Conceptual Development and Case Data for a Modular, Personality-Based Treatment for

Borderline Personality Disorder

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Abstract

Borderline personality disorder (BPD) is a heterogenous condition and variations in its presentation may be accounted for by individual differences in personality dimensions. Extant treatments for BPD are long-term and intensive; it is possible that prioritizing the personality-based difficulties that underlie an individual's symptoms may improve the efficiency of care. This manuscript describes the conceptual background for the development of a novel, personality-based intervention for BPD (BPD Compass) informed by recent research on personality mechanisms maintaining this condition to address gaps left by existing treatments and be maximally efficient and disseminable. BPD Compass is a comprehensive, short-term package with a fully modular design that allows for personalization (e.g., all skills can be presented in isolation or in any order based on pre-treatment assessment). We discuss the theoretical background for its development, an overview of the skills included in the treatment, as well as preliminary efficacy data.

Keywords: borderline personality disorder, five factor model, treatment

Conceptual Development and Case Data for a Modular, Personality-Based Treatment for Borderline Personality Disorder

Borderline personality disorder (BPD) is a costly and debilitating condition characterized by impairment across several areas of functioning (Sansone, 2004). In the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), diagnostic criteria for BPD include emotional difficulties (labile affect and intense anger), interpersonal problems (efforts to avoid abandonment and unstable relationships), behavioral dysregulation (chronic suicidality, self-injury, and other impulsive actions), identity disturbance (unstable self-image and chronic emptiness), and cognitive symptoms (transient dissociation and paranoia in response to stress; American Psychiatric Association [APA], 2013). A categorical diagnosis of BPD is assigned when a patient endorses five of nine criteria.

In addition to the categorical approach to diagnosing BPD, DSM-5 also includes a multidimensional diagnostic approach called the Alternative Model of Personality Disorders (AMPD; APA, 2013). Criterion A of the AMPD involves dimensional assessment of self (e.g., identity and self-direction) and interpersonal (e.g., empathy and intimacy) functioning, as difficulties in these areas are thought to define the core of personality disorders that distinguishes them both from healthy personality and other forms of psychopathology (Pincus, 2011). Criterion B involves the assessment of dimensional personality traits, organized into five broad domains (i.e., negative affectivity, detachment, antagonism, disinhibition, and psychoticism). Finally, Criteria C through G represent additional considerations when making a mental health diagnosis, including pervasiveness, stability, age of onset, discrimination from other mental disorders, and differentiation from the effect of substances, developmental state, or sociocultural environment. After establishing the presence of Criterion A above a threshold level, BPD is represented as elevations in Criterion B dimensions negative affectivity, disinhibition, and

antagonism.

The AMPD conceptualization of BPD is similar to other dimensional of models of psychopathology. For example, the Hierarchical Taxonomy of Psychopathology (HiTOP; Kotov et al., 2017) includes a general psychopathology factor (*p*) to characterize distress and impairment that may overlap with the AMPD's Criterion A (Widiger et al., 2019). Moreover, HiTOP describes six broad spectra (i.e., internalizing, disinhibited externalization, antagonistic externalizing, detachment, thought disorder, and somatoform) that largely conform to Criterion B dimensions in the AMPD. From a HiTOP perspective, BPD is characterized by the internalizing (i.e., negative affectivity) and antagonistic externalizing (i.e., antagonism) spectra. Similarly, the dimensions captured in the AMPD's Criterion B are isomorphic with trait domains of five factor model of personality (FFM; Costa & McCrae, 1990), a widely used paradigm for understanding individual differences.

The AMPD and Extant Treatments for BPD

Given that the field is moving toward a more dimensional, personality-based understanding of BPD (e.g., the ICD-11's formal adoption of a dimensional system for classifying personality disorders), it is important to consider how extant treatments for this condition, developed in the context of a categorical diagnostic system, remain relevant in a changing nosological landscape. We contend that existing interventions for BPD, in general, focus on a single AMPD Criterion B dimension of BPD (i.e., negative affectivity or antagonism). These treatments have amassed empirical support for their efficacy in addressing BPD (particularly for life-threatening symptoms; Kliem et al., 2010) and, importantly, at the group level, they do not appear to outperform each other (Cristea et al., 2017).

Dialectical behavior therapy (DBT; Linehan, 1993), perhaps the most well-known

intervention for BPD, is designed to target emotional difficulties, analogous to the AMPD

dimension of negative affectivity. Linehan (1993) describes BPD as a disorder of emotion

dysregulation, characterized by high sensitivity to emotion-provoking stimuli, strong emotional

responses, and slow return to baseline levels of arousal following a trigger. Although Linehan

(1993) argues these emotional vulnerabilities are exacerbated by environmental factors (e.g.,

invalidating caregivers), DBT is primarily focused on addressing emotion dysregulation. DBT

teaches patients cognitive-behavioral skills to tolerate (i.e., mindfulness, distress tolerance) and

change (i.e., emotion regulation, interpersonal effectiveness[1]) emotions and the situations that

elicit them. Meta-analytic findings suggest that DBT results in decreased suicidal thoughts and

behaviors, hospitalizations, and anger (Kliem et al., 2010).

On the other hand, several treatments for BPD target relationship difficulties/antagonism

(i.e., distrust, manipulativeness, oppositional tendencies; Mullins-Sweatt et al., 2012). Theorists

have suggested that agreeableness, the opposite pole of antagonism, is functionally related to

attachment styles that result from relationships with parents or other caregivers (Young et al.,

2003). Specifically, low levels of agreeableness are thought to develop from insecure,

ambivalent, and/or avoidant attachment styles (Bowlby, 1973) that, in adults, manifest as feeling

vulnerable in relationships and lead to the seemingly protective behaviors that characterize

externalizing psychopathology (e.g., acting cruel, isolating oneself, or seeking excessive

admiration from others; Young et al., 2003). Individuals with BPD display high rates of insecure

attachment styles (Agrawal et al., 2004), justifying the development of relationally-focused

interventions for this condition, including psychodynamic treatments, such as transference--

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[1] Although DBT's Interpersonal Effectiveness skill module targets interpersonal difficulties, it is largely focused on building assertiveness skills that will prevent unnecessary negative emotions in relationships. This module is not explicitly focused on addressing past interpersonal experiences that may contribute to mistrust in relationships (i.e., attachment difficulties).

focused therapy (TFP; Clarkin et al., 2001; Kernberg, 1984) and mentalization-based treatment (MBT; Bateman & Fonagy, 2004). Additionally, schema-focused therapy (SFT; Young et al., 2003) is a cognitive approach for personality disorders that includes techniques to challenge patterns of beliefs and behaviors about oneself and others (i.e., disconnection and rejection, impaired autonomy, impaired limits, other directedness). There is promising evidence that these interventions lead to reduced BPD symptoms and increased attachment security (Cristea et al., 2017; Levy et al., 2006; Vogt & Norman, 2019).

Limitations of Extant Treatments for BPD

The currently available approaches for treating BPD are typically intensive, long-term, and technically sophisticated, requiring extensive training and support for therapists. However, BPD is a highly heterogenous condition with 256 possible symptom combinations for any given person (APA, 2013). Patients with BPD often present with less severe symptoms (Trull et al., 1997), and emerging evidence suggests that shorter courses of care (e.g., systems training for emotional predictability and problem solving [STEPPS; Black et al., 2004]; good psychiatric management [Gunderson et al., 2018]; internet-based psychoeducation [Zanarini et al., 2017]), as well as abbreviated or alternative delivery schemes (i.e., stepped care) of existing treatments (Laporte et al., 2018), are efficacious for this population. Given long waitlists for specialist care, it may be useful develop treatment approaches that can be easily tailored based on severity.

Another limitation of existing treatments for BPD is that they generally focus on either emotional difficulties/negative affectivity or attachment insecurity/antagonism. Given the variability observed in BPD presentations, idiographic mechanisms likely contribute to a particular patient's symptoms (Cardona et al., 2020). For example, if an individual's interpersonal difficulties are most strongly associated with neuroticism (e.g., stressors prompting

strong emotions and temper outbursts serving to dampen negative affect), the treatment approach

would be different than if this symptom resulted from high levels of antagonism (perhaps

conferred through attachment difficulties from early life experiences). Of course, these putative

mechanisms are not mutually exclusive, so an individual patient with BPD can have elevations

on multiple personality dimensions. Given that extant treatments for BPD typically emphasize

either emotional vulnerability/neuroticism or attachment insecurity/antagonism, these

interventions may be incomplete for some individuals.

Finally, the AMPD conception of BPD (APA, 2013; Mullins-Sweatt et al., 2012)

underscores the relevance of disinhibition, and existing treatments for this condition do not

directly address this trait. Both emotion-based and relational conceptualizations of BPD provide

explanations for disinhibited, impulsive behaviors (e.g., self-injurious actions, substance use,

binge eating) that fit within the focus of their respective interventions. For example, although

Linehan's (1993) biosocial theory of BPD was updated to include early expressions of trait

impulsivity (Crowell et al., 2009), DBT focuses on rash actions in the context of strong

emotions. By promoting more effective emotion regulation, DBT purportedly reduces reliance

on impulsive behaviors that function to escape unwanted affective states. Relational approaches

to BPD view impulsive behaviors as occurring in interpersonal contexts (Levy, 2005) and

suggest that cultivating an increased ability to understand the motives of oneself and others

(Bateman & Fonagy, 2004) by repairing split-off object relations (Kernberg et al., 2008) reduces

the urge to act on impulses. However, relegating impulsive behaviors to emotional and

interpersonal contexts fails to account for mounting evidence that impulsivity in BPD may result

from heritable neural profiles associated with impaired response inhibition (van Zutphen et al.,

2015) that are independent from emotion-generating systems and early childhood experiences.

Thus, a comprehensive treatment for BPD must include strategies to address trait impulsivity.

Arguments for Personality-Based Treatment Recommendations for BPD

One of the major advantages of personality-based approaches to psychopathology (e.g., the AMPD) is that they can provide a comprehensive, multidimensional assessment of the features underlying individual patients' symptoms. These dimensional personality profiles can be created for each patient and used by clinicians to craft personalized treatment plans targeting the specific mechanisms that maintain symptoms for that individual (Samuel & Widiger, 2006). For example, AMPD's Criterion A level of personality dysfunction may be used as an overall severity metric to provide recommendations on the length or intensity of treatment. Additionally, if a patient endorses high levels of negative affectivity and disinhibition on Criterion B, treatment elements targeting these difficulties can be selected, while strategies targeting antagonism can be left out. Thus, assessing BPD with the AMPD can produce treatment plans that are comprehensive *and* efficient. Encouragingly, there is evidence that clinicians find that dimensional personality profiles are able to communicate important information, are easy to use, and are useful in treatment planning (Widiger & Mullins-Sweatt, 2010).

Dimensional models of psychopathology are also useful for understanding co-occurring conditions. BPD is characterized by a high degree of comorbidity with other forms of psychopathology (Zanarini et al., 1998), with estimates as high as 75% for lifetime co-occurrence with anxiety and depressive disorders (Grant et al., 2008) and 50% for substance use disorders (Carpenter et al., 2015). People with BPD and comorbid conditions respond more poorly to non-BPD focused treatments than those without BPD (e.g., Vignarajah & Links, 2009). However, rather than conceptualizing co-occurring disorders as discrete, categorical phenomena, comorbid conditions can be regarded as additional manifestations of shared underlying

mechanisms (Brown & Barlow, 2009). For example, in the HiTOP framework (Kotov et al.,

2017), a patient with BPD, social anxiety disorder, depression, and alcohol use disorder can be

conceptualized as displaying both internalizing and externalizing psychopathology. Thus, a

personality-based dimensional approach to understanding psychopathology provides higher-

order treatment targets that may simultaneously address comorbid conditions (Barlow et al.,

2014; Sauer-Zavala, Southward, & Semcho, 2020).

 Despite the advantages of personality-based conceptions of psychopathology and

treatment, these approaches are not currently well integrated in clinical practice. Several authors

(e.g., Bach & Presnall-Shvorin, 2020; Hopwood, 2018; Mullins-Sweatt et al., 2020) have

articulated strategies for using personality profiles to select individualized treatment approaches;

however, we contend that the substance of these recommendations may have resulted in

unintended barriers. First, the majority of the treatment recommendations based on personality

features involve matching existing interventions (e.g., interpersonal effectiveness in DBT) to

particular traits (e.g., antagonism; Hopwood, 2018; Mullins-Sweatt et al., 2020). This approach

requires that clinicians be trained in a variety of treatment protocols to provide comprehensive

care, perhaps limiting uptake (McHugh et al., 2009). Additionally, treatment recommendations

are often made at the facet level (Bach & Presnall-Shvorin, 2020). In the Five Factor Model,

each of the five broad domains of personality are composed of six facets, which would yield 30

distinct treatment approaches. Although this number of interventions is far fewer than the

number of protocols required to address each DSM diagnosis, it may still result in significant

therapist burden associated with learning a large number of treatments. Additionally, it is not

clear that the facets organized beneath a broad personality domain are functionally distinct,

warranting discrete treatment approaches. Thus, we argue that a single intervention to address

the broad domain level of personality provides a balance between comprehensive coverage of transdiagnostic personality dimensions, while being practical for therapists to learn and implement.

BPD Compass: A Customizable Treatment for BPD Based on Personality Profiles

We (REDACTED) sought to create a treatment package for BPD that was informed by the substantive dimensions (Criteria A and B) of the AMPD. BPD Compass, which loosely stands for Cognitive-behavioral Modules for Personality Symptoms, was developed to 1) synthesize decades of research on mechanisms maintaining BPD into a comprehensive treatment, 2) address gaps left by existing interventions, and 3) be maximally efficient and disseminable. Incorporating assessment of Criterion A provides a metric of overall severity, perhaps allowing clinicians to estimate the number of BPD Compass sessions needed to address a given patient's symptoms (see section on *Assessment and Personalization*) or determine whether an alternative treatment approach is more appropriate. Assessment of Criterion B is used to determine which BPD Compass modules will be presented; discrete modules were developed to target negative affectivity, antagonism, and disinhibition using commonly applied treatment strategies: identification of values, techniques to promote cognitive flexibility, behavior change principles (alternative action, exposures), and mindfulness training. In the section below, we describe the theory that underscores our approach to targeting relevant dimensions of personality, summarize the skills and exercises included in BPD Compass, and highlight the treatment gaps this intervention addresses. Finally, we describe the strategies we used to increase the likelihood that BPD Compass will integrate well with routine practice settings.

How Does BPD Compass Address Empirically Identified Mechanisms Maintaining BPD?

We view the personality dimensions included in Criterion B of the AMPD as a

framework to integrate decades of theoretical and empirical research on the nature of BPD.

Indeed, BPD Compass was designed to engage the putative mechanisms associated with negative

affectivity, antagonism, and disinhibition. We drew from emotion dysregulation (i.e., DBT, UP)

and attachment insecurity (i.e., TFP, MBT, SFT) perspectives on treating BPD to specify the

targets in the negative affectivity and antagonism modules, respectively, along with adding

content specific to disinhibition. Thus, although we are not proposing a completely new

conceptual framework for understanding this condition, BPD Compass' innovation lies in the

way this intervention provides comprehensive coverage of the putative mechanisms maintaining

BPD symptoms within a single intervention. In the section below, we briefly summarize the

existing theory that underscores the modules included in our treatment. Additionally, when

developing and testing a new treatment, it is important to confirm that the components included

in each module indeed engage hypothesized mechanisms. Based on (Kazdin, 2007)'s criteria for

determining whether a psychological process can serve as a mechanism of action, we have

planned to collect empirical support to test the mechanistic relations between strategies and

targets in BPD Compass; see the Research Agenda for BPD Compass section below).

Barlow and colleagues' functional model of neuroticism (Barlow, Ellard, et al., 2014;

Barlow, Sauer-Zavala, et al., 2014) posits that aversive reactions to frequently occurring negative

emotions prompt the use of emotionally avoidant coping strategies (e.g., self-injurious behaviors,

binge eating, substance use) that paradoxically result in more frequent and intense negative

emotions (i.e., exacerbating and maintaining negative affectivity; Bullis et al., 2019). By

contrast, sustained decreases in the frequency of negative emotions, achieved by targeting

aversive/avoidant responses to emotions, may constitute decreases in negative affectivity (for a

description of what constitutes trait change, see Magidson et al., 2014). Transdiagnostic

behavioral interventions targeting aversive reactivity have been associated with significantly larger decreases in neuroticism than symptom-focused protocols (Sauer-Zavala, Fournier, et al., 2020) and improvements in negative affectivity in transdiagnostic treatments may even predict symptom reduction (Stumpp et al., in preparation).

Antagonism, characterized by distrust, manipulativeness, and oppositionality (Mullins-Sweatt et al., 2012), is associated with strained interpersonal relationships and is a risk factor for developing externalizing psychopathology (Anderson et al., 2007; Kotov et al., 2010; Miller et al., 2003). Higher levels of antagonism are associated with insecure attachments to childhood caregivers, which can manifest in adulthood as behaviors that function to protect a person in interpersonal contexts perceived as threatening (Young et al., 2006). Here, attachment insecurity represents an actionable functional mechanism linking the personality trait of antagonism to externalizing symptoms, akin to the role of aversive reactivity in the relation between neuroticism and negative emotions. Emerging research suggests that improving patients' ability to consider others' perspectives, along with challenging negative schemas about oneself and others, improves attachment security in adults (Levy et al., 2006; Vogt & Norman, 2019).

Finally, disinhibition, or trait impulsivity, is characterized by sensation-seeking (the tendency to seek out novel and thrilling experiences), lack of deliberation (the tendency to act without thinking), lack of persistence (an inability to remain focused on a task), and urgency (the tendency to act rashly in response to positive and negative emotional experiences; Cyders et al., 2007; Whiteside et al., 2005). Roberts and colleagues have published several theoretical accounts of how to alter this trait in treatment (Magidson et al., 2014; Roberts et al., 2017). They suggest that individuals' expectancies about their performance on certain tasks, along with how much they value these actions, predict conscientious behaviors (e.g., paying bills on time, subjugating

impulses that would be gratifying in the short-term; Eccles, 2009). Others have suggested that trait impulsivity is maintained by high reward orientation such that disinhibited individuals will continue to pursue rewards (e.g., relief from negative emotions, substance-related highs) despite negative consequences (Carver & White, 1994; Gray, 1987). Thus, intervention strategies that focus on values, provide immediate (reinforcing) feedback on progress, and engage performance expectancies may be particularly useful for this trait (Magidson et al., 2014).

What Skills/Activities Are Included in BPD Compass?

BPD Compass consists of four skill domains applied to the core personality-based mechanisms described above (i.e., negative affectivity, antagonism, disinhibition; Table 1). These domains include values identification, skills for thinking (i.e., cognitive flexibility), skills for doing (i.e., alternative actions, exposure), and skills for being (i.e., mindfulness training). What makes our treatment different from the typical provision of these skills is the explicit focus on emotion tolerance, trust, and delay of impulsive gratification.

Introduction and case conceptualization. The initial session is focused on psychoeducation about BPD and an overview of treatment content. The therapist first reviews symptoms of BPD and any other conditions the patient is experiencing and then describes how these difficulties can be explained by three risk factors: attempts to push away frequent strong negative emotions, difficulty trusting others, and difficulty resisting the urges to act impulsively. Patients are asked to reflect on how these three issues manifest in their own lives and the therapist explains that treatment will focus on helping them 1) tolerate emotions, 2) test the extent to which they can trust others in their lives, and 3) delay acting on urges in order to live in accordance with long-term goals. The major theme across all modules/skills is that patients often pursue short-term relief (escape from emotions, engaging in protective relationship behaviors,

engaging in satisfying impulsive actions) that limits their ability to live in line with their values. This conceptualization is described in the first session and is brought up explicitly in subsequent sessions.

Identifying and Approaching Values. Next, patients spend at least two sessions identifying their values and considering the extent to which they are currently living in accordance with them. To identify personal values, patients are provided with a list of domains (e.g., family, career, spirituality) and asked to answer prompting questions (e.g., what does this domain mean to you, what qualities do you want to embody in this domain). These procedures were inspired by acceptance and commitment therapy (Hayes et al., 1999) and values-based behavioral activation (Hopko et al., 2003). In BPD Compass, values identification is conducted at the beginning of treatment to foster the therapist's understanding of the patient beyond their symptoms and create a standard against which to evaluate the patient's behaviors (e.g., "is this action in line with your values?") to motivate change. Specifically, patients are encouraged to consider both the short- and long-term effects of their behaviors to reflect on whether they are moving closer to their values. Although values identification may involve negative affectivity, antagonism, and disinhibition, values-focused work is particularly in line with Magidson's et al. (2014) recommendations for targeting disinhibition.

Skills for Thinking. Using patients' values as guiding principles, the cognitive skills in BPD Compass are designed to help patients practice flexible thinking around emotion-provoking situations, maladaptive schemas about relationships, and beliefs about their inability to resist impulsive urges. At its core, cognitive flexibility involves identifying overly negative, biased, or ineffective thoughts and considering alternative interpretations to better evaluate the evidence for these thoughts (Beck et al., 1987). Patients use a standard thought record form throughout these

sessions to assist in the examination of their thoughts, which are subjected to challenging

questions as a means to generate alternative perspectives. To address intolerance of emotions,

specifically, patients are encouraged to generate alternative appraisals for thoughts about

emotions themselves (e.g., "I always overreact" becomes "given my previous experiences in

similar situations, it makes sense my gut reaction would be strong").

BPD Compass also incorporates two supplemental activities to address unhelpful

thinking patterns in relationships and in response to triggers for impulsive actions. With regard to

thoughts about relationships, patients are asked to examine multiple dimensions of trust (e.g.,

paying back a debt, taking care of a child) for significant others in their lives. Drawn from

cognitive processing therapy (Resick et al., 2016), this technique is designed to challenge all-or-

nothing thinking regarding the trustworthiness of other people by asking patients to evaluate the

degree to which they trust each person in their life on each dimension. For thoughts about

impulses, BPD Compass patients are asked to explore the functional origin of their impulsive

urges and related thoughts. For example, the functional origin of sensation-seeking urges may be

the thought that "nothing feels as good as the rush I get from sex." Finally, patients can have an

optional overview/wrap-up session to either troubleshoot particularly difficult thoughts or

practice identifying and challenging core beliefs that the patient or therapist may have noticed

throughout the prior cognitive-focused sessions.

Skills for Doing. BPD Compass incorporates common principles of behavior change by

encouraging patients first to identify unhelpful emotional, relationship, and impulsive actions

and then practice behaviors that bring patients closer to their values. Patients are first oriented to

the negative reinforcement cycle of unhelpful behaviors (Barlow, 2002). For example, although

self-injuring during an altercation with a loved one may satisfy the urge to reduce intense

emotions, it prevents patients from learning that emotions and urges can be tolerated and may also lead to poor health and relationship outcomes. Skills for Doing are designed to break the cycle of negative reinforcement and facilitate 1) an approach-oriented stance towards experiencing emotions, 2) a willingness to feel vulnerable and build trust in relationships, and 3) an ability to resist immediately responding to urges. The two primary behavioral strategies used are alternative action and exposure. Alternative action refers to replacing a current unhelpful behavior with a more adaptive one, whereas exposures are used when a patient avoids situations that may elicit strong emotions or urges. Continuing with the example above, a patient may practice speaking calmly and actively listening when communicating (i.e., alternative action) or initiating a difficult conversation (i.e., exposure) with a loved one, rather than engaging in self-injury. Patients use a tracking form to identify unhelpful emotional, relationship, and impulsive behaviors and plan specific alternative actions and exposure ideas to practice between sessions.

Skills for Being. BPD Compass also includes mindfulness training to cultivate present-focused, non-judgmental attention. Patients practice nonjudgmentally observing the thoughts, physical sensations, and behavioral urges that arise in response to emotion-provoking situations, interpersonal conflicts, and triggers for impulsive actions. This is accomplished via three formal meditation exercises focused on each BPD-relevant personality dimension. The meditation focused on emotions is adapted from Mindfulness Based Cognitive Therapy (Segal et al., 2013) and encourages patients to observe the internal experiences that arise naturally, whereas the relationship-focused and urge-focused meditations ask patients to bring to mind a recent conflict or triggering stimulus (e.g., a party, a specific substance). Beyond the formal meditation, patients practice and track their nonjudgmental, present-moment attention in real-time situations. Finally, an optional session may be used to deepen or troubleshoot patients' practice with mindfulness.

Assessment and Personalization. The delivery of BPD Compass can be personalized based on information provided by Criteria A and B of the AMPD. Criterion A can be assessed with the Level of Personality Function Scale Brief 2.0 (LPFS; Weekers et al., 2019), which provides an overall severity rating of a patient's self and relationship dysfunction. It may be possible to use this information to personalize the length of treatment with BPD Compass required to observe symptom remission or to determine if a more intensive or focused intervention is necessary. Empirical data is needed to determine if the LPFS can be used in this manner (see our *Research Agenda for BPD Compass* Section for more information).

Additionally, given that the dimensions included Criterion B are closely related to the FFM, a well-established personality paradigm, a range of psychometrically-sound assessment tools can be applied (Sleep et al., 2021). For instance, measures assessing the range of normal personality (NEO Personality Inventory-3; McCrae et al., 2005; International Personality Item Pool; Donnellan et al., 2006; Maples et al., 2014; Big Five Inventory-2 [BFI-2]; Soto & John, 2017) range in length from 10 to 300 items, allowing researchers/clinicians to choose the level of specificity for their assessment. However, some authors have speculated that measures of normal personality do not capture the full range of functioning for those with personality disorders (Krueger et al., 2012) and created FFM-based instruments for BPD. The Five-Factor Borderline Inventory (Mullins-Sweatt et al., 2012) and its short form (DeShong et al., 2016) provide coverage of maladaptive variants of neuroticism, agreeableness, and conscientiousness. Finally, although not BPD-specific, the Personality Inventory for DSM-5 (Krueger et al., 2012) also captures more extreme presentations of the FFM relevant to personality disorders.

Thus, there is a wide pool of instruments that can be used to assess and personalize BPD Compass. These instruments can generate personality profiles to identify relative areas of

elevation (i.e., high antagonism relative to scores on other FFM domains), as well as absolute

elevations (i.e., high antagonism compared to normative data). These data can then be used to

select relevant modules from BPD Compass. BPD Compass was developed to be fully modular

so that skills addressing neuroticism, antagonism, or disinhibition could be presented in isolation

or in any order to prioritize areas of greatest need. If a patient exhibits elevations on all three

domains targeted by BPD Compass, we recommend providing 16-18 sessions (Table 1).

However, if a patient only displays clinically relevant elevations in one domain, fewer session

may be needed.

For an example of FFM profiles using the BFI-2 from our current trial evaluating the

efficacy of BPD Compass in a sample of individuals meeting DSM-5 criteria for BPD, see

Figure 1. Case A displays high neuroticism and average levels of agreeableness and

consciousness, suggesting treatment might prioritize skills for addressing aversive reactions to

emotions. Case B and Case C demonstrate high neuroticism along with deficits in one additional

personality dimension, conscientiousness and agreeableness, respectively. Finally, Case D

exhibits high neuroticism, low agreeableness, *and* low conscientiousness, suggesting the

comprehensive approach taken by BPD Compass would be warranted. Although it is currently

unknown which personality measures provide the most predictive utility for selecting BPD

Compass modules or whether facet-level scores provide important information beyond domain-

level scores for personalizing treatment, we are currently collecting data to address these

questions (see Research Agenda section below).

How Does BPD Compass Address Gaps in the Existing Treatment Options for BPD?

BPD Compass was developed to address patient and provider-level gaps in the current

treatment offerings for BPD. We view BPD Compass as a complement to existing evidence-

based treatments for this condition. Given that BPD is relatively common in outpatient samples

and many patients with BPD display less severe symptoms (Goldberg, 2001), we contend that

many patients with BPD may not *require* the longer-term, more intensive treatments that have

amassed the most research support to date. Thus, BPD Compass was explicitly developed to be

relatively short-term, delivered in its entirety in 16-18 weekly sessions (i.e., 4-5 months).

Directing patients with less severe symptoms to shorter-term interventions delivered by

generalist providers may free up space on specialist caseloads for those that truly need this level

of care (see Laporte et al., 2018 for evidence on using stepped care approaches in treatment for

BPD). Moreover, because BPD Compass is composed of well-known therapeutic strategies (i.e.,

cognitive flexibility, behavior change/exposure, mindfulness training) that are frequently trained

in graduate programs, we believe this approach can be easily integrated into routine practice. In

our current trial evaluating the efficacy of BPD Compass, most study therapists are graduate

students with less than one year of clinical experience who have generally been able to

competently deliver the intervention.

     Despite the intended brief duration of BPD Compass, we also view this intervention as a

comprehensive package that addresses the core personality-based mechanisms implicated in the

development and maintenance of BPD. Instead of primarily focusing on emotion dysregulation

or attachment insecurity, BPD Compass contains skills to address neuroticism, antagonism, and

trait impulsivity (disinhibition). Additionally, BPD Compass is the first treatment to our

knowledge for this condition that was explicitly designed to be customizable based on the

mechanistic factors maintaining each patient's symptoms. As described previously, existing FFM

questionnaires can be used to determine the personality dimensions that characterize individual

patients and corresponding BPD Compass modules can be applied.

How Was BPD Compass Developed to be Disseminable?

Many people with BPD may have particularly pronounced difficulties accessing care (Lawn & McMahon, 2015). For example, in the United Kingdom, BPD has only recently been considered a diagnosis that mental health providers are responsible to treat (NICE, 2009). When care is available, people with BPD may experience substantial stigma from providers (Rogers & Acton, 2012), many of whom refuse to treat patients with BPD (Sulzer, 2015). Unfortunately, access to specialist providers with the expertise and inclination to treat BPD is limited (Iliakis et al., 2019), and many patients lack the financial resources to afford gold-standard, intensive care (Tomko et al., 2014).

Given these barriers to accessing mental healthcare, we contend that any new treatment must consider dissemination issues during development. Our goal was to create an intervention that 1) could be applied in generalist mental healthcare settings and 2) would be relatively easy to train across various professions (e.g., social workers, licensed mental health counselors, psychologists, psychiatrists). Although we fully acknowledge that severe forms of BPD require intensive specialist treatments such as DBT, TFP, SFT, or MBT, there is evidence that usual care is still quite beneficial (Finch et al., 2019) when individuals with this condition can actually receive it. Thus, we designed BPD Compass to be delivered in weekly, 50-minute outpatient sessions in line with typical service delivery models. Additionally, both patient-level factors (e.g., difficulty affording treatment; Tomko et al., 2014) and system-level factors (e.g., long waitlists) underscore the need for efficient, yet flexible treatments (Southward et al., 2020). Although a full course of BPD Compass lasts 16-18 sessions, it could be completed in as few as 9 sessions for patients with dysfunction in only one personality dimension (though it is an empirical question whether this brief of treatment would be sufficient). This flexibility makes

BPD Compass ideally suited to a stepped care approach to BPD (Laporte et al., 2018).

Another important consideration for maximizing widespread dissemination of an intervention is the burden placed on clinicians to deliver it. BPD Compass is a manualized cognitive-behavioral treatment (CBT) with a patient workbook (REDACTED, 2020) and therapist guide (REDACTED, in preparation). By providing clear guidance on the application of this treatment for clinicians in a familiar format (i.e., workbook chapters corresponding to session-by-session material), any mental health provider that is inclined to work through BPD Compass with their patients will be able to more quickly learn and apply it. Although we do offer consultation/training services, we explicitly view these offerings as enriching one's practice, rather than necessary to provide the treatment. Finally, we elected to use a cognitive-behavioral approach given that CBT is reported as the primary theoretical orientation by most providers in typical mental health service settings (Wolitzky-Taylor et al., 2019) and most training programs for clinical psychology focus on developing student competencies in delivering CBT (Heatherington et al., 2012). Although we believe that adopting a manualized, CBT approach increases the disseminablility of BPD Compass, it is important to note that the eclectic use of other theoretical orientations is not precluded; indeed, psychodynamic or interpersonal techniques that use the patient's relationship with their therapist as a vehicle for new learning can be integrated within structured CBT exercises (Westen, 2000). Overall, by making it clear that BPD can be successfully treated in generalist settings, stigma associated with this condition may be diminished.

What is Our Research Agenda for BPD Compass?

We are currently evaluating the efficacy for BPD Compass with an RCT in which patients are assigned to receive this treatment immediately upon enrollment in the study or

following an 18-week delay (clinicaltrials.gov registration: REDACTED); all study procedures

are approved by our local institutional review board. This design allows us to compare BPD

Compass to waitlist; however, because all participants eventually receive the intervention, we

will collapse the immediate and delayed treatment conditions to increase our power for within-

group analyses. Given that this study represents the first evaluation of this novel intervention, we

elected to deliver all skills/mechanistic modules to all participants rather than personalizing

delivery based on pre-treatment assessment.

To date, we have enrolled 37 patients (14 assigned to immediate treatment and 15

assigned to delayed treatment) out of our projected N of 50 individuals. Patients are included if

they meet DSM-5 criteria for BPD (assessed via clinician administration of the Structured

Clinical Interview for DSM-5 Personality Disorders; First et al., 1997), agree to refrain from

concurrent behavioral treatment, and agree to remain on a stable dose of psychotropic

medication. Exclusion criteria are based solely on the well-being of participants and include

difficulties that would warrant the prioritization of alternative care: 1) uncontrolled bipolar I

disorder or psychotic/delusional symptoms (i.e., a manic episode or delusions/hallucinations in

the past 12 months), 2) acute suicidal intent requiring immediate hospitalization, and 3) an

untreated substance use disorder that would be better addressed with supervised detoxification

and or medication management. Of note, our recruitment materials did not mention acute

suicidal intent as a rule out. Of the 59 individuals that completed a study intake, none were

excluded for acute suicidality, although many endorsed ideation. This sample composition is in

line with epidemiological data suggesting that 80-97% of individuals with BPD are not actively

suicidal (i.e., did not attempt suicide in the past year; Grilo & Udo, 2021; Yen et al., 2021),

underscoring the need for treatments focused on less-severe individuals.

Given that there have been several theoretical accounts of how to directly treat the personality-based domains included in dimensional models of psychopathology (AMPD, HiTOP; e.g., Bach & Presnall-Shvorin, 2020; Hopwood, 2018; Mullins-Sweatt et al., 2020), we wanted to include preliminary efficacy data to demonstrate the utility of a personality-based approach to BPD. Nine patients assigned have completed a full course of care with BPD Compass. Outcome data for each individual can be viewed in Table 2. Six of nine patients demonstrated statistically significant improvements in BPD symptoms and depressive symptoms, and six of nine patients demonstrated change in anxiety symptoms in the expected direction. This initial review of patient improvement on our trial is consistent with novel treatment development recommendations (Barlow et al., 2008). If the first cases treated with a newly developed intervention do not demonstrate the anticipated effect, treatment can be refined before substantial resources are used for a large-scale trial. The pattern of results demonstrated by the first nine BPD Compass treatment completers suggests that this intervention has promise as a short-term intervention for BPD and commonly co-occurring symptoms (i.e., anxiety and depression).

Given that BPD Compass was developed to address personality dimensions related to BPD, we also plan to examine whether these dimensions and their putative mechanistic processes (i.e., aversive reactivity to emotions, attachment insecurity, goal-pursuit expectancies), change over the course of treatment. Kazdin (2007) has proposed five criteria for determining whether a psychological process can serve as a mechanism of change: 1) finding a strong association between the mechanism of action and the outcome, 2) establishing temporal precedence where change in the mechanism of action precedes changes in the outcome, 3) manipulating the levels of the mechanisms to determine how they relate to outcomes; 4) identifying a dose-response relationship where greater change in a mechanism of action leads to

better outcomes, and 5) replicating findings. The design of our trial will allow us to test Kazdin's

first, second, and fourth criteria. Specifically, we are conducting weekly repeated measurement

of BPD symptoms, relevant personality domains, and intermediary mechanisms.

Finally, because we are currently testing BPD Compass in its entirety, we will be unable

to determine whether skills associated with a particular personality domain uniquely engage their

intended target. Thus, our immediate next step will be to conduct a component analyses of BPD

Compass in which skills associated with each higher-order personality trait will be presented in

isolation to determine if they result in improvement on these dimensions. Additionally, given

that the delivery of BPD Compass modules can be personalized, it will also be important to

compare trajectories of improvement across patients who receive tailored modules of BPD

Compass versus those who are treated with the standard, full protocol. Another area for future

research is to determine whether the AMPD's Criterion A can be used to predict a dose response

to BPD Compass or whether it can indicate whether a more intensive treatment is warranted.

Conclusions. The purpose of this manuscript is to provide the conceptual background for

a novel, short-term intervention for BPD that maps on to Criteria A and B of the AMPD. BPD

Compass was developed to incorporate recent research on dimensional models of personality

pathology into a comprehensive, yet customizable, treatment protocol. This intervention includes

components to address negative affectivity, antagonism, and disinhibition, and was conceived to

be fully modular such that pre-treatment personality profiles can be used to personalize the

selection of modules presented. BPD Compass was developed explicitly as a short-term option

for addressing BPD that can complement existing, higher-intensity interventions. Preliminary

patient data suggests that BPD Compass is a promising approach to addressing BPD and

commonly co-occurring conditions, warranting continued empirical study.

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Table 1

BPD Compass Skills and Goals

Skills Domains	Workbook Chapters	Number of Sessions	Therapeutic Goal
Introductory Content	What is BPD? About This Treatment	1	• Review patient symptoms and conceptualize them within the three personality dimensions associated with BPD • Introduce the skills covered in the treatment
Values Work	Identifying Your Values Approaching Your Values	2	• Encourage patients to reflect on their values in various life domains • Provide a framework for patients to monitor their (emotional, interpersonal, and impulsive) triggers and evaluate whether their responses (feelings, thoughts, behaviors) are in line with their values
Skills for Thinking	Cognitive Flexibility for Emotions Cognitive Flexibility for Relationships Cognitive Flexibility for Impulses	3 - 4	• Encourage patients to evaluate their automatic thoughts (and generate alternative responses) in emotion eliciting situations, as well as about emotions themselves • Encourage patients to evaluate automatic thoughts about themselves and others (and generate alternative responses), with specific attention to black-and-white thinking and consideration of the varied ways one can trust another person • Encourage patients to evaluate automatic thoughts about their ability to follow through on goals, make cohesive plans, engage in rash actions in response to emotions, and inappropriately seek out sensations.
Skills for Doing	Changing Emotional Behaviors Changing Relationship Behaviors Changing Impulsive Behaviors	6	• Identify patients' emotionally avoidant behaviors and plan alternative actions and exposures that encourage approach-oriented behaviors. The goal is to facilitate new learning that emotions can be tolerated • Identify patients' unhelpful relationship behaviors and plan alternative actions and exposures that allow patients to test hypotheses about others' motives. The goal is to facilitate new learning that the patient can be safe in relationships • Identify patients' impulsive behaviors in four domains (problems making plans, problems following through, emotion-driven impulses, and sensation seeking) and plan alternative actions/exposures for these areas. The goal is to facilitate new learning that the urges will subside if not reinforced.
Skills for Being	Mindfulness of Emotions Mindfulness of Relationships Mindfulness of Impulses	3 – 4	• Cultivate a non-judgmental present-focused stance toward emotional experiences using meditation and "in the moment" activities • Cultivate a non-judgmental, present-focused stance toward other people (observing facial expressions, body language, words used) using meditation and "in the moment" activities • Cultivate a nonjudgmental, present-focused stance in response to impulses using meditation and "in the moment" activities
Relapse Prevention	Recognizing Accomplishments and Looking to Your Future	1	• Evaluate progress (symptom improvement, skill cultivation) and create a plan for continued practice after treatment has ended.

Table 2

Change in BPD, Anxiety, and Depressive Symptoms in Patients Treated With BPD Compass

	Anxiety Symptoms 95% CI = CS ± 3.78			Depressive Symptoms 95% CI = CS ± 3.42			BPD Symptoms 95% CI = CS ± 5.54		
	Pre-treatment	*Post-treatment*	*Change Score (95% CI)*	*Pre-treatment*	*Post-treatment*	*Change Score (95% CI)*	*Pre-treatment*	*Post-treatment*	*Change Score (95% CI)*
Patient 1	9.00	4.00	-5.00* (-8.78, -1.22)	8.00	2.00	-6.00* (-9.42, -2.58)	11.00	5.00	-6.00* (-11.54, -.46)
Patient 2	11.00	10.00	-1.00 (-4.78, 2.78)	11.00	8.00	-3.00 (-6.42, 0.42)	17.00	10.00	-7.00* (-12.54, -1.46)
Patient 3	16.00	11.00	-5.00* (-8.78, -1.22)	18.00	10.00	-8.00* (-12.42, -4.58)	16.00	13.00	-3.00 (-8.54, 2.54)
Patient 4	9.00	9.00	0.00 (-3.78, 3.78)	7.00	14.00	7.00^ (3.58, 10.42)	19.00	11.00	-8.00* (-13.54, -2.46)
Patient 5	9.00	8.00	-1.00 (-4.78, 2.78)	8.00	4.00	-4.00* (-7.42, -.58)	10.00	5.00	-5.00* (-10.54, .54)
Patient 6	17.00	14.00	-3.00 (-6.78, .78)	19.00	15.00	-4.00* (-7.42, -.58)	10.00	10.00	0.00 (-5.54, 5.54)
Patient 7	8.00	11.00	3.00 (-.78, 6.78)	11.00	0.00	-11.00* (-14.42, -7.58)	7.00	1.00	-6.00* (-11.54, -.46)
Patient 8	10.00	2.00	-8.00* (-11.78, -4.22)	5.00	0.00	-5.00* (-8.42, -1.53)	8.00	0.00	-8.00* (-13.54, -2.46)
Patient 9	5.00	5.00	0.00 (-3.78, 3.78)	6.00	5.00	-1.00 (-4.42, 2.42)	4.00	0.00	-4.00 (-9.54, 1.54)

Note. Negative change scores indicate decreases on a given measure, positive change scores indicate increases. Anxiety symptoms were measured by the Overall Anxiety Severity and Interference Scale (OASIS), depressive symptoms were measured by the Overall Depression Severity and Interference Scale (ODSIS), and BPD symptoms were measured with the Zanarini Rating Scale for Borderline Personality Disorder Symptoms (ZAN-BPD). Significance of within-participant change (from pre- to post-treatment) was evaluated by calculating a 95% confidence interval (CI) around observed change scores to determine reliability of changes (Au et al., 2017). Jacobson and Truax's (1991) method was used to calculate standard error of the difference (S_{diff}). SDs and internal consistency coefficients from the following psychometric studies were used for the OASIS (Norman et al., 2006), ODSIS (Bentley et al., 2014), and ZAN-BPD (Zanarini et al., 2015). Listed at the top of each column is the value used for each measure to calculate the 95% CIs around each raw change score. * Indicates statistically significant change score. CS = change score. CI = confidence interval.
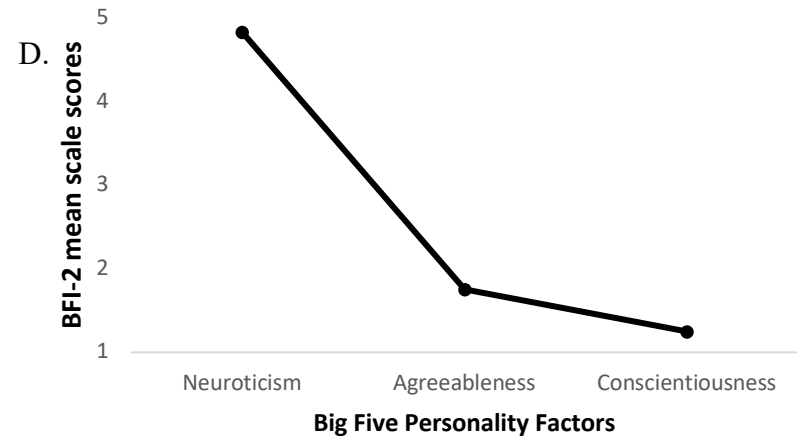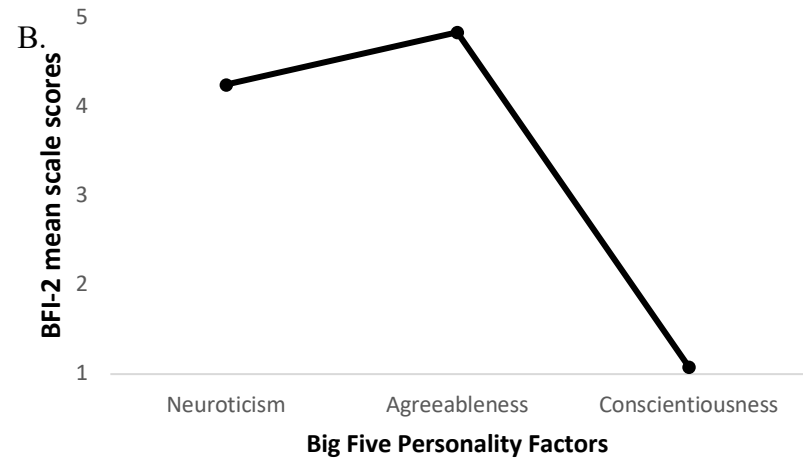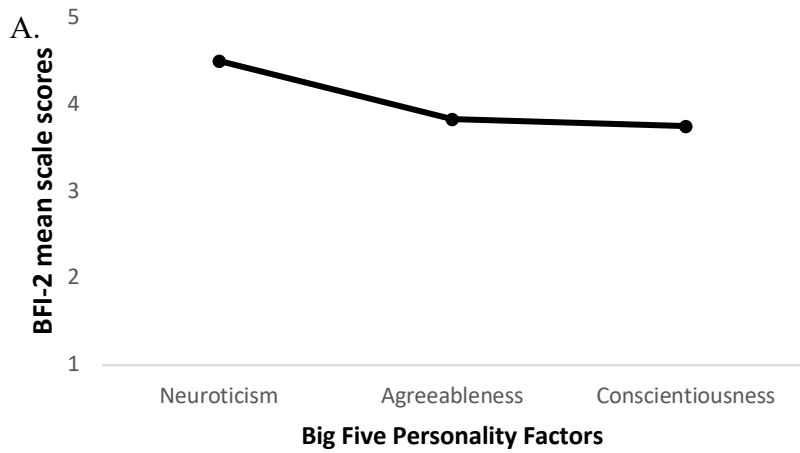
Figure 1

Figure 1. Five Factor Model profiles for four patients (A, B, C, D) diagnosed with borderline personality disorder. BFI-2 = Big Five Inventory-2.