rules are broken. This behavior must have occurred for at

least 12 months. The four main problem areas are 1) aggression to people and animals, 2) destruction of property, 3) deceitfulness or theft, and 4) serious violation of rules. Aggression includes bullying and threatening, starting physical fights, using a weapon in fights, being physically cruel to people or animals, stealing while confronting a victim, and forcing someone into sexual activity. Destruction includes deliberate fire setting or destruction of property. Deceitfulness or theft includes breaking into a house or car, lying to obtain goods or services, and stealing or shoplifting. Serious violation of rules includes staying out at night (but not overnight) before age 13, running away from home overnight at least twice, and frequent truancy from school before age 13. Conduct disorders are rarely diagnosed in preadolescent children. If someone meets criteria for conduct disorder, he or she does not receive a concurrent diagnosis of ODD.

Both of these disorders are often associated with ADHD, and the treatment for one may improve the co-morbid condition as well (Kutcher et al., 2004). Treatment of both CD and ODD includes the use of the same behavior management techniques that are useful in ADHD. Similarly, both disorders may benefit from stimulant and other ADHD medication (Connor, Barkley, & Davis, 2000). The difference is that although stimulant medication is the treatment of choice for ADHD, behavioral therapy is the preferred treatment for ODD and CD. Behavioral therapy involves setting consistent limits, behavioral expectations, and consequences for violating the limits. This intervention must be similar at home and school so that the child knows that the rules are in force for all settings. For young children, a positive reinforcement system employing stickers and/or a behavior chart targeting two principal areas, being respectful and following directions, can cover most rules and activities during the day (see Chapter 35). Achieving a certain number of stickers or "yeses" on the behavior chart leads to praise and a small reward, such as participation in an activity with the parent after school. Some special education programs also give children a chance to go to a "prize closet" at the end of a week following five "good days." Prizes might include a fun pencil or eraser. For older children and adolescents, tokens are used to reinforce following rules. These can be traded for desired activities, such as an extra 30 minutes of television or free computer time. In this way, adolescents earn and pay for

their privileges in the same way that adults use wages to buy what they need or want.

### Impulse Control Disorders

These disorders include intermittent explosive disorder and trichotillomania. Intermittent explosive disorder is diagnosed after there are several discrete episodes of failure to resist aggressive impulses, with resultant assaults or destruction of property. The severity of the assault must be out of proportion to the precipitating psychosocial stressor. An example might be a child who is told that he cannot have cake until he has finished his lunch. The child then throws his plate across the room, breaks his chair, and start kicking his little sister over the incident. In the literature, treatment of intermittent explosive disorder in adults includes the use of **beta-blockers** such as propranolol, certain antiepileptic/mood stabilizing drugs (e.g., valproic acid [Depakote]), and novel antipsychotics (e.g., risperidone [Risperdal]) (Jenkins, & Maruta, 1987). Children with mild to moderate intellectual disability are more likely to have this disorder than their typically developing peers.

Trichotillomania involves the recurrent pulling out of hair (anywhere on body) that is noticeable. It is not associated with an underlying skin or physical condition causing hair loss. Consultation with a dermatologist to rule out skin problems such as tinea capitis (ringworm), which can cause hair loss, may be appropriate. There is a sense of tension that makes the child pull out the hair and a sense of relief after this is done. Children who have trichotillomania may eat the hair, which can cause bezoars (hair balls) in the stomach or gastrointestinal track that need to be surgically or endoscopically removed. In children with hair loss, it is important to ask the parent and child if the child is pulling out and eating hair. Treatment of this disorder is similar to that for OCD, with the use of SSRIs (e.g., fluoxetine) and cognitive-behavioral therapy. There are numerous manuals for the use of cognitive behavioral therapy in pediatric psychiatry disorders such as the manuals used for two National Institute of Mental Health (NIMH) studies: 1) the Treatment of Adolescent Depression Study (TADS) for adolescent depression (TADS Team, 2004), and 2) the Pediatric OCD Treatment Study (POTS) (POTS Team, 2004). In treating patients who are young or have more cognitive

impairment, the manuals can be simplified to suit the person's developmental level.

### Anxiety Disorders

Anxiety disorders include the *DSM-IV-TR* classifications Generalized Anxiety Disorder, Panic Disorder, Social Phobia, OCD, and Posttraumatic Stress Disorder (PTSD).

**Generalized Anxiety Disorder** The diagnosis of generalized anxiety disorder, including overanxious disorder of childhood, requires at least 6 months of excessive anxiety and worry about many events or situations such as school, play, sports, friends, and family. It is hard to control the worry, and the child has symptoms that accompany the worry including restlessness or feeling keyed up, being easily fatigued, having problems concentrating, and experiencing irritability, muscle tension, and disturbed sleep. There are problems at home or school because of the anxiety, and it is unrelated to another psychiatric or medical illness. Treatment includes cognitive-behavioral therapy to reduce worry and at times medication such as SSRIs. One paper in the literature reported on the use of sertraline (Zoloft) in the treatment of generalized anxiety disorder in children (Rynn, Siqueland, & Rickels, 2001), and a second paper reported on the use of fluvoxamine (Luvox) for several anxiety disorders in children (Walkup et al., 2001). Both papers showed that these medications were safe and effective in treating this disorder.

**Panic Disorder** Panic attacks do not usually begin until puberty. They consist of recurrent and unexpected episodes combined with worry about having more panic attacks, worry about the consequence of an attack (e.g., that the child might die or go crazy), or a significant change in behavior due to the attacks (e.g., stopping exercising because of a fast heartbeat, rapid breathing, and sweating—feeling like a heart attack). Panic attacks include at least four of the symptoms listed in Table 21.1. Because these symptoms can mimic other disorders such as heart problems, stomach disorders, seizures, and asthma, appropriate treatment is often delayed while the child is sent to specialists to rule out medical causes. In patients with panic disorder, there is often a history of anxiety disorder or panic attacks in other family members. Adolescents with panic disorder may begin to avoid certain places or situations such as crowds, public transportation, and other places where a

**Table 21.1.** Symptoms of Panic Disorder

1. Rapid or racing heartbeat
2. Sweating, trembling, or shaking
3. Feeling short of breath or as if smothering
4. Feeling as if choking
5. Chest pain or discomfort
6. Nausea or abdominal distress
7. Feeling dizzy, lightheaded, or faint
8. Feeling of unreality or detachment (like floating or in a dream)
9. Fear of losing control or going crazy
10. Fear of dying
11. Numbness and tingling
12. Hot flashes or chills

*Note:* At least four symptoms need to be present during an attack for a diagnosis of panic disorder.

panic attack could occur. This avoidance can lead to comorbid agoraphobia (fear of leaving the house). Patients with panic disorder can be treated with high-potency benzodiazepines such as alprazolam (Xanax) and clonazepam (Klonopin) alone or in combination with SSRIs. Patients with panic disorder can also be helped through cognitive-behavioral therapy to develop a list of things that are least to most likely to cause a panic attack. Patients then work their way through the list, facing the different issues that cause the attacks. The therapist helps the adolescent ride out the attacks and observes how the anxiety decreases over time.

**Social Phobia** A phobia particularly relevant to children is social phobia, which includes school phobia. Social phobia involves a marked and persistent fear of one or more social or performance situations in which a person is exposed to strangers or to scrutiny by others and worries that he or she will do something embarrassing. To be diagnosed with this disorder, a child must have appropriate relationships with family members and friends but be afraid of other peers and adults. Exposure to the social situation (e.g., a birthday party) provokes anxiety and the child may cry, have a tantrum, freeze, or shrink from situations with unfamiliar people. The child may not be aware that the fear is unreasonable, and the fear must cause an impairment in social functioning. Social phobia is classified as generalized if it takes place in multiple settings. The symptoms must last for more than 6 months. Treatment includes cognitive-behavioral therapy to reduce anxiety in social situations, speech making and acting classes for people with performance anxieties, and the use

of SSRIs. Extreme cases of social phobia in childhood may include children who are too frightened to speak in the classroom, eat in the cafeteria, or use the restroom at school. This can lead to a marked impairment in school performance and should not be dismissed as simple shyness. Some children with a variant of social phobia may have selective mutism, in which they refuse to speak to unfamiliar people or children; SSRIs may be helpful in this case (Black & Udhe, 1994). Girls with fragile X syndrome have been found to have severe shyness that may be a manifestation of social phobia (Hagerman et al., 1992).

**Obsessive-Compulsive Disorder** A child with OCD has obsessions, compulsions, or both. Obsessions are recurrent thoughts, images, or impulses that are experienced as intrusive and inappropriate and cause anxiety or distress. The obsessions are not excessive worries about real-life problems (as in generalized anxiety), and the individual attempts to ignore, suppress, or neutralize the obsessions. Children may not be aware that the obsessions and compulsions are unreasonable; furthermore, children with a developmental disability may not realize that the obsessions are a product of the mind. Compulsions are repetitive behaviors (e.g., hand washing) or mental acts (e.g., praying, counting) that are done to neutralize an obsession or as part of following rigid rules. A child with obsessions about germs would have washing compulsions to neutralize the germs. The compulsions are designed to reduce distress or to prevent some dreaded act. For example, a child might refuse to step on green tiles in the school corridor because his or her mother might die if the child stepped on green tiles. Children, especially younger ones, are more likely to have compulsions without the accompanying obsessions; thus, a child might have an elaborate 2-hour bedtime ritual without knowing why it must be done in a certain way. Some children develop the rapid onset of OCD after a streptococcal skin or throat infection. Common compulsions in children include ordering and arranging, counting, tapping, touching, and collecting/hoarding. In order to meet the *DSM-IV-TR* criteria for the diagnosis, the obsessions and compulsions must occupy more than 1 hour per day and interfere with functioning.

Treatment of OCD in children and adolescents includes cognitive-behavioral therapy, which is aimed at experiencing the obsessive

thought without carrying out the compulsion designed to reduce the anxiety. This form of cognitive-behavioral therapy is called exposure and response prevention. A child with fear of germs would be asked to touch a doorknob and then be prevented from washing her hands. Children have weekly assignments in this therapy. Several medications are also approved for the treatment of OCD including clomipramine (Anafranil), sertraline (Zoloft), fluoxetine (Prozac) and fluvoxamine (Luvox) (DeVaugh-Geiss et al., 1992; Geller et al., 2001; March, Biederman, et al., 1998; Riddle et al., 2001). One paper in the literature described the difference in outcome among children with OCD who were treated with sertraline, placebo, cognitive-behavioral therapy, and a combination of medication and therapy (POTS Team, 2004). Combination therapy helped the most children, followed by cognitive-behavioral therapy alone, then sertraline, and placebo. OCD can be comorbid with other developmental disabilities, especially ADHD and ASDs.

#### **Posttraumatic Stress Disorder**

PTSD is an anxiety disorder that occurs after exposure to a traumatic event in which the person experiences or witnesses an actual or threatened death, serious injury, or threat. In children with developmental disabilities, this may occur after physical abuse or after the injury that caused the disability. Children with intellectual disability are particularly at risk for PTSD, as they have more limited coping skills. The person's response to the inciting event involves intense fear, helplessness, or horror, and the child may have disorganized or agitated behavior. For a diagnosis of PTSD, one must have symptoms for at least 1 month and have impairment of functioning as a result of the symptoms. The symptoms are broken down into three categories: 1) reexperiencing the trauma, 2) avoidance and numbing, and 3) increased arousal. Reexperiencing behavior includes recurrent recollections of the event (in children, this may manifest as a repetitive theme in play), dreams of the event (children may have distressing dreams that are not trauma specific), flashbacks of the event (children may reenact the trauma), intense mental distress at physical or mental cues that remind one of the event, and physiological reactivity on exposure to cues that remind one of the event. Avoidance behavior includes efforts to avoid thoughts or feelings associated with the trauma, efforts to avoid people and places associated with the trauma,

inability to recall important aspects of the trauma, decreased interest or participation in activities, feelings of detachment or estrangement, restricted range of feelings, and a sense of a shortened future. Symptoms of increased arousal include difficulty sleeping, irritability or angry outbursts, difficulty concentrating, hypervigilance, and an exaggerated startle response. PTSD is characterized by duration, either acute (3 months or less) or chronic (more than 3 months), and by delayed onset (starts 6 months after the stressor).

Treatment of PTSD includes both **psychotherapy** and SSRIs (March, Amaya-Jackson, et al., 1998). Patients must practice talking through the thoughts and events that remind them of the incident that elicited the PTSD. Play therapy, in which a child has a chance to relive and triumph over the trauma, may also help the child work through the loss. Therapy must be modified based on the cognitive level of the child.

### Mood Disorders

**Major Depression** Children carrying a diagnosis of **major depression** must have a 2-week period with at least five of the following symptoms that represent a change from previous functioning: 1) depressed mood by subjective report or as observed by others (children and adolescents may have an irritable mood), 2) decreased interest or pleasure in most activities, 3) significant change in weight or appetite (children may fail to make expected weight gains), 4) insomnia or hypersomnia (excessive sleep), 5) psychomotor agitation or retardation, 6) fatigue or loss of energy, 7) feelings of worthlessness or guilt, 8) decreased concentration or indecisiveness, and 9) recurrent thoughts of death and dying. Symptoms must not be due to bereavement and must cause impairment in the child's daily function. Children with major depression can be treated with medication or psychotherapy or a combination of both. Studies have shown that several SSRIs are superior to a placebo in the treatment of depression (Emslie et al., 2002; Wagner et al., 2003; Wagner et al., 2004). A NIMH study found that for adolescents with major depression, a placebo and cognitive-behavioral therapy alone were similar in improvement, whereas fluoxetine was better, and fluoxetine plus cognitive-behavioral therapy had the best outcome (TADS Team, 2004).

**Bipolar Disorder** Bipolar disorder consists of swings between depression and **mania** or both together (mixed bipolar disorder). A manic episode consists of a distinct period of abnormally and persistently elevated, expansive, or irritable mood lasting at least 1 week. The mood disturbance must have three of the following symptoms if happy and four if irritable: 1) inflated self-esteem or grandiosity, 2) decreased need for sleep, 3) more talkative or pressured speech or vocalizations (in nonverbal children), 4) flight of ideas or racing thoughts, 5) distractibility, 6) increased goal directed activity or psychomotor agitation, and 7) excessive involvement in pleasurable activities that have a high potential for painful consequences (e.g., sexual touching of self and others). A mixed episode is diagnosed when criteria are met for both manic and major depressive episodes nearly every day for 1 week. Hypomania consists of symptoms of mania without impairment or hospitalization, fewer symptoms, or duration of symptoms for less than 1 week.

Individuals with bipolar disorder are treated with mood stabilizers such as lithium or valproic acid (Depakote, which is also used as an antiepileptic drug). They may also benefit from antipsychotic medication such as risperidone (Risperdal), aripiprazole (Abilify), olanzapine (Zyprexa), quetiapine (Seroquel), and ziprasidone (Geodon) in conjunction with mood stabilizers or as monotherapy (use of antipsychotics alone rather than in combination with a primary mood stabilizer such as lithium or valproic acid). Children with bipolar disorder must have consistent bedtimes and routines so that lack of sleep does not precipitate either a manic or mixed episode.

### Psychotic Disorders

Psychotic disorders consist of alterations in thinking or perceptions that are not connected with reality. The primary psychotic disorder is **schizophrenia**. It consists of two or more of the following symptoms that are present for at least a 1-month period, less if treated: 1) **delusions** (fixed idiosyncratic false belief; e.g., that someone is following the person), 2) hallucinations (sensory perception without stimulus; e.g., hearing a voice when no one else is present), 3) disorganized speech and grossly disorganized or catatonic (statue-like) behavior, and 4) negative symptoms (apathy, lack of emotions, poor or nonexistent social functioning). Only one criterion needs to be met if the delusions are

bizarre, the voice keeps a running commentary on the person's behavior, or two or more voices are conversing with each other. Patients with a mood disorder or an ASD may have symptoms that are confused with schizophrenia. Other medical conditions that can mimic schizophrenia include epilepsy, effects of an illegal drug, and brain tumors. Once the diagnosis has been confirmed, treatment with antipsychotics will reduce the delusions and hallucinations, thereby improving psychosocial functioning.

### **Eating Disorders**

Two important types of eating disorders occur in children with developmental disabilities, rumination and binge eating. In rumination disorder, infants or young children repeatedly regurgitate without nausea or gastrointestinal illness for at least 1 month. It is a common form of self-stimulatory behavior in children with moderate to severe intellectual disability. Treatment includes behavioral interventions and the use of gastrointestinal motility agents (e.g., laxatives). The second common eating disorder is binge eating, whereby the child eats large amounts of food during short periods of time. Individuals with binge eating disorder do not engage in the accompanying purging behaviors seen in bulimia and do not have a distortion of body image. Children who do binge are at risk for choking and death from this eating pattern. In Prader-Willi syndrome, binge eating is a frequent complication and contributes to the morbid obesity seen among people with this disorder. Children with binge eating disorder need nutritional guidance and counseling, parental and school oversight of meals, limited access to food outside of meals, and an exercise routine. For some children with a severe binge eating disorder, admission to a long-stay residential setting with strict oversight of meals and activity levels can dramatically change the child's weight and improve the underlying medical condition.

### **Adjustment Disorders**

These disorders involve the development of emotional or behavioral symptoms in response to an identifiable stressor and occur within 3 months of the onset of that stressor. The symptoms or behaviors are clinically significant and cause marked distress, in excess of what would be expected from exposure to the stressor, or

significant impairment in social or occupational (academic) functioning. With the exception of an ASD, individuals do not have another major psychiatric disorder and do not have bereavement. Once the stressor ends, the symptoms do not persist for more than 6 months. Adjustment Disorder with Anxiety has symptoms such as nervousness, worry, or jitteriness or, in children, fears of separation from parents. Adjustment Disorder with Depressed Mood includes depressed mood, tearfulness, or hopelessness as the predominant symptoms. Adjustment Disorder with Mixed Emotions and Conduct manifests as altered emotions, such as depression or anxiety, plus problematic behavior such as truancy, vandalism, reckless driving, or fighting.

Children with developmental disabilities may be at higher risk for adjustment disorders because they have limited coping skills and frequently have medical illnesses or require procedures that produce stress. When children with developmental disabilities enter the hospital for a medical procedure or illness, parents, caregivers, and health care providers must be prepared for exaggerated emotional and behavioral responses to being in the hospital and to being kept away from their normal routine. Children may cry, have tantrums, or act out. They may alternatively become quiet and withdrawn, refusing to eat or cooperate with the staff. Patience and reassurance will generally help the child navigate the stressful situation and return to his or her baseline emotional and behavioral functioning.

### **Maladaptive Behavior Disorders**

Some individuals with severe to profound levels of intellectual disability develop behavioral symptoms that are qualitatively different from those seen in people without developmental disabilities. These symptoms, which include repetitive self-stimulating behavior, SIB, and pica, rarely occur in typically developing children.

Individuals who engage in SIB generally display a specific pattern for producing injury. They may bang their heads, bite their hands, pick at their skin, hit themselves with their fists, or poke their eyes. They may do this once or twice a day, in association with tantrums, or as often as several hundred times an hour. Tissue destruction, infection, internal injury, loss of vision, and even death may result. These behaviors may be accompanied by additional repetitive, stereotyped behaviors, such as hand waving



and body rocking. When these repetitive behaviors interfere with activities of daily living or result in significant injury to the individual, a diagnosis of stereotypic movement disorder with SIB is made.

Although serious SIB occurs in fewer than 5% of people with intellectual disability, these behaviors cause enormous distress to the individuals and their caregivers, can result in severe body injury, and may lead to residential placement with the separation of the individual from the family and from other community contacts. Some children with SIB also demonstrate severe aggressive behavior toward their caregivers or peers.

SIB is a puzzling and disturbing phenomenon that prompts one to ask why these individuals hurt themselves. Although no simple answer exists, there is evidence for both environmental and biological causes, in a context of enormous individual variation (Buitelaar, 1993; Mace & Mauk, 1995; Schroeder et al., 1999). Some children exhibit SIB as a result of environmental events (i.e., **operant control**; Loschen & Osman, 1992). For example, a girl who is nonverbal may demonstrate head banging that is reinforced once she learns that this action captures the attention she craves. Other environmental factors that can reinforce this behavior include access to desired items (e.g., food), avoidance of task demands (e.g., chores), and certain sensory effects (e.g., bright lights from eye pressing; Mace & Mauk, 1995). The inference that the sensations produced through self-induced painful stimulation may somehow be gratifying has led to the notion that SIB plays a role in regulating physiologic states, such as arousal. Guess and Carr (1991) proposed a bio-behavioral model in which the regulation of normal sleep, wake, and arousal patterns is delayed or disturbed in some individuals (Guess & Carr, 1991). These individuals then develop stereotypic movements and SIB as a way to self-regulate arousal in under- or overstimulating environments; they ultimately also get environmental reinforcement for the behavior. There is also a relationship between SIB and pain in nonverbal children with severe cognitive impairment. These children have been found to increase their SIB during an ear infection, constipation, or other conditions associated with pain (Breau et al., 2003). Other biological factors are suggested by the increased prevalence of SIB in certain genetic syndromes, including de Lange syndrome, Lesch-Nyhan syndrome, Prader-Willi syndrome, and Rett syndrome

(see Appendix B). Psychiatric disorders such as ASDs, depression, mania, and schizophrenia are also risk factors for SIB. General medical conditions and medication side effects can be acute precipitants of SIB. For example, a painful middle-ear infection may lead to head banging. Evaluating any individual for the cause of SIB demands the systematic testing of a broad range of behavioral and biomedical hypotheses (Sternberg, Taylor, & Babkic, 1994).

Although the brain mechanisms underlying most forms of SIB remain unknown, several neurotransmitters are thought to be involved. These include dopamine, which mediates certain reinforcement systems in the brain; serotonin, the depletion of which is sometimes associated with violent behavior; gamma-aminobutyric acid (GABA), an inhibitory neurotransmitter; and opioids, the brain's natural painkillers (Verhoeven et al., 1999). The atypical antipsychotic risperidone has been found to be useful in treating this disorder (Zarcone et al., 2001) together with applied behavior analysis (Chapter 35). As of 2006, risperidone was FDA approved for the treatment of violent and aggressive behavior, including SIB in individuals with ASDs.

Pica, the persistent craving and ingesting of nonfood items, is a typical behavior of toddlers. When children older than 2 years display pica, however, professionals should explore the possibility that the child has a psychiatric disorder or a nutritional deficiency. It should be noted that pica in older children can also be a typical behavior of people with severe to profound levels of intellectual disability. Irrespective of the cause, pica can seriously affect a child's well-being. It can result in toxicity from ingested materials such as medications or lead-containing plaster or paint chips. It also can cause physical damage to the individual's gastrointestinal tract. Behavior management techniques (see Chapter 35) have been found to be the most effective intervention for pica (Johnson, Hunt, & Siebert, 1994).

## EVALUATION

Psychiatric needs can be met only if parents, teachers, and other staff who work with children with disabilities are aware of the possible existence of emotional disturbances. Ideally, the referral for evaluation should be made to mental health professionals (e.g., psychiatrists, psychologists, social workers) with specific training, experience, and expertise in the psychiatric disorders of children with developmental dis-

abilities. Often this requires referral to a specialized tertiary care center with a multidisciplinary team, such as a university hospital. Less experienced mental health professionals who undertake such evaluations should have access to consultation from a specialized center.

The mental health professional first takes a detailed history of the current symptoms and problematic behaviors from parents or other caregivers. For example, identification of recent changes in sleep pattern, appetite, or mood provides important evidence of depression. In addition, an individual and family medical history should be obtained. The family history may reveal, for example, other members with depression. A review of the individual's past medical and psychological assessments may indicate prior behavior or psychiatric problems. Following the history taking, an interview is conducted posing both structured and open-ended questions to the child and parents. If impairments in communication and cognitive skills are significant, the professional can still gain important information from the direct observation of the child both alone and in the presence of the parents (King et al., 1994).

The evaluation should also focus on the social system and setting in which the psychiatric disorder occurs. Thus, the professional should evaluate the current level of family functioning by assessing 1) family members' ability to cope with the child's psychiatric disorder and therapy; 2) their current morale, problem-solving abilities, external social supports, and practical resources (e.g., finances, insurance); 3) the system of beliefs that sustains their efforts; and 4) the stability of the parents' relationship. It is important to understand how individual family members are reacting and adjusting to the child's underlying developmental disability as well as any current mental health problems (see Chapter 40).

Following the comprehensive interview, the child may be referred for psychological testing or behavioral assessment. Although standardized behavior rating scales are available, they are insufficient by themselves as diagnostic tools. A single, structured psychological testing instrument may not be able to cover the range of developmental levels and behavioral baselines exhibited by individuals with developmental disabilities. These instruments are important, however, for confirming or adding to information obtained from the history and interview. They can also be extremely helpful in measuring changes that occur during the course

of intervention (Aman, Burrow, & Wolford, 1995; Demb et al., 1994; Linaker & Helle, 1994; Reiss & Valenti-Hein, 1994).

Standardized rating scales may be combined with a functional behavior analysis. This type of assessment is most useful for children with severe behavioral abnormalities for which specific family or behavior therapies are being considered. Behavior analysis provides direct observation of the child in a natural setting, yielding a clear description of the abnormal behavior itself and its antecedents and consequences (see Chapter 35).

It is important to note that many of the symptoms of a psychiatric disorder can actually be caused by a variety of medical disorders and treatments. For example, hypothyroidism, common in individuals with Down syndrome, can cause emotional disturbances that present as anxiety or depression. In excessive (and sometimes therapeutic) dosages, drugs used to treat associated impairments such as epilepsy can cause symptoms of hyperactivity or depression (Alvarez, 1998). Careful evaluation for medical conditions or drug reactions should be a part of any assessment of new-onset behavioral or psychiatric symptoms.

After the evaluations have been completed, the professional can begin to work to formulate an intervention plan based not only on the psychiatric diagnosis but also on the developmental level of the child, accompanying medical conditions, the family's strengths and challenges, and the needs and limitations of the settings where the child spends his or her time.

## TREATMENT

Treatment of psychiatric illness in children and adolescents with developmental disabilities involves some or all of the modalities described in the following sections. Intervention must be tailored to each child's needs at home, at school, and with peers. The treatment modalities utilized may need to be adjusted as the child matures and as his or her needs change.

### Educational Interventions

Educational interventions can include a variety of supports to help a child succeed in the classroom (see Chapter 34). Children may be placed in smaller self-contained classes or included in the general education class but with extra aides or a one-to-one helper. When the child becomes upset, the aide can help the child become

calm, avoiding the need to leave the classroom. The child may also benefit from therapy sessions with the school counselor and a behavioral psychologist. There should be close collaboration between the school personnel and the child's medical team.

### Rehabilitation Therapy

There is evidence that language impairments significantly contribute to the development of certain behavior problems. Some aggressive behaviors and SIBs have been linked to the inability to communicate needs, and teaching functional communication skills has been shown to decrease SIB. Thus, speech-language therapy and training in augmentative and alternative communication systems (see Chapter 22) may be an important part of the intervention program. Similarly, if the child has a physical disability, the pain from contractures, an inability to ambulate, or difficulty reaching for desired objects may lead to behavior and mood alterations. Physical and occupational therapy may result in an improvement in motor function, with associated improvement in behavior and mood.

### Psychotherapy

There is ample evidence that various forms of psychological/behavioral therapy (individual, group, and family) can benefit a child or adolescent with developmental disabilities and psychiatric disorders, if it is adapted to the child's mental age and communication abilities (Hollins, Sinason, & Thompson, 1994; Nezu & Nezu, 1994; Sigman, 1985). Table 21.2 shows

different types of psychotherapy and the *DSM-IV-TR* disorders that they are most useful in treating. Goals of therapy are to relieve symptoms and help the child to understand the nature of his or her disability and associated feelings and to gain a recognition of and appreciation for his or her strengths. Psychotherapy, particularly group work, can also enhance social skills and help the child deal with stigmatization, rejection, peer pressure, and attempts at exploitation (American Academy of Child and Adolescent Psychiatry, 1999). Regrettably, individuals with developmental disabilities are seriously underserved regarding psychotherapy, despite the fact that psychotherapy can provide a supportive relationship, help restore self-esteem, and enhance the capacity to recognize and master emotional conflicts and solve problems. Psychotherapy also can be added to behavior therapy and pharmacotherapy when these approaches have not adequately resolved symptoms or improved quality of life. Ideally, the therapist should have expertise in working with individuals with developmental disabilities.

Behavior therapy is perhaps the most widely researched psychotherapeutic intervention for children and adolescents with intellectual disabilities (see Chapter 35). There is extensive literature supporting the effectiveness of behavioral approaches in psychiatric disorders (National Institutes of Health, 1989). When used in conjunction with comprehensive assessment, accurate medical and psychiatric diagnoses, and programmatic intervention, behavior therapy is among the most powerful available interventions. As with other forms of psychotherapy and pharmacotherapy, however,

**Table 21.2.** Types of psychotherapy and uses in different disorders

Therapy	Behavior	CBT	Social skills	Group	Individual	Supportive/educational	Parent training
ADHD	X		X	X			X
ODD and Conduct Disorder	X		X	X			X
Generalized Anxiety Disorder		X			X	X	
Social Phobia		X	X	X	X	X	X
Panic Disorder		X			X	X	
PTSD		X			X	X	
OCD		X			X		
Major Depression		X			X	X	
Bipolar Disorder					X	X	X
ASDs	X		X	X		X	X
Schizophrenia			X		X	X	X

Key: CBT, cognitive-behavioral therapy; ADHD, attention-deficit/hyperactivity disorder; ODD, oppositional defiant disorder; PTSD, posttraumatic stress disorder; OCD, obsessive-compulsive disorder; ASDs, autism spectrum disorders.

it should be implemented only under the supervision of licensed professionals who have been specifically trained in this methodology.

### Pharmacotherapy

Medication can play an important role in treating the psychiatric disorders that occur in children with developmental disabilities (Efron et al., 2003). Table 21.3 lists the various medications in each of the groups that are described next. Additional information on uses and side effects of these medications can be found in Appendix C.

**Antidepressants** Antidepressants are used to treat major depression and anxiety disorders including OCD, generalized anxiety disorder, and **separation anxiety** disorder (DeVaugh-Geiss et al., 1992; Emslie et al., 2002; Geller et al., 2001; March, Biederman, et al., 1998; Riddle et al., 2001; Wagner et al., 2003; Wagner et al., 2004). The class of antidepressants most commonly used in children and adolescents is the SSRIs. In 2006, the Food and Drug Administration (FDA) required drug companies to start putting "black box" warnings on the packaging of all categories of antidepressants, as well as atomoxetine (Strattera) and quetiapine (Seroquel), which is approved for bipolar depression. The warning states that these medications have been associated, in short-term studies, with a two-fold increase in suicidal ideation and attempts compared to placebo. No suicides have actually been reported. Per the FDA, all children under the age of 18 started on any antidepressant for any indication must be monitored weekly for the first 4 weeks, then biweekly for the second 4 weeks, then monthly. Patients are to be monitored for any change in mental state and for the emergence of suicidal ideation or plans. With these controls in place, antidepressants can continue to be useful in the treatment of pediatric mood and anxiety disorders and remain an important part of treatment for these illnesses (Hammad, Laughren, & Racoosin, 2006).

**Antihypertensives** Beta-blockers, such as propranolol, are used to treat explosive and aggressive behavior, whereas alpha-2 adrenergic receptor agonists (e.g., clonidine [Catapres], guanfacine [Tenex]) are used to treat tic disorder, Tourette syndrome, and ADHD. These medications are sedating and can also lower blood pressure; thus, they should be used cautiously (Ahmed & Takeshita, 1996).

**Antipsychotic Medications** Antipsychotic medications have been used primarily to treat aggression and SIB in children with intellectual disability or ASDs. There is, in fact, more safety data on risperidone in children with intellectual disability and ASDs than in their typically developing peers. In 2006 risperidone became the first antipsychotic approved for the treatment of aggressive behavior in individuals with ASD. Many of the other novel neuroleptics have also been studied in individuals with ASDs. Although these medications are much more likely to cause weight gain, they are less likely to cause a movement disorder (Martin et al., 2004; Stigler et al., 2004).

**Benzodiazepines** Benzodiazepines are helpful in reducing anxiety in the short term. Children with developmental disabilities, however, may have paradoxical reactions to these medications and may become agitated rather than calm and sleepy. Because chronic use of these agents can cause chemical and behavioral dependency, they should not be used for long-term control of anxiety symptoms.

**Mood Stabilizers** Mood stabilizers include lithium and antiepileptic medication (Findling et al., 2005). They are most commonly used to treat bipolar disorder and aggressive behaviors. Lithium is effective in treating current episodes and in preventing future bipolar episodes. It is a salt that is excreted through the kidneys and causes increased thirst and urination. It must be used with caution in combination with certain other drugs that can lead to toxic lithium levels, including non-steroidal anti-inflammatory drugs (e.g., ibuprofen) and certain anticonvulsants (e.g., topiramate [Topamax]) that are excreted by the kidneys. Lithium toxicity can occur with rapid onset if normal fluid intake is decreased, for example with vomiting, diarrhea, or acute illness; this in turn can result in coma, kidney failure, or the need for dialysis.

**Stimulants and Atomoxetine** Stimulants of both the amphetamine and methylphenidate classes are first-line treatments for ADHD. Both families of drugs now have long-acting preparations available that can improve control of ADHD symptoms throughout the day. Side effects include loss of appetite, insomnia, tics, headache, and gastrointestinal side effects (Pearson et al., 2003). The use of atomoxetine has been studied in children with ADHD (Newcorn et al., 2005) and ASDs and has been

**Table 21.3.** Medications used to treat psychiatric disorders

	Generic name	Trade name	Type	Uses	Other formulations
Antidepressants	Fluoxetine	Prozac, Sareferm	SSRI	Depression, anxiety, OCD	Liquid and weekly
	Fluvoxamine	Luvox	SSRI	OCD	None
	Sertraline	Zoloft	SSRI	Depression, anxiety, OCD	Liquid
	Paroxetine	Paxil, Paxil CR	SSRI	Depression, anxiety, OCD	Liquid (not in CR)
	Citalopram	Celexa	SSRI	Depression	Liquid
	Escitalopram	Lexapro	SSRI	Depression, anxiety	Liquid
	Venlafaxine	Effexor, Effexor XR	SNRI	Depression, anxiety	None
	Duloxetine	Cymbalta	SNRI	Depression	None
Antihypertensives	Bupropion	Wellbutrin, Wellbutrin SR, Wellbutrin XL	Dopaminergic	Depression, ADHD	None
	Propranolol	Inderal, Inderal LA	Beta blocker	Aggressive behavior	None
	Clonidine	Catapres, Catapres-TTS patch	Alpha-2-adrenergic agonist	ADHD, tics, sleeping agent	Weekly skin patch
	Guanfacine	Tenex	Alpha-2-adrenergic agonist	ADHD, tics	None
Antipsychotics	Clozapine	Clozaril	Atypical	Treatment-resistant schizophrenia, bipolar disorder (not FDA approved for acute bipolar mania)	None
	Risperidone	Risperdal, Risperdal M-Tab, Risperdal Consta	Atypical	Schizophrenia, bipolar disorder, aggressive behavior in children with autism spectrum disorders	Liquid, oral dissolving tablets (M-Tab), 2-week injection (Consta)
	Olanzapine	Zyprexa, Zyprexa Zydis	Atypical	Schizophrenia, bipolar disorder, acute agitation	Oral dissolving tablets, daily injection
	Ziprasidone	Geodon	Atypical	Schizophrenia, bipolar disorder, acute agitation	Daily injection
	Quetiapine	Seroquel	Atypical	Schizophrenia, bipolar disorder (acute mania and bipolar depression)	None
	Aripiprazole	Abilify, Abilify Discmelt	Atypical (plus serotonin agonist)	Schizophrenia, bipolar disorder	Liquid, oral dissolving tablets

	Generic name	Trade name	Type	Uses	Other formulations
	Haloperidol	Haldol, Haldol Decanoate	Typical	Schizophrenia, Tourette syndrome, agitation, severe behavior disorders	Liquid, daily injection, monthly injection
	Pimozide	Orap	Typical	Tourette syndrome	None
Benzodiazepines	Lorazepam	Ativan	Typical	Anxiety	Liquid, daily injection
	Alprazolam	Xanax, Xanax XR	High potency	Panic, anxiety	None
	Clonazepam	Klonopin, Klonopin Wafers	High potency	Panic, anxiety	Oral dissolving tablets
Mood stabilizers	Lithium carbonate	Lithobid, Eskalith, Eskalith-CR	Mood stabilizer	Bipolar disorder (acute mania and maintenance)	Liquid
	Valproic acid	Depakote, Depakote ER, Depacon, Depakene	Antiepileptic drug	Bipolar disorder	Liquid, intravenous, sprinkles
	Carbamazepine	Tegretol, Tegretol XR, Carbamol, Equetro	Antiepileptic drug	Bipolar disorder	Chewable tablet, liquid
	Oxcarbazepine	Trileptal	Antiepileptic drug	Not FDA approved yet for bipolar disorder, but used	Liquid
	Lamotrigine	Lamictal	Antiepileptic drug	Bipolar maintenance	Chewable tablets
Stimulants and atomoxetine	Methylphenidate-racemic mixture	Ritalin, Ritalin LA, Metadate CD, Concerta	Synthetic stimulant	ADHD	Sprinkles for Ritalin LA and Metadate CD
	Dexmethylphenidate	Focalin, Focalin XR	Synthetic stimulant	ADHD	Sprinkles for XR
	Dextroamphetamine	Dexedrine, Dexedrine ER spansules	Stimulant	ADHD	Chewable generic tablet, ER spansule
	Mixed amphetamine salts	Adderall, Adderall XR	Stimulant	ADHD	Sprinkles for XR
	Modafanil	Provigil, Sparlon	Unknown	ADHD (not FDA approved for ADHD due to concern about Stevens-Johnson syndrome)	None
	Atomoxetine	Strattera	NRI	ADHD	None

Key: SSRI, selective serotonin reuptake inhibitor; OCD, obsessive-compulsive disorder; CR, controlled release; SNRI, serotonin norepinephrine reuptake inhibitor; XR, extended release; SR, slow release; XL, extra long; ADHD, attention-deficit/hyperactivity disorder; LA, long acting; TTS, transdermal system; ER, extended release; FDA, Food and Drug Administration; CD, controlled delivery; NRI, norepinephrine reuptake inhibitor. For further information see Appendix C.

found to control hyperactive/impulsive symptoms with an effect size similar to methylphenidate.

### SUMMARY

Children with developmental disabilities are at higher risk of having psychiatric and behavioral disorders at some time during the course of their childhood or adolescence. By being aware of the possibility of psychiatric disorders that can affect a child's behavior, parents, educators, and clinicians can identify the problem early and intervene. Early intervention leads to more rapid resolution of the difficulties and allows the child to function more effectively and happily at home, at school, and in the community.

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