Pediatric Depression Detection Methods

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EDUCATIONAL OBJECTIVES

1. Become familiar with diagnostic criteria and course of depression in children and adolescents, including specific features of depression characteristics during developmental stage.
2. Institute the application of rating scales, clinical interviews, and medical work-ups in the assessment of pediatric depression.
3. Develop increased comfort with the assessment of suicidality in youth who are or may be depressed.

Depression in childhood and adolescence can be a prolonged and debilitating disorder, with significant functional impact. Because depression rarely presents as the chief complaint, primary care providers must be aware of the signs and symptoms of depression in general, and those unique to children at different developmental stages.

According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR), major depressive disorder (MDD) in a child or adolescent must include the experience of one of the following: a depressed mood, an irritable mood, or anhedonia (decreased pleasure or interest in previously enjoyed activities) for most of the time over at least 2 weeks.1 This change in mood or loss of interest must be accompanied by at least four other depression criteria (see Table 1, page 514) to make a diagnosis.

A depressive episode is considered mild when there is a limited number of symptoms and functional impairment is minimal. More symptoms and more impairment are characteristic of moderate episodes, and severe episodes are said to occur when most of the DSM criteria are present and there is a marked impairment in functioning. Severe episodes of depression can be accompanied by psychotic symptoms such as hearing voices or experiencing delusions. MDD may occur once in a person’s lifetime, or it can be recurrent.1

Dysthymic disorder (DD, dysthymia) is a form of depression that is typically less severe than major depression, but is more persistent. Dysthymia is diagnosed when a child or adolescent experiences depressed or irritable mood more often than not for at least a year, but does not meet criteria for either an active major depressive episode or a major depressive episode that has partially resolved. At least two other depressive symptoms besides depressed or irritable mood must be present before making the diagnosis (see Table 1, page 514).1

When depressive symptoms are clinically significant, but the criteria for diagnosing MDD or DD are not met, then depressive disorder not otherwise specified (NOS) could be diagnosed.1

Approximately 20% of adolescents will have experienced a major depressive episode.2-4 At any given time, up to 2% of children and 8% of adolescents are clinically depressed,2,5 while another 5% to 10% of youths have symptoms of depression that, although not meeting criteria for major depression or dysthymic disorder, cause significant impairment.6,7 Additionally, 14% of students in grades 9 through 12 endorsed having seriously considered suicide over the past 12 months when asked in a national survey. Of those, 11% said they had made a plan to do so, and 6% reported attempting suicide at least once during that period.8

PRESENTATION OF PEDIATRIC DEPRESSION

The younger the child, the less likely “depression” will be the child’s chief complaint. The prevalence of depression is low in preschool-aged children, estimated by one reviewer at near 1%.9 At this developmental stage, when children have few language skills to describe their emotions, occluding depression’s functional impact, DSM criteria may be difficult to apply.9 In one study of preschool-aged children, anhedonia (loss of interest) was the most specific symptom for depression.10 Irritability and/or sadness was present in 98% of depressed preschool children and was the most
specific symptom, suggesting that children in this age group who do not experience irritability or sadness are unlikely to be clinically depressed.10

Compared with adults, school-aged children with depression are more likely to present with behavioral problems and social withdrawal.1,2,6 Rather than seem consistently low in spirits, a child may be labile, angry, or irritable. Poor frustration tolerance and temper tantrums may be common,6 as well as somatic complaints such as fatigue, gastrointestinal concerns, headache, or other pains.1,2,6,11 In contrast, excessive sleep and weight loss are less likely to occur in children than in adults.12 Psychotic depression features are rare in childhood depression; when they do occur, a child is more likely to hear voices than to experience fully formed delusions as can be seen in adolescents and adults.2,5,7,12 Boys and girls experience depression equally in these early years, yet by adolescence, females are twice as likely as males to have a diagnosis of MDD.2,6

Adolescent depression tends to mimic adult depression, although there are some differences. Like in younger children, irritability may be the predominant mood state, and the initial presentation to a provider may be for a somatic complaint or a behavioral issue.13 In one large prospective, epidemiologic study, adolescents were more likely than adults to endorse feelings of worthlessness and guilt.4 They were also less likely than adults to endorse changes in weight or appetite, and less likely to have thoughts of death or suicide.4

Adolescents may also present with “atypical features” of depression, in which there can be increased appetite and sleep, feelings of heaviness in the limbs, significant sensitivity to rejection, and mood that can readily improve in response to positive events.1,7,14

PROGRESSION OF PEDIATRIC DEPRESSION

Untreated episodes of depression can last 7 to 9 months in children.2,12 After MDD does remit, recurrence is common: up to 70% by 5 years.2,3,5,6 As many as 10% of major depressive episodes become chronic.2,3 Dysthymic disorder can last 3 to 4 years.2,6 At 5-year follow-up, the majority of youth initially diagnosed with dysthymia will have developed MDD.3

Depression increases the risk for multiple other psychiatric disorders in childhood and adolescence. These include disruptive behavior disorders, personality disorders, and substance use disorders.2 Such children are more likely than non-depressed peers to have physical, academic, interpersonal, legal, and occupational problems.3,5,6 Subclinical symptoms of depression may persist after resolution of the depressive episode, continuing to cause significant impair-
ment. Additionally, having some residual symptoms of depression increases the likelihood of relapse, and more than one depressive episode predicts poorer long-term outcome.

COMORBIDITIES OF MDD

Of children and adolescents with a depressive disorder, 40% to 90% have at least one comorbid psychiatric disorder, many with two or more. It is important to identify comorbid disorders, as they may complicate the presentation, interfere with treatment, and portend a poorer prognosis. MDD and DD can coexist, with dysthymia typically preceding the onset of MDD. Anxiety disorders are the most common comorbidity, present in 30% to 80% of depressed children. Substance abuse becomes more common in adolescence, and can exacerbate the underlying condition and can increase suicidal risk, in addition to significantly affecting a youth’s functioning. Other comorbidities include disruptive disorders such as attention deficit/hyperactivity disorder, oppositional defiant disorder, and conduct disorder.

RISK FACTORS

Depression in children and adolescents appears to develop as a result of both biological and environmental factors. A family history of depression is common, and having a depressed parent significantly increases a child’s risk. Besides genetic influences, parental depression may contribute to a child’s psychopathology due to the parent modeling depressive thinking and coping styles. Youth with a tendency toward self-consciousness and poor self-esteem, who perseverate on negative events, and who are apt to see things in a negative light, are more likely to become depressed. Family and peer conflict, stressful life events, and lack of social support can also contribute to a child becoming depressed. Conversely, quality parental and peer support, and school engagement can be protective. Anxiety disorders are also a risk factor for development of depression.

DIFFERENTIAL DIAGNOSES

It is important to distinguish depression from the normal transient ups and downs of childhood and adolescence. Duration and intensity of mood disturbance are important factors in making this distinction. An adjustment disorder is a response to stressful events or situations within the previous 3 months that has resulted in depressive, anxious, or behavioral symptoms that do not meet diagnostic criteria for another mental health disorder. It is important to note that stressful events can also trigger major depressive episodes; a child with symptoms meeting full criteria for MDD would not qualify for an adjustment disorder diagnosis.

Episodes of depression also occur as part of bipolar spectrum disorders. Some studies have suggested that 20% to 40% of adolescents with MDD will develop BPD, although others have found rates to be lower. Factors that seem to increase risk for development of BPD include very early onset depression, significant physical slowing, a history of manic or hypomanic symptoms induced by a medication, the presence of psychotic symptoms, and a family history of bipolar disorder.

<table>
<thead>
<tr>
<th>TABLE 1. DSM-IV-TR Criteria for Depression Disorders in Children and Adolescents</th>
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<tr>
<td><strong>Major Depressive Episode</strong></td>
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<td>Five or more symptoms present for at least 2 weeks.</td>
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<td><strong>Must have either:</strong></td>
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<td>• Depressed mood most of the day nearly every day (predominant mood can be irritable in children and adolescents).</td>
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<td>• Decreased interest or pleasure in activities.</td>
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<td><strong>Additional symptoms:</strong></td>
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<td>• Weight loss or gain; decreased or increased appetite (children may fail to make expected weight gains).</td>
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<tr>
<td>• Insomnia or excessive sleep.</td>
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<td>• Physical agitation or lethargy.</td>
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<td>• Fatigue or loss of energy.</td>
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<tr>
<td>• Feelings of worthlessness or excessive guilt.</td>
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<td>• Difficulty concentrating or making decisions.</td>
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<tr>
<td>• Recurrent thoughts of death or suicidal ideation or behavior.</td>
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Source: Adapted from DSM-IV-TR.
Mood symptoms can also be caused or exacerbated by underlying medical conditions or the use of a substance (see Table 2). Some prescription medications and illicit drug use also can cause depressive symptoms.

**ASSESSMENT OF DEPRESSION**

Many youth with depression do not request a depression evaluation from a primary care provider, and therefore are at risk of going undiagnosed. For that reason, the US Preventive Services Task Force recommends that adolescents between the ages of 12 to 18 years be screened for depression when there are systems in place to ensure accurate diagnosis, treatment, and follow-up. They do not recommend routinely screening children 7 to 11 years of age, due to insufficient evidence for the benefit of screening. Guidelines for Adolescent Depression in Primary Care (GLAD-PC) recommends that “systematic identification strategies” be employed for high-risk adolescents at least once a year, during routine health visits or even during urgent care.

**Self-Report Questionnaires**

Self-report questionnaires are useful as screens for psychiatric symptoms, and can also assist with obtaining information from youth who are uncomfortable discussing some topics one-on-one with the provider. Self-reports can provide a basis for obtaining more detailed information (“What did you mean when you answered this question this way?”). When used before initiation of treatment and repeated at follow-up visits, rating scales aid in the assessment of treatment response. It is important to remember that all rating scales result in some degree of false positives and false negatives, and should never replace the clinical interview as the basis for diagnosis and treatment recommendations.

There are multiple “broadband” and depression-specific questionnaires available, not all of which are included here.

Broadband rating scales assess multiple symptom domains. They are useful as general screens for psychosocial dysfunction, but may be less helpful than a depression-specific scale for making a diagnosis. Using broadband rating scales assists the provider in screening for other comorbidities with depressive problems. The Child Behavior Checklist (CBCL) and the Behavior Assessment System for Children (BASC) are commonly used examples that have reliably normed results, but due to their length, complexity, and cost are less ideal for screening use in primary care.

Two shorter and no-cost screening tools are The Pediatric Symptom Checklist (PSC) and the Strengths and Difficulties Questionnaire (SDQ). The PSC is a 35-item questionnaire that can be given to parents of 4- to 15-year-olds. Total, internalizing, conduct, and attention scores are determined. A youth self-report version is available (PSC-Y), as is a shorter, 17-item parent form (PSC-17). The SDQ, for children between the ages of 3 and 17 years, consists of 25 items, which cover five categories: emotional symptoms, conduct issues, hyperactivity/inattention concerns, peer problems, and prosocial behavior.

There are several depression-specific self-report rating scales that can be easily used in the primary care setting. The Center for Epidemiologic Studies—Depression Scale for Children (CES-DC) consists of 20 items and takes 5 to 10 minutes to complete. It can be used in adolescents and adults, but specificity may be low. The Patient Health Questionnaire—9 as modified for Adolescents (PHQ-A) consists of nine items that can be completed quickly by youth, and scored in session. The Moods and Feelings Questionnaire (MFQ) is a 33-item depression scale that can assess patients aged 8 to 18 years, and has both child and parent report forms. Specificity and sensitivity are good. A shorter, 13-item form, the SMFQ, is also available. Common commercially available youth self-report depression rating scales include

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**TABLE 2. Medical Conditions and Substances that Cause or Mimic Depression**

<table>
<thead>
<tr>
<th>Medical Conditions</th>
<th>Substances</th>
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<tbody>
<tr>
<td>Hypothyroidism</td>
<td>Corticosteroids</td>
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<tr>
<td>Mononucleosis</td>
<td>Stimulants</td>
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<tr>
<td>Anemia</td>
<td>Contraceptives</td>
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<tr>
<td>Certain cancers</td>
<td>Benzodiazepines</td>
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<tr>
<td>Autoimmune disorders</td>
<td>Isotretinoin</td>
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<tr>
<td>Chronic fatigue syndrome</td>
<td>Barbiturates</td>
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<tr>
<td>Multiple sclerosis</td>
<td>Interferon</td>
</tr>
<tr>
<td>Other common infectious causes</td>
<td>Antihypertensive</td>
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<tr>
<td>Other less common disorders related to hormone functioning</td>
<td>Some chemotherapy agents</td>
</tr>
<tr>
<td>Electrolyte abnormalities</td>
<td>Alcohol</td>
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<tr>
<td>Wilson's disease</td>
<td>Cocaine</td>
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<tr>
<td>Porphyria</td>
<td>Methamphetamine</td>
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<tr>
<td>Traumatic brain injury</td>
<td>Marijuana</td>
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<tr>
<td>Epilepsy</td>
<td>Inhalants</td>
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<tr>
<td>Vitamin deficiency</td>
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Adapted with permission.
the Beck Depression Inventory, used for adolescents aged 13 years and older, and the Child Depression Inventory for children and adolescents between 7 and 17 years of age.17

Importance of Clinical Interview

The clinical interview is the most important component to the diagnosis of depression. Details should be elicited about current symptoms and level of functioning. It is important to understand when the symptoms began, changes in appetite, and loss of interest in social or other previously enjoyed activities. Besides asking about core depressive symptoms, attention should be paid to recurrent physical complaints, behavioral problems at home and school, and a downward trend in grades.6 If the family consents, school teachers and administrators may be helpful informants, as they see the child for much of his or her day in a differently structured setting than that of caregivers.

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Many adolescents may not be able to recognize themselves as depressed; the provider should therefore be alert to other signs of depression such as irritability, anhedonia, and problems at home, school, or with friends.6 When assessing adolescents, it is important to delineate the limits of confidentiality early in the process so they understand that major issues of personal safety, such as having a suicide plan, will be shared with the parent or caregiver. Adolescents should have an opportunity to meet with the provider alone, although collateral information should be sought from caregivers as well. Adolescents should be asked about substance abuse, sexual activity, suicidal ideation and behaviors, non-suicidal self-harm, thoughts of hurting others, and other high-risk activities.

In all youth, exposure to stressful and traumatic events — past and present — should be assessed. If a child is currently in an unsafe situation such as ongoing abuse, the first priority is to assure safety.6 Knowledge of family psychiatric history can assist in understanding a child’s diagnosis and risk for comorbidities, and can guide treatment as well.6 Patient and family strengths should be assessed.6 Providers should be sensitive to a family’s cultural background, and how it may impact symptom presentation, perspectives of mental illness, and willingness to pursue treatment.6,15

Youth should be assessed for comorbid psychiatric diagnoses. Broadband rating scales can be helpful in screening for symptoms in other diagnostic categories. Asking general questions about anxiety levels, getting into trouble at home, at school, or with the law, and longstanding problems with inattention or hyperactivity can be helpful as well.

The presence of bipolar risk factors alone in a depressed child should not stand in the way of appropriate treatment of a depressive episode. Asking about previous hypomanic or manic episodes is also key. The presence of bipolar risk factors alone in a depressed child should not stand in the way of appropriate treatment of a depressive episode. Psychotic symptoms occur rarely,5 and can be elicited by asking whether the adolescent has had the experience of his or her mind playing tricks on him or her, or whether he or she has seen or heard things others have not, such as voices.

Medical Assessment

A thorough physical examination and review of systems can assist in ruling out an underlying medical condition and prevent medical problems from being overlooked in a child with a tendency for somatic complaints, which characterize MDD. The use of prescription and over-the-counter medications and supplements should be reviewed, and
the youth and family asked about exposures and substance use. The extent of laboratory and other medical work-ups pursued should be based on the patient’s particular constellation of signs and symptoms. Thyroid studies are reasonable to perform in a child with unexplained depression. A CBC can be useful to rule out anemia, particularly when there is significant fatigue. Pregnancy is also a consideration.

**Assessment of Suicidal Ideations**

The assessment of depression must include an assessment of suicidal thoughts, behaviors, and incidences of self-harm. There is no data to support the concern that asking about suicide could make someone suicidal.13 “Suicidal ideation” is more common, much more so than suicide attempts. While it is impossible to predict accurately who will attempt suicide, there are many risk factors to consider. Although attempts are more common in females, males have a greater risk of completion.13,23

Suicidality has been linked to mood disorders, psychotic disorders, disruptive behavior disorders, substance abuse disorders, and anxiety disorders.1,4,13,24 A history of abuse or exposure to violence, homosexual or bisexual orientation, parental mental health problems, and personal family history of suicidal behavior also increase risk.1,13,24 Suicide attempts are often preceded by an acutely stressful event such as a breakup, family discord, or getting into school or legal trouble.1,13 Protective factors include having religious beliefs, concerns about the effect of suicide on the family, and a sense of family connectedness.6,24

Adolescents may be more willing to discuss suicidal thoughts and self-harm when interviewed separately from parents. Even so, additional information about suicidal behaviors and risk should be obtained from caregivers. When asking about suicide and self-harm, it is helpful to begin with general questions, inquiring about thoughts of death and wishes that he or she were not alive. The questions can then become more specific, such as asking whether a youth has ever done anything on purpose to hurt him- or herself. Positive answers to these questions should lead to more specific questions regarding what specifically happened and when, what the youth’s intent had been (eg, death, or relief from emotional distress), and whether anyone else was told or knows about the event.13 The youth should be asked how often he or she thinks about suicide.23 The provider should ask if there are any current plans or intent for self-harm or suicide. The provider also should inquire about access to lethal means such as firearms.13

Active concerns about safety must be discussed with a responsible caregiver. For a child to be allowed to return home while having suicidal thoughts, adequate adult supervision and support needs to be in place. The presence of lethal means in the environment must be considered. While the most common method used in a suicide attempt is substance ingestion, a firearm is the method most frequently responsible for completed suicide.13,23 The recommendation should be made for any guns or highly lethal medications to be removed, at least temporarily, from the home. Even locked firearms are associated with a higher risk of suicidality.13 If not removed, firearms and ammunition should be locked away separately and the youth should have no ability to access them rapidly. Caregivers should understand that even over-the-counter and naturopathic medications can be dangerous, and any medications that are necessary to have in the home should be secured. A youth with suicidality who is sent home should have a plan in place, agreed upon by the child and caregiver, clearly indicating what to do and whom to contact in case of a crisis. There also should be a plan in place for follow-up.

When assessing suicidality, immediate risk factors to consider include the level of hopelessness and agitation, and the acuity of the current mental state (eg, actively psychotic or severely anxious or depressed).13,23 A recent highly-lethal suicide attempt, access to lethal means, and a current plan or active intent are of great concern.13,23 Intoxication also increases acute risk for suicide. Important risk factors should be considered carefully in the assessment of acute suicidal risk (see Sidebar). If a patient is thought to be at a moderate to high risk in the short term, urgent consultation with a mental health provider is warranted.13 Depending on local resources, this may

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**SIDEBAR.**

**Acute Suicide Risk Assessment: Factors of High Concern**9-11

- Suicide plan.
- Recent highly lethal attempt.
- Current intent to kill self.
- Severe hopelessness.
- Intoxication.
- Recent stressful life event.
- Agitation.
- Active delusions or hallucinations.
- Threatening violence to others.
- Currently depressed, manic, hypomanic, mixed, or severely anxious.
- Inadequate supervision.
- Availability of lethal means.

*Source: Boydston L.*
mean transfer to the emergency department for evaluation and consideration of inpatient psychiatric hospitalization.

CONCLUSION

Primary care providers should consider routine screening of adolescents for depression and develop a system for assessment for children in whom depression is suspected. A free toolkit is available online from GLAD-PC, as are several broadband and depression-specific self-report questionnaires, which can assist in assessment and evaluation of treatment response. Based on the provider’s assessment, the appropriate level of initial intervention should be determined, with the immediate safety level of initial intervention should be determined, with the immediate safety of the youth as the highest priority.

REFERENCES


