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# Introduction: ADHD, Moodiness, Meteorology, and Elephants

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ADHD is one of the most common mental health disorders, with a prevalence of approximately 8% in children and adolescents and 4–5% in adults in population studies [1]. According to criteria from the Diagnostic and Statistical Manual of Mental Disorders' fifth edition [DSM-5; [2]], patients with ADHD by definition have impairment in multiple functional domains, which can be life-long, especially without treatment [1, 3, 4].

Patients of all ages with ADHD often have other comorbid disorders, both in clinical and epidemiological samples [5–7]. Many such disorders have symptoms of moodiness, variously described as irritability, dysphoria, depression, anxiety, anger, mood dysregulation, affective lability, or explosive aggression. Some diagnoses are limited to children or adolescents, including conduct or oppositional defiant disorders. Depressive disorders can be diagnosed in all ages, but in children or adolescents, irritability as well as depression or anhedonia can be the predominant mood symptom, while irritability in adults is not a mood criterion for depression. Disruptive mood dysregulation disorder is a new mood diagnosis added to DSM-5 limited to patients less than 18, and characterized by persistent irritable or angry moods that are punctuated by recurrent temper outbursts several times a week [2].

Other disorders with moodiness or irritability can only be diagnosed in adults, including borderline, histrionic, and narcissistic personality disorders, as well as antisocial personality disorder (which is considered a continuation of juvenile conduct disorder) [2]. Finally, additional disorders with irritable or moody symptoms can occur in patients of all ages, including bipolar disorders, cyclothymia, drug or alcohol use disorders, autism spectrum disorders, or intermittent explosive disorders [2]. All will be covered in various chapters in the current book.

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While comorbid disorders are relatively common and account for much of the moodiness seen in patients of all ages with ADHD, some experts have argued that moodiness in adult ADHD is a core symptom of the ADHD itself [8, 9]. Others have gone a step further to suggest that the presence of moodiness should be used to define subtypes of ADHD, just as having inattentive or hyperactive/impulsive symptoms do [10, 11]. The section on ADHD in DSM-5, however, describes “low frustration tolerance, irritability, or mood lability” as “associated features” but not diagnostic criteria of ADHD [2, p. 61]. Chapter 11 reviews various explanations of emotional dysregulation in adult ADHD, along with their assessment, and treatment.

Mental health clinicians are taught to use the term “affect” to describe patients’ immediate emotional tone, with signs and symptoms conveyed both verbally (with changes in tone, volume, and rapidity) and nonverbally (with changes in facial expressions, motoric activity, and body posture). Such signs of affect can change from seconds to minutes. In contrast, the term “mood” is used to describe more extended emotional states (e.g., anxious, depressed, manic) lasting days to weeks or longer. Such moods color people’s views of themselves and their life experiences. The relationship of “affect” to “mood” is considered analogous to that of “weather” to “climate.” However, mood and affect are perhaps better described as existing on a continuum. Moods change faster in patients with mental illnesses just as climates change faster with greenhouse gasses. I have deliberately used the informal and nonspecific term “moody” to capture this array of problematic emotional states, both brief and extended.

My first experience working with child and adolescent psychiatric patients was at a busy community mental health clinic, where I often saw patients with comorbid ADHD. My experiences treating such patients were consistent with the literature, which suggests that approximately 3 out of 4 respond to any stimulant tried when dosed correctly [12]. Such work seemed a unique opportunity in psychiatry to “hit a home run with the first pitch.” Eventually, as a child and adolescent psychiatry fellow, the ADHD patients I saw in a tertiary mental health clinic at the University of Utah had comorbid presentations at least two-thirds of the time, echoing the comorbidity literature [13]. Such comorbidities included *externalizing disorders* with outbursts of anger, defiance, and aggression. They also included *internalizing disorders* with somatic/vegetative symptoms, excessive worry, poor self-esteem, guilt, and hopelessness, suggesting the social and academic challenges such patients experienced chronically because of their ADHD. An additional challenge was that such patients often had parents with similar symptoms. Dr. Paul Wender and colleagues also at the University of Utah were working with many of these adult patients, diagnosing and treating their ADHD, and challenging the conventional wisdom at the time that ADHD did not extend into adulthood [10]. Adults who continued to have symptoms of ADHD often had co-occurring affective lability, which Wender and colleagues labeled “emotional dysregulation,” and argued was an additional symptom of adult ADHD [10, 11]. These adult patients often had a dramatic response regarding ADHD and emotional dysregulation when treated with

stimulants, and a marked improvement in their ability to function as parents, which also improved the lives of their children who were frequently our patients.

My training experiences raised some questions. How could the various causes of moodiness in pediatric or adult ADHD be more effectively diagnosed and treated? Does effective treatment of their ADHD change these patients' risk of developing more severe externalizing and internalizing disorders later? Are there situations in which treating the ADHD worsens patients' moodiness and how can we anticipate those? Conversely, could treating these patients' mood and affective problems lessen the impairment of their ADHD? Are the various diagnoses used to describe mood symptoms in patients with ADHD truly distinct diagnoses, or are these simply examples of us as blind clinicians feeling different parts of the same elephant?

The goals of the current book are to give clinicians the ability to start answering some of the above questions, by providing a clinical framework and pragmatic tools to improve their assessment and treatment of various sources of moodiness in patients with ADHD. Authors of the various chapters were selected based on their clinical and research expertise in their respective topics. The earliest two chapters are devoted to general strategies for assessing ADHD and other comorbidities and ruling out potential organic etiologies for them. Subsequent chapters focus on various "flavors" of diagnoses associated with such moodiness, their epidemiology and public health impact, etiological factors, and strategies for assessment and treatment. Each chapter concludes with a summary of where things stand in that particular area, as well as key un-answered questions. Some chapters review disorders that can occur at any age, others focus on disorders of children, and the last focuses on disorders of adults.

Authors have written their chapters independent of each other, and as a result, there may be some differences about frequencies of various disorders, or about recommendations for assessment and treatment between chapters. Even so, my goal is to present a range of expert perspectives and opinions, some of which may be more relevant or useful than others, depending on the reader's clinical experiences and interests. My hope by providing a review of the main causes of moodiness in individuals with ADHD is to help improve clinicians' understanding, clinical skills and confidence in caring for such patients.

I'd like to acknowledge the contributions of all of the authors of chapters in this book. All have been generous with their time and diligent in writing their respective chapters, reflecting their enthusiasm for their professional work as clinicians and researchers. All have also been exceedingly patient with my sometimes compulsive editorial suggestions. Thanks also to Cheryl Winters-Tetreau and Nadina Persaud with Springer Publishing for their help and patience.

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