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LITERATURE REVIEW

What is an emotional disorder? A transdiagnostic mechanistic definition with implications for assessment, treatment, and prevention

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Abstract

We present a transdiagnostic definition of the commonly used, but poorly defined, term *emotional disorder*. This definition transcends and possibly complements traditional descriptive diagnostic categories, and candidate dimensional models of psychopathology by focusing on putative mechanisms that contribute to the onset and maintenance of disorders characterized primarily by dysfunction in the interpretation and regulation of emotion. We review three intermediate transdiagnostic mechanisms that characterize emotional disorders, such as, but not limited to, anxiety and depressive disorders, and then illustrate how this proposed definition applies to additional diagnoses beyond anxiety and depression. Implications of this new conceptualization of disorders of emotion are then discussed in the context of assessment, treatment, and prevention.

KEYWORDS

classification, comorbidity, emotional disorders, transdiagnostic

1 | INTRODUCTION

The aim of this article is to define a term that has been widely used by both researchers and practitioners in the field since at least 1924 (Miller, 1924), but has never been included in any official nomenclature: *emotional disorder*. Our reasons for doing so are twofold. First, the literature on emotion and emotion regulation has been plagued by widespread variability in the terminology used to refer to emotion-related constructs and processes (Gross, 2015; Gross, Sheppes, & Urry, 2011). For example, terms like *affect*, *emotion*, and *mood* are often used interchangeably or in the absence of any definition. This lack of conceptual clarity over key terms continues to impede scholarly efforts to consolidate and integrate existing research findings. We will demonstrate that the frequent use of the term *emotional disorder,* in the absence of explicit operationalization, has only contributed to an illusory consensus whereby the same term is being used with different meanings. Even without a clear definition, the term *emotional disorder* continues to feature prominently in contemporary literature; Google Scholar indexed over 1,300 publications for the year 2017 with *emotional disorder* in the article. Given that use of the term *emotional disorder* is a popular umbrella term and is likely to persist, there is considerable advantage to leveraging its use.

Second, and more importantly, by presenting a definition for *emotional disorder* that connects putative mechanisms to clinical syndromes, we are also proposing a heuristic for grouping disorders together that transcends traditional diagnostic categories by reclustering disorders into larger groups

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based on presumed shared etiologic and maintaining factors. Prior research has repeatedly shown that temperamental vulnerabilities, such as neuroticism or negative affectivity, are strongly linked to the development, maintenance, and severity of symptoms across anxiety and depressive disorders, and demonstrated substantial explanatory power as higher-order variables (Barlow, Sauer-Zavala, Carl, Bullis, & Ellard, 2014; Brown & Barlow, 2009; Clark, 2005). Within the child literature, the tendency to express distress inward or to "internalize" has similarly been shown to account for the interrelationships between anxiety and depressive disorders (e.g., Kovacs & Devlin, 1998; Krueger, 1999). While this research has been paramount in advancing our understanding of co-occurring psychological disorders, these higher-order descriptive variables alone lack clinical utility as intervention targets due to the heterogeneity of their expression. Therefore, the primary objective of our proposed definition for the term *emotional disorder* is to identify intermediate transdiagnostic mechanisms that are more proximally related to clinical phenotypes and represent putative intervention targets.

We begin with a brief clarification of key terms and concepts, followed by a review of how the term *emotional disorder* has been variably used within the literature. Next, we present a definition for disorders of emotion that specifies the functional processes that are shared across these disorders and causally linked to the development and maintenance of symptoms across disorders (Harvey, Watkins, Mansell, & Shafran, 2004; Mansell, Harvey, Watkins, & Shafran, 2009; Sauer-Zavala et al., 2017). We elected to present our definition in a transdiagnostic framework that is agnostic to diagnostic categories, but can also complement both existing descriptive categorical models and newer dimensional models (Kraemer, 2015). To maximize clinical utility, we also prioritized operationally defined, empirically supported functional domains that may serve as treatment targets in our definition. We then use a range of *DSM-5* diagnoses to illustrate the application of the proposed diagnostic criteria to determine whether a disorder is an emotional disorder. In the final section, we conclude with a discussion of how the proposed conceptualization might inform approaches to the assessment, prevention, and treatment of disorders of emotion.

2 | AN OVERVIEW OF KEY TERMS

In an effort to avoid perpetuating the practice of referring to important concepts and processes in the absence of clear definitions that has plagued the field of emotion science, it is necessary first to specify what we mean when we refer to key terms throughout this review.

An *emotion* is characterized by changes in physiology, subjective experience, and behavior that unfold over time and occur in response to an activating event (Gross, 2015; Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). Although the subjective experience of an emotion is often considered the defining characteristic, emotions are also strongly associated with action tendencies and facial expressions (Frijda, 1986). Prime examples of emotion-related behaviors include the fight, flight or freeze response associated with fear, and a slumped body posture or urge to withdraw associated with sadness. Compared to emotions, *moods* last longer, are more generalized (e.g., feeling down), and often lack obvious causes; emotions are elicited in response to an activating event and are more specific in nature (e.g., anger, pride, jealousy; Gross, 2015).

Affect, on the other hand, is an umbrella term that refers to emotions, moods, and stress responses (Scherer, 1984; Werner & Gross, 2010). Generally speaking, emotions can be distinguished from other affective states (i.e., moods, stress responses) by their relative brevity and differentiation beyond a general negative or positive affective state (Jazaieri, Urry, & Gross, 2013). *Emotion regulation* refers to the goal-driven process of influencing the intensity, duration, or quality of a current or future emotion, and can be either automatic or effortful in nature (Gross, 2015; Gross et al., 2011).

3 | CONTEMPORARY USE OF THE TERM *EMOTIONAL DISORDER*

One explanation for why such a commonly used term has remained so poorly defined is that the very practice of repeatedly using a term without defining it creates a presupposition that there is a shared meaning, such that its use does not require further elaboration. In the case of the term *emotional disorder*, one might infer that there is a tacit agreement within the field about either the specific criteria that constitute an emotional disorder or which *DSM* diagnoses are included within the broader category of emotional disorders.

We conducted a circumscribed literature review of psychological and medical journals to demonstrate how this assumption is not supported by the literature. A search of PubMed for articles published during the past 20 years (i.e., between January 1, 1998, and December 31, 2017) that included *emotional disorder*, *emotional disorders*, *disorder of emotion*, or *disorders of emotion* in the title identified a total of 241 articles. The purpose of this review was to examine whether any uniformity existed in which disorders were referred to as emotional disorders, and what explanations were provided for why those disorders were conceptualized as disorders of emotion. Of these 241 articles, 48 articles were published in a language other than English, which resulted in 193 articles available for analysis. Each available article was reviewed by the first and second author to determine the following: (a) Did the authors provide

a definition of the term *emotional disorder*? (b) if yes, was the definition descriptive (i.e., specified which diagnoses the term *emotional disorder* referred to) or mechanistic (i.e., specified the shared underlying causal processes that characterize an emotional disorder) in nature? and (c) in the absence of an explicit definition, did the authors provide any information from which the reader could infer the meaning of the term *emotional disorder* (e.g., using *emotional disorder, anxiety,* and *depression* interchangeably, or providing information about the study sample)?

Most articles ($n = 120$) provided an implicit definition and did not directly define *emotional disorder*. Among these articles, significant variability was evident; for example, most studies referenced anxiety and depression, but some also included somatic symptoms, eating, or dissociative disorders. Some articles referenced anxiety, depression, and "other related emotional disorders" without further elaboration on how emotional disorders might be related to one another or which other disorders might be related to anxiety and depression. A considerable number of studies used the term *emotional disorder* to refer to psychological disorders or emotional distress more generally. A small number of articles ($n = 14$) provided no definition and no information to contextualize the use of *emotional disorder*.

There were 36 articles that explicitly defined the term *emotional disorder*, and we provide a representative sample to illustrate the range of these definitions (Table 1; full table of all 36 available as an online supplement). The majority of these articles provided categorical definitions that stated which *DSM* diagnoses fell into the category of emotional disorders. Most also included a brief description of or reference to the descriptive higher-order dimensions shared by those diagnoses, such as negative affectivity, or to difficulties with emotional regulation. However, even the articles that were explicitly focused on the classification of emotional disorders focused primarily on factors that differentiated disorders from one another (e.g., fear vs. distress disorders; Kotov, Perlman, Gamez, & Watson, 2014). Most notably, the minority of articles that included diagnoses beyond anxiety and depressive disorders (e.g., somatic symptom disorders) in their definition of emotional disorders did not fully explicate the shared mechanisms that link these diagnoses.

To summarize, although there does appear to be a general consensus that the term *emotional disorder* refers to, at minimum, anxiety and unipolar depressive disorders, it is less clear whether other diagnoses can or should be subsumed by this label. To achieve clarity on which disorders fit within this classification, and, perhaps more importantly, why some disorders fit while others do not, it is necessary first to explicitly identify the underlying functional processes that characterize a disorder of emotion.

4 | WHAT IS AN EMOTIONAL DISORDER?

As is evidenced by the cursory definitions of an emotional disorder provided in previous articles authored by members of our research group (e.g., Barlow, Sauer-Zavala, et al., 2014), we consider a disorder is an emotional disorder if it meets the following criteria: (a) The disorder is characterized by the experience of frequent and intense negative emotions; (b) there is an aversive reaction to the emotional experience itself that is driven by the individual's diminished sense of control and negative appraisal of the emotion; and (c) the individual engages in efforts to dampen, escape, or avoid the emotional experience, either preemptively or in reaction to the onset of a negative emotional state.

In this section, we will expand on each of these components in turn, illustrating how they contribute to the development and maintenance of symptoms. Since the term *emotional disorder* has been most consistently used in reference to anxiety and depressive disorders, we first review the empirical support for their classification as disorders of emotion using our proposed criteria.

4.1 | Experience of frequent and intense (negative) emotions

Our first criterion is often conceptualized as a personality trait or temperament style that predisposes an individual to experience negative emotions more often and more intensely than individuals without this general biological vulnerability (Barlow, Sauer-Zavala et al., 2014). Within the personality and psychopathology literature, there are a variety of closely related constructs that are relevant to this temperamental style, such as *neuroticism* (Barlow, 2002; Clark & Watson, 2008; Eysenck, 1947)*, negative affect* (Watson & Clark, 1992; Watson, Clark, & Tellegen, 1988), *trait anxiety* (Spielberger, 1975; Spielberger, Gorsuch, & Lushene, 1970), and *behavioral inhibition* (Gray, 1982; Kagan, 1989).

These constructs are not only closely related conceptually, but latent variable and structural equation modeling approaches have yielded empirical support for significant overlap among them (Brown, 2007; Clark, 2005; Naragon-Gainey, Gallagher, & Brown, 2013; Watson, 2005). Moreover, these studies have identified a hierarchical structure where higher-order temperamental constructs, such as neuroticism and negative affect, account for substantial variability in the onset of anxiety and depressive disorders and most, if not all, of the temporal covariance. These findings are consistent with the high rates of comorbidity observed among these disorders (Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Kessler, Chiu,

TABLE 1 Sample of categorical definitions of the term "emotional disorder."

Article	Definitions of the term "emotional disorder"
Watson, O'Hara, and Stuart (2008)	"This superclass [of current mood and anxiety disorders] should be given a nonspecific label, such as 'emotional disorders' (p. 285)"
Goldberg, Krueger, Andrews, and Hobbs (2009)	"They [emotional disorders] include generalized anxiety disorder (GAD), unipolar depression, panic disorder, phobic disorders, obsessional states, dysthymic disorders, post-traumatic stress disorder (PTSD) and somatoform disorders. We have also included neurasthaenia, as this diagnosis is commonly made in many parts of the world, and is in the ICD-10. We have preferred the term 'emotional' because we include somatoform disorders in the group (p. 2043)"
Baek (2014)	"Typical emotional disorders are anxiety disorder, depression, and bipolar disorder (p. 205)"
Zvolensky, Farris, Leventhal, and Schmidt (2014)	"Among the various psychiatric symptoms and psychopathologies, depressive and anxiety syndromes—that is, emotional disorders—are highly prevalent in the general population…(p. 912)"
Alladin (2016)	"Emotional disorders in this article refer to a spectrum of psychological conditions including anxiety, depression, dissociation, somatization, and trauma-related problems (p. 147)"
Sung et al. (2016)	"The term 'emotional disorders' is not a clearly defined medical term, but is commonly used to refer to psychological disorders (e.g., generalized anxiety disorders and major depressive disorders) that appear to affect the emotions. 'Emotional disorders' in this study refers to the symptoms of anxiety and depression (p. 1630)"
Dornbach-Bender et al. (2017)	"Emotional disorders—namely bipolar disorders, depressive disorders, posttraumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), and anxiety disorders—are among the most prevalent forms of mental illness…(p. 31)"
Finning, Moore, Ukoumunne, Danielsson-Waters, and Ford (2017)	"Emotional disorder can be conceptualised in different ways but is generally considered to mean depression or anxiety (p. 122)"
Waszczuk, Kotov, Ruggero, Gamez, and Watson (2017)	"Emotional disorders consist of a cluster of closely related conditions, including depressive, bipolar, and anxiety disorders, as well as posttraumatic stress disorder (PTSD) and obsessive–compulsive disorder (p. 613)"

Demler, Merikangas, & Walters, 2005; Merikangas et al., 2003), and further bolstered by affective neuroscience, which has demonstrated similar functional and structural abnormalities across these disorders in brain areas that are associated with elevated levels of negative affect (Etkin & Wager, 2007; Holmes et al., 2012; Shin & Liberzon, 2010). Compared to positive affect, which tends to be more environmentally influenced, negative affect has been shown to be significantly heritable and more dispositional in nature (Menne-Lothmann et al., 2012; Zheng, Plomin, & von Stumm, 2016).

4.2 | Negative reactivity to intense emotional states

Inherent to the experience of any emotion is a valuation or appraisal of that emotion (Izard, 1971; Solomon & Stone, 2002; Tomkins, 1962, 1963). Indeed, it has been argued that it is an individual's interpretation of or reaction to an emotional experience, rather than the discrete emotional experience itself, that contributes to the development and maintenance of pathology (Barlow, 1991). Aversive reactions to emotional experiences are associated with a number of factors, beginning with a strong sense of uncontrollability and unpredictability of the emotional experience. This may lead to difficulty tolerating the subjectively unpleasant experience of the emotion, a lack of perceived utility of the emotion in relation to goal attainment, and expectancies that there are social or interpersonal consequences associated with negative emotions, or negative self-evaluations in the context of experiencing an undesired emotion. These perceptions are an integral component of the neurotic temperament. As a result of these appraisals, individuals are less accepting of emotional experiences and less willing to tolerate them.

There is ample evidence to indicate that individuals with anxiety and depressive disorders react more aversively to and are less accepting of the experience of negative emotions than healthy individuals (e.g., Campbell-Sills, Barlow, Brown, & Hofmann, 2006b; McLaughlin, Mennin, & Farach, 2007; Roemer, Salters, Raffa, & Orsillo, 2005; Tull & Roemer, 2007). For example, Campbell-Sills, Barlow, Brown, and Hofmann (2006a) and Campbell-Sills et al. (2006b) found that in response to viewing an emotion-provoking film, patients with anxiety and depressive disorders experienced increases in negative emotions that were comparable to a nonclinical control group, but engaged in more suppression than the control group. Importantly, the relationship between high levels of negative emotions and greater use of suppression was mediated by patients' perceptions of their current emotions as unacceptable. These findings suggest

that anxious and depressed individuals experience particular emotional states as more aversive than healthy controls and consequently engage in greater efforts to down-regulate the emotional experience through suppression or related strategies, which paradoxically increases the intensity and duration of the aversive emotional state.

Following treatment for anxiety and comorbid depressive disorders, Sauer-Zavala et al. (2012) found that patients experienced large decreases in both the frequency of and reactivity to negative emotions and that reductions in emotional reactivity remained significantly related to symptom outcomes even after controlling for the frequency of negative emotions. In addition, greater acceptance of emotions has been shown to predict treatment outcome in acceptance-based approaches for anxiety and depression (e.g., Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Hayes, Orsillo, & Roemer, 2010). These results further support the assertion that the way an individual relates to his or her negative emotions is more important than the frequency with which they occur.

4.3 | Efforts to dampen, escape, or avoid negative emotional experiences

All individuals engage in efforts, either explicitly or implicitly, to influence the trajectory of their emotional experiences (Gross et al., 2011). It is not surprising then that negative appraisals of emotions are accompanied by an unwillingness to experience aversive emotional states, which is then manifested behaviorally. These behaviors are motivated by a desire to avoid the provocation of an unpleasant emotional experience or to inhibit the intensity of a present emotional state, and can range from mental strategies designed to shift emotion-provoking stimuli out of awareness to overt behavioral avoidance.

Myriad studies have shown that individuals with anxiety and depression chronically engage in attempts to escape or avoid their emotional experiences more than healthy controls and that the use of emotion avoidance is associated with diminished positive affect, greater negative affect, and poorer recovery from an emotion-provoking stimulus (Aldao & Nolen-Hoeksema, 2010; Amstadter, 2008; Beblo et al., 2012; Campbell-Sills et al., 2006a; Cisler & Olatunji, 2012; Feldner, Zvolensky, Eifert, & Spira, 2003; Gross & John, 2003; Levitt, Brown, Orsillo, & Barlow, 2004; Ottenbreit & Dobson, 2004; Ottenbreit, Dobson, & Quigley, 2014). Examples include overt behavioral avoidance (e.g., leaving a party in social anxiety disorder, refraining from taking the elevator in panic disorder, avoiding social interaction when depressed), as well as cognitive avoidance, such as thought suppression (Wenzlaff & Wegner, 2000), rumination (McLaughlin & Nolen-Hoeksema, 2011), and worry (Borkovec, Alcaine, & Behar, 2004). As noted above, these forms of avoidant coping have a paradoxical effect and actually serve to increase and maintain negative emotions (Abramowitz, Tolin, & Street, 2001; Blalock & Joiner, 2000).

4.4 | Summary

Negative reactivity to emotions results in both amplified emotional intensity and frequency and a lack of willingness to experience negative emotions, which in turn generate emotional states that are highly distressing. Accordingly, it is no surprise that aversive appraisals of emotion are frequently followed by attempts to dampen or escape the emotional experience (Barlow, Ellard, Sauer-Zavala, Bullis, & Carl, 2014; Barlow, Sauer-Zavala et al., 2014). Because suppression of internal experience often results in a boomerang effect (Wegner, 1989; Wegner, Schneider, Carter, & White, 1987) and because avoidance and escape preclude opportunities to learn about one's ability to cope with and recover from the experience of unwanted emotions, emotion avoidance strategies ultimately maintain the negative affect and contribute further to a sense of uncontrollability of emotions. Thus, the use of maladaptive emotion regulation strategies is a self-perpetuating consequence of disturbances in the appraisal of unwanted emotions, whereby negative interpretations associated with diminished sense of control over emotional experience (Barlow, 1988, 2002; e.g., "I can't handle feeling this way," "People would judge me for feeling anxious") are reinforced, motivating continued emotion avoidance. We propose that this feedback loop represents the functional mechanism by which negative affect and emotional distress are maintained for disorders of emotion. That is, although emotional disorders are characterized by difficulties with emotion regulation, it is an appraisal of intolerability or perception of lack of control over emotions that influence the intensity and frequency of future emotional experiences and their associated action tendencies, and ultimately produce an emotional disorder.

It is worth noting that since our proposed definition is dimensional in nature, these criteria would only be considered an emotional disorder if the associated distress and functional impairment were chronic and significant. For example, intraindividual variation in frequency and intensity of negative affect is normal, as is occasional emotional avoidance or aversive reactions to negative emotions in specific, isolated situations.

5 | DISORDERS OF EMOTION: BEYOND ANXIETY AND DEPRESSION

In the next section, we briefly describe several additional disorders that fit our proposed criteria, but are not traditionally considered disorders of emotion. These examples do not

constitute an exhaustive list, but rather illustrate how our definition might be applied to disorders beyond anxiety and depression.

5.1 | Borderline personality disorder

We have proposed that borderline personality disorder (BPD) should be included within the category of emotional disorders (Sauer-Zavala & Barlow, 2014). Not only does BPD share substantial temperamental variance with neuroticism (e.g., Distel et al., 2009), but it has been suggested that BPD and neuroticism represent a single latent dimension, with BPD representing a more extreme level of neuroticism (Samuel, Carroll, Rounsaville, & Ball, 2013). The experience of heightened negative affect is considered a core component of BPD (Carpenter & Trull, 2013; Crowell, Beauchaine, & Linehan, 2009; Trull, 2001), and studies have consistently shown that individuals with BPD experience their emotions more intensely than nonclinical populations (Nica & Links, 2009; Yen, Zlotnick, & Costello, 2002). BPD is also associated with heightened emotional reactivity, particularly in the context of interpersonal stress (Chapman, Walters, & Gordon, 2014). Although it has been reported that individuals with BPD seem to struggle with identifying their own emotions (New et al., 2012; Salsman & Linehan, 2012), it is unclear whether individuals with BPD truly possess deficits in emotional clarity or whether this observed skill deficit is actually a consequence of an unwillingness to engage with their emotional experiences (Wupperman, Neumann, & Axelrod, 2008). For example, using an experimental design, Gratz, Rosenthal, Tull, Lejuez, and Gunderson (2006) found that individuals with BPD were unwilling to experience distress in order to pursue goal-directed behavior, but they did not evidence deficits in their ability to engage in goal-directed behavior when distressed.

Using experience sampling, Stiglmayr et al. (2005) found that compared to healthy controls, patients with BPD report greater levels of aversive emotional experiences that occur more frequently, increase more rapidly, and last for longer periods of time. Extant studies have shown that individuals with BPD utilize suppression in an attempt to avoid the distress that is associated with these negative emotional experiences, and then, when suppression paradoxically amplifies their distress, they resort to more impulsive behaviors, such as self-harm, to distract from this intensified distress (Chapman, Gratz, & Brown, 2006; Chapman, Specht, & Cellucci, 2005; Rosenthal, Cheavens, Lejuez, & Lynch, 2005; Selby, Anestis, Bender, & Joiner, 2009; Selby & Joiner, 2009).

These findings are consistent with other studies that have shown that individuals with BPD demonstrate extreme polarity (i.e., all good or all bad) in their descriptions of their emotional experiences and that this polarity predicts impulsive behavior (Coifman, Berenson, Rafaeli, & Downey, 2012). In other words, not only do individuals with BPD experience frequent and intense negative emotions, but they also find these emotional experiences aversive and distressing, perhaps due in part to polarized appraisals of their emotions as either all good or all bad. A recent experience sampling study of the temporal relationships between negative emotions and BPD symptoms found that negative emotions were strongly predictive of future BPD symptoms, including relationship intensity, feelings of emptiness, uncertain sense of self, and unstable mood, whereas current symptoms did not reliably predict future negative emotions (Law, Fleeson, Arnold, & Furr, 2016). Taken together, these studies provide a strong empirical argument that BPD symptoms are maintained in part by aversive reactions to emotional experiences, and because of this strong functional relationship, BPD can be considered an emotional disorder.

5.2 | Eating disorders

Recent research has begun to emphasize disturbances in the experience and appraisal of emotions as a core feature that contributes to the development and maintenance of eating disorders (e.g., Lavender et al., 2015; Oldershaw, Lavender, Sallis, Stahl, & Schmidt, 2015). Individuals suffering from anorexia nervosa and bulimia nervosa, initially triggered by body image distortions that are relatively common in the general population and adolescents in particular, score higher than healthy controls on measures of neuroticism and negative emotionality (Cassin & von Ranson, 2005; Forbush & Watson, 2006), and these traits have been shown to be prospective risk factors for eating psychopathology (Fox & Froom, 2009; Wildes, Ringham, & Marcus, 2010).

Empirical research has reliably demonstrated that compared to healthy controls, individuals with eating disorders report more negative beliefs about emotions and less acceptance of their emotional experiences (Brockmeyer et al., 2014; Harrison, Sullivan, Tchanturia, & Treasure, 2009, 2010; Ioannou & Fox, 2009; Lawson, Emanuelli, Sines, & Waller, 2008; Svaldi, Griepenstroh, Tuschen-Caffier, & Ehring, 2012). Negative beliefs about the experience and expression of emotions are associated with more severe symptomatology in individuals with anorexia (Hambrook et al., 2011), and have even been found to differentiate between individuals with current anorexia symptoms and those in recovery (Oldershaw et al., 2012).

As a result of these negative appraisals of emotions, individuals with eating disorders endorse experiencing aversive reactions and significant distress in the context of negative emotions (Corstorphine, Mountford, Tomlinson, Waller, & Meyer, 2007). In a 6-year longitudinal study of adolescents, negative affect and distress intolerance predicted eating disorder attitudes at baseline, but it was emotional reactivity, measured by increases in negative emotions following

exposure to a stressor, that predicted increases in eating disorder attitudes over time (Juarascio et al., 2016). Studies have consistently found that individuals with eating disorders experience difficulties with deliberate engagement of emotion regulation strategies and tend to engage in more maladaptive strategies in response to emotional distress (Oldershaw et al., 2015; Racine et al., 2016). The conceptualization of these emotion regulation difficulties has been evolving to mirror our functional model described above, where disordered eating-related behaviors such as restriction, binging, and purging are seen as efforts to escape aversive emotional experiences (Kolar, Hammerle, Jenetzky, Huss, & Burger, 2016; Wildes et al., 2010).

More recent studies have been able to utilize longitudinal and daily diary data to help elucidate the temporal relationships between the experience of negative emotions and disordered eating behaviors. For example, increases in negative affect have been shown to predict ritualized eating, purging, and weighing behaviors in women with anorexia (Engel et al., 2013); moreover, levels of negative affect significantly decreased immediately after engaging in these behaviors. Greater lability in negative affect was found to predict frequency of binge eating episodes, although it is noteworthy that this relationship was only present in individuals high in neuroticism (Zander & De Young, 2014). Daily fluctuations in patients' ability to tolerate unpleasant emotions preceded anorexia-related cognitions and behaviors among the majority of patients with severe symptomatology, but not in patients with low symptom severity. Other studies have shown that improvements in emotion regulation difficulties are associated with treatment gains in eating psychopathology and that greater emotional regulation difficulties at discharge predict worsening of eating disorder symptoms in the year following discharge (Racine & Wildes, 2015; Rowsell, MacDonald, & Carter, 2016). This accumulation of evidence suggests that although thin idealization and body dissatisfaction have been clearly identified as precipitating factors (e.g., Stice & Shaw, 2002; Thompson & Stice, 2001), it is not simply these common appraisals of body shape that potentiate and maintain eating disorders. Rather, negative reactivity to emotions and maladaptive attempts to regulate aversive reactions to negative affect at the core of neuroticism may be more proximally related to the development and maintenance of eating psychopathology.

5.3 | Insomnia disorder

The ubiquity of sleep disturbance across psychological disorders is well established (Dolsen, Asarnow, & Harvey, 2014), particularly among anxiety and depressive disorders (Cox & Olatunji, 2016; Murphy & Peterson, 2015). Sleep disturbance has often been conceptualized as a symptom of or secondary to another disorder, a perspective that was reflected in *DSM-IV-TR's* differentiation between primary insomnia and secondary insomnia (American Psychiatric Association, 2000). However, the assumption that diagnosis and treatment of the principal or underlying psychological disorder will result in the full remission of sleep difficulties has not borne out empirically (e.g., Carney, Harris, Friedman, & Segal, 2011; Stepanski & Rybarczyk, 2006; Zayfert & DeViva, 2004). As a result, the decision was made to no longer distinguish between primary insomnia and secondary insomnia in *DSM-5* in an effort to improve the recognition and treatment of sleep disorders among healthcare providers (Reynolds & Redline, 2010).

DSM-5 describes insomnia disorder as a sleep disorder that does not occur exclusively during the course of another disorder and is characterized by at least 3 months of either difficulty with sleep onset, maintenance, or quality that results in daytime distress and impairment (American Psychiatric Association, 2013). Individuals with insomnia disorder report higher levels of negative mood on a daily basis compared to good sleeper controls (Buysse et al., 2007), greater behavioral inhibition (Espie, Barrie, & Forgan, 2012), elevated levels of trait anxiety (Spira et al., 2008), and are more than five times as likely to suffer from anxiety or depression than individuals without sleep problems (Pearson, Johnson, & Nahin, 2006). Insomnia disorder is also associated with greater harm avoidance, a personality trait that is closely related to and may be isomorphic with both behavioral inhibition and neuroticism (Bravo-Ortiz et al., 2013; Park, An, Jang, & Chung, 2012). Myriad studies have demonstrated that neuroticism is strongly associated with poor sleep quality (Duggan, Friedman, McDevitt, & Mednick, 2014; Gurtman, McNicol, & McGillivray, 2014; LeBlanc et al., 2007; Ramsawh, Ancoli-Israel, Sullivan, Hitchcock, & Stein, 2011; Vincent, Cox, & Clara, 2009; Williams & Moroz, 2009), with findings suggesting that neuroticism influences how the sleep system is affected by stress rather than the sleep system itself (Harvey, Gehrman, & Espie, 2014). People with insomnia tend to exhibit more emotional reactivity to stress than good sleepers, and this vulnerability is observable even before onset of insomnia symptoms (Fernandez-Mendoza et al., 2010). Despite experiencing an equivalent number of stressful life events as good sleepers, individuals with insomnia rate more highly the impact of these daily minor stressors, view their lives to be more stressful overall, and report low control over daily stressors, reflecting both heightened negative emotionality and a perceived inability to cope in response to stress (Morin, Rodrigue, & Ivers, 2003).

Although there has been considerable investigation into the effect of sleep disturbance on emotional functioning, less attention has been paid to whether negative appraisals of emotions or aversive reactions to negative emotions contribute to the maintenance of insomnia symptoms. However, there is some evidence to suggest that insomnia is associated with

nonacceptance of emotions (Hom et al., 2016; McCracken, Williams, & Tang, 2011). Moreover, negatively valenced emotional arousal prior to bedtime is associated with poorer sleep quality (Grano, Vahtera, Virtanen, Keltikangas-Jarvinen, & Kivimaki, 2008; McCrae et al., 2008; Shin et al., 2005; Stoia-Caraballo et al., 2008). Findings such as these are leading researchers to emphasize the maladaptive effect of trying to control emotional experiences as an important maintaining factor in insomnia (Schmidt, Harvey, & Van der Linden, 2011). Individuals with insomnia often engage in dysfunctional forms of cognitive control (e.g., worry, thought suppression, rumination) that prove counterproductive and ultimately contribute to the maintenance of symptoms (Baker, Baldwin, & Garner, 2015; Carney, Harris, Falco, & Edinger, 2013; Schmidt et al., 2011). Insomnia disorder is also associated with the use of sleep-related safety behaviors, a form of avoidant coping that maintains symptoms through reinforcement of maladaptive beliefs (Harvey, 2002a,b); examples include attempts to catch up on sleep by napping, going to bed early, or conserving energy during the day (Ree & Harvey, 2004). There are fewer data available that explicitly characterize how individuals with insomnia react to negative emotions, but the relationship between efforts to dampen or avoid emotional experiences and sleep disturbance is well documented. Therefore, it is reasonable to extrapolate that individuals with insomnia react aversively to emotional experiences, possibly due an appraisal that these experiences are a threat to sleep, thereby evincing the functional relationship that is at the heart of our definition of emotional disorders.

6 | NOT ALL DISORDERS ARE EMOTIONAL DISORDERS

Of course, there are many diagnoses in which the experience of negative emotions is prominent that do not meet our proposed criteria. Therefore, it is important to differentiate disturbances in the experience of emotion that represent a primary deficit from similar difficulties that are due to secondary or compensatory deficits (Gross & Jazaieri, 2014). Consider the example of attention-deficit/hyperactivity disorder (ADHD), a disorder characterized by symptoms of inattention or hyperactivity that are associated with substantial impairment in multiple settings (American Psychiatric Association, 2013). Although ADHD is sometimes associated with increased negative affectivity and emotional lability (Barkley & Fischer, 2010; Newman et al., 2001), research has demonstrated that it is best characterized as a neurodevelopmental disorder (Pingault et al., 2015). In other words, the experience of negative affect is not responsible for the onset of hyperactivity or the inability to sustain attention, and, although it may exacerbate these symptoms, negative affect does not seem to play a significant role in the onset or maintenance of ADHD symptoms. Similarly, while ADHD is often associated with behavioral avoidance (e.g., procrastination, avoidance of activities requiring sustained mental effort), the avoidance is not a core mechanism by which the symptoms develop or continue to persist (i.e., reducing avoidance in an individual with ADHD will not fully attenuate hyperactivity or inattention).

Schizophrenia and other psychotic disorders represent another example of diagnoses that, despite being associated with substantial emotional lability in many cases, are not consistent with our proposed definition of an emotional disorder. Schizophrenia is characterized by hallucinations, delusions, disorganized speech and behavior, restricted affect, and avolition (American Psychiatric Association, 2013). Although elevated levels of neuroticism in adolescence have been linked to psychotic symptoms in adulthood (Boyette et al., 2013; Goodwin, Fergusson, & Horwood, 2003; Van Os & Jones, 2001), it has been well documented that the development of schizophrenia is driven primarily by disruption in brain connectivity (Cannon, 2015). Although individuals with schizophrenia do demonstrate difficulties in the expression of emotion, and negative emotions may accompany psychotic symptoms (e.g., anxiety or even panic related to hallucinations), few would argue that disturbances in the experience of emotion are functionally related to the development of psychotic disorders or that targeting appraisals about emotions in treatment would result in substantial clinical improvement in core psychopathology.

Similarly, it is important to note that many individuals may experience strong negative emotions without appraising these feelings as unacceptable and without engaging in avoidant coping (i.e., only the first criterion of our proposed definition is met). For example, an individual who experiences profound and disruptive sadness after the loss of a loved one may recognize these emotional experiences as part of an acute grief reaction that will eventually evolve into a state of integrated grief (Shear, Ghesquiere, & Glickman, 2013). Therefore, this individual is more likely to respond to the bereavement with adaptive, approach-oriented coping strategies, such as behavioral activation. In the absence of a strong aversive reaction or negative appraisals about the negative mood state, or efforts to escape the emotional experience, the distress associated with the experience of the negative affect will progressively diminish and the individual will eventually be able to reengage with everyday activities. However, a small percentage of individuals experiencing strong grief reactions do go on to develop complicated grief, a state characterized by significant and impairing grief symptoms that do not transition from an acute to integrated state (Bonanno et al., 2007). These individuals experience persistent negative affect, demonstrate intense emotional reactivity, and engage in excessive avoidance of any stimulus associated with the

loss (Shear et al., 2011). Specifically, catastrophic interpretations of the grief response (e.g., beliefs that grief is intolerable or that one lacks control over one's sadness) are thought to be an important causal factor in the development and maintenance of complicated grief (Boelen, van den Bout, & van den Hout, 2006). Avoidance of both external and internal (e.g., emotions, memories) reminders of loss perpetuates complicated grief insofar as this avoidance is driven by beliefs about one's inability to cope with the reality of the loss (i.e., the emotional experience provoked by the loss). Therefore, complicated grief, which is captured by the *DSM-5* diagnosis of persistent complex bereavement disorder, meets our definition of an emotional disorder.

7 | IMPLICATIONS OF A NEW CONCEPTUALIZATION OF EMOTIONAL DISORDERS: ASSESSMENT, TREATMENT, AND PREVENTION

The preceding discussion presents a framework for conceptualizing a class of disorders based on shared mechanistic features that may complement, but also transcends descriptive nosological frameworks. We discuss next how this perspective might influence the assessment and treatment of psychopathology while proposing areas for further research.

7.1 | Assessment

Our proposed definition of emotional disorders has implications for diagnosis and assessment. Even with increased interest in transdiagnostic approaches to conceptualization and treatment, the prevailing diagnostic system, *DSM-5*, continues to rely on categorical classification. There is a strong need for assessment approaches that are compatible with a more dimensional, transdiagnostic conception of psychopathology. Such assessment methods should reflect the continuous nature of constructs instead of imposing artificial boundaries in an effort to improve diagnostic reliability (Brown, 2007; Brown, Chorpita, & Barlow, 1998).

Given that transdiagnostic treatments typically consist of therapeutic strategies designed to target core processes contributing to the development and maintenance of symptoms across disorders, clinical decisions regarding whether to utilize a transdiagnostic approach with a particular patient should be based on the presence or absence of these processes instead of relying on disorder-specific descriptive diagnostic criteria. Therefore, although it is helpful to assess the constructs and vulnerability factors that serve as less proximal indicators of causal processes (e.g., negative affect, neuroticism), it will be important to also assess the mechanisms directly to guide case conceptualization and treatment decisions. Empirical findings presented throughout this review point to the utility of assessing individuals' reactions to emotional experience as both a transdiagnostic vulnerability factor and a mechanism of change. There is evidence that both explicit and implicit evaluations of emotions predict subsequent use of emotion regulation strategies (Tamir, Chiu, & Gross, 2007), and future research should consider the use of implicit measures to facilitate more objective assessment of appraisals of emotions and other putative mechanisms.

Equally important to the construct validity of any diagnostic approach is its clinical utility (First et al., 2004; Mullins-Sweatt, Lengel, & DeShong, 2016). In order to be useful in routine practice, clinicians should be able to accurately apply the diagnostic criteria, the diagnosis should inform treatment selection, and use of the diagnostic system should improve clinical outcomes. Surprisingly, very little is known about how the *DSM* is used in clinical practice (First et al., 2014), but the substantial discrepancies observed when diagnoses assigned by clinicians are compared to those assigned to the same patient using a structured interview imply that clinicians are not prescriptively applying *DSM* criteria (e.g., Ramirez Basco et al., 2000; Shear et al., 2000). Equally concerning, field trials for the latest version of the *DSM*, *DSM-5*, have failed to demonstrate strong test–retest reliability for some of the most commonly occurring psychological disorders, such as major depressive disorder (Regier et al., 2013). There is some evidence that clinicians may find a dimensional classification system more useful than the current categorical system. For example, after using both *DSM-IV* diagnostic criteria and a dimensional five-factor model to characterize personality disorder in their patients, clinicians not only rated the five-factor model significantly easier to use, but also rated it more useful for client and professional communication, describing a client's personality problems and choosing an effective intervention (Samuel & Widiger, 2010). Similarly, when comparing DSM-IV's categorical model of personality disorders to DSM-5's dimensional system, mental health clinicians found the latter to be significantly more clinically useful (Morey, Skodol, & Oldham, 2014). This portends well for more quantitative dimensional descriptive approaches to classification such as the recently unveiled Hierarchical Taxonomy of Psychopathology (HiTOP; Kotov et al., 2014).

A transdiagnostic mechanistic approach to diagnosis and assessment may also facilitate more appropriate treatment referrals in routine clinical care settings. In a recent analysis of almost 50,000 adults in the United States, less than a third of the individuals who screened positive for depression received treatment and, perhaps even more concerning, the majority of individuals who were receiving treatment for depression did not screen positive for the disorder (Olfson, Blanco, & Marcus, 2016). Studies also suggest that the rate of detection

for anxiety disorders among practitioners is one-half to one-third of the detection rate for depressive disorders, despite the fact that anxiety disorders are the most common class of psychological disorders (Silberman & Weiss, 2016). Instead of focusing on difficult diagnostic differentials, which routinely results in misdiagnosis and inappropriate treatment, healthcare practitioners could utilize a broad screening measure that assesses transdiagnostic mechanisms and then refer patients to a transdiagnostic treatment that targets those shared processes.

7.2 | Treatment

Transdiagnostic interventions also hold promise for the dissemination and implementation of evidence-based treatments in real-world clinical settings. Rather than learning how to administer numerous diagnosis-specific treatment protocols to treat the full range of anxiety, depressive, and related disorders, a clinician could utilize one treatment model to effectively treat a variety of symptomatic presentations (McHugh, Murray, & Barlow, 2009; Wilamowska et al., 2010). To the extent that transdiagnostic treatments target common mechanisms, they are likely to be advantageous for addressing issues of comorbidity and other-specified disorders (i.e., clinically significant symptoms that do not meet diagnostic criteria for a currently recognized disorder), or those who are experiencing symptoms that do not meet a diagnostic threshold for a *DSM* disorder, all of which are highly prevalent in routine clinical practice. There are also pragmatic benefits to transdiagnostic treatments, such as the cost-effectiveness and scalability of group treatment (e.g., the ability to deliver a transdiagnostic protocol to a diagnostically heterogeneous group of patients). Existing empirical studies support the efficacy of transdiagnostic treatments for anxiety (Reinholt & Krogh, 2014), anxiety and depression (McEvoy, Nathan, & Norton, 2009), and eating disorders (Fairburn et al., 2009), with evidence to suggest that outcomes obtained with transdiagnostic protocols are at least comparable to those achieved with diagnosis-specific protocols for anxiety and depressive disorders (Barlow et al., 2017; McEvoy & Nathan, 2007; Norton, 2012).

Although transdiagnostic interventions were originally developed to target shared mechanisms across disorders, the vast majority of existing transdiagnostic protocols are confined to one class of diagnoses (e.g., anxiety disorders, eating disorders). If we are to truly embrace a transdiagnostic mechanistic approach to assessment and treatment, transdiagnostic protocols should be characterized by the specific mechanisms of action that are targeted in the treatment (e.g., experiential avoidance, safety behaviors) instead of by the diagnostic class referenced in the treatment title (e.g., transdiagnostic treatment for anxiety disorders) or by broad applicability across multiple diagnostic categories (e.g., treatment for mixed anxiety and depression; Sauer-Zavala et al., 2017). The term emotional disorder as defined in the present article may facilitate a shift away from an overreliance on heterogeneous symptom presentations and toward a deeper understanding of the functional processes of etiology and symptom maintenance that are present across diagnostic categories.

As the field moves further toward a focus on mechanisms as a framework for conceptualizing psychopathology, it will be important to consider whether positive treatment outcomes are driven by an actual attenuation of those mechanisms or by the use of compensatory strategies that counterbalance those causal processes (Hollon, Stewart, & Strunk, 2006). Greater understanding of transdiagnostic mechanisms will also help refine and augment existing interventions. For example, research has shown that appraisals of emotions are often related to the perceived utility of the emotion; even if an emotion is unpleasant to experience, individuals may still be willing to experience it if they believe the emotion will promote goal achievement (Berridge & Robinson, 2003; Tamir, 2009; Tamir & Ford, 2012). In an experimental paradigm designed to determine whether negative appraisals of emotions were malleable, negative evaluations of anger were successfully influenced by experiencing anger in a context where it was beneficial to performance, such that greater improvements in performance were associated with less negative evaluations of anger (Netzer, Igra, Anan, & Tamir, 2015). Future research should explore the therapeutic effect of intervening directly on negative appraisals of emotions in clinical populations through either psychoeducation on the adaptive function of emotions or behavioral experiments that demonstrate how negative emotions can be useful despite their aversive qualities.

The applicability of fear extinction models and exposure-based procedures to disorders of emotion more broadly is another important area for future research. This will be particularly important for transdiagnostic approaches to emotional disorders, such as the unified protocol (Barlow et al., 2017), where exposure procedures target the primary emotional experience and its associated aversive reactions, rather than the situational context. For example, prior research has shown that sustained physiological arousal facilitates the consolidation of extinction memories (e.g., Craske, Treanor, Conway, Zbozinek, & Vervliet, 2014), and although some negative emotions are associated with high levels of arousal (e.g., anxiety), others are characterized by low arousal (e.g., depression). It remains to be seen whether fear extinction strategies that have proven effective in the treatment of anxiety and trauma-related disorders will produce comparable effects across other disorders of emotion. There is also evidence that supports the specificity of negative reactivity to emotions, such that individuals may have particularly problematic or aversive reactions to specific negative emotions versus

negative emotions in general (Harmon-Jones, Harmon-Jones, Amodio, & Gable, 2011). Future studies should explore the generalization of fear learning from one negative emotion to others, as well as the effect of context exposure to determine whether an emotion itself can serve as the conditioned stimulus or whether the emotion remains subordinate to the event that elicits it.

7.3 | Prevention

Emotional disorders are the most common psychological disorders and are associated with significant impairment across all areas of life, as well as substantial direct and indirect costs (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012; Lahey, 2009; Mojtabai et al., 2015). Most individuals do not seek treatment immediately following disorder onset, which further exacerbates the associated impairment and economic costs (Wang et al., 2007). In light of this information, the scientific community has begun to prioritize the development of preventative interventions (NIMH, 2015).

Transdiagnostic approaches targeting shared mechanisms may be well suited for application to prevention programs as they are uniquely able to focus on temperamental risk factors, such as neuroticism, instead of focusing on symptom reduction related to a diagnostic status (Zalta & Shankman, 2016). Studies suggest that rates of emotional disorders in college students are increasing at a rate that is difficult for universities to accommodate, which suggests that early adulthood may be a critical period for prevention programs (e.g., Pedrelli, Nyer, Yeung, Zulauf, & Wilens, 2015). Given that many young adults tend to view symptoms as early warning signs instead of an indication to seek treatment (Gagnon, Gelinas, & Friesen, 2017), transdiagnostic programs may be able to intervene before symptoms become more severe in a preemptive manner that minimizes embarrassment or personal stigma. There is preliminary evidence that college students view a two-hour transdiagnostic workshop focused on adaptive emotion management skills to be satisfactory and acceptable and that attending the workshop is associated with significant reductions in neuroticism and improvements in quality of life (Bentley et al., 2018). Based on prior research demonstrating the adverse impact of perceived social expectancies to minimize or avoid negative emotions (Bastian et al., 2012), it may be effective to directly address these misconceptions. Further evaluation will be necessary to establish the efficacy of transdiagnostic prevention programs, as well as the optimal mode of delivery (e.g., an in-person workshop vs. electronic format with interactive components).

It will also be important to determine when is the optimal developmental period to deliver preventive interventions and who should receive them. For example, it is likely that anyone, regardless of vulnerability factors, would benefit from adaptive emotion management skills (Gross & Jazaieri, 2014). There are some exciting findings that suggest that school-based programs designed to teach skills related to emotional intelligence and competence, such as the ability to recognize and express emotions, are associated with positive outcomes across numerous domains. For example, at-risk preschoolers who received an emotion-based preventive intervention demonstrated greater gains in emotion knowledge and emotion regulation, as well as decreases in aggression, anxious/depressed behavior, and expressions of negative emotions than their peers who received a problem-solving intervention (Finlon et al., 2015; Izard et al., 2008). Of note, gains in emotion knowledge were found to mediate the effect of the intervention on emotion regulation skills, suggesting that a greater understanding of the expressions, functions, and feelings of emotions mitigated children's urge to use maladaptive coping strategies. Future studies should consider integrating psychoeducation on the nature of emotions and effective emotion regulation strategies more broadly into educational programs.

8 | FINAL REMARKS

It is well established that the majority of individuals suffering from emotional disorders do not receive treatment and, of those that do, only a small minority receive treatment that is evidence-based (Collins, Westra, Dozois, & Burns, 2004; Olfson et al., 2016; Young, Klap, Sherbourne, & Wells, 2001). The amount of time and cost required for training remains one of the largest barriers to the dissemination of empirically supported treatments, in addition to the complex comorbidity present in most patients that is not easily addressed with treatment protocols designed for a single diagnosis (Chambless, 2014; Gunter & Whittal, 2010; Stewart, Chambless, & Baron, 2012). Despite the commendable advances made to date in our understanding and treatment of psychopathology, there remains a long way to go to increase the availability and access to effective treatment. Our proposed framework for the conceptualization of emotional disorders and the recommendations for its applications outlined above are best viewed as a proposal that will require further research to validate empirically.

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