Affective Disturbance and Psychopathology: An Emotion Regulation Perspective

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Abstract

It is widely thought that many psychological disorders involve emotion dysregulation. However, it is not yet clear just how many of the disorders presented in the Diagnostic and Statistical Manual of Mental Disorders-IV-Text Revision (DSM-IV-TR) are formally characterized by emotion regulation difficulties and related affective disturbances. To address this issue, we first define emotion, emotion regulation, emotion dysregulation, and affective disturbance. Next, we systematically code the psychological disorders listed in the DSM-IV-TR in terms of the presence or absence of affective disturbance and emotion dysregulation. We then use an emotion regulation perspective to examine affective disturbances in Axis II disorders, with a focus on borderline personality disorder (BPD). Finally, in the last section, we discuss some of the implications of our emotion regulation perspective for clinical assessment and intervention.

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Keywords: affective disturbance; emotion regulation; emotion dysregulation; psychopathology; DSM; borderline personality disorder

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Introduction

It is commonly said that emotion dysregulation characterizes more than half of the mental disorders described in the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994; Barlow, 2000; Kring & Sloan, 2010; Kring & Werner, 2004; Werner & Gross, 2010). This observation fits nicely with the idea that the regulation of emotions is an essential component to mental health (Gross & Muñoz, 1995). The empirical record, however, is far thinner than these broad claims would suggest. In this article, we use an emotion regulation perspective to clarify the role of affective disturbance in psychopathology.

Specifically, we begin by defining emotion, emotion regulation, emotion dysregulation, and affective disturbance. In the second section, we systematically code 176 mental disorders in the DSM-IV-TR for the presence of affective disturbance and emotion dysregulation. In the third section, we use an emotion regulation perspective to examine affective disturbances in Axis II disorders, with a focus on borderline personality disorder (BPD). Finally, in the fourth section, we discuss implications of this perspective for clinical assessment and clinical intervention, specifically within the context of dialectical behavior therapy (DBT).

Emotion, Emotion Regulation, Emotion Dysregulation, and Affective Disturbance

Many terms are used to refer to emotion and emotion-related processes, and a consensus has yet to emerge regarding precise definitions of these terms. Therefore, it is useful to be explicit about how one conceptualizes emotion and related terms (Gross, 2010).

Emotion and Other Affective Processes

Core features of emotion include situational antecedents, attention, appraisal, and multifaceted response tendencies (Werner & Gross, 2010). First, emotions involve an activating event. Emotions do not just land on us like fairy dust, but instead begin with an internally or externally relevant situation. Second, emotions require attention. We must attend to a potentially emotion-eliciting situation for emotion to arise. However, it is important to note that this attention may not involve conscious awareness. Third, situations must be appraised for emotions to arise. Here too, it is important to note that this appraisal may not be conscious. Fourth, emotions prompt action
urges and in many cases, actual expressive behaviors. Emotions are multi-faceted processes which include subjective experience, behavior, and physiology (central and peripheral) (Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005).

Defined in this way, emotions are one type of affective response. We conceive of affect as an overarching term that includes emotions, moods, and stress responses (Gross & Thompson, 2007). Affect involves an evaluation that something is good or bad for one in light of currently active goals. Affective states unfold over time and vary in quality, magnitude (intensity), duration, and frequency. Emotions may be distinguished from other affective processes, albeit imperfectly, by noting that they are typically briefer than moods, and comprise a broader range of responses than are typically included within the rubric of the “stress response”.

**Emotion Regulation and Other Forms of Affect Regulation**

Emotion regulation refers to influencing the particular emotions one has, when one has them, and how these emotions are (or in some cases, are not) experienced and/or expressed (Gross, 1998b). At times, the goal of altering the emotion trajectory represents an end in itself – in these cases, the motivation to regulate is driven by directly wanting to change one or more emotions. In other cases, altering the emotion trajectory simply serves as a means to an end – in these cases, the motivation to regulate is driven by some other goal (Gross & Thompson, 2007).

Three core features of emotion regulation deserve emphasis. First, one may regulate negative or positive emotions by either decreasing or increasing their magnitude or duration. Second, emotion regulation can be a conscious, intentional process, or a process that occurs without conscious awareness (Gross & Thompson, 2007). Third, emotion regulation processes cannot be said to be “all good” or “all bad,” as the specific context determines whether emotion regulation is helpful in a specific context in light of one’s current goals.

Emotion regulatory processes can be organized into groups based on when they have their primary impact on the emotion-generative process (Gross, 1998a; Figure 1). In particular, we have distinguished among five specific families of emotion regulation processes: situation selection, situation modification, attentional deployment, cognitive change, and response modulation. **Situation selection** refers to efforts to influence emotion, either by increasing or decreasing the likelihood of encountering a given situation where particular emotions are likely elicited. **Situation modification** refers to efforts to alter one’s emotions by changing external, physical features in the environment. **Attentional deployment** refers to efforts to alter one’s emotions by directing one’s attention in a particular way in a given situation. **Cognitive change** refers to efforts to alter one’s emotions by changing the meaning of the situation. Lastly, **response modulation** refers to efforts to alter one’s physiological, experiential, or behavioral responses. While these distinctions are useful, it is important to note that in everyday life, it is common to engage in behaviors that represent amalgams of different strategies.

It is important to note that aside from emotion regulation, there are many other forms of affect regulation including mood regulation and coping. These forms correspond to each of the distinctions we drew in the last section among affective processes, so that affect regulation refers broadly to the regulation of any affective state, mood regulation refers to attempts to regulate mood, and coping refers to efforts to regulate some component of a stressful situation. In terms of affect regulation, in this paper we focus only on emotion regulation and emotion dysregulation and its relation to broader affective disturbance (for a more detailed description of the other forms of self-regulation see Gross & Thompson, 2007).
Emotion Regulation, Emotion Dysregulation, and Affective Disturbance

When emotion regulation goes “well”, the individual successfully regulates his/her emotion(s) and goes on his/her merry way. However, when emotion regulation does not go well, emotion dysregulation occurs, which we can define as a state in which despite an individual’s best efforts, regulatory attempts are not achieving the individual’s emotion related goal(s) and the individual is unable to make necessary corrections to achieve the emotion related goal(s). There are numerous factors that may produce emotion dysregulation. For example, emotion dysregulation may occur when the emotion regulation strategy employed is problematic or maladaptive in some way (e.g., creates more of the very emotion s/he is trying to regulate, creates a problematic secondary emotion, etc.). Emotion dysregulation has been closely tied to psychopathology, particularly mood and anxiety disorders (e.g., Cole, Michel, & Teti, 1994).

We define affective disturbance as a disruption in the multi-system response (subjective experience, expressive behavior, physiology) of emotions, moods, and stress responses. Affective disturbance can refer to either negative affective states (e.g., anxiety or depression) or positive affective states (e.g., euphoria or mania). One prominent cause of affective disturbance may be difficulties with emotion regulation. From this perspective, then, emotion regulation and potential subsequent emotion dysregulation are subordinate to the broader construct of affective disturbance. Further, emotion regulation is neither good nor bad, while emotion dysregulation and affective disturbance are by definition considered to be dysfunctional states.

Affective Disturbance in the DSM-IV-TR

Many of the disorders described in the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994) are said to include some sort of affective disturbances, some of which may result from emotion dysregulation (Gross, Sheppes, & Urry, 2011). Indeed, affective disturbances are thought to be important features of psychopathology – some diagnostic disorders are defined primarily in terms of disturbed emotions (Mineka & Sutton, 1992), and a failure “to regulate intense, negative, and shifting emotional states” (Bradley et al., 2011). However, many other disorders do not seem to feature such difficulties as prominently in their diagnostic criteria.
To our knowledge, previous research has not empirically determined the presence of affective disturbances and emotion dysregulation in the DSM. Using an approach that reflects current thinking in affective science, we set out to quantify the extent to which the criteria for Axis I and II diagnoses in the DSM-IV-TR involve affective disturbance and emotion dysregulation. Thus, we developed a coding scheme that incorporates the major points of consensus regarding the key features of affect and its regulation.

**Coding of the DSM-IV-TR**

The coding system we developed captures affective disturbance as explicitly represented (or not) in the formal diagnostic criteria for DSM-IV-TR disorders. For a disorder to be included, its entry in DSM-IV-TR needed to include a formal set of diagnostic criteria (e.g., Diagnostic Criteria for Mental Retardation). The only information used to code affective disturbances associated with each diagnosis was that presented in the formal criteria sets, and not information provided in Introduction, Diagnostic Features, Associated Features and Disorders, Specific Age and Gender Features, Prevalence, Course, Familial Features, etc. Although affective information may be present in these supplemental sections, this information was not considered to be a defining feature of the diagnosis and was thus excluded. We excluded diagnoses listed as “Other Conditions That May Be a Focus of Clinical Attention” as well as diagnoses listed in Appendix B, “Criteria Sets and Axes Provided for Further Study”. We acknowledge that diagnoses listed in these sections involve affective disturbance (e.g., V62.82 Bereavement), but we excluded them to narrow our focus to official diagnostic categories. These criteria led to the identification of 176 diagnoses for coding (see Supplemental Materials).

Three PhD-level psychologists independently coded all 176 diagnoses. Two coders (HLU and JJG), both trained as clinical psychologists, initially coded 21 diagnoses to create a gold standard. Upon establishing this standard, all diagnoses were coded by the three independent raters. Interrater reliability (Cohen’s kappa) between the gold standard and the third coder was computed on the basis of the independent codes for all 176 diagnoses. Kappas indicated acceptable interrater reliability (mean $\kappa = .79$, minimum $\kappa = .45$, and maximum $\kappa = .95$). The final codes used in the analyses reported here were determined by consensus.

For each set of criteria, we made 20 coding decisions. The first captured the extent of affective disturbance reflected in the diagnosis. This was coded using a 4-point scale ranging from 0, no affective disturbance, to 3, in which receiving the diagnosis guarantees affective disturbance. Next, we coded whether there was evidence of negative affective (NA) disturbance and/or positive affective (PA) disturbance. A 3-point scale was used for each of these two decisions. A 0 was assigned when there was no NA or PA. A 1 was assigned when there was an indication of a state that might reflect NA or PA, but it was unclear, and a 2 was assigned when there was definitely NA or PA present. Where possible, we further distinguished between the intensity, duration, and frequency of NA and PA experience, and separately, between the intensity, duration, and frequency of NA and PA expression. Codes were assigned to one or more of the three experience columns when it was clear that the person carrying the diagnosis was presumed to feel the emotions/moods noted in the criteria with some specifiable level of intensity, duration, or frequency. Codes were assigned to one or more of the three expression columns when it was clear that a reasonable observer would see the affective states described (or the criteria indicated that it was observable to others) with some specifiable level of intensity, duration, or frequency. Intensity was noted when an explicit qualifier indicated that the experience or expression of NA and/or PA was too intense (e.g., “marked”) or too weak (e.g., “deficient”), or when an affect term was deemed inherently intense or weak by definition (e.g., “depressed” was interpreted to be an intense state of sadness, and “loss of temper”, which was interpreted to be an intense state of anger). Duration was noted when an explicit qualifier indicated that the experience or expression of NA and/or PA lasted too long (e.g., “persistent”) or too short. Frequency was noted when an explicit qualifier indicated that the experience or expression of NA and/or PA was too frequent (e.g., “often”) or too infrequent. For all of these, a 0 was assigned without an explicit qualifier.

In addition to the experience and expression of affective disturbance, we noted the presence of putatively affect-related autonomic physiological changes. Here, we keyed in on terms that clearly indicated the presence of autonomic physiological changes (e.g., tachycardia, sweating) when affective disturbance was also present. Somatic symptoms such as muscle tension, psychomotor agitation or retardation, and headaches that were suggestive of autonomic physiological changes were considered “maybe” responses, as were terms such as...
psychomotor agitation or retardation” or “feeling keyed up”. Presence of physiological symptoms in the absence of affective disturbance was coded as absent.

We also assessed whether each criteria set contained information suggesting a problem of emotion regulation (ER) (i.e., emotion dysregulation). Scores were assigned on a 3-point scale (0, no problem with ER noted, 1, ER may be present but this conclusion is somewhat speculative, and 2, yes, there is a problem of ER). Issues of emotion dysregulation were often expressed in terms of avoidance of situations that prompt NA (e.g., taking a substance to relieve withdrawal symptoms that include anxiety, or avoiding situations in which one has previously experienced a panic attack). On occasion, an inability to control affect was noted explicitly. The inability to control non-affective behaviors was not considered evidence of emotion regulation and was therefore assigned a code of 0.

We coded the presence of affective lability and clinically significant distress. Affective lability reflected the degree to which affective/mood lability is a symptom (0 = no, 2 = yes). For this decision, the criteria must explicitly indicate that there is affective lability. Where lability is not explicitly noted, an inference of lability was warranted only when there is some explicit indication of the time frame for cycling between affective states, which should be reasonably short. In addition, there must have been an explicit indication that affect is shifting between positive and negative states (i.e., if it remained possible that affect is shifting between emotions within the positive or within the negative domain, then affective lability was coded 0). The presence of affective lability did not imply an issue of intensity, duration, or frequency unless there were appropriate qualifiers. However, when affective lability was coded as present, we also assigned a code of present to NA and PA disturbance.

Lastly, we noted when the disorder included a statement somewhere indicating that the symptoms of the disorder may be characterized by clinically significant distress (0 = no, 2 = yes) (e.g., “The symptoms in Criterion B cause clinically significant distress or impairment in social, academic, or occupational functioning.”). This statement could occur as its own separate criterion or as part of another criterion, and could be present even in disorders for which there were no affective disturbance otherwise represented in the criteria. Disorders that only indicated that the symptoms must incur “clinically significant impairment in social, academic, or occupational functioning” were coded as absent because we were specifically attempting to capture distress.

**Affective Disturbance and Emotion Dysregulation in DSM-IV-TR**

We computed basic frequencies to determine the percent of times each code appeared across the 176 diagnoses. Key findings are as follows: 1) Affective disturbance is likely present in 40.3% of these diagnoses, and is “guaranteed” in 19.3% of them. Examples of disorders where affective disturbance was likely present include oppositional defiant disorder (313.81) and hypochondriasis (300.7). Disorders where affective disturbance was guaranteed include separation anxiety disorder (309.21) and anorexia nervosa (307.1). 2) This affective disturbance is typically on the negative side of the valence dimension (39.2%) rather than the positive side, but positive affective disturbance is still relatively frequent (19.3%; note: the NA and PA percentages do not sum to 40.3% since some diagnoses have disturbance at both ends of the valence dimension). Examples of disorders where affective disturbance appeared only on the negative side include dysthymic disorder (300.4) and sleep terror disorder (307.46). Examples of disorders where affective disturbance appeared on both the negative and positive side include histrionic personality disorder (301.50) and posttraumatic stress disorder (300.7). Disorders where affective disturbance without agoraphobia (300.01). Examples of definite emotion dysregulation included dependent personality disorder (301.6) and pathological gambling (312.31). 4) Finally, clinically significant distress is a criterion for 58% of disorders including major depressive disorder (296.2x) and obsessive compulsive disorder (301.4). (For full coding decisions for all 176 disorders, please see Supplemental Materials).

Overall the results of our coding indicate that although a large portion of descriptions of disorders contain a likely presence of affective disturbance (40.3%), far fewer descriptions of disorders than previously assumed include specific mention of affective disturbance in the DSM-IV-TR. Less than a quarter (21.6%) of descriptions of disorders in the DSM-IV-TR actually have some sort of definite or implied problem of emotion regulation. These results point to an important gap that exists between DSM-IV-TR diagnostic criteria and clinical understanding.
(informed by the scientific literature as well as clinical intuition) of these disorders. It is important to parse out which aspects of the two representations of mental disorders – DSM diagnostic criteria versus clinical understanding – best reflect reality.

**Affective Disturbance and Emotion Dysregulation on Axis II: The Case of Borderline Personality Disorder**

To illustrate the value of assessing affective disturbance and emotion dysregulation in DSM disorders, we highlight for more detailed consideration one Axis II disorder, namely borderline personality disorder (BPD). Affective disturbance is pervasive across Axis II disorders and is often exacerbated by high levels of comorbidity with Axis I disorders (e.g., Pfohl, Black, Noyes, Coryell, & Barrash, 1991; Widiger et al., 1991). Among Axis II disorders, BPD is unequivocally considered to be the prototypical disorder of affective disturbance. Therefore, through the examination of BPD as a case study, we next examine affective disturbance in relation to the five families of emotion regulatory processes.

BPD has a lifetime prevalence rate of 1-5.9% (Grant et al., 2008; Samuels et al., 2002; Swartz, Blazer, George, & Winfield, 1990; Torgersen, Kringlen, & Cramer, 2001), lifetime suicide attempt rates over 70% (Soloff, Lynch, & Kelly, 2002; Soloff, Lynch, Kelly, Malone, & Mann, 2000; Zisook, Goff, Sledge, & Shuchter, 1994), and typically, at least one concurrent Axis I disorder (e.g., Zimmerman & Mattia, 1999). BPD is characterized by pervasive patterns of unstable affective states, interpersonal relationships, and self-image (American Psychiatric Association, 1994). These patterns begin in early adulthood and persist in varying contexts and environments.

The diagnostic features of BPD include affective, cognitive, behavioral, and interpersonal disturbances. An individual with BPD experiences at least five out of nine features: 1) displays of frantic behaviors in an attempt to avoid abandonment (actual or perceived); 2) patterns of intense and unstable interpersonal relationships with others, often altering between idealization of the person to complete devaluation; 3) “identity disturbance”, wherein the person persistently lacks a clear sense of self or experiences an unstable self-image; 4) impulsivity in two or more potentially self-damaging areas such as excessive spending, reckless driving, binge eating, substance abuse; 5) recurrent suicidal ideations, behaviors, gestures, or communication, or other self-harm or self-mutilating behavior; 6) “affective instability” due to reactive mood states ranging from irritability, anxiety, or dysphoria, which last between a few hours to a few days; 7) ongoing feelings of emptiness; 8) intense and often inappropriate displays of anger and general difficulties controlling anger; or 9) occasional (stress-related) paranoid thinking or severe “dissociative symptoms”.

According to Linehan (1987), emotion dysregulation lies at the core of BPD. In particular, BPD is said to be caused by both a biological vulnerability to emotion dysregulation (a high baseline negative emotional intensity coupled with high emotional reactivity that is activated when encountering an emotion evoking situation) and an invalidating environment (Linehan, 1993a). On this view, emotion dysregulation is a significant contributor to the overarching affective disturbance that is pervasive in BPD. As Linehan (1993a) states, “suicidal and other impulsive, dysfunctional behaviors are usually maladaptive solution behaviors to the problem of overwhelming, uncontrollable, intensely painful negative affect” (p. 60).

Utilizing the coding procedures described in the previous section, according to the formal diagnostic criteria for BPD, there is a guaranteed affective disturbance characterized by negative affect, a general problem of emotion regulation, and clinically significant distress. The negative affect problem featured in the diagnostic criteria for BPD is characterized by a problem of intensity, duration, and frequency of negative affect expression and by a problem of intensity and frequency of negative affect experience. Findings for BPD are summarized in Table 1. In the following sections, we consider BPD in more detail, focusing on each of the five families of emotion regulation processes specified by the process model of emotion regulation.
Table 1: Coding of Affective Disturbance and Difficulties with Emotion Regulation of Borderline Personality Disorder in the DSM-IV-TR

<table>
<thead>
<tr>
<th>Axis II: 301.83 Borderline Personality Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective disturbance?</td>
</tr>
<tr>
<td>NA?</td>
</tr>
<tr>
<td>PA?</td>
</tr>
<tr>
<td>NA expression:</td>
</tr>
<tr>
<td>Intensity?</td>
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<tr>
<td>Duration?</td>
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<tr>
<td>Frequency?</td>
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<tr>
<td>NA experience:</td>
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<tr>
<td>Intensity?</td>
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<td>Duration?</td>
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<td>Frequency?</td>
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<td>PA expression:</td>
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<td>Intensity?</td>
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<td>PA experience:</td>
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<td>Intensity?</td>
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<tr>
<td>Duration?</td>
</tr>
<tr>
<td>Frequency?</td>
</tr>
<tr>
<td>Autonomic physiological changes?</td>
</tr>
<tr>
<td>Problem of ER?</td>
</tr>
<tr>
<td>Affective lability?</td>
</tr>
<tr>
<td>Clinically significant distress?</td>
</tr>
<tr>
<td>Specific emotions?</td>
</tr>
</tbody>
</table>

Note. NA = Negative Affective; PA = Positive Affective; ER = Emotion Regulation

Situation Selection

In BPD, situation selection can be compromised due to states described as “active passivity” or “apparent competence” (Linehan, 1993a). In “active passivity”, the individual behaves in a passive and helpless manner, rather than in an active and determined one. Thus, the individual will often avoid the situation that may evoke an unwanted emotion and instead look to others in the environment for solutions (Linehan, 1993a). On the other hand, when in a state of “apparent competence”, the individual at times appears competent and able to skillfully cope with everyday life tasks (and chooses to engage in situations that may evoke certain emotions), and at other times, will behave as if the competencies do not exist (Linehan, 1993a) and will not engage in these situations in order to avoid unwanted emotions. Thus, situation selection (in the context of active passivity or apparent competence) can lead to affective disturbance; however in BPD, the inverse is also true, affective disturbance can also lead to situation selection. For example, when individuals with BPD are experiencing heightened emotional reactivity, the ability to properly weigh short-term versus long-term benefits and consequences of engaging in particular situations is compromised. Because behavior in BPD is often mood- or emotion-dependent, the individual may proceed with approaching or avoiding a situation based on current emotional state, examining the prompting event or situational antecedents only in relation to the emotion currently being experienced, rather than considering the broader context. As Linehan (1993a) states, “failures to inhibit maladaptive, mood-dependent action are by definition part of the borderline syndrome” (p. 43). To date to our knowledge, there has not been any explicit empirical research conducted with those with BPD who endorse the perception of active passivity or apparent competence.
**Situation Modification**

For those with BPD, the very emotion (and expression of that emotion) that they are experiencing can modify a situation. For example, in an invalidating environment, the emotions of the person with BPD are often dismissed; therefore, in an effort to better communicate an emotion to those in the environment, the person with BPD may escalate (or up-regulate) the expression of that (typically negative) emotion. Such up-regulation of the emotional response is an instance of response modulation (discussed below). However, such up-regulation also may be considered an instance of situation modification when this escalation successfully gets the attention of those in the environment, causing them to suddenly take interest in the BPD individual’s emotions (and experience) in a caring way (positive reinforcement; Skinner, 1953) and thus, modifying the previous situation. Over the longer term, this can be problematic because those in the environment are inadvertently reinforcing the escalation of emotion, and thus increasing the likelihood that the escalation of emotion as a means of communicating will reoccur. Essentially, the individual with BPD has learned that on some level, the escalation of one’s emotion and related features can be an “effective” way to communicate to others because the original invalidating response from the environment is consequently modified into a validating and caring one. Therefore, it makes sense that “individuals with BPD can proficiently intensify the valence and arousal of negative stimuli as well as prolong the duration of the effect of the stimulus” (Putnam & Silk, 2005, p. 900), as this response is learned to be an effective way of communicating with those in the environment following invalidation. To date to our knowledge, there has not been any explicit empirical research examining the role of environmental reinforcement on emotion and emotional expression in individuals with BPD.

**Attentional Deployment**

Individuals with BPD tend to use distraction and rumination. One form of maladaptive distraction that is employed by individuals with BPD is dissociation. In BPD, severe dissociation is reported when stress levels are high (Stiglmayr et al., 2008). It is possible that the maladaptive attentional deployment through dissociation precipitates the self-injurious behavior that is prevalent in BPD (Gratz, Conrad, & Roemer, 2002). Because 50-60% of those who engage in self-injurious behavior report that no pain is felt (Kleindienst et al., 2008), it is possible that dissociation or attentional deployment is taking place during the self-harm behavior, and thus pain is not experienced. Distraction may also be combined with rumination, as when individuals with BPD focus on a secondary feature of a situation so as to minimize one emotion while possibly maximizing another emotion. For example, if an individual has just gotten fired for being late to work again, the primary emotion may be anxiety about finding another job and paying bills. For most, anxiety is an uncomfortable emotion to experience. Thus, attentional deployment (e.g., in the form of rumination) may kick in as the person recounts the many times when she came into work early and stayed late, and after some time, she may no longer feel anxiety about finding a new job or paying bills, but is now irate about getting fired. Rumination here refers to perseverating on one’s feelings and the consequences of those feelings (or behaviors or action urges associated with the feelings).

**Cognitive Change**

In general, it has been noted that “the later an emotion-regulatory process occurs, the more likely it is to be affected by the level of emotional intensity” (Sheppes & Gross, 2011, p. 323). For those with BPD, it is difficult to employ cognitive change strategies such as reappraisal because frequently, by the time they consider using this strategy, the emotion is often already too intense and distressing (Putnam & Silk, 2005). This is problematic because those with BPD have a poor assessment of their abilities to effectively deal with intense emotional stimuli (Putnam & Silk, 2005) and therefore may choose to simply not use any regulation strategies with intense emotions, perpetuating heightened emotional reactivity. In an fMRI study of cognitive reappraisal in BPD, Schultze and colleagues (2011) found that when attempting to downregulate negative emotional responses while viewing negative aversive stimuli, cognitive reappraisal skills were not implemented in women with BPD. Further, poor cognitive change abilities lead to enduring, inflexible, and dichotomous thinking (Wenzel, Chapman, Newman, Beck, & Brown, 2006), which may contribute to the primarily-negative experiences that are readily recalled to memory rather than more neutral or positive ones in BPD (Donegan et al., 2003; Korfine & Hooley, 2000; Kurtz & Morey, 1998).
Response Modulation

Response modulation can take many different forms in BPD including self-injurious behavior, or other maladaptive behaviors such as binge eating, and excessive consumption of alcohol, prescription or non-prescription drugs. As Linehan (1993a) states, “borderline patients are so fearful of emotions, especially negative ones, that they try to avoid them by blocking their experience of the emotions.” (p. 345). Of these, self-injurious behavior is one of the most common forms of response modulation, with prevalence rates of up to 84% (Clarkin, Widiger, Frances, Hurt, & Gilmore, 1983; McGlashan et al., 2005). Self-injury is defined as a direct and intentional injury of body tissue, without suicidal intent (Klonsky, 2007). Clinically and theoretically, self-injurious behavior serves an important function (Connors, 1996a, 1996b; Linehan, 1993a). Consistent with the experiential avoidance model (Chapman, Gratz, & Brown, 2006), self-injurious behavior is seen as a means of providing relief from unwanted emotions (e.g., Gratz et al., 2002). Further, it has been noted that self-injurious behavior is associated with an inability to verbally express one’s emotions (Zlotnick, Donaldson, Spirito, & Pearlstein, 1997), and self-injury has been noted to be more prevalent in individuals who have a lower capacity to tolerate strong emotions (Deiter, Nicholls, & Pearlman, 2000). Self-injurious behavior is reinforced by relief from negative emotions (Nock & Prinstein, 2004). The reinforcement from oneself and the environment (in the form of caretaking behavior) are powerful in maintaining self-injurious behavior. The function of self-injurious behavior as a method of suppressing an emotional experience in order to escape painful or overwhelming emotions suggests an obvious deficit in adaptive emotion regulation skills.

Implications for Assessment and Treatment

Our emotion regulation perspective has implications for clinical assessment and how we might move beyond the current edition of the DSM. Further, this perspective also has implications for existing and future clinical interventions that address emotion dysregulation across disorders. It is our belief that only through more fine-tuned assessment can ecologically-valid interventions for affective disturbance and emotion dysregulation emerge.

Clinical Assessment

It is a widely-held belief that many mental disorders involve emotion dysregulation. However, based on our coding, less than a quarter of the DSM-IV-TR disorders have some sort of definite or implied problem of emotion regulation. At the same time, approximately 40% of disorders are likely to exhibit some sort of affective disturbance (typically negative). Although this number seems relatively low, given the likelihood of comorbidity among Axis I and Axis II disorders in the Diagnostic and Statistical Manual of Mental Disorders, it is likely that the occurrence of affective disturbance and difficulties with emotion regulation are much higher in typical clinical presentations (given that the probability of affective disturbance when more than one disorder is present is higher – and perhaps much higher – than 40%).

Others have stressed that although clinicians’ conceptions of disorders and the descriptions in the DSM overlap, there are also systematic differences whereby clinician conceptions place greater emphasis on the patient’s “mental life and inner experiences” (Shedler & Westen, 2004). Shedler and Westen (2004) have suggested that the “DSM-IV criterion sets are too narrow. They do not capture the richness and complexity of personality syndromes as they are understood by clinicians in the community, observed empirically in patients treated in the community, or defined by DSM-IV itself” (p. 1359). Again, this suggests that the features highlighted in the diagnostic criteria for DSM-IV-TR are perhaps only a subset of the actual features observed in a clinical setting.

In the proposed DSM-V revision, there are promising “substantial” changes whereby using a “hybrid dimensional-categorical model” for personality disorders has been suggested (American Psychiatric Association, 2012). The dimensional assessments will include ratings of personality pathology severity according to the Levels of Personality Functioning. Two scales will be assessed, one assessing self functioning and another assessing interpersonal functioning. Both will be evaluated on a continuum ranging from no impairment, i.e., healthy functioning (Level = 0) to extreme impairment (Level = 4).
Self functioning is examined in terms of identity (“experience of oneself as unique, with clear boundaries between self and others; stability of self-esteem and accuracy of self-appraisal; capacity for, and ability to regulate, a range of emotional experience”) and self-direction (“pursuit of coherent and meaningful short-term and life goals; utilization of constructive and pro-social internal standards of behavior; ability to self-reflect productively”) are evaluated. Interpersonal functioning is examined in terms of empathy (“comprehension and appreciation of others’ experiences and motivations; tolerance of differing perspectives; understanding of the effects of own behavior on others”) and intimacy (“depth and duration of positive connections with others; desire and capacity for closeness; mutuality of regard reflected in interpersonal behavior.”).

For borderline personality disorder, proposed DSM-V revisions include requiring both A) significant impairments in self functioning, and interpersonal functioning, and B) pathological personality traits including negative affectivity (e.g., emotional lability, anxiousness, etc.), disinhibition, and antagonism (American Psychiatric Association, 2012). While these revisions seem promising due to the inclusion of more references to difficulties with affective disturbance and emotion dysregulation, it is necessary for the continued consideration of more dimensional accounts of psychopathology for all disorders in order to more fully encompass the clinical realities that patients and therapists face. Further, it is our hope that particular attention will paid to examining the presence of emotion regulatory difficulties and affective disturbance when conceptualizing criteria for pathology. More specifically, it will be important to broaden the criteria for disorders beyond symptoms to empirically based descriptions of the mechanisms that underlie the onset or maintenance of these symptoms of affective disturbance and emotion dysregulation.

Clinical Interventions

Many have emphasized the importance of emotions in treatment (Greenberg & Safran, 1987; Mennin, Heimberg, Turk, & Fresco, 2002; Safran, 1998; Samoilov & Goldfried, 2000). Examining components of affective disturbance such as maladaptive emotion regulation attempts may be key to better understanding disorders and assisting in enhancing treatments to target these areas. Emotion dysregulation is considered by some to be a multidimensional construct which involves: a) lack of awareness, understanding, and/or acceptance of emotions; b) lack of access to adaptive strategies for modulating the intensity and/or duration of emotional responses; c) an unwillingness to experience emotional distress in order to pursue desired goals, and d) an inability to engage in goal-directed behaviors when experiencing distress (Gratz & Roemer, 2004). In addition to determining the factors that give rise to emotion dysregulation, it is also important to examine what other factors may lead to the heightened emotional reactivity that is evident in psychopathology.

Our analysis of BPD suggests that emotion regulatory attempts are being made; however, these attempts are not necessarily moving the individual towards his or her goals and are often creating significant problems. It is likely that across other disorders, emotion regulatory attempts are also being made, albeit unsuccessfully. These maladaptive strategies may be factors contributing to the clinical presentation.

As highlighted by our coding, affective disturbance is present across axes in the DSM, thus, many therapies have been designed to target affective disturbance and emotion dysregulation. Formal treatment programs and interventions that explicitly address affective disturbance and emotion dysregulation by way of emotion regulation skills include Diaceptical Behavior Therapy (DBT; Linehan, 1993a), Emotion-focused therapy (EFT; Greenberg, 2002), Unified Protocol for the Treatment of Emotional Disorders (Barlow, Allen, & Choate, 2004), Emotion Regulation Therapy (ERT; Mennin, 2004; Mennin & Fresco, 2009), and Integrative Training of Emotional Competencies (ITEC; Berking, 2007). These programs have been implemented with clinical and non-clinical populations as a method of enhancing emotion regulation. Informal programs have also been implemented including an affect and interpersonal regulation training (Cloitre, Koenen, Cohen, & Han, 2002), a psychoeducational group training program which includes topics of emotion recognition and emotion management (Clyne & Blampied, 2004), and an integrative acceptance-based emotion regulation training as an adjunct to treatment as usual (Gratz & Gunderson, 2006). More recently, mindfulness-based interventions have been linked with improvements in emotion regulation skills (e.g., Arch & Craske, 2006; Blackledge & Hayes, 2001; Goldin & Gross, 2010; Robins, Keng, Ekbland, & Brantley, 2012; Roemer, Erisman, & Orsillo, 2009). Mindfulness, or intentionally paying attention in the present moment, can be thought of as a form of attentional deployment.
However, unlike most traditional emotion regulation interventions which aim to down-regulate negative emotions, mindfulness practice (as it applies to emotions, at any rate) seeks to create distance between the person and the emotion by allowing one to observe emotions as being separate from oneself and not evaluating the emotion (meta-thoughts regarding emotions) in any way (Corcoran, Segal, Anderson, & Farb, 2009).

Given our case study emphasis on BPD, here we will focus on the most common intervention for this disorder, Dialectical Behavior Therapy (DBT; Linehan, 1993a). DBT is considered to be the “gold-standard” or “best practice” treatment for BPD; here, we will focus on aspects of DBT (for borderline personality disorder) that assist in enhancing emotion regulation. Dialectical behavior therapy was originally created for individuals with borderline personality disorder (Linehan, 1993a); however, preliminary evidence has since noted its effectiveness in the treatment of various other disorders including substance abuse (Linehan et al., 2002), eating disorders (Safer, Telch, & Agras, 2001; Telch, Agras, & Linehan, 2001), and depression in older adults (Lynch, Morse, Mendelson, & Robins, 2003). In DBT, emotion dysregulation is considered to be a “Stage I” problem as emotion dysregulation is typically paired with “severe behavioral dyscontrol”. In “Stage I” of treatment, the goal is to gain behavioral control through learning skills.

It has been noted that those at risk for developing BPD exhibit an oversensitive emotion generative system that is highly sensitive to emotional stimuli and that produces an intense response that is slow to return to emotional baseline (Linehan, Bohus, & Lynch, 2007), thus, the emotion regulation component of DBT treatment is primarily response-focused. For example, after checking the facts of the emotion and situation, the individual decides whether to act on the action urge associated with the emotion, or to “act opposite” to emotional urges (Linehan, 1993b, in press). This opposite action might include approaching a situation even when experiencing intense fear or avoiding a situation when experiencing intense anger. Further, individuals learn to examine whether an emotion is effective and congruent with one’s goals as a method of assisting in choosing to follow action urges associated with the emotion or to inhibit unskillful action urges. Attentional deployment in the form of dissociation is specifically targeted in DBT in several ways. Dissociation is treated as a problem behavior that is tracked on weekly diary cards. Further, through functional chain analyses, the patient and therapist analyze the prompting events and antecedents of the behavior in order to gain insight into its occurrence. More broadly, the patient learns emotion regulation and distress tolerance skills in order to better cope with stressful situations and crises that may prompt dissociation. Further, in individual therapy, the patient may work on becoming desensitized to cues to past traumatic experiences that may prompt negative emotions and dissociative behavior (Bohus et al., 2004; Linehan, 1993a, in press). Self-injury or self-harm behavior, a form of response modulation, is addressed in a similar fashion to dissociation where the behavior is tracked, analyzed, and replaced with a more skillful behavior (e.g., mindfulness of current emotions or utilizing distress tolerance for very intense emotions).

Skills for “reducing vulnerability to emotion mind” (or “amygdala hijack”) prior to emotion onset are also discussed in the emotion regulation module. Patients learn to actively accumulate positive emotions by intentionally scheduling pleasant events, build mastery in activities that make one feel accomplished and competent, cope ahead of time for potential situations that will bring about strong emotions, and take care of one’s body by treating physical illnesses, eating well, avoiding mood altering drugs, getting sufficient sleep and regular exercise (Linehan, 1993b, in press). Further, skills deficits in cognitive change are informally addressed throughout each skills module (Linehan, 1993a). However, cognitive change must be coupled with validation, and a structured cognitive change procedure is often not appropriate for most individuals with BPD as it requires preliminary skills before successful implementation (Linehan, 1993a).

Because most individuals are unaware of the actual processes involved in emotion dysregulation and are instead typically concerned with the symptom (or the consequences of the problem behavior), one way that DBT addresses this issue is through utilizing a detailed chain analysis of the problematic behavior. In the chain analysis, the individual examines the vulnerability factors (e.g., forgot to take medication, only got three hours of sleep, etc.), prompting event (e.g., boyfriend didn’t return text message, colleague didn’t say hello to me, etc.), links (what occurred between the prompting event and the problem behavior, e.g., actions, bodily sensations, cognitions, events, feelings), problem behavior (often the “symptom” of the disorder, e.g., engaging in self-harm behavior, yelling, etc.), and consequences (immediate and delayed consequences in the individual and the environment as a result of the problem behavior). The goal of a chain analysis is to assist the individual with gaining insight into the
processes involved in the problematic behavior (which is typically a symptom of the disorder or playing a role in maintenance of the disorder).

**Concluding Comment**

Although interventions for specific populations exist to address different types of affective disturbance, the findings from our coding of the DSM point to the importance of emotion regulation skills training across a variety of forms of psychopathology. Effectively using emotion regulatory strategies has important implications for mental health and well-being. Future research should examine the effectiveness of existing treatments in improving emotion regulation and identify whether such improvements are important mechanisms of change. Further, future studies may consider examining treatment outcomes of treatment as usual (TAU) versus TAU paired with emotion regulation skills training. In addition, although not captured within our coding of the DSM, emotion regulation skills training may be beneficial at a much broader level, regardless of current mental health status or psychopathology. Because emotions are an integral part of everyday life, in an effort to optimize one's ability to function at the highest possible level, future research may benefit from examining the potential benefits of emotion regulation skills training among healthy adults or those who do not necessarily meet DSM criteria for psychopathology.

**References**


