Mood Disorders in Children and Adolescents

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Childhood mood disorders such as major depression, dysthymia, and bipolar disorder have been found to be highly prevalent among children and adolescents. The emotional and behavioral dysfunction associated with these mood disorders can cause impairments across areas of functioning, including academic and social arenas. This article reviews the course, possible causes, assessment, and treatment of this group of disorders in youth and concludes by examining the implications for nurses and other health care providers of youth with mood disorders.
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THE TYPES OF emotional and behavioral disturbances that occur in youth with mood disorders can be highly debilitating and include problems in social, academic, and interpersonal functioning (Duggal, Carlson, Sroufe, & Egeland, 2001). Although it is developmentally normal for all children to go through periods when their mood is either more depressed or more elevated than normal, having a mood disorder indicates that a child's mood has been persistently abnormal for an extended period, which has in turn resulted in significant distress or impairment (American Psychiatric Association [APA], 2000). This impairment can negatively affect a child's social, academic, and interpersonal functioning (Reynolds & Kamphaus, 2003).

The purpose of this article is to review the research literature on mood disorders in children and adolescents. There are four primary types of mood disorders recognized by the current version of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; APA, 2000): depressive disorders, bipolar disorders, mood disorder due to a medical condition, and substance-induced mood disorders. In addition to symptoms and diagnostic criteria, we will also review the etiological theories, assessment, and treatment of mood disorders in children and adolescents, highlighting implications for nurses and other health care providers. The information contained herein was gathered through a thorough review of the literature, primarily utilizing databases such as PsyInfo, ERIC, Medline, and PubMed. Information was predominantly obtained from peer-reviewed or meta-analysis articles, with most publication dates ranging between 1987 and 2007.

EPIDEMIOLOGY

Depressive symptoms are normative in both children and adolescents, with most of these populations reporting depressive symptoms at some point before adulthood (Ollendick, Shortt, & Sander, 2005), but diagnosis-level depressive disorders are seen less frequently. Best estimates for point prevalence rates for depressive disorders based on a recent meta-analysis are 2.8% for children younger than 13 years old and 5.6% for 14- to 18-year-olds (Costello, Erkanli, & Angold, 2006), with those aged 8 and younger showing rates less than 1% (Keenan, Hipwell, Duax, Stouthamer-Loeber, & Loeber, 2004). In terms of lifetime prevalence, rates up to 25% before adulthood have

been found (Kessler, Avenevoli, & Merikangas, 2001). Nondiagnostic levels of depressive symptoms are seen in much higher rates, with point prevalence estimates ranging from 20% to 30% in adolescents (Cooper & Goodyer, 1993; Roberts, Lewinsohn, & Seeley, 1991). In terms of gender differences, similar prevalence rates are typically seen across gender prior to adolescence, but higher rates of depression among females during adolescence have been established in multiple studies (e.g., Cohen et al., 1993; Kessler et al., 2001) in ratios as high as 2:1 (Axelson & Birmaher, 2001; Rushton, Forcier, & Schectman, 2003).

Rates of mania and bipolar disorder in youth are much lower than those in depressive disorders, and the disorder itself appears to be rare in children (Weckerly, 2002). Although few large-scale studies have been conducted examining prevalence rates, there is one notable exception (Lewinsohn, Klein, & Seeley, 1995). This study interviewed over 1,700 14- to 18-year-olds and found an estimated lifetime prevalence of 1% for bipolar disorders (about the same as the adult prevalence rates), with almost 6% of the sample reporting subclinical levels of bipolar symptoms (Lewinsohn et al., 1995). Other adolescent samples have yielded similar rates (Verhulst, van der Ende, Ferdinand, & Kasius, 1997), but much lower rates have been found in preadolescents (approximately 0.1%; Costello et al., 1996; Kessler & Walters, 1998). These numbers are in stark contrast to the increasing attention this diagnosis has been given over the last several years, with a wave of books aimed at the layperson (e.g., Findling, Kowatch, & Post, 2003; Papolos & Papolos, 2000), scholarly articles (e.g., Craney & Gellar, 2003; Harris, 2005), and media attention (including a two-part special on the British Broadcasting Corporation) given to the diagnosis of childhood bipolar disorders. There is, however, little evidence to support the widespread diagnosis of bipolar disorder in children, and the confusion may be due in large part to the high rates of comorbidity seen in youth with mood disorders.

The most common type of co-occurring disorder in youth with mood disorders is an anxiety disorder, such as panic or generalized anxiety, with up to 75% of people having a lifetime prevalence (Avenevoli, Stolar, Li, Dierker, & Merikangas, 2001). Point prevalence estimates range from 25% to 50% for anxiety disorders, which often developmentally precede the onset of the depressive disorder (Lewinsohn, Zinbarg, Seeley, Lewinsohn, & Sack, 1997). Other commonly co-occurring problems include disruptive behavior disorders, such as conduct disorder and attention-deficit/hyperactivity disorder (ADHD; 14%–36%; Angold, Costello, & Erkanli, 1999), and substance abuse in adolescents (45%–50%; Avenevoli et al., 2001).

ETIOLOGY

Biological, cognitive, behavioral, interpersonal, family, and life stress models have all been proposed as hypotheses behind why a mood disorder is expressed in a child or adolescent (Ebrneier, Donaghey, & Steele, 2006). Although each of these is useful in explaining an aspect of mood disorders, none is effective at completely explaining each aspect, and all began as adaptations of adult models of depression. Instead, a more effective way to view the etiology of mood disorders is as a complex interaction between biological, psychological, developmental, and social factors. Researchers have begun to work toward a transtheoretical perspective to explain the causes of mood disorders, particularly depression (e.g., Cicchetti & Toth, 1998). These models focus on integration of the known biopsychosocial factors, as discussed in the next paragraphs, involved in the development and maintenance of depression.

Biological Model

Neurochemistry, brain structure, and genetic influence have all been examined in the biological model of depression. Having a parent, particularly a mother, with depression is a very strong predictor of a child developing a mood disorder (Beardslee, Versage, & Gladstone, 1998). Supporting this genetic influence are large-scale twin studies showing a moderate impact of genetics on the development of depression (e.g., Eaves et al., 1997; Silberg, Rutter, & Eaves, 2001). What exactly is inherited is, at this point, unknown, but possibilities include neurochemical differences, temperament, reactivity to stress, and brain structure. Several specific neurotransmitters have been implicated in the development of depression, including alterations in neurotransmission related to monoamines such as norepinephrine, serotonin, and dopamine (Wagner & Ambrosini, 2001), which has helped to guide pharmacological treatments, especially the use of selective serotonin reuptake inhibitors (SSRIs).

Cognitive Model

These theories emphasized the role that maladaptive ways of thinking impact a child's emotions and behaviors (Beck, Rush, Shaw, & Emery, 1979; Clark, Beck, & Alford, 1999) and focused on three types of maladaptive cognitive functions that a person with depression engages in on a daily basis. First, people with depression engage in automatic negative thoughts (e.g., "Mom is really mad, it must be something that I did"), which lead to inappropriately negative interpretations of events. Second, they have excessively self-critical views of themselves or schemas. Third, they tend to have highly negative views of themselves, the world, and the future, referred to as the *negative cognitive triad*. As an example, a child with depression may think, "I don't do well in school because I'm stupid" as an example of a negative view of themselves, "I hate school" as a negative view of their world, and "I'll never be good at anything" as a negative view of the future (Epkins, 2000). Other cognitive theories emphasize the importance of attributions in depression (Abramson, Seligman, & Teasdale, 1978; Goodyer et al., 2007). People with depression tend to attribute negative outcomes to internal factors (e.g., "I did poorly on the test because I'm stupid"), whereas positive outcomes are attributed to external factors (e.g., "I did well on the test because the teacher made it easy"). These attributions appear to be stable, or change little from situation to situation, and global, applying to almost every situation that a person with depression encounters (Curry & Craighead, 1990).

Behavioral Model

Behavioral models have focused on depression being caused by social deficits, in which a lack of social skills causes high levels of negative feedback, rather than positive, from the environment (Lewinsohn, 1974). Some theories have posited that this negative feedback is eventually internalized, which leads to negative self-perceptions and thought processes such as those described earlier (Cole, Martin, & Powers, 1997). These in turn cause the child to be predisposed to depressive symptoms, which can in turn lead to further maladaptive behavior, creating a continuous negative feedback loop that maintains symptoms.

Interpersonal Model

The interpersonal theory of Coyne (1976) and Coyne, Burchill, and Stiles (1990) proposed that people who have depression have interpersonal behaviors and attitudes, such as constantly seeking reassurance from others that they are loved, that lead to rejection from others. Even when others provide reassurance, its sincerity is questioned, and further reassurance is sought. This causes a pattern of negative interactions where the child with depression seeks more and more reassurance from others who become disaffected and increasingly prone to reject the child (Klerman, Weissman, Rounsaville, & Chevron, 1984).

DSM-IV-TR MOOD DISORDERS

There are four primary types of mood disorders described in the *DSM-IV-TR*: depressive disorders, bipolar disorders, mood disorder due to a medical condition, and substance-induced mood disorders (APA, 2000). Differentiation between the disorders requires knowledge of the four types of mood episodes (major depressive, manic, mixed, and hypomanic), which are present or absent depending on the type of disorder. Although diagnostic criteria within the disorders are the same for adults and children, there are differences in common presentation, which will be highlighted in the following paragraphs (Kaufman, Martin, King, & Charney, 2001).

Major Depressive Disorder

Major depressive disorder has the same diagnostic criteria in children as it does in adults. To diagnose MDD in children, one needs to be aware that a child's external behavior (e.g., disruptiveness) is sometimes more easily expressed than his or her internal emotions, so internalizing problems such as depression can often be overlooked, and instead, attention is focused on disruptive behavior. Another diagnostic concern is that some characteristics of depression, such as irritable mood, are seen more frequently in children, a fact one has to keep in mind when assessing for MDD (Hammen & Rudolph, 2003).

The primary *DSM-IV-TR* diagnostic criterion for MDD is having one or more major depressive episodes. This means that a person must be displaying at least five of the following symptoms for most of the day, nearly every day, for at least two consecutive weeks, with at least one symptom being depressed mood or disinterest: (1) depressed most of the day, (2) diminished interest in all or almost all activities, (3) appetite disturbance, (4) fatigue, (5) feelings of worthlessness, (6) inability

to think or concentrate, and (7) suicidal ideation or suicidal attempts. The child's mood may be affected by displaying behaviors such as crying, feeling discouraged, and repeated emotional outbursts. Appetite disturbance may be evident through either an increase or decrease in appetite and in weight. The child may exhibit feelings of worthlessness through statements such as, "I'm stupid" and "No one likes me." Feelings of worthlessness can be differentiated between depressed and nondepressed children by the depressed child being hesitant in trying to do something different. Nondepressed children for the most part will not be hesitant to try something different. Keep in mind, however, that regardless of whether the child is depressed or not, he or she may be tentative about trying something that is new or different if it is beyond his or her developmental capabilities. In addition, clinically significant impairment in social, occupational, and other important areas must be present. The *DSM-IV-TR* recognizes that research has shown that irritableness may be more common than depressed mood or sadness in children as compared with adults (e.g., Goodyer & Cooper, 1993). MDD can either be diagnosed as a single episode or recurrent episode.

There are several developmental differences between children and adults in the expression of depression. Depressed children, especially preschoolers and preadolescents, are more likely to show a depressed appearance than unpleasant mood or hopelessness (Carlson & Kashani, 1988; Kashani & Carlson, 1987; Ryan et al., 1987). A depressed mood may be shown by behaviors such as frequent crying, loss of interest in enjoyable activities, changes in appearance, and increased social withdrawal (Papolos & Papolos, 2000). Children are also likely to display exaggerated somatic complaints (Kashani, Rosenberg, & Reid, 1989; Ryan et al., 1987). Somatic complaints that often present in children are headaches, stomachaches, and aching arms and legs that do not respond to treatment (Bardick & Bernes, 2005; Table 1). The most common emotions displayed by depressed children are irritability, indifference, lack of cooperation, and disinterest (Kashani, Holcomb, & Orvaschel, 1986).

Dysthymic Disorder

Dysthymia is another depressive disorder recognized by the *DSM-IV-TR*. In children, it is defined as a chronically depressed or irritable mood that occurs most days and persists for most of the day

Table 1. Common Somatic Symptoms of Mood Episodes in Youth

Depressive Episodes	Manic Episodes
• Sleep difficulties such as insomnia or early-morning wakefulness; excessive sleeping in younger children	• Decreased need for sleep; may present in adolescents as not sleeping for multiple days at a time
• Appetite decrease or increase and resulting weight change	• Greatly increased energy
• Headaches	• Loss of appetite
• Chronic pain in back or chest	• Increased interest in sex and sexual activities (in adolescents)
• Gastrointestinal difficulties or complaints of upset stomach	
• Decreased sexual desire or interest (in adolescents)	
• Complaining of "not feeling well" with no specifics	
• Aching feelings in extremities	
• Excessive fatigue	
• Dizziness or lightheadedness	

for at least 1 year (APA, 2000). In conjunction with the depressed mood, two or more of the following symptoms are present: appetite disturbance, sleep disturbance, fatigue, low self-esteem, inability to concentrate, and hopelessness. For dysthymia to be diagnosed, the youth cannot be without the above symptoms for more than 2 months at a time during the previous 1 year, and there cannot be a major depressive episode during that time. Dysthymia is often considered a low-grade depression, where the symptoms of MDD are present, but in fewer numbers and with less severity (Ingram & Trenary, 2005). Up to 70% of youth with DD, however, develop what is referred to as double depression, where they experience a major depressive episode in addition to the DD (Kovacs, Akiskal, Gatsonis, & Parrone, 1994).

Bipolar Disorder

Bipolar disorder is characterized by mood swings from extremely low (depression) to extremely high (mania; Miklowitz, 2001). There is considerable debate on the nature of bipolar disorder in children and adolescents, both in terms of symptoms and epidemiology. Bipolar disorder in adolescents is a controversial topic due to the many diagnostic obstacles present. Caution must be exercised when giving a diagnosis of bipolar disorder to youth, especially if the clinician is not familiar with the developmental and symptomatic differences between adults and children.

One obstacle present is misperception of the symptoms. A child's behavior such as irritability,

defiance, and mood swings may be labeled as excessive teenage emotional or behavioral dysregulation, especially in the absence of a history of specific episodes (Hammen & Rudolph, 2003). Some of the key features of bipolar disorder in adults are not present in youth, as childhood bipolar disorder is typically not characterized by acute onset of symptoms, an interval of moderate functioning between episodes, or definite episodes of elevated mood or irritability (Gellar & Luby, 1997). For instance, more rapid cycling of depression and mania has been seen in adolescents (Gellar et al., 1998), whereas symptoms such as grandiosity and euphoric mood are fairly rare (Carlson, 1999). High rates of psychotic features have also been noted (Kafantaris, Coletti, Dicker, Padula, & Pollack, 1998), which makes diagnosis difficult for inexperienced clinicians.

Another obstacle is that many bipolar disorders are initially displayed as depression, so diagnosis only occurs after following the person over time and with the presence of mania. An additional obstacle is the co-occurrence of other conditions such as drug or alcohol abuse, conduct problems, and especially ADHD (Biederman, Faraone, Chu, & Wozniak, 1999). There is great concern for the overlap or similarity of ADHD and bipolar disorder in adolescents. Biederman et al. (1999) have found high rates of ADHD in children diagnosed with mania, as well as high rates of mania among children diagnosed with ADHD.

According to the *DSM-IV-TR*, there are two types of bipolar disorders. Although both require a history of major depressive episodes, Bipolar I is defined by the presence of manic or mixed episodes, whereas Bipolar II has hypomanic episodes (APA, 2000). Manic episodes are characterized by a period of at least 1 week where the person's mood is abnormally and constantly elevated, unrestrained, or irritable. There must be at least three of the following symptoms present during the mood disturbance (four if the mood is only irritable): grandiosity, decreased need for sleep, more talkative or pressure to keep talking, having flight of ideas, easily distracted, increase in goal-directed activity, and involvement in activities that could have serious negative consequences. A child could manifest behaviors such as risk taking, being able to go with little or no sleep for several days without tiring, talking too much or too quickly, and changing topics also very quickly (Bardick & Bernes, 2005).

The diagnostic criteria for children and adults for manic episodes are similar. A mixed episode meets the criteria for both manic episode and a major depressive episode nearly every day during a 1-week period. Symptoms most associated with a mixed episode are appetite disturbance, agitation, insomnia, psychotic features, and suicidal thinking (APA, 2000). For both manic and mixed episodes, the performance of the person must be so impaired that his or her occupational or social functioning is compromised or he or she requires hospitalization, and the symptoms are not due to the effects of drug abuse, medication, or other treatment. Social functioning in a child may be compromised through difficulties in peer and family interactions, school performance, play and recreation, and social withdrawal (Bardick & Bernes, 2005). A hypomanic episode is characterized by a period of at least 4 days where the person's mood is elevated, unreserved, or irritable (APA, 2000). An additional three of the symptoms of manic episodes must be present along with the mood disturbance, and when these symptoms are present, the person's functioning and personality are uncharacteristically impaired. In contrast to manic and mixed episodes, however, a hypomanic episode is not severe enough that it impairs functioning for the individual either socially or occupationally.

Cyclothymic Disorder

Cyclothymia is the second class of bipolar disorders. The symptoms for cyclothymia in children and adolescents include periods of hypomanic and depressive symptoms for at least 1 year that do not meet the criteria for a major depressive episode; during the year's time, the symptoms have not been absent for more than 2 months; there has not been a major depressive, manic, or mixed episode during the first year of the disturbance; and it is not better accounted for by another disorder or medical condition (APA, 2000). In addition, the symptoms cause severe functional difficulty in social, occupational, or other important areas.

Other Mood Disorders

There are two other types of mood disorders in the *DSM-IV-TR* that should be of particular interest to nurses due to their causes. Both are characterized by significant impairment in functioning and a disturbance in mood that is prominent and persistent and includes one or both of the symptoms: a depressed mood or a noticeable disinterest in all or almost activities or a mood that is elevated, unrestrained, or irritable. The first is mood disorder due to a general medical condition, where there is

evidence that the disturbance is caused by a general medical condition and that the disorder is not better accounted for by another mental disorder. Diagnostic criteria include the following: full criteria for major depressive, manic, mixed, or hypomanic episode need not be met; it must be evidenced from the history, physical examination, or laboratory findings that the problem is due to a general medical condition; it is not accounted for by another mental disorder; problems do not occur during the course of a delirium exclusively; and the symptoms cause significant distress or impairment in social, occupational, or other important areas in functioning. Some examples of general medical conditions that may cause mood symptoms are Parkinson's disease, Huntington's disease, endocrine conditions, viral or other infections, or certain cancers. Prevalence rates range from 25% to 40% in individuals with certain neurological conditions such as Parkinson's disease, Huntington's disease, and multiple sclerosis (APA, 2000).

The second is a substance-induced mood disorder, where evidence from background information, physical examination, or laboratory findings suggests that the symptoms developed during or shortly after a substance intoxication or withdrawal. Some symptoms that might appear as such but are not substance induced are the following: symptoms that come before the onset of the substance use; symptoms that continue after a considerable time after the end of an acute withdrawal or severe intoxication or are greater than what would be expected given the type or amount of substance use or the time of use; or there is support that suggests that there is an existence of a independent non-substance-induced mood disorder. Some substances that may co-occur with mood disorders during intoxication are alcohol, amphetamine, cocaine, hallucinogens, opioids, and sedatives, to name a few. Some common substances that can cause a mood disorder during withdrawal are alcohol, amphetamine, cocaine, hypnotics, and anxiolytics (APA, 2000).

ASSESSMENT

Given the large amount of research in the area of psychological assessment for mood disorders, this article will not provide a comprehensive review but instead an overview of the most commonly used means of assessment. One common feature of all the assessment methods reviewed here is that they are all meant to be used as one piece in a comprehensive assessment as accurate diagnoses should rely on a variety of sources of information (Sattler, 2001). Typical areas of assessment include current symptoms and symptom development, developmental history, family history of psychological disorders, and current and previous levels of psychosocial functioning, as reported by the child, parents, and other caretaking adults (e.g., teachers). In general, there are two types of instruments that can aid one in making a diagnosis: diagnostic interviews and self-report or other-report scales.

Diagnostic interviews can be divided into structured and semistructured formats. In semistructured formats, the interviewer is given leeway to ask additional questions and follow-up on answers to asked questions. In structured interviews, little variation is allowed in how one asks questions, and no further questioning is allowed. Semistructured interviews are used by professionals, typically psychologists or other mental health practitioners, who have extensive knowledge of the field and can thus follow up appropriately on given information. Structured interviews, on the other hand, are designed to be used by individuals with less training or can even be administered via a computer program. There are both structured and semistructured interviews that can assist with a diagnosis of a mood disorder.

The most commonly used diagnostic interview for mood disorders is the semistructured Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS; Orvaschel & Pugi-Antich, 1987). It has two versions, one that asks about present episodes (K-SADS-P) and one that asks about both current and past episodes (K-SADS-E). The K-SADS requires a highly trained clinician to administer, is appropriate for ages 6–16 years, and requires between 60 and 90 minutes of administration time. Very strong reliability and validity have been found for the K-SADS, especially for the mood disorders of major depression and bipolar disorder (Kaufman, Birmaher, Brent, & Rao, 1997; McCauley, Mitchell, Burke, & Moss, 1988). The most commonly used structured interview is the National Institutes of Mental Health's *Diagnostic Interview Schedule for Children* (*DISC-IV*; Schaffer, Fisher, Lucas, Duncan, & Schwab-Stone, 2000). It can be administered by someone with no clinical training due to its highly structured format or even self-administered via a computer program. Parallel versions are available to give to the youth directly (aged 9–17 years) or to a caregiver (aged 6–17 years).

Research has found sound psychometric properties for the *DISC-IV* and strong validity when diagnoses based on it are compared with those of semistructured interviews, clinician's diagnoses, and rating scales (King et al., 1997).

Self-report and other-report scales are a very useful adjunct to a diagnostic interview, providing normative information that allows for a comparison with the youth's peer group. A number of scales are available that assess depression either specifically or as part of a broader measure. One of the most commonly used is the *Children's Depression Inventory* (Kovacs, 1992). This is a self-report 27-item multiple choice questionnaire for those aged 7–17 years that has been shown to have strong reliability and validity (see Semrud-Clikeman, Bennett, & Guli, 2003 for a review). Another depression-specific self-report measure is the *Reynolds Child Depression Scale* (*RCDS*; Reynolds, 1989). A very psychometrically strong measure with 30 items, the *RCDS* is suitable for those aged 8–13 years, with another version available for those aged 12–18 years (Reynolds, 1987). There are several very good parent and teacher report measures that cover multiple areas of emotional, psychological, and behavioral functioning, notably the *Personality Inventory for Children-Second Edition* (*PIC-2*; Wirt, Lachar, Seat, & Broen, 2001), *Behavior Assessment System for Children-Second Edition* (*BASC-2*; Reynolds & Kamphaus, 2003), and the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001). Both the CBCL and *BASC-2* have parallel forms for the child, parent, and teacher, whereas the *PIC-2* has only a parent form. All three scales have been shown to have very good reliability and validity for assessment of psychological problems, but the CBCL and *PIC-2* are better used as screening measures for general distress. The *BASC-2*'s depression scale, however, has been shown to have very strong construct validity and is suitable to use as a specific measure of depressive symptoms (Achenbach & Rescorla, 2001).

It should be noted that a thorough and accurate assessment may be difficult with children for several reasons. A lack of insight into symptoms and development is typical of children, especially those under the age of 10 years, and even adolescents may have difficulty giving good histories of their symptom development. Also, externalizing symptoms, such as oppositional behavior or aggression, are more easily observed and reported on by parents and teachers than internalizing problems, such as depression and anxiety. As described earlier, the difference in symptom presentation between adults and children may provide further confusion if the assessor is not well versed in how depression is typically manifested in children. For these reasons, it is important to always follow a multimodal assessment plan, gathering information from multiple sources and methods, especially parents or other caretakers and teachers.

TREATMENT

Pharmacological Treatment

The use of antidepressants to treat depressive symptoms in youth has become a common practice. However, guidelines from the American Academy of Child and Adolescent Psychiatry and expert opinion agree that, unless the depression is severe or recurrent, use of medication is generally unwarranted (Birmaher et al., 2007; Cheung et al., 2008). Nevertheless, treatment of all ranges of depressive symptoms with medication has become common practice (Safer, 1997), with SSRIs being the most frequently prescribed drug for mood disorders (Ingram & Trenary, 2005). Although SSRIs have become popular for several reasons, primary reasons include their efficiency, requiring only one daily dose, and limited side effects, which include nausea, insomnia, nervousness, and sedation, that usually disappear after the first few weeks.

Several research studies have found SSRIs to be effective in treating depression in children and adolescents. For example, in an evaluation of the SSRI fluoxetine, Emslie, Weinberg, Rush, Adams, and Rintelmann (1990) found that with depressed youths between the ages of 7 and 17 years, fluoxetine was much more effective in reducing depression than does a placebo. In the Treatment for Adolescents With Depression Study (TADS), the combination of fluoxetine with cognitive–behavioral therapy (CBT) was superior to fluoxetine alone and to CBT alone. Results showed that 71% of those in the fluoxetine-with-CBT group, 60.6% for fluoxetine alone, and 43.2% for CBT alone were very much improved or much improved (March et al., 2004). The results from TADS and others suggest that pharmacotherapy should be used concurrently with a psychosocial intervention for those with complex or severe depression.

Two other types of medications often prescribed to treat mood disorders in adults but are not

recommended for use in children or adolescents are tricyclic antidepressants and monoamine oxide inhibitors (MAOIs). For tricyclic antidepressants, which in adults show effectiveness consistently and are used often as a reference point for new treatments (Gitlin, 2002), problems include the need to increase the dosage to obtain the full effect and the severe side effects such as heart arrhythmias, tachycardia, urinary problems, sedation, weight gain, and blurry vision that result from increased dosage. MAOIs are not used to treat children due to their side effects (Stark et al., 2006). These medications have serious dietary restrictions that are required for their use as foods that contain tyramine can raise a person's blood pressure dangerously high (Ingram & Trenary, 2005). Some alcoholic beverages such as wine and beer and many cheese contain high amounts of tyramine and should be avoided. Also, MAOIs cannot be taken in combination with drugs that have monoamine agonist activity because this may lead to hypertension or even death (Ingram & Trenary, 2005).

Controversies Regarding Pharmacotherapy

Although in the past the effectiveness of a drug served as the main criteria for use, the amount of risky side effects of antidepressants is taking the place of treatment effectiveness, especially in the public eye (Ebrneier et al., 2006). This change, as well as the concern over highly publicized cases where youth taking antidepressants had committed suicide, caused the Food and Drug Administration (FDA) to issue a black-box warning for antidepressants, saying that they may lead to an increase in suicidal thoughts and activities (FDA News, 2004). Studies that have investigated whether antidepressants cause suicide were unclear and vague in their results for several reasons (see Bostwick, 2005 for a review). One reason is the lack of clarity in the definition of suicide and what constitutes a child. Some terms that were used to describe suicide were behavioral activation, impulsivity, and emotional liability. Some studies conducted in the United Kingdom considered children to be any patient 18 years old or younger, others only used teenagers, and one study considered preteens to be as young as 5 years old.

Coupled with the vague terminology described earlier, it has been alleged that pharmaceutical companies had withheld negative outcomes for their products and that only positive results were used for publishing. Critics allege that one of the

possible reasons for this is that the regulatory agencies had become lax in their positions, which, coupled with the profit-minded nature of medication development, suppressed any negative research results (Bostwick, 2005). Media stories about youth killing themselves while taking SSRIs contributed to the concern of the risk of suicide in children, but there is still a mixed message of whether antidepressant use increases risk of suicide. In a review of nine studies conducted in the United Kingdom which had more than 1,700 patients combined, medicated patients were 1.5 times more likely to show suicidal behavior than do control subjects but that rates of suicidal behavior in both control and experimental subjects were very low (Ferguson et al., 2005). Other studies have also found that the link between antidepressants and suicide was weak. Valuck, Libby, Sills, Giese, and Allen (2004) found that the longer patients took antidepressants, the more their risk for suicide decreased. The authors believed that their results were due to a delayed antidepressant treatment response. Support was also found for the theory that comorbidity and certain demographic factors contributed more to the risk of suicide than do antidepressants (Valuck et al., 2004).

In the abovementioned TADS (March et al., 2004), rates of suicidal thoughts and behaviors were found to drop significantly across all treatments options. However, those taking only fluoxetine during treatment had significantly higher rates of new or alarming suicidal thoughts or behavior (15%) than the rates of those in either the combination CBT–fluoxetine (8%) or CBT-alone (6%) groups, particularly in the early stages of treatment. This may be because recovery takes place in stages (Ebrneier et al., 2006), so the phenomenon of "rollback," a rise in energy and motivation, may occur before mood improves. If the patient had prior thoughts of suicide before taking antidepressants, the surge of motivation after taking the antidepressants could increase the patient's risk of committing suicide (Bostwick, 2005). Another possible reason for suicide attempts is that the side effects that are related to SSRIs such as insomnia and nervousness coupled with motor restlessness can be very uncomfortable and unbearable (Teicher, Glod, & Cole, 1990).

Psychosocial Treatments

In the area of psychotherapy effectiveness, CBT and interpersonal therapy for adolescents (IPT-A) have been the two treatment models most widely

Table 2. Rates of Comorbid Mood Disorders in Youth With Medical Conditions

Medical Condition	Mood Disorder Rate, %	Reference
Asthma	15	Data from Wamboldt, Weintraub, and Krafchick (1996)
Cancer	14	Data from Essen, Enskar, Kreuger, Larsson, and Sjoden (2000)
Cardiac outpatients	13	Data from Kashani, Lababidi, and Jones (1982)
Congenital heart disease	11–15	Data from Karsdarp, Everaerd, Kindt, and Mulder (in press)
Crohn's disease	27	Data from Burke, Meyer, Kocoshis, and Orenstien (1989)
Cystic fibrosis	11.5	Data from Thompson, Gustafson, and Hamlett (1992)
Diabetes	5	Data from Engstrom (1992)
Orthopedic procedures	23	Data from Kashani, Venzke, and Millar (1981)
Pseudoseizures	32	Data from Wyllie, Glazer, Benbadis, Kotagal, and Wolgamuth (1999)
Severe burns	13–26	Data from Thombs, Bresnick, and Magyar-Russell (2006)
Sickle cell anemia	18	Data from Schaeffer et al. (1999)

studied and supported (Stark et al., 2006). The main objectives of CBT are for youth to recognize that how they think affects how they feel and to learn how to modify these beliefs (Beck et al., 1979). CBT draws from both the cognitive and behavioral models described earlier to design effective interventions at the cognitive, behavioral, and affective levels (Young, Weinberger, & Beck, 2001) and focuses on how crucial information processing is in maintaining depression (Ingram & Holle, 1992).

Cognitive–Behavioral Therapy generally begins with youth learning that their problems stem from deficits in skills and their negative thinking. They are also taught to recognize changes they experience in their emotions. Once the youth has been taught about the underlying causes of their depression, treatment is moved to an interpersonal–social skills acquirement phase where he or she learns new skills for coping, skills for problem solving, skills for emotional control, and social skills. Youth are also encouraged to participate in activities that provide a pleasant experience to relieve them from depressive symptoms, often referred to as behavioral activation. For the last phase of treatment, the patients are given the tools necessary to replace their negative thoughts with more positive thoughts, a process called cognitive restructuring. The areas that children are taught to focus and have a positive outlook on include thoughts about themselves, life in general, interpersonal relationships, and the future. As a final part of their treatment, children are given structured therapeutic homework assignments to apply the strategies that they learned (Young et al., 2001). Although CBT for youth has been found to be more effective than no treatment, its overall effectiveness as a stand-alone intervention is somewhat in question as most meta-analyses have found significant benefits (e.g., Weisz, McCarty, & Valeri, 2006), but a recent large-scale clinical trial found it to be no more effective

than a placebo for adolescents (March et al., 2006). Thus, CBT may benefit from being combined with IPT-A or pharmacotherapy (Stark et al., 2006).

The goals of IPT-A are to diminish the depressive symptoms in adolescents while improving their interpersonal functioning (Stark et al., 2006). Before the treatment begins, the child and therapist identify one or two problem areas that can include grief, interpersonal role disputes, role transitions, interpersonal deficits, and living in a single-parent family (Ingram & Trenary, 2005). By identifying these areas, the therapist and child are able to narrow in on the problem areas and use them as a basis for treatment. Treatment is then focused on the problem areas that were identified initially, and strategies for implementing plans are structured to solve the areas of concern. IPT-A is considered to be a promising treatment of depression in adolescents, with studies that have examined IPT-A finding it to be very effective (Mufson, Moreau, Weissman, & Garfinkel, 1999; Weissman, Markowitz, & Klerman, 2000).

IMPLICATIONS FOR NURSES

With the considerable number of roles that nurses can play in the provision of care for a child or adolescent with emotional or behavioral difficulties, knowledge about the signs, symptoms, and effective treatment options available for psychological disorders can be highly beneficial to both the provider and client. Routine screening for psychological disorders in youth by nurses at both inpatient and outpatient settings would allow for more accurate hypotheses about what is causing a child's presenting problem, whether it is a physical, behavioral, and/or emotional complaint. This is especially true in the case of mood disorders, which have a number of associated somatic complaints (Table 1) and frequently

co-occur in youth with medical illnesses (Table 2). Being aware of how depression may present in terms of somatic symptoms such as sleep disturbance or stomachaches can decrease the amount of time between a client presenting with a complaint and proper diagnosis of the problem. A nurse who is accurately able to assess or explain why, even though someone's child is presenting with physical illness, there may not be a purely physical cause can be effective in preventing unneeded diagnostic testing and in addressing parents' concerns for the health of their child.

Knowing some of the likely etiologies, particularly the maladaptive cognitions often seen in those with depression, can also assist in making a differential diagnosis and obtaining proper treatment as soon as possible. For example, if a nurse frequently observes or overhears a patient making remarks similar with the maladaptive cognitions mentioned earlier, questioning about depressive symptoms could lead to a referral to a specialist for further assessment. Observing patterns of familial interactions that may be maintaining depressive symptoms can provide a point of entry to discuss possible psychological causes of somatic symptoms if a family is resistant to a nonmedical interpretation of their child's physical complaints. These recommendations can be especially important for nurses working within school systems as they are often the first line of medical contact for many children and adolescents and may be more familiar with a child than a nurse in an outpatient clinic setting.

Although this article provides an overview of assessment methods and diagnostic criteria for mood disorders, the difficulty in diagnosing and differentiating between types of mood disorders in children often requires a multidisciplinary team with specialized knowledge and experience. Those interested in gaining further expertise in the assessment and treatment of pediatric mood disorders are highly encouraged to seek out formal training in those areas, either through continuing education courses and seminars, self-education, or in other more formal settings. Psychiatric nurses and advanced practice nurses who have prescriptive privileges are especially encouraged to keep current on the latest information regarding empirically supported assessments and treatments, both pharmacologically and psychologically based, and any risks or side effects that may result from such treatment.

CONCLUSIONS

Mood disorders in children are one of the most impairing classes of emotional and behavioral disturbances in youth, causing problems in social, academic, and interpersonal functioning. The differences in presentation and developmental course between adults and children with mood disorders may lead some clinicians without specialized knowledge to misdiagnose and mistreat a child or adolescent with a mood disorder. A multimethod, multi-informant approach to assessment, including diagnostic interviews, rating scales, and behavioral observations, is an effective way to differentiate between mood disorders and other similar presentations. A proper assessment will enable a clinician to obtain proper evidence-based treatment of that particular mood disorder, which can include pharmacological treatments such as SSRIs and psychosocial interventions such as behavioral, cognitive–behavioral, and interpersonal therapies.

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