

TRANSDIAGNOSTIC TREATMENT OF BORDERLINE PERSONALITY DISORDER AND COMORBID DISORDERS: A CLINICAL REPLICATION SERIES

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Borderline personality disorder (BPD) is a severe, difficult-to-treat psychiatric condition that represents a large proportion of treatment-seeking individuals. BPD is characterized by high rates of co-occurrence with depressive and anxiety disorders, and recently articulated conceptualizations of this comorbidity suggest that these disorders may result from common temperamental vulnerabilities and functional maintenance factors. The Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (UP) was developed to address these shared features relevant across frequently co-occurring disorders. The purpose of the present study was to explore the preliminary efficacy of the UP for treatment of BPD with comorbid depressive and/or anxiety disorders in a clinical replication series consisting of five cases. For the majority of cases, the UP resulted in clinically significant decreases in BPD, anxiety, and depressive symptoms, as well as increases in emotion regulation skills.

Borderline personality disorder (BPD) is a severe psychiatric condition that is characterized by impairment across several domains of functioning. Although in the current *Diagnostic and Statistical Manual of Mental Disorders (DSM-5*; American Psychological Association [APA], 2013) criteria suggest a diverse pattern of deficits, including both internalizing and externalizing features, it is important to note that there is great heterogeneity across BPD presentations. In fact, there are over 200 unique combinations of the five (out of the nine possible) *DSM-5* criteria necessary for this diagnosis, and due to an artifact of the current nosological scheme, it is possible for two individuals with BPD to share only one diagnostic criterion (Ellis, Abroms, & Abroms, 2009). This categorical approach to diagnosis may limit treatment development efforts for BPD, as a “one-size-fits-all” diagnosis does not highlight important differences among individuals with this disorder that may warrant diverse treatment strategies.

The alternative model of personality disorders presented in Section III of the *DSM-5* (APA, 2013) may offer a framework for capturing and

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communicating the diversity that exists within personality disorder categories. While a diagnostic category of BPD still exists in this approach, the emphasis is placed on identifying the individual patient's unique personality features as they interfere with self and interpersonal functioning. Given their relevance across diagnostic boundaries, attending to personality traits, rather than purely disorder-specific symptoms, may be especially useful in understanding the high rates of comorbidity (lifetime estimates are as high as 75%; Grant et al., 2008) among BPD and other *DSM* categories, particularly the mood and anxiety disorders. Indeed, several authors have suggested that the pattern of comorbidity observed across *DSM-5* classes (e.g., anxiety, depressive, personality disorders) may be best accounted for by a shared temperamental vulnerability (Brown & Barlow, 2009; Sauer-Zavala & Barlow, 2014). Specifically, a "general neurotic syndrome" (Andrews, 1990; Tryer, 1989) or the personality trait of neuroticism, defined as the tendency to experience negative emotions accompanied by a sense of the uncontrollability of these emotional experiences, has been implicated in the development of the range of anxiety disorders, depression, and BPD (for a review, see Barlow, Sauer-Zavala, Carl, Bullis, & Ellard, 2014). Exploring dimensional processes that are relevant across diagnostic boundaries also aligns with current priorities in clinical science and funding initiatives set forth by the National Institute of Mental Health (Insel et al., 2010).

Under this conceptualization of comorbidity, symptom heterogeneity (e.g., individual differences in the prominence of interpersonal conflicts, panic attacks, anhedonia) among disorders of neuroticism can be viewed as trivial variations in the manifestation of this broader underlying syndrome. Across disorders, negative emotions (and, possibly, neuroticism itself) are maintained by aversive reactions to unwanted emotional experiences when they occur, leading to subsequent avoidant coping strategies that have been shown to paradoxically increase the frequency of negative emotions (Barlow et al., 2014). There is a large body of literature to support this pattern of negative emotionality, and its maintenance, in a BPD population (see Sauer-Zavala & Barlow, 2014). For example, the impulsive behaviors that characterize BPD, such as suicidal and nonsuicidal self-injury (NSSI), substance abuse, and binge eating, are often understood as maladaptive attempts to reduce or escape from intense negative affect (Chapman, Gratz, & Brown, 2006). Although potentially more life-threatening in nature, these BPD-characteristic behaviors seem to serve a similar function (relief from negative emotions) as leaving a social situation for an anxiety patient or taking a nap for a depressed patient. Given the role of strong emotions in their development, the term "emotional disorder" has been used to classify diagnoses that exhibit these functional similarities (Barlow, 1991; Barlow et al., 2011), including BPD (Sauer-Zavala & Barlow, 2014).

It is important to reiterate that BPD, while sharing considerable covariance with neuroticism (Kendler, Myers, & Reichborn-Kjennerud, 2011), is also influenced by other traits. For example, several authors have found that BPD is best described as an internalizing and an externalizing disorder, though it is significantly more strongly associated with internalizing pathology (factor loadings = .60 versus .23 for externalizing; Eaton et al., 2011; James & Taylor, 2008). The relative influence of internalizing and externalizing factors on BPD pathology is also captured in the personality traits included in *DSM-5*'s

alternative model of BPD; 4 out of 7 traits (emotional lability, anxiousness, separation insecurity, and depressivity) included in this model stem from the parent factor of neuroticism from the Five Factor Model (FFM) of personality. The other traits relevant for BPD are impulsivity and risk taking (from FFM conscientiousness) and hostility (from FFM agreeableness). One advantage of this hybrid approach to diagnosis is that it allows clinicians to identify core processes, in this case personality features, that may be driving a given patient's BPD symptoms (as well as comorbid conditions) and target these processes directly during treatment.

THE UNIFIED PROTOCOL FOR THE TREATMENT OF BPD

Given the wealth of theoretical and empirical evidence in support of the notion that neuroticism drives BPD symptoms, the use of an intervention explicitly designed to target this underlying construct may represent a streamlined, parsimonious approach to treating this disorder. Of course, because neuroticism is a transdiagnostic factor, comorbid conditions similarly characterized by this trait (e.g., depression, anxiety) should simultaneously improve following such a treatment approach. The Unified Protocol (UP) for Transdiagnostic Treatment of Emotional Disorders (Barlow et al., 2011) is a cognitive-behavioral intervention recently developed to address a range of psychological disorders characterized by shared underlying vulnerabilities. Specifically, the UP purports to address neuroticism by extinguishing distress in response to the experience of strong emotions; fewer aversive reactions to emotions when they occur is thought to lead to less reliance on the maladaptive, avoidant emotion-regulation strategies that exacerbate symptoms, in turn leading to fewer negative emotions. Preliminary data suggest promising outcomes using this approach across the spectrum of anxiety and unipolar mood disorders (Ellard, Fairholme, Boisseau, Farchione, & Barlow, 2010; Farchione et al., 2012) and show that the UP has resulted in reductions in neuroticism (Carl, Gallagher, Sauer-Zavala, Bentley, & Barlow, 2014). Given that the same core negative emotional process that drives other emotional disorders appears to be present in BPD, it stands to reason that the UP would similarly address the symptom-level features of BPD that may result from this underlying vulnerability.

Compared to extant treatments for BPD, the UP is relatively brief, as it is generally administered across 16–20 once-weekly outpatient sessions (e.g., Farchione et al., 2012). In contrast, existing empirically supported treatments for BPD, including dialectical behavior therapy (DBT; Linehan, 1993), transference-focused therapy (TFT; Clarkin et al., 2001), mentalization-based treatment (MBT; Bateman & Fonagy, 2004), schema-focused therapy (SFT; Young, Klosko, & Weishar, 2003), and general psychiatric management (GPM; McMain et al., 2010) are intensive and long-term (usually at least one year). These treatments have, understandably, focused on targeting the life-threatening and therapy-interrupting behaviors that often characterize this disorder; however, to date, no treatments have been explicitly designed with lower-risk presentations of BPD in mind. Patients presenting with less severe (i.e., imminently life-threatening) symptoms of BPD may represent a

unique opportunity to directly treat core, mechanistic deficits, as they are less likely to display the specific behaviors (e.g., suicidal actions, other reckless, high-risk behaviors) that may shift the focus of treatment to safety. The UP consists of eight treatment modules, each explicitly designed to target the aversive responses to emotions and subsequent avoidant coping maintaining patients' symptoms. Although DBT contains some skills aimed at this putative mechanism, other skills in this treatment may be counter to increasing extinguishing distress over the experience of emotions (e.g., distraction) but necessary for safety in suicidal individuals. For individuals with BPD who do not need crisis survival skills, the UP may be an efficient approach to targeting the core negative emotionality driving their symptoms.

A detailed account of each module has been described elsewhere (Payne, Ellard, Farchione, Fairholme, & Barlow, 2014); however, aspects of each module that are particularly relevant to BPD symptoms are highlighted below. Treatment begins with two introductory modules. Module 1 emphasizes the importance of motivation enhancement to ensure engagement in treatment (Miller & Rollnick, 2012). This is accomplished through two guided exercises in which patients weigh the pros and cons of changing versus staying the same and articulate concrete treatment goals. Module 2 provides psychoeducation regarding the functional, adaptive nature of a range of emotions (anger, anxiety, sadness, joy), and these experiences are broken down into three components (physical sensations, cognitions, and behaviors), which serve to make the experience more manageable and provide points of intervention. The interaction between these three components is discussed, particularly how negative reinforcement due to decreased emotional arousal occurs following behavioral efforts at avoidance. This module may be particularly useful for patients with BPD, as they are likely to view their emotions as problematic, criticism-eliciting events rather than normal, adaptive experiences. As astutely observed by Linehan (1993), individuals with BPD are accustomed to having others minimize, trivialize, and criticize their emotional expressions, which has been shown to lead to anxiety focused on emotions (Sauer & Baer, 2009). Further, individuals with BPD engage in avoidance-motivated behaviors and can benefit from understanding that such activities are short-term solutions that may lead to increased discomfort in emotional situations in the future.

The introductory modules are followed by five core UP treatment modules. Modules 3 through 5 are comprised of new skills aimed at cultivating a more accepting relationship with emotional experiences, with the goal of facilitating extinction learning in subsequent modules. Module 3 introduces the concept of mindfulness, and patients are taught to engage in present-focused and non-judgmental attention. Given that judgmental responses to emotional experience are common in BPD (Wupperman, Neumann, Whittman, & Axelrod, 2009), mindfulness training may represent a useful tool for addressing this problem. Module 4 provides skills for directly coping with thoughts that arise as part of an emotional experience. Although this module involves skills for identifying thinking errors and engaging in cognitive restructuring, the emphasis is on developing cognitive flexibility; as such, patients are instructed to move past initial, automatic appraisals by generating other possible interpretations of the situation. This approach to cognitive therapy is

particularly well suited to patients with BPD who may have frequently been accused of distorting or misperceiving situations by significant others and may respond poorly to a therapist pointing out “irrational” thoughts (Linehan, 1993). Despite the reluctance to address them with traditional cognitive therapy, distorted cognitions are common in BPD, particularly core beliefs regarding the self as vulnerable, bad, or unlovable (Klosko & Young, 2004). The UP also includes efforts to address core beliefs by assisting patients in identifying self-relevant misappraisals and uncovering how they can trigger emotional reactions in certain situations. Module 5 provides skills for addressing avoidance and escape behaviors that may maintain or exacerbate emotional disorder symptoms. This module involves the identification and prevention of any behaviors that function to reduce or down-regulate emotional experiences. Behavioral avoidance is common in BPD; for example, the literature suggests that recurrent nonsuicidal self-injurious behavior typically functions to reduce or escape from negative emotions (Bentley, Nock, & Barlow, 2014; Nock & Prinstein, 2004). Further, the *DSM* interpersonal criteria for BPD (i.e., frantic attempts to avoid abandonment and alternating between extremes of idealization and devaluation) also may function in this manner. As such, the UP, as a treatment for emotional disorders, may provide a useful framework for addressing these behavioral manifestations of BPD.

Finally, Modules 6 and 7 encourage patients to engage in emotion exposures, providing an opportunity to develop new associations with the experience of strong emotions through extinction learning. First, in Module 6, interoceptive sensitivity is targeted by asking patients to engage in exercises that evoke physical symptoms of anxiety; for example, patients might breathe through a thin straw to experience symptoms of shortness of breath or spin in a chair to cultivate dizziness. Module 7 involves entering into situations or engaging in activities that elicit strong emotions. Patients are encouraged to apply previously learned UP skills (i.e., generating alternate appraisals about the situation before entering, tolerating physical sensations, thoughts, and behavioral urges that may arise over the course of the exposure, and acting counter to urges to avoid) during exposure exercises in order to help facilitate new learning. The UP approaches exposure in a graduated fashion, starting by creating manageable, controlled situations with a therapist to practice. This may be particularly useful for patients with BPD, who may have difficulties finding a suitable, low-level situation for practice in their chaotic lives. For example, a therapist might encourage a patient to engage in an exposure in which he/she tolerates being alone in the office for five minutes. Finally, Module 8, consistent with most CBT protocols, allows the patient and therapist to review progress made during treatment and discuss ways to prevent relapse.

CURRENT STUDY

In the present study, the UP was applied clinically to a sample of five cases with BPD and comorbid anxiety and mood disorders. It was hypothesized that the UP might be an efficacious and efficient approach to treating this population due the UP's emphasis on directly addressing core processes common

across the disorders represented in this sample. Study therapists were one licensed doctoral-level psychologist with eight years of experience (SSZ) and one masters-level doctoral student with 1.5 years of experience (KHB); both had received formal training and certification in the protocol. Treatment was delivered across 16–20 weekly individual sessions. After an introductory session, each UP module was presented for 1–2 sessions, with the exception of the exposure module applied over 4 or more sessions; decisions to move on to the next module were made based on therapist impressions of skill acquisition. In several cases, described below, unexpected circumstances (e.g., unplanned pregnancy, job loss) delayed transition into the next module.

Prior to beginning treatment with the UP, patients received an initial diagnostic assessment using the BPD module from Diagnostic Interview for Personality Disorders – 4th Edition (DIPD-IV; Zanarini, Frankenburg, Chauncey, & Gunderson, 1987) and the Adult Anxiety Disorders Interview Schedule for *DSM-IV* (ADIS-IV; Di Nardo, Brown, & Barlow, 1994). Severity of BPD, anxiety, and depressive symptoms was assessed at pre- and post- treatment using well-validated self-report measures: The Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD; Zanarini, 2003) and the Depression, Anxiety and Stress Scales (Lovibond & Lovibond, 1995). Additionally, acquisition of emotion regulation skills was assessed at pre- and post-treatment using the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004). Outcome data are presented in Table 1. In addition, an illustrative case example depicting the application of the UP to a patient with BPD is presented, followed by brief examples from other patients that highlight advantages and difficulties using this protocol with this population. Specific, potentially identifying details in each case have been altered to protect patient confidentiality.

CASE 1

Z.L. is a 28-year-old married Caucasian female who presented for psychological treatment for the first time. She is an international student from an Eastern European country pursuing a graduate degree in a social science field. Z.L. was referred to our Center by a professor who was concerned about her anxiety, which appeared to be interfering with her schoolwork; she had taken incompletes in two of her classes during her previous spring semester. We began our work together during the following summer, and Z.L. reported great difficulty finishing the delinquent assignments due to strong feelings of anxiety regarding her capabilities and subsequent procrastination. This issue with her school work, as well as irritability and anger outbursts with her husband, represented Z.L.'s primary concerns for seeking treatment.

The initial session was focused on conducting a thorough diagnostic interview. Based on the assessment, Z.L. met criteria for BPD and generalized anxiety disorder. In terms of her BPD diagnosis, she endorsed clinical levels of the emotional difficulties that characterize the disorder: inappropriate intense anger and affective instability. She reported that her mood shifts several times a day from happy to angry or from “loving to extremely irritable.” Z.L. described quick anger in response to minor infractions, particularly with her husband, as extremely interfering. She further stated that she never questioned

her temperament, describing her moodiness and anger as “who I am.” Z.L. also endorsed BPD interpersonal difficulties (frantic attempts to avoid abandonment and relationship instability) at a clinical level. Of note is the fact that her mother had committed suicide when Z.L. was 11 years old, and since then, she has reportedly made not losing anyone else a priority. She indicated that she currently lives in fear that her husband will leave her because she’s “too bad” and that she must be constantly present in his life to prevent him from leaving; this fear has reportedly barred her from taking important educational trips. She further stated that she “[doesn’t] remember a time when [she] didn’t feel abandoned,” citing relationships with her parents and friends from her home country. Z.L. also reported a pattern of unstable, intense relationships, not only within the context of previous romantic relationships but with her brother and now, primarily, with her husband. In terms of BPD identity disturbance, Z.L. also endorsed clinically significant levels of chronic emptiness and an unstable sense of self. She stated that she often feels that life is meaningless and her “existence is not necessary.” She further reported frequently questioning the choices she’s made (e.g., marriage, career), alternating from feeling motivated about work (and that she’s done good work in her field) to feeling completely disinterested. Finally, Z.L. denied clinically significant evidence of the behavioral difficulties that characterize BPD; although she reported having chronic and frequent thoughts of suicide, particularly to test whether others indeed care about her, Z.L. did not have a history of suicide attempts. She also denied a history of nonsuicidal self-injury (NSSI) or impulsive behavior in other domains. Finally, she reported subthreshold symptoms of cognitive difficulties, namely transient paranoia in response to stress, and stated that when she is particularly overwhelmed, she feels as though people are watching her.

In terms of her generalized anxiety disorder diagnosis, Z.L. described excessive, uncontrollable worry more days than not over the past six months about her school/work performance, minor matters (e.g., running errands, preparing meals), her husband’s health, her family’s finances, and her personal health and safety. Z.L. reported that during her spring semester, she spent approximately 90% of the day engaged in worry. She also reported engagement in avoidance behaviors such as procrastination in completing school assignments and refusing to enter crowded places that might be susceptible to terrorist attacks. Additionally, she reported engaging in checking behaviors (e.g., going to the doctor frequently) in response to persistent concerns about her health. Accompanying these worries, Z.L. described associated symptoms of restlessness, difficulty concentrating, irritability, and muscle tension. She also noted that hearing noises that would trigger her concern over her safety often led to panic attacks. Finally, in our interview, Z.L. endorsed depressive symptoms at a subclinical level. She stated that she had experienced depressed mood and lack of interest in her usual activities for most of the day in the two weeks prior to our assessment; however, she denied the associated symptoms required for the diagnosis. Z.L.’s initial self-report assessment scores indicated high levels of BPD and depressive symptoms, moderate levels of anxiety, and a high degree of emotion regulation deficits (see Table 1).

In our first treatment session, we engaged in a discussion of Z.L.’s readiness for change and engagement in treatment by exploring her goals and the

TABLE 1. Pre- and Post-Treatment Outcome Scores

Comorbid Diagnoses	Case 1		Case 2		Case 3		Case 4		Case 5	
	GAD		MDD		SOC		SOC		SOC	
	Pre	Post								
ZAN-BPD	18	2	16	8	22	16	7	3	17	17
DASS-D	22	0	32	21	23	3*	9	8	19	22
DASS-A	12	4	21	17	13	3*	5	1	15	20
DERS	106	54	98	92	136	116	121	65	99	95

Note. GAD = generalized anxiety disorder; MDD = major depressive disorder; SOC = social anxiety disorder; ZAN-BPD = Zanarini Rating Scale for Borderline Personality Disorder (self-report version); DASS-D = Depression, Anxiety, and Stress Scales – depression subscale; DASS-A = Depression, Anxiety and Stress Scale – anxiety subscale; DERS = Difficulties in Emotion Regulation Scale (higher scores reflect greater difficulties). *Patient failed to complete back of questionnaire, so data for week 12 have been substituted.

pros and cons of changing versus staying the same (Module 1). Developing skills to respond adaptively to strong emotions in order to enhance school performance, make more friends, and have a more fulfilling marriage were collaboratively established as the main goals for treatment.

The next four sessions were focused on exploring the adaptive function and nature of emotions (Module 2) and learning to adopt a nonjudgmental, present-focused stance toward this experience (Module 3). Z.L. struggled initially with identifying the adaptive function of each emotion, as she described a deeply held belief that her emotions had only caused problems for her in the past. Psychoeducation regarding differentiation between initial, adaptively triggered emotions and maladaptive responses to these emotions was discussed, and ultimately, Z.L. was able to articulate why experiencing the full range of emotions is necessary. We further explored maladaptive responses to her emotions by discussing a recent argument she had with her husband within the context of the three-component model of emotion; this allowed her to examine how the interaction of her thoughts, physical sensations, and behaviors that followed her initial emotional trigger may have escalated the experience. Z.L. described a frequently occurring disagreement in which her husband asks her to help him prepare dinner despite his having previously agreed to take turns with the cooking. She identified automatic thoughts (“I will not be able to complete my schoolwork if I help with dinner”; “my husband does not respect my time”) and how such appraisals led to physical sensations of increased heart rate and muscle tension. This escalation of emotion was reportedly followed by an angry outburst at her husband and her storming out of the room. We highlighted the long- and short-term consequences of Z.L.’s maladaptive emotional response by engaging in a functional analysis of behaviors. In the short-term, snapping at her husband led to a decrease in anxiety as she was able to return to her schoolwork rather than help with dinner; however, she reported subsequent guilt over her reaction and increased anxiety on the following evening while her husband was preparing dinner, fearing that he might again ask her to help.

Adopting a more mindful approach to her emotional experiences was achieved through formal meditation practice and mindfully informed coping techniques (anchoring in the present). Z.L. reported that the rationale for this module, developing a present-focused and nonjudgmental stance toward emotions, mapped onto her tendencies to beat herself up for her strong emotions and to engage in a great deal of future-themed cognition. Despite her initial enthusiasm, Z.L. struggled with completing the formal meditation task outside of session, only attempting the task three times during the week instead of twice daily, as assigned. She cited concerns about her ability to complete the exercise correctly and whether the task was taking too much time away from her studies. In the following session, we discussed how engaging in the mindfulness meditation represents a first exposure activity. By objectively observing all stimuli without responding to them, including thoughts about completing a task correctly, patients learn what happens when they do not engage in attempts to avoid or dampen emotions. Z.L. subsequently reported greater success in completing the exercise during the next week, stating that she was better able to label her worries as thoughts that may not represent the truth. Z.L. also indicated that using her breath or other sensory cues to anchor herself in the present moment was particularly helpful in terms of future-oriented worries. For example, she described a situation in which she was walking to a potluck at her school and noticed herself making negative predictions about the event (e.g., it will be awkward, no one will talk to me); she stated that she was able to pull herself away from these cognitions by focusing on the feeling of her feet hitting the sidewalk, reminding herself that the awful consequences she was predicting were not yet happening in the present moment and may not actually happen at all. She noted that taking this “space” to objectively observe and label her future-oriented thoughts allowed her to overcome her behavioral urge to avoid the potluck.

The next three sessions were spent going into greater depth exploring the contributions of the three components of an emotional response described above (thoughts, behaviors, and physical sensations). We began with the role of negative automatic appraisal in generating strong emotions (Module 4), and Z.L. was able to identify maladaptive thought patterns that contribute to her anxiety and anger. In session, activities and homework exercises provided an opportunity to identify “thinking traps,” such as overestimating the likelihood that a negative prediction will occur and discounting one’s ability to cope with it if it does. Z.L. described a situation in which one of her professors did call on her during class, and she identified automatic thoughts regarding the professor’s opinion of her (“she doesn’t like me”) and her ability to tolerate future classes (“it will be too uncomfortable for me to raise my hand again”; “if she doesn’t call on me, it’ll confirm my suspicion that she doesn’t like me”). During session, we were able to increase Z.L.’s cognitive flexibility by generating alternate possibilities with regard to her professor’s behavior. Additionally, this experience provided an opportunity to explore the role of behaviors during her emotional experiences (Module 5). In general, Z.L. was asked to monitor and record behavioral urges associated with certain emotions or automatic thoughts. With regard to the situation with her professor, Z.L. described the urge to sit in the back of the class and to refrain

from participating for the rest of the semester. Following an exploration of the short- and long-term consequences of these behaviors, she was willing to act in a manner inconsistent with these urges. Not only was she able to successfully participate in the subsequent classes, but her professor also praised her contributions, disconfirming her negative automatic appraisals. Finally, we attended to how Z.L.'s physical sensations (racing heart, muscle tension) contribute to both her negative automatic appraisals and her urge to engage in avoidant behaviors (Module 6). Z.L. was encouraged to complete interoceptive exposures, including hyperventilation and breathing through a thin straw, to practice relating to these sensations in a mindful manner.

The final phase of treatment was focused on utilizing the skills Z.L. had learned thus far through emotion-exposure tasks (Module 7). Specifically for Z.L., exposures were designed to elicit anxiety around social situations (attending church functions and parties), personal safety (taking public transportation in the evening), health (going to the doctor), and completing schoolwork (starting and continuing assignments without distraction). Through these experiences, she was able to challenge a core belief about herself as a person who simply does not enjoy social contact. She described a poignant realization at a party, during which she had asked herself, "Doesn't this feel good?" after each conversation she had. She then stated that this led to a feeling of freedom regarding her ability to pursue her career and social goals. Throughout this phase of treatment, Z.L. was also concerned about a medical issue, but she was able to address this concern with her exposure practices by making and attending medical appointments. In preparation for these activities, she challenged her automatic thoughts (e.g., "the doctor will think I'm stupid for seeking treatment if this turns out to be nothing"; "it will be horrible if I find out I am really sick") and identified and devised alternatives to likely behavioral urges (e.g., refraining from asking questions in order to shorten the appointment). In addition, she described successfully using her mindful anchoring skills throughout the week that she was waiting for test results.

At the time of treatment termination (Module 8), Z.L. reported significant improvement in her ability to tolerate and respond to strong emotions, and this had had a positive effect on her relationships with her husband and her brother, as well as helped her to develop friendships with classmates and fellow church parishioners. Z.L.'s self-report data was consistent with her verbal assessment of treatment gains. She evidenced large reductions in symptoms and increases in her ability to regulate her emotions (see Table 1). Finally, Z.L. expressed confidence in her ability to maintain treatment gains and did not request additional services at the time of termination.

CASES 2–4

The UP was successfully implemented in three additional cases (see Table 1), and highlights from each course of treatment are presented below. First, R.B. (Case 2) is a 26-year-old married Caucasian female who was referred for cognitive-behavioral therapy by her supportive counselor. R.B. reported that she sought treatment in order to cope with jealousy that arises when she and her husband are around other women, despite there being no history

of infidelity; she further indicated that, in such situations, she begins to feel insecure in their relationship and that this can lead to panic attacks. In addition to causing tension in her marriage, R.B. had distanced herself from her family for fear that her husband might be attracted to her sister, sister-in-law, and mother. Following the initial diagnostic interview, R.B. met criteria for BPD and major depressive disorder.

R.B. often arrived at our treatment sessions reporting high levels of distress in response to events that had occurred earlier in the day; efforts were made to incorporate these crises into the context of UP skill delivery. For example, in one instance, R.B. indicated that her mother, with whom she and her husband are currently living, had just hired a new female babysitter for her little sister earlier that day. Prior to our session, R.B. had reportedly texted her husband repeatedly (“don’t interact with her”) and had begun looking for apartments in order to move out. Her distress in this situation provided a useful opportunity to explore the three components of her emotional response and how they contributed to the intensity of her experience (Module 2). In particular, this exercise highlighted for R.B. the relationship between behaving as if her husband would be unfaithful (e.g., monitoring his behavior via text message, preventing him from interacting with women) and the conviction with which she held negative thoughts (e.g., my husband will disrespect me by flirting with other girls). R.B. also noted that the physical sensations associated with her anger and anxiety, such as shaky hands and rapid heart rate, also increase the believability of her negative thoughts and the urgency to perform anxious behaviors. These discoveries became the focus as we sought to increase her ability to mindfully observe emotion-related stimuli (Module 3). R.B. was particularly encouraged to notice negative predictions about her husband’s fidelity, label them as thoughts, and allow them to be there without responding to them. We also discussed the nature of thoughts and how it made sense that she would have such thoughts given her father’s history of infidelity, allowing R.B. to be less judgmental of her anxiety and less fused with her thinking. Additionally, R.B. reportedly found anchoring in the present to be a useful strategy for combating negative future predictions about schoolwork (e.g., “I’m going to fail”) and work (e.g., “I’m never going to be able to finish all this work”) by noting that these feared outcomes had not yet occurred.

Next, I.R. (Case 3) is a 35-year-old married Caucasian female who sought treatment at the request of her husband who believed that her mood swings were interfering with their marriage. In our initial phone consultation, I.R. described her emotions as escalating from “0 to 10, with nothing in between.” She stated that her strong emotions have impacted her relationship with her husband, other family members, and business clients, and that she often copes by withdrawing (e.g., sleeping) to avoid conflicts. I.R. indicated that her overarching goal for treatment was to develop better strategies to modulate her emotional experiences in order to relate better with the people in her life. Following an initial assessment, I.R. met criteria for BPD and social anxiety disorder.

Notably, midway through treatment, I.R. reported that she had become pregnant but was unsure of whether to keep the baby. This topic became a major focus of treatment on which subsequent UP skills were applied. I.R.

experienced a great deal of distress regarding the uncertainty of this decision. We returned to the decisional balance exercise (Module 2) to examine the pros and cons for either continuing or terminating the pregnancy. Although the most favorable decision remained unclear, this exercise allowed I.R. to identify her worst-case scenarios for either decision (e.g., my husband will leave me after the baby is born; I'll become depressed if I have an abortion) and use her cognitive restructuring skills (Module 4) to address worries around these scenarios. This strategy increased her confidence in her ability to handle these unlikely outcomes, thereby reducing her anxiety. In a subsequent session, after I.R. indicated that she was feeling intense sadness following the termination of her pregnancy; she was encouraged to act in a manner that was inconsistent with her emotion-driven behaviors to withdraw from work and to sleep (Module 5). She completed homework to counter emotion-driven behaviors by engaging in regular exercise, completing procrastinated work, and refraining from napping, and subsequently reported that her feelings of unrelenting sadness had abated by our next session.

Finally, S.P. (Case 4) is a 38-year-old single Caucasian female who was referred for CBT by her psychiatrist. She sought treatment due to feeling "overwhelmed" after recently receiving a BPD diagnosis. During the initial interview, she endorsed frequent mood shifts, engagement in "passive-aggressive" behavior toward her family, friends, and coworkers, and frequent reassurance-seeking, calling her sisters in desperation to make sure they still care about her. S.P. also stated that she regularly avoids any situation (e.g., parties, dating, participating at meetings) in which others may "make [her] feel stupid," significantly restricting her social life and career advancement. Although a healthy weight during treatment, she reported a long history of eating pathology, including restriction and occasional binge/purge episodes. S.P. indicated that her primary goals for treatment were to enjoy her life more and make new acquaintances. Following the assessment, S.P. met criteria for BPD and social anxiety disorder.

S.P. initially struggled to complete her homework, which she attributed in part to concerns that her parents (with whom she was living at the time) or coworkers would notice her doing so. When S.P. did attempt an assignment, she prefaced the in-session homework review by noting that she had done a "bad" job or did not understand the workbook readings. However, it quickly became apparent that S.P. had a very strong understanding of UP skills and the corresponding assignments. We examined the consequences of this overarching tendency to discount her abilities across many life areas; in the short-term, it reduced her anxiety about the potential for failure or rejection, but in the long-term, it strengthened her maladaptive core beliefs and prevented her from achieving her goals. This functional analysis helped S.P. subsequently implement UP strategies when distressed at work, such as recording upsetting emotional experiences (Module 2) during downtime and anchoring in the present (Module 3), thereby facilitating new learning that helped challenge negative appraisals about her ability to cope (Module 4). S.P. was also well able to identify her idiosyncratic emotion-driven behaviors when feeling depressed (e.g., withdrawing, overeating) and practiced acting inconsistently during exposure exercises, which included signing up for an art

class, going for walks alone, and introducing herself to new people at social events (Module 6). Notably, following session 15, S.P. was fired from her paralegal job, which resulted in strong initial negative emotions (e.g., anger) and maladaptive behaviors (e.g., yelling at her boss) that had elicited secondary emotional responses (e.g., embarrassment about losing her temper). By the next session, however, S.P. had cultivated a more nonjudgmental stance to her emotional experience (e.g., it is natural to feel upset after being fired), and was using cognitive restructuring to generate alternative appraisals about this scenario. For example, she reported being “excited” about the opportunity to look for more enjoyable positions. She also suggested adaptive actions to improve job satisfaction in the future, such as “being more approachable” and making employers aware of her accomplishments in a respectful manner.

CASE 5: CHALLENGES TO TREATMENT DELIVERY

O.M. is a 19-year-old single Hispanic male who met diagnostic criteria for BPD and social anxiety disorder; of note is that he was the only patient in this pilot trial who reported a history of NSSI and engaged in this behavior consistently throughout treatment. O.M. was mandated by his university to complete a course of therapy as a part of disciplinary action following the destruction of his roommate’s property. Although O.M. was regular in his attendance, he was rarely engaged in session activities and homework assignments. At times throughout our work together, he was able to describe treatment topics (e.g., short- and long-term consequences of his responses, alternative cognitions, inconsistent behaviors), thereby demonstrating his intellectual knowledge of the skills. However, more often than not, O.M. refused to practice these skills, as he reportedly felt justified in the way he was feeling (e.g., “[he had] been legitimately wronged by someone else”) and did not want to consider that the way he was responding could be contributing to his mood shifts. Additionally, O.M. refused to practice mindfulness or complete emotion exposures, indicating that they only made him feel worse. Consistent with his self-report, O.M.’s symptoms did not improve following 20 sessions of treatment (see Table 1).

Several possibilities may be considered regarding why O.M. did not benefit from treatment with the UP. First, he may not have been intrinsically motivated to complete this (or any) treatment, as he was mandated by his university to be in therapy. Another explanation is that he was qualitatively more severely impaired than the other patients in this sample, given his long-standing history of (and current engagement in) NSSI, and thus, once-weekly, outpatient treatment may not have been the appropriate level of care for this individual. Another possibility more consistent with UP theoretical underpinnings is that O.M.’s reactions to his own emotions were so aversive that he was engaging in therapy-interfering behaviors in order to escape or avoid uncomfortable emotions. This was pointed out when discussing the behavioral component of an emotional experience (Module 2) and again when specifically highlighting the role of emotional avoidance in maintaining symptoms (Module 5). Despite these efforts to conceptualize therapy-interfering behavior as emotionally driven behaviors, O.M. never fully engaged in the UP. He was given referrals upon termination to help him pursue further treatment.

SUMMARY OF RESULTS

Overall, treatment with the UP was well received in these cases. Four of the five cases treated evidenced reductions in BPD, depressive, and anxiety symptoms (see Table 1). Effect sizes (standardized mean gain, ES_{sg}) estimates were calculated for each of the study variables, and results suggest that change in BPD symptoms and emotion-regulatory capacity was large in magnitude ($ES_{sg} = 1.06$, 95% CI [0, 2.11] and $ES_{sg} = 1.29$, 95% CI [0.1, 2.59], respectively), while changes in anxiety and depressive symptoms represented medium effects ($ES_{sg} = .51$, 95% CI [-0.18, 1.19] and $ES_{sg} = .70$, 95% CI [-0.69, 2.08], respectively). It is important to note that the Confidence intervals of the effect sizes for change in anxiety and depressive symptoms include zero, indicating that this may not be a reliable effect; however, this is likely due to the very small sample size, suggesting that future studies with larger, controlled samples are warranted.

DISCUSSION

The purpose of this paper was to present clinical case examples illustrating the application of the UP, a transdiagnostic treatment for emotional disorders, with patients with BPD and comorbid depressive and anxiety disorders. Because of the functional similarities between BPD and other emotional disorders, it was theorized that the UP may be an appropriate treatment to address BPD symptoms in a relatively stable population, as well as simultaneously to address coexisting emotional disorders (e.g., depressive and anxiety disorders). Four out of the five cases presented demonstrated reductions in symptoms and increases in emotion-regulation capacity following treatment with the UP. In general, treatment responders indicated that increasing their capacity to observe their emotions without avoidant responding (likely facilitated through mindfulness training and cognitive restructuring) allowed them to move toward the goals they had established early in treatment (e.g., better relationships with significant others, moving toward education and social goals). Overall, these results suggest that the UP may be a cost-effective approach for individuals diagnosed with BPD who do not exhibit highly severe, life-threatening symptoms. As noted above, BPD is a notoriously heterogeneous diagnosis and, to date, there are no empirically supported treatments designed specifically for less severe forms of this disorder.

It is notable that in most of these cases unanticipated significant life stressors (e.g., an unexpected move, a health scare, an unplanned pregnancy and subsequent abortion, a job loss) occurred during the course of treatment with the UP. These types of stressors are consistent with the life chaos described by Linehan (1993) that is often experienced by individuals with BPD. In most cases, these stressors were successfully folded into the context of the UP skills, suggesting that a structured protocol may be adequate to address BPD symptoms even when crises are present. However, it is possible that greater gains may have been achieved had the UP been applied over a more flexible number of sessions, rather than limited to the maximum of 20 weeks provided in this pilot trial.

It is important to note, of course, that a relatively short-term, once-weekly outpatient treatment may not be the most appropriate course of intervention for all individuals with BPD. For example, extreme interpersonal dysfunction, vulnerability to increased suicidality, chronic engagement in severe NSSI (perhaps requiring medical attention), and recurrent psychosocial crises may disrupt successful delivery of a structured protocol. As these issues arise in session, they may require transitioning the focus targeting core mechanisms (e.g., intolerance of emotion) to crisis management. In fact, it is important to note that one patient in our small study did not improve. As described above, this patient was notably less engaged in treatment activities; however, the reasons for this remain unclear. Possibilities for his lack of engagement include reduced intrinsic motivation due to a therapy mandate, extreme emotional avoidance underscoring his therapy-interfering behaviors, or symptom severity (e.g., history of and current, frequent engagement in NSSI).

Additionally, other personality factors depicted in the *DSM-5* Alternative Model of personality disorders, aside from the negative emotionality (neuroticism) targeted with the UP, may also be important to consider in terms of treatment planning for individuals with BPD. Specifically, disinhibition (maladaptive FFM conscientiousness) and antagonism (maladaptive FFM agreeableness) likely played a role in Case 5's BPD presentation and should have also been targeted directly in treatment. Although interpersonal difficulties (e.g., arguments) are consistently reported in BPD samples, there is great heterogeneity in relational presentations among individuals with this diagnosis, likely driven by diverse underlying personality traits. For example, when interpersonal circumplex styles are examined in BPD samples, six distinct profiles emerge: Nonassertive, Avoidant, Extreme Exploitable, Moderate Exploitable, Intrusive, and Vindictive (Wright et al., 2013). Given his history of destroying others' property and other antisocial behaviors, it is likely that Case 5 fell into the vindictive class, driven by the hostility/antagonism trait rather than by neuroticism. Perhaps a more comprehensive treatment like DBT or MBT would have better addressed Case 5's confluence of internalizing and externalizing features. Future research is needed to clarify which patients with BPD are likely to benefit from treatment with the UP, or other available treatments.

The conclusions of the present study must be considered in the context of its limitations. First, as noted above, our small sample size makes it difficult to draw conclusions regarding the generalizability of our findings. Additionally, we did not assess for comorbid personality disorders, which often co-occur with BPD and may moderate treatment effects. However, despite these limitations, treatment with the UP, a transdiagnostic, emotion-focused CBT treatment, appears to be a promising approach to the treatment of BPD. The outcomes of the cases presented here suggest that the UP is both a feasible and acceptable approach in this population. However, future controlled studies will be needed to formally assess both the short- and long-term efficacy of the UP in managing BPD symptoms, as well as to evaluate specific moderators of treatment (e.g., severity) in this difficult-to-treat population. If the UP proves efficacious, this treatment may offer a parsimonious, cost-effective approach for individuals presenting with less severe (e.g., less life-interfering) BPD symptoms.

REFERENCES

- American Psychological Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Andrews, G. (1990). Classification of neurotic disorders. *Journal of Royal Society of Medicine*, 83, 606–607.
- Barlow, D. H. (1991). Disorders of emotion. *Psychological Inquiry*, 2(1), 58–71. doi:10.1207/s15327965pli0201_15
- Barlow, D. H., Farchione, T. J., Fairholme, C. P., Ellard, K. K., Boisseau, C. L., Allen, L. B., & Ehrenreich-May, J. (2011). *Unified protocol for transdiagnostic treatment of emotional disorders: Therapist guide*. New York, NY: Oxford University Press.
- Barlow, D. H., Sauer-Zavala, S., Carl, J. R., Bullis, J. R., & Ellard, K. K. (2014). The nature, diagnosis, and treatment of neuroticism: Back to the future. *Clinical Psychological Science*, 2, 344–365.
- Bateman, A. W., & Fonagy, P. (2004). Mentalization-based treatment of BPD. *Journal of Personality Disorders*, 18, 36–51. doi:10.1521/pedi.18.1.36.32772
- Bentley, K. H., Nock, M. K., & Barlow, D. H. (2014). The four-function model of nonsuicidal self-injury: Key directions for future research. *Clinical Psychological Science*, 2, 638–656. doi:10.1177/2167702613514563
- Brown, T., & Barlow, D. (2009). A proposal for a dimensional classification system based on the shared features of the DSM-IV anxiety and mood disorders: Implications for assessment and treatment. *Psychological Assessment*, 21, 256–271. doi:10.1037/a0016608
- Carl, J. R., Gallagher, M. W., Sauer-Zavala, S. E., Bentley, K. H., & Barlow, D. H. (2014). A preliminary investigation of the effects of the Unified Protocol on temperament. *Comprehensive Psychiatry*, 55(6), 1426–1434.
- Chapman, A., Gratz, K., & Brown, M. (2006). Solving the puzzle of deliberate self-harm: The experiential avoidance model. *Behaviour Research and Therapy*, 44, 371–394.
- Clarkin, J. F., Foelsch, P. A., Levy, K. N., Hull, J. W., Delaney, J. C., & Kernberg, O. F. (2001). The development of a psychodynamic treatment for patients with borderline personality disorder: A preliminary study of behavioral change. *Journal of Personality Disorders*, 15, 487–495. doi:10.1521/pedi.15.6.487.19190
- Di Nardo, P. A., Brown, T. A., & Barlow, D. H. (1994). *Anxiety Disorders Interview Schedule for DSM-IV*. New York, NY: Oxford University Press.
- Eaton, N. R., Krueger, R. F., Keyes, K. M., Skodol, A. E., Markon, K. E., Grant, B. F., & Hasin, D. S. (2011). Borderline personality disorder co-morbidity: Relationship to the internalizing-externalizing structure of common mental disorders. *Psychological Medicine*, 41(5), 1041–1050. doi:10.1017/S0033291710001662
- Ellard, K. K., Fairholme, C. P., Boisseau, C. L., Farchione, T. J., & Barlow, D. H. (2010). The role of mindfulness in borderline personality disorder features. *Cognitive and Behavioral Practice*, 17, 88–101.
- Ellis, A., Abroms, M., & Abroms, L. (2009). Abnormal personality and personality disorders. In A. Ellis, M. Abroms, & L. Abroms (Eds.), *Personality theories: Critical perspectives* (pp. 437–478). Thousand Oaks, CA: Sage.
- Farchione, T. J., Fairholme, C. P., Ellard, K. K., Boisseau, C. L., Thompson-Hollands, J., Carl, J. R., ... Barlow, D. H. (2012). Unified Protocol for transdiagnostic treatment of emotional disorders: A randomized controlled trial. *Behavior Therapy*, 43(3), 666–678. doi:10.1016/j.beth.2012.01.001
- Grant, B. F., Chou, S. P., Goldstein, R. B., Huang, B., Stinson, F. S., Saha, T. D., ... Ruan, W. J. (2008). Prevalence, correlates, disability, and comorbidity of DSM-IV borderline personality disorder: Results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*, 69(4), 533–545. doi:10.4088/JCP.v69n0404
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26(1), 41–54. doi:10.1023/B:JOBA.0000007455.08539.94
- Insel, T., Cuthbert, B., Garvey, J., Heinssen, R., Pine, D. S., ... Want, P. (2010). Research Domain Criteria (RDoC): Toward a new classification framework for research on mental disorders. *American Journal of Psychiatry*, 167, 748–751. doi:10.1176/appi.ajp.2010.09091379
- James, L., & Taylor, J. (2008). Revisiting the structure of mental disorders: Borderline personality disorder and the internalizing/externalizing spectra. *British Journal of Clinical Psychology*, 47, 361–380.
- Kendler, K., Myers, J., & Reichborn-Kjennerud, T. (2011). Borderline personality disorder traits and their relationship with dimensions of normative personality: A web-based cohort and twin study. *Acta Psychiatrica Scandinavica*, 123, 349–359. doi:10.1111/j.1600-0447.2010.01653.x
- Klosko, J., & Young, J. (2004). Cognitive therapy of borderline personality disorder. In R. L. Leahy (Ed.), *Contemporary cognitive therapy: Theory, research, and practice* (pp. 269–298). New York, NY: Guilford.

- Lenzenweger, M. F., & Pastore, R. E. (2007). On determining sensitivity to pain in borderline personality disorder. *Archives of General Psychiatry*, *64*(6), 747–748; author reply, 748–749. doi:10.1001/archpsyc.64.6.747
- Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York, NY: Guilford.
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, *33*(3), 335–343.
- McMain, S. F., Links, P., Gnam, W. H., Guimond, T., Cardish, R. J., Korman, L., & Streiner, D. L. (2010). A randomized trial of Dialectical Behavior Therapy versus General Psychiatric Management for borderline personality disorder. *American Journal of Psychiatry*, *167*, 1365–1374.
- Miller, W. R., & Rollnick, S. (2012). Meeting in the middle: Motivational interviewing and self-determination theory. *International Journal of Behavioral Nutrition and Physical Activity*, *9*, 25. doi:10.1186/1479-5868-9-25
- Nock, M. K., & Prinstein, M. J. (2004). A functional approach to the assessment of self-mutilative behavior. *Journal of Consulting and Clinical Psychology*, *72*, 885–890. doi:10.1037/0022-006X.72.5.885
- Payne, L. A., Ellard, K. K., Farchione, T. J., Fairholme, C. P., & Barlow, D. H. (2014). Emotional disorders: A unified transdiagnostic protocol. In D. H. Barlow (Ed.), *Clinical handbook of psychological disorders: A step-by-step treatment manual* (5th ed.; pp. 237–274). New York, NY: Guilford.
- Sauer, S. E., & Baer, R. A. (2009). Relationships between thought suppression and symptoms of borderline personality disorder. *Journal of Personality Disorders*, *23*(1), 48–61. doi:10.1521/pedi.2009.23.1.48
- Sauer-Zavala, S. E., & Barlow, D. H. (2014). The case for borderline personality disorder as an emotional disorder: Implications for treatment. *Clinical Psychology: Science and Practice*, *21*(2), 118–138.
- Tryer, P. (1989). *Classification of neurosis*. Oxford, England: John Wiley and Sons.
- Wright, A., Hallquist, M., Morse, J., Scott, L., Stepp, S., Nolf, K., & Pilkonis, P. (2013). Clarifying interpersonal heterogeneity in borderline personality disorder using latent mixture modeling. *Journal of Personality Disorders*, *27*, 125–143.
- Wupperman, P., Neumann, C., Whitman, J., & Axelrod, S. (2009). The role of mindfulness in borderline personality disorder features. *Journal of Nervous and Mental Disease*, *197*, 766–771.
- Young, J. E., Klosko, J. S., & Weishaar, M. E. (2003). *Schema therapy: A practitioner's guide*. New York, NY: Guilford Press.
- Zanarini, M. C. (2003). Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD): A continuous measure of DSM-IV borderline psychopathology. *Journal of Personality Disorders*, *17*(3), 233–242. doi:10.1521/pedi.17.3.233.22147
- Zanarini, M. C., Frankenburg, F. R., Chauncey, D. L., & Gunderson, J. G. (1987). The Diagnostic Interview for Personality Disorders: Interrater and test-retest reliability. *Comprehensive Psychiatry*, *28*(6), 467–480. doi:10.1016/0010-440X(87)90012-5