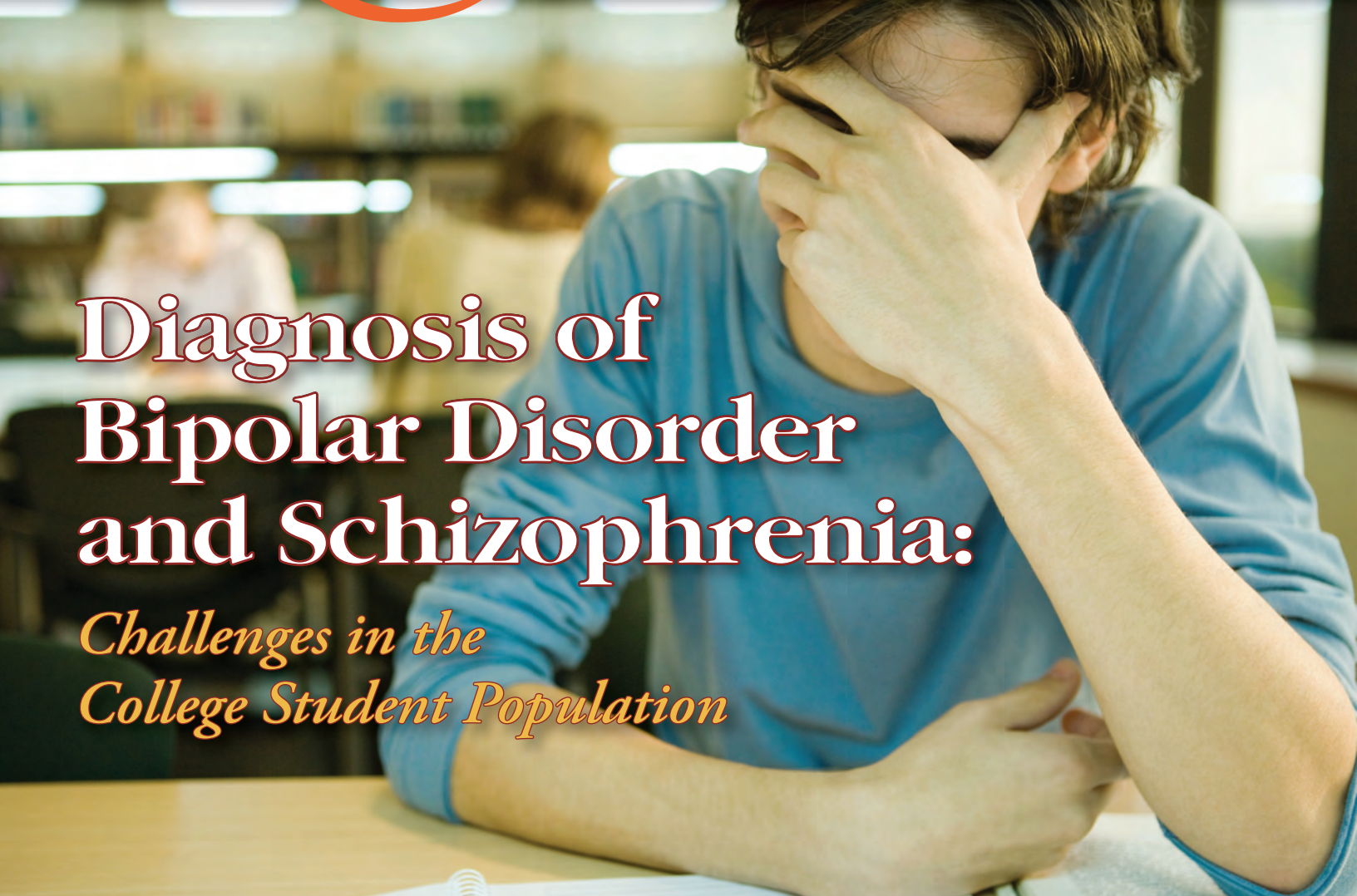




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Diagnosis of Bipolar Disorder and Schizophrenia: *Challenges in the College Student Population*

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Presented by Temple University
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Diagnosis of Bipolar Disorder and Schizophrenia: *Challenges in the College Student Population*

A CME-CERTIFIED ACTIVITY



Educational Overview

Bipolar disorder and schizophrenia are serious mental illnesses that typically present during the college-age years. The prevalence of mental illness is increasing, particularly in the young adult. The onset of bipolar disorder and schizophrenia during the college-age years and the poor outcome associated with unrecognized illness underscore the need for early diagnosis and treatment in this population.

Target Audience

Psychiatrists and other health care professionals interested in learning about the identification, treatment, and management of college students with bipolar disorder and schizophrenia in the campus environment.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Discuss the prevalence and disease onset characteristics of bipolar disorder and schizophrenia in college-aged students
- Describe the potential long-term outcomes for patients with bipolar disorder and schizophrenia who have a family history of mental health disorders or who have prolonged undiagnosed disease
- Identify clinical indicators of bipolar disorder and schizophrenia in college-aged students
- Review common comorbidities of bipolar disorder and schizophrenia, including potential misdiagnoses
- Discuss appropriate methods of diagnosing college students with bipolar disorder and schizophrenia

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Faculty Disclosure Declarations

Paul P. Doghramji, MD, FAAFP, has been a consultant for Takeda Pharmaceutical Company Ltd; Cephalon, Inc; and Wyeth Pharmaceuticals. He is a member of the speakers bureau for Takeda Pharmaceutical Company Ltd; Cephalon, Inc; sanofi-aventis; Sepracor Inc; and Pfizer Inc.

Theresa R. Cerulli, MD, is a member of the speakers bureau for Shire Pharmaceuticals and Novartis Pharmaceuticals Corporation.

Kristine A. Girard, MD, has no relationships with commercial entities related to the health care industry to disclose.

Barry A. Schreier, PhD, has no relationships with commercial entities related to the health care industry to disclose.

All faculty and planning committee members have submitted a disclosure form. Those with something to disclose are listed. All efforts have been made to resolve these conflicts based on the guidelines outlined by the ACCME and the policies and procedures of Temple University School of Medicine.

Preview

Bipolar disorder and schizophrenia are serious mental illnesses that typically present during the college-age years. The prevalence of mental illness is increasing, particularly in the young adult population.¹ According to the National Comorbidity Survey Replication study of a representative sample of adults in the United States, the lifetime prevalence of bipolar disorder is 6.5%, with a mean age at onset of 18.2 years for bipolar I disorder and 20.3 years for bipolar II disorder.² Up to 60% of adults with bipolar disorder experience symptom onset before the age of 20 years.³ Schizophrenia is a less common (0.5% to 1.4% lifetime prevalence^{4,5}) but equally disabling psychiatric illness that typically begins in men during their

undergraduate or graduate school years and in women during their 20s and 30s.⁶ The onset of bipolar disorder and schizophrenia during the college-age years and the poor outcome associated with unrecognized illness underscore the need for early diagnosis and treatment in this population. In this **Medical Crossfire**[®], a panel of mental health experts who practice in a college campus setting discusses bipolar disorder and schizophrenia among college students and addresses common triggers, psychiatric comorbidities, diagnostic approaches, and the implications of undiagnosed illness on long-term outcomes.

The onset of bipolar disorder and schizophrenia during the college-age years and the poor outcome associated with unrecognized illness underscores the need for early diagnosis and treatment in this population.

Panelists



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Diagnosis of Bipolar Disorder and Schizophrenia:

Challenges in the College Student Population

Bipolar disorder and schizophrenia are two of the most serious and difficult-to-treat mental health disorders in college students, affecting students and administrators as well as campus life for all students. College staff and administrators require extensive training and education to provide unique counseling and treatment protocols for students. Administrators are charged with the task of offering an appropriate level of care for students with mental health disorders while at the same time considering the health and welfare of all students on campus. However, the landscape of needs of college students with mental health disorders continues to expand and become more complicated. Therefore, examining the scope of bipolar disorder and schizophrenia in college students, including the identification of clinical indicators and appropriate diagnostic methods, is a timely and important initiative.

Overview

Triggers

Kristine Ann Girard, MD, began this *Medical Crossfire*[®] by stating that “clinicians are seeing more and more college students with mood disorders or psychotic processes every day.” Supporting Dr. Girard’s opening statement are the results of a 13-year study at a large midwestern university conducted between 1988 and 2001. The study found that the number of students seeking help for depression at a campus counseling center had doubled and the number of students seeking help for suicidal behaviors tripled during the same period.⁷ Dr. Girard also noted that the reasons for the apparent increased prevalence in this population are not fully understood. One explanation may be the availability of effective treatments that enable young adults with mental illness to attend college, when they may not have been able to in the past.

Commenting on the difficulties diagnosing patients, Barry A. Schreier, PhD, remarked that “determining the age at onset for bipolar disorder and schizophrenia can be challenging because patients may have difficulties remembering when

their symptoms first became apparent.” Certainly, clinicians agree that it is important to be able to differentiate between the onset of symptoms and the age at which the patient first received his or her diagnosis. Hirschfeld et al established that many patients with bipolar disorder are not diagnosed for 5 to 10 years after their first signs of symptoms.⁸ Dr. Schreier went on to say that “moving from home to a college campus is a significant life event for young adults. The sensory overload, abundance of unscheduled time, challenges of a demanding academic workload, and newfound financial concerns are common environmental factors that can trigger symptoms that may have been subclinical before entering college. Therefore, it is important for students previously diagnosed with a mental disorder to recognize that environmental factors are all around them and that they may trigger an episode of mania or psychosis.”

For many students, the first encounter with college life can be a significant trigger of new-onset psychiatric illness, agreed Theresa R. Cerulli, MD. In addition, “bipolar disorder and schizophrenia are complex disorders with multifactorial etiologies, including environmental and genetic factors.” A large body of evidence

from the study of twins has demonstrated that the risk of schizophrenia is multifactorial and not solely related to genetic factors. The study showed that, in monozygotic (or identical) twins, the risk

of an individual having schizophrenia is 48%.⁹

The authors concluded that if genetic factors were the sole cause of schizophrenia, both twins would have the illness.

Therefore, while genetics is an important etiologic factor, it is not the only cause, and the contribution of environmental stressors must be considered.⁹ “The environmental stressors associated with college life should not be discounted when considering the underlying causes of bipolar disorder and schizophrenia,” said Dr. Cerulli.

Family history also plays an important role in the assessment of patients with symptoms of mania or psychosis. The heritability factor for schizophrenia is approximately 0.7, meaning that 70% of patients diagnosed with schizophrenia have an inherited tendency toward manifesting symptoms. In comparison, there is a slightly higher heritability factor of 0.8 for attention-deficit/hyperactivity disorder (ADHD). Heritability in several other areas of human genetics supports the premise of the relationship between family history and mental illness. For instance, height is a genetically determined characteristic with a heritability factor of 0.9. Breast cancer and asthma have much lower heritability factors (0.3 and 0.4, respectively). For bipolar disorder, however, the heritability factor is less clear.¹⁰⁻¹⁴

Age of Onset

The next topic, regarding the occurrence of bipolar disorder or schizophrenia in much younger patients, such as in adolescents as young as 12 to 16 years of age, was posed to the faculty by moderator Paul P. Doghramji, MD, FAAFP. While childhood-onset schizophrenia occurs, it is relatively rare. Dr. Girard remarked that, although the National Institute of Mental Health has one of the largest cohorts of children younger than 13 years of age with very early onset of schizophrenia, schizophrenia most commonly occurs in late adolescence or early adulthood.¹⁵

“Schizophrenia is not an easy diagnosis to make because of a gradual, insidious onset,” continued Dr. Girard. “Early signs are often very subtle and evolve over the course

of several years.” The prodromal symptoms of schizophrenia in young people, such as unusual beliefs, magical fantasies, subtle perceptual disturbances, paranoia, or even transient psychotic behaviors, are evident. In

addition, adolescence and young adulthood are typically plagued by experimentation with alcohol and various substances, including cannabis, the latter of which can have a negative effect on persons who are predisposed to schizophrenia.^{16,17}

“Schizophrenia is not an easy diagnosis to make because of a gradual, insidious onset.”

Clinical Indicators of Mental Disorders

Differences Between Bipolar Disorder and Schizophrenia

Having established some important basics regarding the incidence of bipolar disorder and schizophrenia in college students, the attention of the panel turned to issues involving the similarities and differences between clinical indicators. “The clinical indicators of bipolar disorder can be similar to presenting symptoms associated with schizophrenia,” explained Dr. Schreier. “Patients with bipolar disorder often express grandiose behavior, persecutory delusions, irritability, and agitation. Patients with bipolar II disorder are somewhat different in that they can experience profound catatonia during the depressive phase of their illness.”

A common biologic pathway for bipolar disorder and schizophrenia has been suggested by the fact that some of the same medications, such as the atypical antipsychotics, are effective in both. In addition, some of the positive symptoms of schizophrenia are similar to some of the symptoms of mania in bipolar disorder. However, even though the majority of presenting symptoms can overlap, there are certain symptoms of bipolar disorder and schizophrenia that are characteristic of each disorder. In a recently published survey, only 9% of respondents experienced a psychotic episode as their first symptom of schizophrenia.¹⁸

The negative symptoms of schizophrenia may also mimic some features of the depressive phase of bipolar disorder. The classic onset of schizophrenia involves delusions that are odd or bizarre in nature. In contrast, delusions of religious grandiosity in college students with bipolar disorder are often observed. Delusions in schizophrenia are typically without pronounced mood symptoms, which is distinctly different from bipolar disorder. Some mood symptoms may occur in schizophrenia, but without the intensity or duration as occurs in bipolar disorder. Furthermore, psychotic symptoms in patients with bipolar disorder usually only occur during periods of severe mood disturbance.¹⁹ “Therefore, knowledge of the patient’s family history is essential in making the diagnosis and formulating a treatment plan,” commented Dr. Schreier.

Obtaining a Differential Diagnosis

“Another situation that can complicate patient assessment in the college-aged population,” continued Dr. Schreier, “is the presence of schizoaffective disorder or major depression with psychotic features.” When differentiating bipolar disorder from schizophrenia, a 4-part rubric can be used to assess (1) the patient’s premorbid behavior, (2) history of depression, (3) onset of symptoms, and (4) family history. In clinical practice, college students with schizophrenia who sometimes have bizarre, withdrawn, or socially inappropriate behaviors in social settings are seen. Students with bipolar disorder, in comparison, may not have difficulties in social situations. Patients with bipolar disorder also often have a history of depression, whereas premorbid depression in schizophrenia is less common.²⁰ The onset of bipolar disorder is typically sudden, but in schizophrenia symptom onset is more insidious. Finally, mood disorders are more common in the family history of persons with bipolar disorder compared with schizophrenia.²¹

In retrospective reviews, roughly one in four persons who eventually is diagnosed with schizophrenia is misdiagnosed with an affective disorder.²² “Even though the symptoms that differentiate bipolar disorder from schizophrenia have been established, schizophrenia can be extraordinarily difficult to diagnose,” stated Dr. Girard. Overlapping symptoms, such as sleep disorders, social withdrawal, and irritability, further complicate the ability of clinicians to establish a diagnosis. “It is very important to obtain a clear picture of the patient’s family history,

interpersonal functioning, change in self-attitude, and prominence of mood symptoms. When reviewing the patient’s college experience, academic decline that leads to a diagnosis of schizophrenia often can be predicted based on the presence of a first-degree relative with the disorder in approximately 60% of cases.”²¹

In addition to premorbid symptoms and family history, neuropsychological testing may reveal some discriminating factors. Persons with schizophrenia tend to exhibit impairment in verbal memory and visual-spatial perception that may predict the transition from a prodromal state to the full clinical syndrome.²³

“College students often are aware of mental illness in their family, but they do not really know which diagnoses are present in their relatives. What other questions can we ask that will clarify the presence of specific mental disorders in lieu of direct information from the patient?” asked Dr. Doghramji.

“It is important to ask students if they have a family history of suicidal behaviors and hospitalizations,” replied Dr. Girard. “A history of suicide attempts suggests that a sense of hopelessness or a sustained unipolar or bipolar depressive episode may have occurred in that family member.”

Contribution of Comorbid Conditions

Regarding the topic of comorbid conditions, the faculty was queried about the relationship between premorbid functioning and the short-term and long-term outcomes in bipolar disorder and schizophrenia. Dr. Cerulli stated that “comorbid conditions are extremely common. Once a patient has been diagnosed with bipolar disorder or schizophrenia, don’t stop there. It is very likely that other conditions are present.”

Generally, there is a rule of thumb stating that a poor outcome is directly related to the number of present comorbidities. One of the greatest challenges in diagnosing mental illness in college students is the presence of substance abuse, because it can mask symptoms of psychosis, exacerbate existing symptoms, and increase the likelihood that the student will have difficulty adhering to the recommended treatment plan. According to the National Epidemiologic Survey on

Alcohol and Related Conditions, bipolar disorder more than doubles the risk of substance abuse.²⁴ “I recently took care of a student with bipolar disorder who self-medicated with alcohol when she was becoming hypomanic,” continued Dr. Cerulli. “She recently developed full-blown mania and needed to be hospitalized. Unfortunately I was unable to admit her to the general psychiatric unit because her alcohol abuse was viewed as her primary problem, rather than her bipolar disorder.”

Other common comorbidities in patients with bipolar disorder are depression and anxiety. In fact, many patients with bipolar disorder are misdiagnosed with unipolar depression and treated with antidepressants, which may increase the risk of switching to mania. The most common comorbid anxiety disorders are generalized anxiety disorder, panic disorder, and obsessive-compulsive disorder (OCD).²⁵

“I worked with a student for several years who had OCD and initially responded to treatment with a selective serotonin reuptake inhibitor (SSRI),” said Dr. Cerulli. “Over time, his symptoms evolved into prodromal symptoms of schizophrenia, and he withdrew from friends, developed a flat affect, and started wearing loose-fitting black clothing. Finally, he described seeing sparks flying out of his desk lamp. Even though his initial psychiatric presentation was consistent with OCD, this student eventually developed schizophrenia.”

Dr. Doghramji asked about the role of obstructive sleep apnea as a comorbid condition. “Sleep apnea is not uncommon and is associated with obesity, which is an issue of concern among college students,” responded Dr. Girard. “I do consider sleep apnea for students who report not feeling rested despite an adequate duration of sleep time.”

One of the greatest challenges in diagnosing mental illness in college students is substance abuse, because it can mask symptoms of psychosis, exacerbate existing symptoms, and increase the likelihood that the student will have difficulty adhering to the recommended treatment plan.

Incidence of Comorbid Substance Abuse

The occurrence of comorbid substance abuse is very prevalent in the general population of patients with mental disorders, occurring in 47% of persons with schizophrenia and 61% of persons with bipolar I disorder.⁵ Moreover, the co-occurrence of psychiatric illness and substance abuse has been identified as a research priority to be performed among college students.²⁶

“Are college students with a history of substance abuse more likely to develop bipolar disorder or schizophrenia than their noncollege peers?” asked Dr. Doghramji.

Alcohol abuse is observed in as many as 50% of students who seek help for bipolar disorder or schizophrenia, replied Dr. Cerulli.²⁷ “Alcohol use and abuse are very prevalent on college campuses and are comorbid with many other psychiatric conditions, which lessens its usefulness in the differential diagnosis. However, the presence of substance abuse should raise clinical suspicion of psychiatric illness and definitely increases the probability of a less favorable outcome. The importance of viewing substance abuse as a starting point in the search for the underlying primary psychiatric disorder cannot be emphasized strongly enough.”

“I strongly agree with Dr. Cerulli that comorbidities are extremely common in students with bipolar disorder,” said Dr. Schreier. At least 60% of persons who present with bipolar disorder have any number of comorbid features.²⁷ “Alcohol and marijuana are the most frequently abused substances that we see on campus. This is particularly true for our hypomanic or manic patients who abuse alcohol and marijuana in an attempt to gain control over their feelings and achieve a more stable sense of self. Cocaine and stimulants also are abused by our patients with bipolar disorder. We are increasingly seeing abuse of

prescription drugs, such as Ritalin® or Adderall®, which are readily available on college campuses.”

Findings from a survey conducted at a large midwestern university illustrate the frequency of substance abuse on college campuses. In this sample of 1,181 undergraduates, 15% admitted to tobacco use in the past 30 days, 51% admitted to binge drinking in the past 2 weeks, and 17% used marijuana in the past 30 days.²⁸ “College students will abuse almost anything,” continued Dr. Schreier. “Caffeine abuse is something that should not be discounted, particularly overuse of ‘power drinks’ or ‘energy drinks’ that contain very high levels of caffeine. In fact, many college counseling centers are adding these beverages to their list of substances of abuse.”

Persons with schizophrenia are 4.6 times more likely to abuse drugs and 3.3 times more likely to abuse alcohol compared with the general population.⁵ Substance abuse in college students with schizophrenia also is extremely prevalent and is of particular concern in this population.²⁹ “We are fortunate on our campus to have an unusually high proportion of alcohol abstainers compared with other universities,” said Dr. Girard. “Approximately 28% of students on our campus endorse an alcohol-free lifestyle.”

Nicotine dependence also is extremely common in schizophrenia. Persons in a prodromal state may find that they are less tolerant of nicotine, caffeine, MDMA (ecstasy), stimulants, or marijuana. Indeed, stimulants and hallucinogens, when coupled with genetic predisposition, are implicated as risk factors for transitioning from the prodromal state to schizophrenia.³⁰ “It is very important to obtain an accurate history of substance abuse and educate our patients with a positive family history of schizophrenia about the risks associated with substance abuse,” remarked Dr. Girard.

Bipolar Disorder and ADHD

A significant degree of overlap between bipolar disorder and ADHD has also been observed in the adolescent population. A recently conducted systematic literature review found that 9.5% to 21.2% of persons with bipolar disorder also have ADHD, and rates of bipolar disorder among persons with ADHD range from 5.1% to 47.1%.³¹ “It can be difficult to tease apart these conditions in college students because of the many common symptoms

between ADHD and mania,” stated Dr. Cerulli. For example, irritability, increased energy, restlessness, racing thoughts, distractibility, poor judgment, and changes in sleep patterns can exist in both conditions.³¹ “It is essential to differentiate between ADHD and mania so that stimulants, which are used in ADHD, are not prescribed to a patient with mania.”

Although the overlap between ADHD and bipolar disorder symptoms can be a challenge, there are some useful ways to differentiate these disorders. “Students with ADHD may be clumsy or find that they break items out of carelessness or inattention to their surroundings,” explained Dr. Schreier. “A similar pattern of destructiveness also occurs in bipolar disorder, but the underlying cause in these patients tends to be anger, not carelessness.”

“ADHD should not be viewed as a continuum of affective or psychotic states,” stated Dr. Girard. “There are a number of ways to differentiate these disorders.” The natural course of ADHD is markedly different from that of bipolar disorder. Patients with ADHD often are diagnosed as children, and their symptoms persist over time. In contrast, bipolar disorder generally presents in late adolescence or early adulthood and often is characterized by a fluctuating course of symptoms. With regard to schizophrenia, there is some overlap in symptoms with ADHD, especially in terms of distractibility, problems with concentration, and evidence of academic decline.³²

“Both ADHD and schizophrenia are associated with cognitive impairments,” interjected Dr. Cerulli. “However, the type of cognitive impairment differs between the two disorders.”

Prognosis in Undiagnosed Mental Disorders

“What are the risks associated with failing to diagnose and treat bipolar disorder or schizophrenia?” asked Dr. Doghramji.

Obviously, there are very real concerns about failing to diagnose patients with schizophrenia. Longitudinal studies of patients with a long duration of untreated psychosis predict a more severe course of schizophrenia. Delays in treatment of psychosis or bipolar disorder allow for a prolonged derailment in academic performance, sustained periods of poor self-esteem, and interruption

of appropriate developmental pathways in young adulthood.³³

Dr. Schreier added that it is important to stress the need to identify and halt the many untoward ancillary behaviors in students with bipolar disorder or schizophrenia. “The consequences of long-term alcohol or substance abuse are clear. Unchecked impulsive behavior can lead to injuries, arrests, and other negative sequelae that inevitably take their toll on academic, occupational, and personal achievement.”

“From a neuropsychiatric perspective,” added Dr. Cerulli, “each episode of psychosis or mania increases the risk of more frequent and more severe recurrences. There is a very real need to make an accurate and early diagnosis and begin aggressive and appropriate treatment.”

The risk of suicide in college-age students who remain undiagnosed with bipolar disorder or schizophrenia is relatively high. According to the Centers for Disease Control and Prevention, suicide ranks third behind accidents and homicide as a leading cause of death among adolescents and young adults nationwide.³⁴ A recently published study of 729 students at Emory University found that 11.1% of students admitted to having suicidal thoughts in the past month, and 16.5% admitted to attempting suicide or intentionally harming themselves.³⁵ In fact, suicide is believed to be the second leading cause of death on college campuses.³⁶ As many as 20% to 50% of persons with bipolar disorder will attempt suicide over the course of their lifetime, with a 1% rate of completed

suicide, which is roughly 60 times greater than in the general population.³⁷ Suicide attempts often occur early in the course of bipolar disorder, which coincides precisely

with the college years. These mental disorders can be lethal illnesses if left untreated.³⁸

Diagnostic Challenges
Clinical Presentation
In the final segment of this discussion, the panel was asked by Dr. Doghramji to address issues of relevance to the diagnosis of bipolar disorder and schizophrenia.

Delays in treatment of psychosis or bipolar disorder allow for a prolonged derailment in academic performance, sustained periods of poor self-esteem, and interruption of appropriate developmental pathways in young adulthood.

Dr. Schreier began the discussion by presenting the case of a college student with bipolar disorder as an example representative of the majority of cases seen. “David is a 19-year-old homosexual white student who presented to the student health center with depression and anxiety. He has a long history of early-onset dysthymic depression with two severe depressive episodes without psychotic features. David also has a history of immature social skills that manifested as trouble making friends and difficulties transitioning from home to dormitory life. He entered college as a sad, quiet student, but within a few months he became increasingly irritable and agitated in his new surroundings. We also know that David has a history of suicidal ideation, with one suicide attempt. He became increasingly sleepless, started exclusively eating junk food,

and soon established a pattern of drug and alcohol abuse. When asked about his family history, David described his father as brilliant, eccentric, and an erratic alcoholic.”

In this patient type, it is first important to assess the initial polarity of symptoms, which in this

case is depressed or mixed. A mixed presentation is typically anxious or agitated, whereas a manic presentation is much clearer with a more clearly defined

As many as 20% to 50% of persons with bipolar disorder will attempt suicide over the course of their lifetime, with a 1% rate of completed suicide, which is roughly 60 times greater than in the general population.³⁷

course of illness. It is also important to assess psychosocial impairment, which may be less severe in depressive episodes compared with simple mania. Several readily accessible assessment tools exist, including the GAF (Global Assessment of Functioning) score or the SOFAS (Social and Occupational Functioning Assessment Scale) score. The next evaluation includes an assessment of the student's history of alcohol and other drug abuse as well as suicidal ideation. Approximately two thirds of patients with bipolar disorder experience suicidal ideation, and nearly half have made a suicide attempt. Features of bipolar disorder, such as anxiety, irritability, rage, desperation, and feeling out of control, have been associated with suicidal ideation in college students.³⁵ "Family history is another key element of the differential diagnosis. There are several instruments for the assessment of hypomania and mania, such as the Young-Mania Rating Scale (YMRS) or the 9th scale on the MMPI-II (Minnesota Multiphasic Personality Inventory-II," explained Dr. Schreier.

Dr. Schreier continued by stating that bipolar disorder can be extraordinarily difficult to diagnose in college students, who often present with a wide variety of symptoms, including psychotic features, substance abuse, sleep disorders, or ADHD. "Bipolar disorder is often misdiagnosed as borderline personality disorder in college students. This is a highly intelligent, active, and creative population in whom mood fluctuations, irritability, and hypomania may be misconstrued as an Axis II disorder."

Cultural Considerations

"It is also important not to overlook cultural issues when assessing a student for the first time," remarked Dr. Schreier. "On most college campuses, students from across the nation and all over the world are enrolled." Bipolar disorder may be especially underdiagnosed in African-American students.³⁹ Diets high in omega-3 fatty acids, as observed in those cultures that consume a lot of fish, may also be associated with a lower risk of bipolar disorder.⁴⁰ Mania may be more common among Caribbean-African students compared with white students, who have higher rates of depressive illness.

Strong religious beliefs may also increase resilience to mental illness.⁴¹ "Awareness of cultural background is a critical component of an accurate diagnosis."

With regard to the effect of sexuality or sexual preference, and their role in the diagnosis of bipolar disorder, there does not appear to be a strong correlation between sexual orientation and bipolar disorder. "However, we do see that depression, substance abuse, acting out behaviors, or suicidal ideation may occur in students who experience discrimination either at home or on campus," stated Dr. Schreier.

Dr. Girard noted that while sexuality is not necessarily a factor in the prevalence of bipolar disorder, the gay, lesbian, bisexual, transgender (GLBT) population is at increased for suicidal ideation.⁴²

Academic Performance as an Indicator

Dr. Doghramji continued to query the panel on clinical indicators of disease. "Do you find that declining grades are a clinical indicator of bipolar disorder or schizophrenia?"

"A student's academic performance must be viewed longitudinally," offered Dr. Schreier. "For example, is there a slow decline in grades, or has performance dropped precipitously? Some students with bipolar II disorder do very well in school while being hypomanic. Their performance suffers when they are depressed, but they want to stay in a hypomanic state because of decreased need for sleep, increased productivity, and improved self-esteem. Students who are stable and aware of environmental or behavioral triggers for a relapse do better than those who change their patterns of sleep, diet, or use of drugs or alcohol. The demands of college life may lead students to forget or ignore triggers for mood

fluctuation, and we try to remind them to be vigilant for lifestyle changes that can lead to a relapse."

"Awareness of cultural background is a critical component of an accurate diagnosis."

The ability of a student to perform well academically while hypomanic is an important factor in medication nonadherence. These students may be high functioning and successful during hypomanic episodes; however, they will eventually

transition from a hypomanic state to full-blown mania. In addition, substance abuse contributes to medication nonadherence in this patient population.⁴³

Dr. Girard provided further information regarding diagnostic challenges by presenting the case of Maya, a young woman of Asian descent. “Asian students may have a more reserved presentation compared with their peers and may describe somatic rather than behavioral symptoms. Maya was referred to us through her resident advisor and suitemates because of extreme social withdrawal and odd interpersonal behavior. Like many students on our campus, Maya had a history of exceptional academic performance. After moving into her residence hall, she had difficulty establishing a regular sleep-wake cycle and often did not wake in time for her morning classes. Upon questioning, she described feelings of paranoia and felt as if people were able to read her mind. Over the 3 years Maya has been a student on our campus, her symptoms have intensified. She now believes that her professors are out to get her, which interferes with her ability to participate in class and use office hours. She has the sense that her abnormal behavior and feelings of paranoia were artificially introduced into her head and are not real. As a result of these symptoms, Maya is struggling academically and is in danger of failing.”

Maya's case illustrates the importance of determining the level of functioning at intake in order to assess changes in behavior and performance over time. Dr. Girard added, “As much as possible, we attempt to obtain collateral information to aid in the diagnosis and to involve family members in students' care. Sometimes psychological evaluation is useful in assessing the students' perception of reality. Facial or emotional recognition are more impaired during a psychotic process.” Neuropsychological evaluation, such as the Stroop test, which evaluates distractibility, and the Wisconsin Card Sort test, which evaluates the ability to be flexible in the context of shifting rule structures, is useful in assessing baseline function and change over time.⁴⁴

Importance of Early Diagnoses and Intervention

Early diagnosis and intervention are important for achieving improved outcomes in college-age students

with schizophrenia. The prodromal period in schizophrenia and the potential benefits of early treatment are subjects of great interest to psychiatrists. Approximately one third of persons with prodromal

Regardless of the approach, clinicians must always be sensitive about burdening the student with a potentially stigmatizing diagnosis.

symptoms will convert to overt psychosis.⁴⁵

The panelists expressed the belief that there is some benefit associated with cognitive behavioral approaches or targeted drug therapy to decrease the risk of transitioning to full-blown schizophrenia. However, regardless of the approach, clinicians must always be sensitive about burdening the student with a potentially stigmatizing diagnosis.

“What other factors are important in diagnosing bipolar disorder or schizophrenia in your students?” asked Dr. Doghramji.

“As we discussed earlier,” replied Dr. Cerulli, “substance abuse, depression, anxiety, panic attacks, generalized anxiety disorder, and OCD are common comorbidities. We must be aware of ADHD, which may masquerade as bipolar disorder. In addition, impulse control disorders, personality disorders, and some medical conditions can present with neuropsychiatric symptoms. Subclinical seizure disorder and thyroid abnormality are examples of medical illnesses with cognitive or behavioral symptoms. Other neuropsychiatric conditions with cognitive symptoms and impairment, such as autism spectrum disorders, should be considered.”

Dr. Schreier reiterated that family history, drug and alcohol use, initial polarity, and suicidal behaviors are also important. “We also inquire about hypersexuality, sleeplessness, episodic high productivity, and impulsivity, which can also suggest the presence of bipolar disorder in college-age students. Seeking out corollaries can be an effective means of gaining better insight. We find that family members are often willing to come in and

participate in the student's clinical evaluation. Asking students to query their family members about their specific mental health history can also be very informative.”

In addition, the use of blood testing as a diagnostic tool is considered on an individual basis. Thyroid screens may be ordered for a patient who presents with lethargy, withdrawal, or other depressive symptoms. Young women for whom nutrition is a concern may be candidates for thyroid screening, and a complete blood count may also be used to rule out anemia.⁴⁶ Although blood testing across the board is not necessary, it can provide valuable information in carefully selected patients. For example, in patients with no family history suggestive of mental illness, it is important to consider other etiologies, beginning with a laboratory panel. “I generally do not order neuroimaging or electroencephalography before obtaining blood work and assessing response to therapeutic interventions,” added Dr. Cerulli.

“In addition to the factors discussed earlier,” remarked Dr. Girard, “I would underscore the importance of the extensive social network that is characteristic of campus life today. We adapt a community mental health approach to campus life in order to increase awareness of schizophrenia and other mental health issues, lower the barriers to help seeking, and help students and faculty recognize the signs and symptoms of mental illness.”

Use of Rating Scales

Commonly used rating scales include the 9th scale (level of excitability) and the 2nd scale (depressive symptoms) of the MMPI. A modified Patient Health Questionnaire (PHQ-9) or a modified Hamilton Rating Scale for Depression (HAM-D) is useful for community-wide screening efforts.⁴⁷ “Campus-wide screening in the student center or other central campus location, to increase awareness of mental illness and the accessibility of our on-campus mental health services, is also useful,” stated Dr. Cerulli.

“Are you suggesting that it is useful for other health care professionals, such as nurse practitioners or physician assistants, to use specific screening tools for bipolar disorder, schizophrenia, ADHD, and other illnesses?” asked Dr. Doghramji.

“Brief screening tools or rating scales do assist in narrowing the focus of a clinical interview,” replied Dr. Cerulli. “However, using rating scales as stand-alone diagnostic instruments is risky. I use them as a guide to my overall clinical evaluation.”

The panelists felt that information about ADHD, including diagnostic criteria and a variety of self-test rating scales, is readily available on the Internet. However, they also felt the need to be vigilant for students who may use the information on an ADHD rating scale to fraudulently acquire stimulants in an attempt to enhance their academic performance.

Resources of Patient Support

“On-campus support groups can be tremendously important,” remarked Dr. Girard. “We have a program called MedLinks in which students volunteer to be a liaison between their resident groups and the student health care center. The purpose of the MedLinks program is to help students learn how to negotiate medical and mental health care through the university system.”

“What are your opinions about available websites for support and education?” asked Dr. Doghramji.

The panel identified several web sources. The American Psychiatric Association (APA) provides a website called *Healthy Minds. Healthy Lives.* at <http://www.healthyminds.org> that was developed to specifically meet the needs of college students. In addition, the Jed Foundation sponsors *Uline*[™], which is an Internet-based program at <http://www.jedfoundation.org>. *Uline*[™] is designed to promote mental health and the prevention of suicide among college students. The *Half of Us* online video series from the Jed Foundation at <http://www.halfofus.com/> is also an excellent resource for learning about mental health issues of relevance to college students.

Final Thoughts

Having provided their insight into issues about recognizing and diagnosing bipolar disorder and schizophrenia in college students, Dr. Doghramji asked the panelists to share some clinical pearls with regard to treatment and management of these disorders in their student population.

Dr. Cerulli

“We are living in an era where we can effectively intervene in the process of bipolar disorder, schizophrenia, and other mental illnesses using a range of powerful pharmacologic therapies. With these powerful drugs comes the responsibility of ensuring that treatment is safe as well as effective. I would remind colleagues to make safety a first priority: exclude medical diagnoses before treating and closely monitor possible adverse effects of treatment. For example, we should be aware of increased risk of menstrual abnormalities and polycystic ovary syndrome in women younger than 20 years who begin therapy with some mood stabilizers. The association between antipsychotic agents and metabolic disturbances, such as weight gain, insulin resistance, and changes in prolactin levels, should not be overlooked. We need to be cognizant about doing no harm when we treat our students' psychiatric illness.”

Dr. Girard

“Schizophrenia and bipolar disorder are not easily diagnosed. With regard to schizophrenia, it is important to remember that psychotic processes can be subtle and develop over the course of several years. Nevertheless, it is important to intervene early so that prolonged affective disorder or psychosis does not derail the developmental pathway in young adults.”

“It is important to build partnerships with the deans for student life and university administration to reinforce the importance of mental health care. We must ensure that funding and resources are maintained at an appropriate level for individual patient care and community-wide educational programs to increase awareness and lower stigma.”

Dr. Schreier

“We take a holistic or community planning approach to treating students with mental illness in our practice by finding supportive advisors, addressing housing issues, fostering good medication adherence, and working with academic advisors and the Americans with Disabilities Act compliance office if appropriate. We encourage students to join a support group to improve their crisis planning efforts and coping skills and to help them recognize and proactively address their own triggers so that they are their own best advocates. We advise students to be open about their illness so that faculty and peers are attuned to the implications of erratic student behavior, which has become a focus in the wake of the shooting incidents at Virginia Tech and Northern Illinois University. The current judicial environment on college campuses dictates that students manage their behavior and follow codes of student conduct regardless of underlying mental illness.”

“We need to be cognizant about doing no harm when we treat our students' psychiatric illness.”

Diagnosis of Bipolar Disorder and Schizophrenia: *Challenges in the College Student Population*

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ACTIVITY OBJECTIVES

Upon completion of this activity, participants should be able to:

1. Discuss the prevalence and disease onset characteristics of bipolar disorder and schizophrenia in college-aged students
2. Describe the potential long-term outcomes for patients with bipolar disorder and schizophrenia who have a family history of mental health disorders or who have prolonged undiagnosed disease
3. Identify clinical indicators of bipolar disorder and schizophrenia in college-aged students
4. Review common comorbidities of bipolar disorder and schizophrenia, including potential misdiagnoses
5. Discuss appropriate methods of diagnosing college students with bipolar disorder and schizophrenia

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OVERALL EVALUATION

11. Which of the following describes an action you might take as a result of participating in this activity?

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Implement new procedure/protocol

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12. What are two things that you liked most about this activity and why?

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Diagnosis of Bipolar Disorder and Schizophrenia: *Challenges in the College Student Population*

CME TEST

- 1. Bipolar disorder and schizophrenia usually first occur during which epoch?**
 - a. Early childhood
 - b. Puberty
 - c. Early adulthood
 - d. Middle age
- 2. The onset of bipolar disorder tends to be _____, whereas schizophrenia often develops _____.**
 - a. slow; suddenly
 - b. sudden; gradually
 - c. immediate; rapidly
 - d. gradual; slowly
- 3. Delays in diagnosing and treating bipolar disorder and schizophrenia in college students may _____ the successful completion of their academic careers.**
 - a. enhance
 - b. guarantee
 - c. speed
 - d. impair
- 4. The most widely accepted causal factor in the etiology of bipolar disorder and schizophrenia is _____.**
 - a. genetic transmission
 - b. environmental influences
 - c. both a and b
 - d. none of the above
- 5. Bipolar disorder and schizophrenia can be very difficult to diagnose, in part because of overlapping symptoms. Mood disturbance can be common to both, but in bipolar disorder, the mood symptoms tend to be _____ compared with schizophrenia.**
 - a. prolonged and more severe
 - b. clinically silent
 - c. transient
 - d. less frequent
- 6. Differentiating ADHD from bipolar disorder can be difficult because of overlapping symptoms, which may include _____.**
 - a. decreased need for sleep
 - b. distractibility
 - c. irritability
 - d. all of the above
- 7. According to a survey of students at a large university, _____ had thoughts of suicide in the past month, and _____ had attempted suicide or intentionally harmed themselves in the past.**
 - a. 16.5%; 3.4%
 - b. 11.1%; 16.5%
 - c. 11.1%; 19.4%
 - d. 19.4%; 16.5%
- 8. The panel agrees that substance abuse is a serious problem on college campuses and that substance abuse can mask symptoms of underlying mental illness and lessen the probability of a full and complete recovery. Which of the following substances were found in a recently published survey to be most often abused by college students?**
 - a. Alcohol, cocaine, stimulants
 - b. Marijuana, alcohol, caffeine
 - c. Alcohol, stimulants, ecstasy
 - d. Alcohol, marijuana, tobacco
- 9. Which of the following is not endorsed by the panel as associated with a diagnosis of bipolar disorder?**
 - a. Family history
 - b. Sexual orientation
 - c. Premorbid function
 - d. Academic performance
- 10. The panel cited three rating instruments that are useful for campus-wide mental health screening efforts. Which of the following was not listed as a screening instrument?**
 - a. HAM-D
 - b. MMPI
 - c. PHQ-9
 - d. YMRS

Diagnosis of Bipolar Disorder and Schizophrenia: *Challenges in the College Student Population*

CME TEST ANSWER KEY

1.c. Bipolar disorder and schizophrenia are serious mental illnesses that typically present during the college-age years. The prevalence of mental illness is increasing, particularly in the young adult population.¹ According to the National Comorbidity Survey Replication study of a representative sample of adults in the United States, the lifetime prevalence of bipolar disorder is 6.5%, with a mean age at onset of 18.2 years for bipolar I disorder and 20.³ years for bipolar II disorder.² Up to 60% of adults with bipolar disorder experience symptom onset before the age of 20 years.³ Schizophrenia is a less common (0.5% to 1.4% lifetime prevalence^{4,5}) but equally disabling psychiatric illness that typically begins in men during their undergraduate or graduate school years and in women during their 20s and 30s.⁶

Locator: Preview

2.b. The onset of bipolar disorder is typically sudden, but in schizophrenia symptom onset is more insidious. Mood disorders are more common in the family history of persons with bipolar disorder compared with schizophrenia.²¹

Locator: Obtaining a Differential Diagnosis

3.d. Obviously, there are very real concerns about failing to diagnose patients with schizophrenia. Longitudinal studies of patients with a long duration of untreated psychosis predict a more severe course of schizophrenia. Delays in treatment of psychosis or bipolar disorder allow for a prolonged derailment in academic performance, sustained periods of poor self-esteem, and interruption of appropriate developmental pathways in young adulthood.³³

Locator: Prognosis of Undiagnosed Mental Disorders

4.c. Therefore, while genetics is an important etiologic factor, it is not the only cause, and the contribution of environmental stressors must be considered.⁹ “The environmental stressors associated with college life should not be discounted when considering the underlying causes of bipolar disorder and schizophrenia,” said Dr. Cerulli.

Locator: Overview: Triggers in Mental Disorders

5.a. Some mood symptoms may occur in schizophrenia, but without the intensity or duration as occurs in bipolar disorder. Furthermore, psychotic symptoms in patients with bipolar disorder usually only occur during periods of severe mood disturbance.¹⁹ “Therefore, knowledge of the patient’s family history is essential in making the diagnosis and formulating a treatment plan,” commented Dr. Schreier.

Locator: Differences Between Bipolar Disorder and Schizophrenia

6.d. “It can be difficult to tease apart these conditions in college students because of the many common symptoms between ADHD and mania,” stated Dr. Cerulli. For example, irritability, increased energy, restlessness, racing thoughts, distractibility, poor judgment, and changes in sleep patterns can exist in both conditions.³¹ “It is essential to differentiate between ADHD and mania so that stimulants, which are used in ADHD, are not prescribed to a patient with mania.”

Locator: Bipolar Disorder and ADHD

7.b. A recently published study of 729 students at Emory University found that 11.1% of students admitted to having suicidal thoughts in the past month, and 16.5% admitted to attempting suicide or intentionally harming themselves.³⁵

Locator: Prognosis in Undiagnosed Mental Disorders

8.d. Findings from a survey conducted at a large midwestern university illustrate the frequency of substance abuse on college campuses. In this sample of 1,181 undergraduates, 15% admitted to tobacco use in the past 30 days, 51% admitted to binge drinking in the past 2 weeks, and 17% used marijuana in the past 30 days.²⁸

Locator: Incidence of Comorbid Substance Abuse

9.b. With regard to the effect of sexuality or sexual preference, and their role in the diagnosis of bipolar disorder, there does not appear to be a strong correlation between sexual orientation and bipolar disorder. “However, we do see that depression, substance abuse, acting out behaviors, or suicidal ideation may occur in students who experience discrimination either at home or on campus,” stated Dr. Schreier. Dr. Girard noted that while sexuality is not necessarily a factor in the prevalence of bipolar disorder, the gay, lesbian, bisexual, transgender (GLBT) population is at increased risk for suicidal ideation.⁴²

Locator: Cultural Considerations

10. d. Commonly used rating scales include the 9th scale (level of excitability) and the 2nd scale (depressive symptoms) of the MMPI. A modified Patient Health Questionnaire (PHQ-9) or a modified Hamilton Rating Scale for Depression (HAM-D) is useful for community-wide screening efforts.⁴⁷ “Campus-wide screening in the student center or other central campus location, to increase awareness of mental illness and the accessibility of our on-campus mental health services, is also useful,” stated Dr. Cerulli.

Locator: Use of Rating Scales

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