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Assessment and Treatment of Bipolar Spectrum Disorders in Emerging Adulthood: Applying the Behavioral Approach System Hypersensitivity Model

Elissa J. Hamlat, Jared K. O'Garro-Moore, and Lauren B. Alloy, *Temple University*
Robin Nusslock, *Northwestern University*

Bipolar disorder is associated with a host of negative physical and interpersonal outcomes including suicide. Emerging adulthood is an age of risk for the onset of bipolar spectrum disorders (BSDs) and there has been increased effort to focus on early identification and subsequent intervention for BSDs during this developmental period. Recent research on the Behavioral Approach System (BAS) hypersensitivity model of bipolar disorder may have implications for the assessment and treatment of BSDs in emerging adulthood. We summarize relevant findings on the BAS hypersensitivity model that support the use of reward sensitivity in the early identification of BSDs and suggest evidence-based strategies for clinical work with emerging adults with BSDs.

> My classwork during these galvanized periods seemed straightforward, and I found examinations, laboratory work, and papers almost absurdly easy during the weeks that the high-flying times would last. I would also become immersed in a variety of political and social causes. . . . But then as night inevitably goes after the day, my mood would crash, and my mind again would grind to a halt. I lost all interest in my schoolwork, friends, reading, wandering, and daydreaming.
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> —Kay Redfield Jamison (1995, p. 43)

Entering her freshman year at a large public university, Kim has always done well in school and plans to become a pediatrician. Her first semester schedule consists largely of premed courses, but hoping to appear well-rounded to medical schools, she has decided to major in political science as she enjoys volunteering for local causes. She has always wanted to try crew and signs up for classes; soon, she gets positive feedback from her crew instructor and she decides to try out for the university team. To become more competitive, Kim starts working out, and as she gets positive feedback from others for her more toned physique, her workouts become daily. She finds herself running out of available hours—however, she plans to cut back on sleep during the week and catch up by sleeping in on the weekends.

Around October, Kim receives an A on a paper and plans to receive an A on her next paper to impress her instructor so she can ask for a letter of recommendation from him. On the same day the next paper is due, she has a chemistry exam, but Kim decides that she can "pull an all-nighter" the day before. The next day, she is shocked to see an almost failing grade on the chemistry exam and she is sad for the rest of the week. Kim tries to call friends from high school but they are difficult to reach and preoccupied with their own schedules. She has attended parties with friends from crew, but she doesn't feel close to anyone at school as most of her time has been spent on classes, crew, and working out. Kim finally decides to drop her chemistry class and worries about what this means for her medical career. She starts sleeping in more, missing class in the morning, finds it difficult to concentrate during finals, and ends up barely passing all her classes. Feeling worse about herself, she has trouble getting out of bed and doesn't feel like anything is fun. Kim questions if she can finish college; when she thinks of the next 4 years of classes, she wonders what it would be like to go to sleep and never wake up. She has had symptoms of depression before, but for the first time she might be experiencing a depressive episode. Why is this intelligent, high-achieving young woman striving for her goals one month and clinically depressed the following month and, most importantly, how can such a result be prevented?

Bipolar disorder is characterized by extreme swings of mood (euphoria or irritability vs. sadness), behavior (excessive goal striving, high energy, increased talkativeness vs. anhedonia, fatigue, and lethargy), and cognition (grandiosity, racing thoughts vs. worthlessness) occurring within the same individual. Individuals with bipolar disorder have high rates of suicidal ideation and attempts (Jamison, 2000) and often experience negative physical

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and interpersonal outcomes including high rates of divorce and substance abuse (Alloy, Bender, et al., 2009; Angst, Stassen, Clayton, & Angst, 2002), inconsistent work history, and poor academic achievement (Nusslock, Alloy, Abramson, Harmon-Jones, & Hogan, 2008).

Including cyclothymic disorder, bipolar II disorder, and bipolar I disorder, bipolar spectrum disorders (BSDs) affect approximately 4.5–6% of the general U.S. population (Judd & Akiskal, 2003; Merikangas et al., 2007). From the time an individual first seeks treatment, it requires 6–10 years on average to receive an accurate diagnosis of bipolar disorder (Lish, Dime-Meenan, Whybrow, Price, & Hirschfeld, 1994; Morselli & Elgie, 2003; Scott, 2011). Timely diagnosis is important as one third of the suicide attempts by those with bipolar disorder take place in the first year after illness onset and the likelihood of substance abuse, episode recurrence and relapse, and switching directly from an episode of mania to depression (or vice versa) is high during the early course of bipolar disorder (Salvatore et al., 2007).

This article summarizes some of the recent evidence for the role of the Behavioral Approach System (BAS) or reward hypersensitivity model in BSDs and discusses the implications of this work for the early identification and treatment of bipolar disorder. Although not all individuals with high levels of BAS sensitivity will develop BSDs and not all those diagnosed with BSDs demonstrate BAS hyperactivity, knowledge gained from the BAS/reward hypersensitivity model may prove useful in the assessment of individuals at risk for BSDs during emerging adulthood. Similarly, intervention strategies informed by the BAS model employed during this developmental period may improve the lifetime course of bipolar disorder.

The Assessment of Bipolar Disorder in Emerging Adulthood

Although many individuals experience earlier onset of bipolar disorder (e.g., Perlis et al., 2004), emerging adulthood (usually conceived of as the developmental period between ages 18 and 25; see Arnett, 2000) is another major age of risk for onset of bipolar disorder (Bellivier, Golmard, Henry, Leboyer, & Schurhoff, 2001) and few individuals experience episode onset after the age of 24 (Lewinsohn, Seeley, & Klein, 2003). Emerging adulthood is a period of considerable transition and significant life decisions (Shulman & Nurmi, 2010) and frequent hypo(manic) and/or depressive episodes may make it difficult for an emerging adult to successfully complete developmental tasks. Intervening early in the course of bipolar disorder may allow the emerging adult to finish school or occupational training or to establish a stable partnership; these may be assets in later recurrences of the disorder (Leopold et al., 2012).

Given that the onset of unipolar depression is also frequent during emerging adulthood (Morris, McGrath, Goldman, & Rottenberg, 2014), it may be difficult to determine whether a depressive episode in emerging adulthood represents a unipolar or bipolar presentation. In adolescents and emerging adults, depressive symptoms and episodes are much more common than their (hypo)manic counterparts (Duffy & Carlson, 2013); individuals with bipolar disorder may experience depressive episodes only (i.e., without diagnosed [hypo]mania for 5 years or more; Goldberg, Harrow, & Whiteside, 2001), and so may be misdiagnosed with unipolar depression (Leopold et al., 2012). As individuals may be poor historians of past experiences of symptoms and episodes (Perlis, 2005), ultimately the onus is on the clinician to conduct a thorough history taking including a comprehensive assessment of past mood symptoms and episodes. One tactic may be to include the report of another informant, such as a family member (Perlis, 2005), but this may prove more difficult to manage if an emerging adult is living outside of the home. An assessment profile that reliably predicts which emerging adults with depression are likely to develop bipolar disorder would aid the timely identification of emerging adults at greatest risk of developing a BSD.

The BAS Hypersensitivity Model of BSDs

According to the BAS or reward hypersensitivity model of BSDs, an overly sensitive BAS or reward system may be involved in the generation of both hypomanic or manic (hereafter referred to as "[hypo]manic" to designate both hypomania and mania) and depressive symptoms (Alloy & Abramson, 2010; Depue & Iacono, 1989; Urošević, Abramson, Harmon-Jones, & Alloy, 2008). The BAS has been associated with a frontostriatal neural circuit sensitive to the rewarding properties of stimuli (Depue & Collins, 1999; Haber & Knutson, 2010). Activation of the BAS and this frontostriatal circuit results in goal-directed behavior when in the presence of goal-related or rewarding stimuli (Carver & White 1994; Depue & Iacono, 1989). Stimuli activating the BAS motivational state can be either internal (e.g., reward expectancy) or external (e.g., tangible reward cue).

According to the BAS hypersensitivity model, an overly sensitive BAS leads to hyperresponsiveness to reward-relevant cues and disproportionate goal-directed behavior that leads to (hypo)manic symptomatology (e.g., euphoria; increased energy, decreased need for sleep) characteristic of bipolar disorder (Alloy & Abramson, 2010; Alloy, Nusslock, & Boland, 2015; Depue & Iacono, 1989; Urošević et al., 2008). Excessive BAS activation also can lead to (hypo)manic anger or irritability when goal striving is frustrated (Carver, 2004; Harmon-Jones & Sigelman, 2001). As well as the onset of (hypo)mania, the BAS hypersensitivity model can account for the occurrence of depressive