Borderline Personality Disorder, Comorbid Disorders, and Effective Treatments: A Theoretical Review

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I, Erin Moran, pledge my word that I have abided by the Washington College Honor Code while completing this assignment

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Abstract

Borderline Personality Disorder, Posttraumatic Stress Disorder, Anorexia Nervosa, Bulimia Nervosa, and Alcohol Use Disorder are all disorders that can affect an individual singularly or comorbidly. Using a plethora of research on BPD, PTSD, ED, AUD, treatment options, affect, regulation, and dysregulation, treatment topics are critically evaluated to understand the symptoms they target and effectiveness. DBT was found to be the more efficacious treatment for BPD while DBT+PTSD, DBT+DBT PE, CRT, CBT, and Lamotrigine with inclusion of DBT were found to be efficacious for their respective comorbid disorders. However, these treatment options can also aid general symptoms of BPD as well. More research would be beneficial for ED especially when comorbid with BPD. Clinicians can use this research to determine the best treatment for BPD and comorbid diagnoses.

Introduction

Borderline Personality Disorder (BPD) is a Personality Disorder that affects a multitude of people worldwide. In a survey done by Ellison et al (2018), about 1.6% of the general population suffers from BPD while 20% of the psychiatric inpatient population has BPD. Borderline Personality Disorder is a complex disorder characterized by an individual's inner experience and how their behaviors deviate from societal and cultural expectations of the individual (American Psychiatric Association, 2013). The extenuating and complex pathology of Borderline Personality Disorder reflects a wide range of developmental issues that requires a "highly individualized and attuned" therapeutic and medicinal intervention (Bauer, 1991).

With any illness comes the possibility of comorbidities. Comorbidities involve the presence of two or more diseases or conditions in a patient. The studies of comorbidities offer strong arguments for clinicians that the boundaries between many disorder "categories" are far

more fluid. Additionally, the symptoms associated with a single disorder can occur at varying levels in other disorders (American Psychiatric Association, 2013). Since the recognition of comorbidities within diagnosis, the DSM and other disease classification resources have become more accommodating in terms of dimensional approaches, analysis, and diagnosis of disorders that "cut across current categories" (American Psychiatric Association, 2013). In terms of Borderline Personality Disorder, many other disorders and illnesses can take place at the same time. For the purpose of this study, Borderline Personality Disorder and common comorbid disorders such as Post Traumatic Stress Disorder, Eating Disorders, and Substance Abuse Disorders will be critically evaluated in order to answer the question: Is the most effective BPD treatment reliant on the comorbidities associated with the diagnosis? Put another way: can an individual who is treated for BPD and PTSD receive better and more effective treatment than an individual battling BPD and an Eating Disorder or a Substance Use Disorder?

Personality Disorders

Personality Disorders are categorized into three separate groups, or clusters; these clusters include a number of personality disorders that are categorized by similar symptoms. Borderline Personality Disorder falls into the cluster B category which is mainly characterized by dramatic, overly emotional, or unpredictable thinking or behaviors (American Psychiatric Association, 2013). In this cluster, there lies four separate disorders: Personality, Borderline Personality, Histrionic, and Narcissistic Personality Disorders (American Psychiatric Association, 2013). Borderline Personality Disorder (BPD) is a personality disorder in which there is a "pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity" (American Psychiatric Association, 663). This disorder typically begins in early adulthood and can be presented in a variety of different ways due to chronic instability

(American Psychiatric Association, 2013). Borderline Personality Disorder is also among one of the most prevalent diagnoses in clinical settings—most prevalent in emergency rooms and inpatient unites (Paris, 2013). However, this diagnosis is often not disclosed due to urgent encounters, self-destructive behaviors, and non-definitive treatment plans (Zimmerman & Morgan, 2013). One of the most urgent cases for BPD diagnoses and treatment involves suicide attempts, which is associated with identifying disturbances, frantic efforts to avoid abandonment, and emptiness for individuals suffering with Borderline Personality Disorder (Yen et al., 2021).

In order to diagnose an individual with this disorder, they must display at least five of the following criteria: frantic efforts to avoid real or imagined abandonment; patterns of unstable or intense interpersonal relationships alternating between extremes of idealization and devaluation; identity disturbances; impulsivity in at least two areas that can be self-damaging such as spending, sex, substance abuse, reckless driving, or binge eating; have recurrent suicidal behavior, gestures, threats, or self-mutilating behavior; affective instability marked reactivity of mood; a chronic feeling of emptiness, inappropriate, intense anger; difficulty controlling anger; or transient, stress-relation paranoid ideation or severe dissociative symptoms (American Psychiatric Association, 2013). As these symptoms center around uncontrollable urges of emotion, identity disturbances, impulsivity, and behaviors such as self-harm, it proves important to analyze the concepts of affect, regulation, and dysregulation in regard to an individual's struggle with BPD.

Affect, Regulation, and Dysregulation

Affect refers to the underlying experience of feeling, emotion, or mood which ranges from suffering to elation (APA Dictionary of Psychology). However, when referring to Borderline Personality Disorder, there tends to be a higher presence of negative affect – poor

mood or feelings – than positive affect (Van Dijke et al., 2013). While many individuals can effectively regulate their emotions, individuals with BPD cannot. In fact, affect dysregulation is considered one of the core symptoms of BPD (Van Dijke et al., 2013). This dysregulation is often considered "underregulating" – a deficiency in the capacity to control emotions which results in them being expressed in intense, overwhelming, and uncontrolled forms (Van Dijke et al., 2013). Furthermore, more recent research on Borderline Personality Disorder suggests individuals might employ another form of affect dysregulation known as "overregulation" – a numbering of emotions and inability to fully recognize, accept, and articulate one's emotions (Van Dijke et al., 2010). The range of this dysregulation may even be able to determine the severity of the disorder in a given individual (Van Dijke et al., 2010). Affect regulation and dysregulation is motivated by an individual's experience of feelings as well as outside influences such as alcohol, drugs, sex, and other underlying disorders; this puts those with BPD at risk for substance abuse, as they are more prone to risk taking behaviors.

Alcohol and Drug Influences on Affect

Affect dysregulation and regulation can be influenced by outside sources such as alcohol and drug use. For example, when any individual, those who have BPD or not, consumes alcohol, they are doing so to experience a reward that falls in the line of two dimensions: valence, positive and negative rewards, and locus, internally or externally focused rewards (Wycoff et al., 2020). These internal focused motives relate to drinking problems while externally focused motives relate to more moderate drinking (Wycoff et al., 2020). These then result in different motives such as enhancement (positive-internal), coping (negative-internal), social (positive-external), and conformity (negative-external) (Wycoff et al., 2020). Thus, drinking to enhance positive affect requires an elevated quantity and frequency of use while drinking to cope with

negative affect is associated with risky behaviors, academic and career problems, and the possible development of alcohol dependency (Wycoff et al., 2020). In a study done by Wycoff (2020), persons with Borderline Personality Disorder were analyzed in relation to their alcohol use. Individuals with BPD often drink to change their affective states, mostly to cope and try to enhance their negative affect which is a common symptom of BPD (Wycoff et al., 2020). It was found that about half of the individuals in the study who had been diagnosed with BPD met the criteria for alcohol use disorder as well (Wycoff et al., 2020). This is suggested to be due to the emotional instability and high reports of negative affect that a person with BPD experiences and, thus, resorts to alcohol use as an attempt to cope (Wycoff et al., 2020). As an individual may resort to alcohol use in determination to change their negative affect, it is also common for these individuals to resort to other drug usages.

Other forms of substance abuse influence the presentation of Borderline Personality Disorder, the severity of symptoms, and one's outlook on coping mechanisms and regulating emotions. Since BPD is characterized by the severe inability and dysfunction of interpersonal, emotional, cognitive, and behavioral spheres, there is often a heightened level of self-destructive behaviors and impulsivity (Gunderson, 2001). In many different studies, the relevancy of risky behaviors, deliberate self-harm (Brown et al., 2002), binge eating (Sansone et al., 2005), and substance abuse (Trull et al., 2000) have been found to align with the behaviors and criteria associated with Borderline Personality Disorder.

The lack of impulse control and other technical symptoms of BPD contributes to the strong associations with RSB (Centers for Disease Control and Prevention, 2009). In one study done on the impulsive sexual behaviors of inpatient females with Borderline Personality Disorder, about 46% reported impulsively entering a sexual relationship with an individual with

whom they did not know well (i.e., casual sexual relationship; Hull et al., 1993). Furthermore, a study done by Sansone and Wiederman (2009) found that those with BPD reported significantly higher rates of casual sexual relationships than those without BPD. It is important to note that casual sexual behaviors are not inherently bad, and every person has the autonomy to make their own decisions for their sexual health and well-being. However, when RSB becomes intertwined with substance use disorders (SUD) and co-occur with symptoms of BPD, there is a higher risk for sexually transmitted diseases, involvement with prostitution, and impulsive sexual behaviors, especially for women with BPD-SUD diagnoses (Tull et al., 2011). The findings of a study with a sample of BPD-SUD inpatients reported not only greater engagement in RSB in casual relationships (a sexual partner one does not know well), but also in relationships with commercial partners (a sexual relationship in which sex is traded for drugs, money, or gifts) than those without a BPD diagnosis. Furthermore, it was found that the presence of crack/cocaine dependency seemed to be a moderator for women with both BPD and RSB (Tull et al., 2011).

Sense of Self

Just as external forces such as alcohol are linked to inhibition and dysregulation of emotions, an individual's own sense of self, or identity, can play a key role in the pathology of Borderline Personality Disorder as well. Since Borderline Personality Disorder is associated with "inflexible cognition, emotional experience, expression, and behavior" the symptoms also have a large pull on the individual's definition and expression of their own identities (Lind et al., 2022). These exacerbated experiences of symptoms often lead to multiple understandings of oneself (Lind et al., 2022). As mentioned before, BPD typically arises in early adolescence or earlier which, in turn, means that BPD is a life-span disorder (Shiner, 2009). In a study done in 2017, it was found that the prevalence rates of Borderline Personality Disorder comprised of about 1% to

3% of the general population while anywhere between 11% to 22% of outpatient individuals have the disorder and 33% to 49% of inpatient individuals have BPD (Chanen et al., 2017). Just as dysregulation is involved in the onset of Borderline Personality Disorder, so it mentalizing – the reflection on mental states of the individual and others that includes feelings, desires, and intentions (Chiesa & Fonagy, 2014). At the core of the regulation and mentalization lies the personality pathology of individuals; in a given individual with Borderline Personality Disorder, there is the core of personality – the integrated and coherent sense of self and, in return, the delayed and skewed sense of self (Lind et al., 2022). When the sense of self is skewed, the "effective navigation of interpersonal context" and adaptive functioning of the individual is hindered (Sharp, 2020). One type of personality pathology that affects the onset of Borderline Personality Disorder includes the narrative identity – the dynamic story constructed by an individual about their past, present, and imagined future (Dunlop, 2015). When a person suffers from BPD, there tends to be a lack of self-continuity and purpose in life as there is a less coherent narrative of identity (Dunlop, 2015).

Etiology and Abuse

To further break down identity and variables that may contribute to Borderline Personality Disorder, one can also look towards the presence of abuse and neglect in childhood. As Bornovalova mentioned, the etiology of BPD can be a product of a complex interaction of biological vulnerabilities but can also be due to early exposure to an invalidating or unstable environment (Bornovalova et al., 2006). These traumatic environments may be central to the development of BPD, as researchers have found that a child who experiences emotional, physical, and sexual abuse in childhood has an increased risk of developing a personality disorder (Johnson et al., 1999). However, Borderline Personality Disorder was found to have a

significant relation to childhood abuse and found to be comorbid with personality disorder generally (Johnson, 1991). In one study done with women with BPD, it was found that 75% of women in the sample reported a history of sexual abuse in childhood. Furthermore, more than half of this sample reported the abuse to be prior to the age of 6 (McFetridge et al., 2015). In most studies done on Borderline Personality Disorder, there seems to be a strong correlation with sexual abuse; however, emotional abuse, such as witnessing domestic violence, also resulted in a greater emotional distress in adulthood than the experience of sexual or physical abuse (Teicher et al., 2006).

Other findings done by Teicher suggest that the disrupted social rearing environment of an abusive or neglectful household highly impacts a child's functioning later in life (Tiecher et al., 2006). These environments often lead to a child's inability to regulate emotions – a "multidimensional construct involving awareness, understanding, and acceptance of emotions as well as a willingness to experience emotional distress and engage in self-modulating strategies" (Gratz & Roemer, 2004). The early developmental period of children and the abusive household they grow up in may impair the formation of critical skills such as emotional regulation, observational learning, family dynamics, emotional expressiveness, and parenting styles (Morris et al., 2007).

As for the relationship between childhood trauma and Borderline Personality Disorder traits, sexual abuse was found to have the strongest correlation and independent association with the traits, followed by emotional abuse, physical abuse, and witnessing violence (Bornovalova et al., 2013).

Treatment

Finally, when looking at the manifestations of Borderline Personality Disorder, it is important to recognize the treatment options that are available as well as to critically analyze the usefulness of these options. When recognizing the many different stressors of BPD, it is important to understand that "it is likely that many different treatment approaches are useful; although one may be more suited to a particular patient than another" (Bauer, 1991). Since Borderline Personality Disorder is often associated with severe mental health issues, the later the diagnosis, the greater risk the individual and their behaviors (Zimmerman & Morgan, 2013). As previously mentioned, discussion of diagnosis and treatment is pivotal for the individual being diagnosed, as it can have a direct effect on available resources. Due to this, there is a gap between supply and demand even in the countries with the most resources available (Illiakis et al., 2019). In turn, this means that a "good-enough" treatment for Borderline Personality Disorder must be available for patients in order to fill the gap (Choi-Kain et al., 2016).

In order to fill this gap, one can begin to look towards the importance of integrated treatments and therapies. As it is understood, medicinal treatments only truly help for symptoms; meanwhile, treatments such as therapy are important for learning to cope, changing behaviors, and rewiring the brain. For example, brief treatments such as the *stepped care models* (Grenyer, 2014) aim to use to more adequate therapeutic resources that are available and it is based on assumptions that long-term therapy is not the only treatment that may work for Borderline Personality Disorder. Instead, a shorter-term treatment intervention may have the initial benefits (Huxley et al., 2019) as well as more immediately available for those in clinical states and urgent need or help. The one-stepped care model incorporates the considered stage of the illness and counteracts it with mental health literacy and supportive counseling (Kramer et al., 2022). Stepped care models can easily be adapted to any setting such as on an individual, group, first

line, or specialized clinician baseline (Kramer et al., 2022). Furthermore, these treatment models produce a step-by-step treatment and can be adjusted to higher or lower intensities for the patient, such as working from a low dosage to increasing until the client's response regulates for them to lead an outpatient lifestyle (Kramer et al., 2022).

Comorbidities of Posttraumatic Stress Disorder

Posttraumatic Stress Disorder (PTSD) is a disorder in which the individual develops characteristic symptoms that follow exposure to one or more traumatic events (American Psychiatric Association, 2013). Following these experiences, the individual often starts to exhibit emotional responses to the traumatic event such as feelings of fear, helplessness, and horror (American Psychiatric Association, 2013). However, this is not the sole response of character change that one may see in a clinical setting. For example, some individuals who experience a traumatic event may have a changed emotional response while others show more behavioral symptoms; in others, there may be an anhedonic or dysphoric mood state change, negative cognitions, or arousal and reactive-externalizing symptoms (American Psychiatric Association, 2013). Furthermore, some individuals with PTSD may exhibit a combination of the symptom patterns described above (American Psychiatric Association, 2013). Posttraumatic Stress Disorder (PTSD) is one disorder that is often found to be comorbid with at least one, if not more, disorders. About 80% of these individuals with a PTSD diagnosis are more likely than those without a PTSD diagnosis to show symptoms that meet the criteria for at least one other mental disorder (American Psychiatric Association, 2013).

In order to receive a diagnosis for PTSD, one must align with the following criterion: exposure to actual or threatened death, serious injury, or sexual violence; presence of one, or more, of the intrusion symptoms associated with the traumatic event; exhibit persistent

avoidance of stimuli associated with the traumatic event; have negative alterations in cognitions and mood; and have marked alterations in arousal and reactivity associated with the traumatic event (American Psychiatric Association, 2013). The prevalence rates of PTSD hold steady at 8.7% for those at age 75 (American Psychiatric Association, 2013). The 12-month rate among US adults is about 3.5% while those in Europe and most Asian, African, and Latin American countries are about 0.5% to 1.0% (American Psychiatric Association, 2013). One important thing to note while looking at prevalence rates is the trauma experienced and the different levels of trauma. For example, rates of PTSD are significantly higher for veterans and others whose careers may center around risks of traumatic exposure such as police officers, firefighters, and EMTs (American Psychiatric Association, 2013). The highest rates of individuals with PTSD center around survivors of rape, military combat and captivity, and ethnically or politically motivated internment and genocide (American Psychiatric Association, 2013).

Prevalence and Risk Factors

In order to determine the differences and similarities between both PTSD and BPD, one can look at outward stressors that match with inward behaviors. Statistics found that 25 to 30% of adults meet the criteria for either PTSD or BPD and that between 30 to 70% of adults who are diagnosed with BPD had at least one episode of PTSD at some time in their lifetime (Ford & Courtois, 2021). After 10 years, a follow-up study was done indicating that those who were initially diagnosed with PTSD were currently remitted from PTSD yet still met the criteria; PTSD could potentially be easier to recover than BPD (Ford & Courtois, 2021). Despite these two disorders having different symptoms, such as PTSD focusing on outward triggers while BPD focuses more on internal thought processes in regard to abandonment, they both have a substantial overlap with their symptoms criteria in which both PTSD and BPD include

dissociation, emotional numbing, emptiness, anger, and changes in cognition, mood and behavior (Ford & Courtois, 2021).

In a sample of adults in an outpatient psychiatric treatment done in Great Britain, the BPD and Childhood PTSD (cPTSD) group reported the greatest percentage of overlapping symptoms and diagnosis – an 80% probability (Ford & Courtois, 2021). This group reported histories of emotional, sexual, and physical abuse and emotional and physical neglect (Ford & Courtois, 2021). In another general population sample of adults in the US, reports found that two subgroups endorsed high (20-85%) levels of BPD symptoms and comorbidity with PTSD and BPD and these groups also endorsed histories of childhood physical, sexual, and emotional abuse and neglect (Ford & Courtois, 2021). The subgroups that analyzed solely PTSD symptoms found lower reports of childhood abuse but rather forms of childhood adversity such as emotional neglect (Ford & Courtois, 2021).

As BPD and PTSD are both associated with trauma exposure, it is important to note that there are latent variables to both PTSD and BPD diagnosis and symptoms. Prominent latent variables of PTSD include fear-related memories, avoidance, and hypervigilance, while BPD latent variables include emotional numbing and emptiness, damaged self-perception, and relational detachment (Ford & Courtois, 2021). Both of these classes of latent variables, although clearly distinct, are associated with self-reported histories of childhood interpersonal trauma exposure (Ford & Courtois, 2021).

As Borderline Personality Disorder and Posttraumatic Stress Disorder are associated with trauma exposure, it is also important to note the latent variables of PTSD and BPD diagnosis and symptoms. Prominent latent variables of PTSD include fear-related memories, avoidance, and hypervigilance. Meanwhile, BPD latent variables include emotional numbing, emptiness,

damaged self-perception, and relational detachment (Ford & Courtois, 2021). Both classes of latent variables, though distinct, associated with self-reported histories of interpersonal childhood trauma exposure (Ford & Courtois, 2021).

Comorbidities of Eating Disorders

Eating disorders are characterized by persistent disturbances in eating behaviors that result in distorted absorption of food which results in significantly impaired physical health and psychosocial functioning (American Psychiatric Association, 2013). There is a wide variety of eating disorders, but, for the analysis of this thesis, there will be a focus on Anorexia Nervosa (AN) and Bulimia Nervosa and their comorbidities with Borderline Personality Disorder.

Anorexia Nervosa is the restriction of energy intake which leads to a significantly low body weight in relation to one's age, sex, developmental trajectory, and physical health (American Psychiatric Association, 2013). As the DSM states, "significant low body weight" is defined as a weight that is less than minimally normal and, for children and adolescents, is less than minimally expected (American Psychiatric Association, 2013). Anorexia Nervosa is comprised of intense fears of gaining weight or becoming fat and persistent behavior that interferes with weight gain, such as using laxatives and manipulating dosages of medication, despite being at a significantly low body weight (American Psychiatric Association, 2013). When an individual experiences an eating disorder such as Anorexia Nervosa, they show a lack of recognition for the seriousness of their current low body weight (American Psychiatric Association, 2013). The three essential features of Anorexia Nervosa, according to the DSM-V, includes persistent energy intake restrictions, fear of weight gain, behavior that interferes with weight gain, and the disturbances in self-perceived weight or shape, such as dysmorphia (American Psychiatric Association, 2013). The essential features along with the semi-starvation

tactics of Anorexia Nervosa and the purging behaviors that are sometimes associated with this disorder result in significant and life-threatening medical conditions such as the physiological disturbances of amenorrhea and vital sign abnormalities (American Psychiatric Association, 2013). Fortunately, some of the negative nutritional side effects can be reversed with nutritional rehabilitation; however, the loss of bone mineral density and life-threatening medical conditions can become chronic, taking years to reverse some effects while others last the rest of the lifetime (American Psychiatric Association, 2013).

Individuals with Anorexia Nervosa (AN) also tend to exhibit more compulsive behavior than those with BN, and those with purging (ANP) and binging-purging (ANBP) subtypes tend to display elevated levels of behavior dysregulation beyond dysregulated eating behaviors (Tozzi et al., 2006). Those with ANBP often engage in various behaviors that overlap with BPD symptoms such as NSSI, drug use, shoplifting, and suicide attempts (Bulik et al., 2008). Individuals with ANR also experience dysregulated behaviors such as suicide attempts, but these behaviors in ANR seem to be less common than ANBP (Bulik et al., 2008). One study done that measured behavioral dysregulation in individuals with BPD and comorbid Anorexia Nervosa (AN) found that among those diagnosed with BPD, 24% were diagnosed with ANR, 26% with ANBP, and 18% with ANBN (Selby et al., 2010).

Prevalence and Risk Factors

The prevalence rates of Anorexia Nervosa, in 12 months, is 0.4% (American Psychiatric Association, 2013). The prevalence rate of this disorder is more common and higher in females than males, with the ratio reflecting a general population of 10 to 1 (American Psychiatric Association, 2013). The development of this disorder is commonly subscribed to adolescence or young adulthood, with rates and symptoms beginning either before puberty or after 40 years old,

despite there being some outliers of early and late onset cases (American Psychiatric Association, 2013). Furthermore, the onset of this disorder is often associated with stressful life events such as leaving home for college for young adults or a long duration of illness for older individuals (American Psychiatric Association, 2013). Furthermore, studies suggest that the prevalence rate of Anorexia Nervosa and Borderline Personality Disorder lies at about 3% while for BPD and Bulimia Nervosa it is 21% (Kröger et al., 2010).

Risk factors for Anorexia Nervosa falls into three categories, according to the DSM-V. There is a temperamental factor regarding childhood in which the individual develops the disorder from displaying obsessional traits during childhood, resulting in an increased risk for AN (American Psychiatric Association, 2013). Another risk factor is encapsulated in environmental factors, including occupations. Occupations such as modeling and athletics, in which thinness is encouraged and idealized, results in an increased risk of AN for the individual (American Psychiatric Association, 2013). Finally, there is a genetic and physiological factor that disproportionately affects individuals, putting them at an increased risk for AN (American Psychiatric Association, 2013). It was found that those who are a first degree biological relative to an individual with a diagnosis of the disorder are also at a genetic predisposition to the disorder (American Psychiatric Association, 2013).

Behavioral and Emotional Dysregulation

As emotional dysregulation is common in individuals with Borderline Personality Disorder, behavioral dysregulation tends to be common in individuals with AN. As these disorders can become co-morbid with each other, it is inherent that behavioral and emotional dysregulation is not only common, but persistent. Those with BPD are generally understood to engage in multiple and various forms of dysregulated behaviors ranging from non-suicidal self-

injury (NSSI) to physical fights (Selby et al., 2010). Selby states that, although some of these dysregulated behaviors have an unclear relation to BPD, there are other dysregulated behaviors that are well-established in association with BPD and AN such as non-suicidal self-injury (NSSI), substance abuse, and suicide attempts (2010). There can be a drawn general conclusion in which individuals with BPD engage in a number of these behaviors, however there are other relations that are less established and need to be researched more (Selby et al., 2010).

For Anorexia Nervosa, including binging and purging subtypes, the individuals tend to display elevated levels of behavior dysregulation beyond the scope of eating. These behaviors include often engaging in NSSI, drug use, shoplifting, and suicide attempts which are all behaviors that are commonly associated with Borderline Personality Disorder (Selby et al., 2010). Furthermore, Selby emphasizes that the co-occurring diagnoses can generate synergistic effects in which both diagnoses increase problems with behavioral dysregulation together more so than either BPD or Eating Disorders such as AN alone (Selby et al., 2010).

ED Treatment Options

Treatment options for AN and research for this are difficult to find, as AN is a relatively rare disorder (Safer & Chen, 2011). Family-based treatment plans (Lock et al., 2010) have resulted in encouraging findings for adolescents who suffer with AN. However, currently for adults, there have been no evidence-based successful and sizable psychotherapy or pharmacotherapy clinical trials that are available (Safer & Chen, 2011). One of the more promising areas of investigation for AN treatment lies in neuropsychology in which Cognitive Remediation Therapy (CRT) techniques can help guide Anorexia Nervosa patients through practice and therapy sessions to improve neurobiological and neurocognitive mechanics that underlie the cognitive limitations of those with AN (Safer & Chen, 2011). CRT encourages

confidence in patients with developing strategies to become cognitively flexible (Safer & Chen, 2011). DBT can also be used to treat affect regulation theoretical framework, adaptive emotion regulation skills, and is generally considered to be the most empirically supported treatment (Safer & Chen, 2011). Lynch and Cheavens (2008) adapted DBT for individuals with AN, restrictive type, as well as for individuals with other disorder diagnoses that include overcontrol, emotional constriction, cognitive-behavior rigidity, and perfectionism. The adapted DBT reported beneficial and useful for restrictive AN with, or without, BPD and promising for addition to standard DBT for those with comorbid AN and BPD (Lynch and Cheavens, 2008).

Substance Use Disorders

Substance related disorders are generalized by ten different classes of drugs: alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, hypnotics, anxiolytics, and stimulants (American Psychiatric Association, 2013). These disorders often form as they activate the reward pathways; thus, as an individual continues to misuse substances as a form of reward, they become more addicted, and it can become harder to break the addiction cycle (American Psychiatric Association, 2013). Substance related disorders are divided into two subgroups: substance use and substance induced disorders; substance use disorders are a cluster of cognitive, behavioral, and physiological symptoms that indicate a continued use of the substances despite knowledge of substance related problems (American Psychiatric Association, 2013). Meanwhile, substance induced disorders include intoxication, withdrawal, and other substances or medication induced mental disorders, such as psychotic, bipolar and related, depressives, anxiety, OCD, sleep, sexual dysfunctions, delirium, and neurocognitive disorder (American Psychiatric Association, 2013).

Substance Use Disorders followed a specified set of criterion; however, Criterion A is considered to fit the overall groupings of impaired control, social impairments, risky use, and pharmacological criteria (American Psychiatric Association, 2013). Impaired control, social impairments, and risky use are all criteria that affect the external life of the individual. Impaired control considers that the individual will take the substance in larger amounts or over a longer period than originally intended; social impairments discusses that the individual can express persistent desire to cut back on their regular substance use and may report multiple unsuccessful efforts to decrease or discontinue use; social impairment is the continued substance use despite having persistent or recurrent social or interpersonal problems caused by the substance; risky use discusses the continues use despite having recurrent physical or psychological problems that are caused by the substance (American Psychiatric Association, 2013). Meanwhile, the pharmacological criteria extend to internal effects of the individual through ideas such as tolerance and withdrawal. Tolerance is signaled by requiring a markedly increased dose of the drug in order to achieve the desired effect; the individual will often need to up the dosage of the drug as they actively participate in the substance more frequently (American Psychiatric Association, 2013). Withdrawal occurs when blood or tissue concentrations of the substance decline after prolonged heavy usage (American Psychiatric Association, 2013). Out of the multiple disorders that Substance Use and Substance Induced Disorders cover, Alcohol Use Disorder tends to be highly comorbid with Borderline Personality Disorder, as about 78% of adults with Borderline Personality Disorder develop a Substance Related Disorder or addiction (Kienast et al., 2014).

Comorbidities of Alcohol Use Disorder

According to the DSM-V, Alcohol Use Disorders are defined by a cluster of behavioral and physical symptoms, which includes tolerance, withdrawal, and cravings (American Psychiatric Association, 2013). This type of disorder is characterized by periods of remission and relapse (American Psychiatric Association, 2013). Alcohol Use Disorder (AUD) is often associated with problems that are similar to disorders associated with other substances such as the individual continuing to consume alcohol despite knowing that the continued consumption contains significant physical, psychological, social, and interpersonal issues (American Psychiatric Association, 2013). However, the individual maintains using alcohol to alleviate unwanted effects of other substances or substituting them when their preferred substance is not available; the symptoms of conduct problems, depression, anxiety, and insomnia often precede or accompany the act of heavy drinking (American Psychiatric Association, 2013).

Prevalence and Risk Factors

Alcohol Use Disorder is not an uncommon disorder. In fact, the twelve-month prevalence rate in the United States of America is estimated to be 4.6% for twelve to seventeen years old and 8.5% for adults aged eighteen and over (American Psychiatric Association, 2013). There is a gender difference in prevalence rates as well as men hold about a 12.4% of the prevalence rates while women take about 4.9% (American Psychiatric Association, 2013). Individuals who tend to form Alcohol Use Disorders are also heavily affected by environmental, genetic, physiological risk, and prognostic factors (American Psychiatric Association, 2013).

The risk factors associated with Alcohol Use Disorders include environment, genetic, and physiological (American Psychiatric Association, 2013). The environmental factors include cultural attitudes towards drinking, intoxication, availability of alcohol, personal experiences with alcohol, and stress levels (American Psychiatric Association, 2013). The environmental risk

factors directed towards alcohol can also pose risks regarding heavy peer substance use, exaggerated positive expectations of alcohol effects, and coping with stress (American Psychiatric Association, 2013). In fact, in the National Epidemiological Survey of Alcohol and Related Conditions of over 43,000 adults, the prevalence rate of BPD showed 2.7%; lower income, younger age, separated, divorced, or widowed statuses, and lower education attainment were all associated with increased risk of occurrence for the disorder (Kienast et al., 2014). Alcohol Use Disorder is a crucial contributor to the risk of suicide during severe intoxication (American Psychiatric Association, 2013). This contributor also tends to affect those especially with alcohol induced Depressive Disorder and Bipolar Disorder (American Psychiatric Association, 2013). Alcohol Use Disorder is also associated with greater increases in the risk of accidents, violence, and suicide as an estimation showed that one in five intensive care unit admissions in suburban hospitals had a relation to alcohol (American Psychiatric Association, 2013). More severe Alcohol Use Disorder, especially in those with Antisocial Personality Disorder, is associated with criminal acts such as homicide, disinhibition, sadness, irritability, suicide attempts, and completed suicides (American Psychiatric Association, 2013).

The genetic and physiological risk factors of Alcohol Use Disorder run in families – there is an estimated 40-60% of risk that can be explained by genetic influence (American Psychiatric Association, 2013). The closer the genetic relationship to the person affected by AUD, the higher the severity for alcohol-related problems in the relative (American Psychiatric Association, 2013). There is also a significantly higher rate for AUD in monozygotic twins than dizygotic twins of individuals with the condition (American Psychiatric Association, 2013).

Borderline Personality Disorder and Comorbid Addiction

Kienast and peers discussed that those who have Borderline Personality Disorder and a comorbid addiction to a substance are more impulsive and clinically less stable than those who do not have a comorbid addiction (Kienast et al., 2014). Those who suffer with BPD and a comorbid addiction often display greater suicidal behavior, shorter abstinence phases, and more frequently drop out of treatments (Kienast et al., 2014). Furthermore, studies have found a generally lower lifetime prevalence rate for the use or dependence from substances (Kienast et al., 2014). An increase in the prevalence rates for Personality Disorders were also found in patients with dependence disorders; approximately 57% in Alcohol Related Disorders and 15% of those cases has the more common diagnosis of Borderline Personality Disorder (Kienast et al., 2014).

Alcohol dependence, according to Kienast and their team (2014), in patients with a personality disorder tend to show differently from those without the personality disorder in which they have: increased psychopathological burden, earlier onset, more severe dependence symptoms, lower levels of social functioning, frequent use of other drugs, increased suicidal behavior, shorter periods of abstinence and more frequently relapse, frequent center or institution dropout rate, and poorer long term prognosis. Substance use, according to Kienast, is caused by multiple different factors; however, Borderline Personality Disorder patients are often found using substances in attempts to mitigate overwhelmingly negative feelings or emotional distress and replace them with pleasant feelings such as intoxication – following the self-medication hypothesis (Kienast et al., 2014). As substances are taken with the intention to produce a state mimicking dissociation, the frequent usage results in a dependent pattern of use and forms a Substance Use Disorder (Kienast et al., 2014).

General BPD Treatments

As Borderline Personality Disorder is a disorder in which the symptoms include pervasive patterns of emotional dysfunction, interpersonal distress, behavioral difficulties, identity disturbances, and cognitive vulnerabilities; regarding the symptoms of BPD, most treatments for the disorder tend to be long term and intensive (Neacsiu & Linehan, 2014). There are several possible treatment plans that include: stepped care models, psychodynamic approaches, mentalization based therapy, general psychiatric management, and cognitive behavioral approaches (Clarkin et al., 2001; Bateman & Fonagy, 2004).

Psychodynamic approaches include Transference Focused Psychotherapy (TFP) (Clarkin et al., 2001). Transference Focused Psychotherapy was specifically designed for patients with BPD and spans across 12 months to ensure the best treatment possible for suicidality, self-injurious behavior, and medical and psychiatric service utilization (Clarkin et al., 2001). At the end of a study, Clarkin (et al., 2001) found that TFP significantly reduced hospitalizations and resulted in fewer days spent in a psychiatric hospital; however, the dropout rate of the TFP program was 19.1% (Clarkin et al., 2001). Mentalization based therapy is a form of psychoanalytical oriented, partial hospital treatment used for BPD (Bateman & Fonagy, 2004). This form of treatment takes place in an individual and group therapy setting and focuses on the individual's capacity to think about their mental states and the mental states of others as separate, yet potentially trigger actions for their BPD (Bateman & Fonagy, 2004). The main areas of focus for mentalization based therapy includes enhancing mentalization, patient deficits, transference, retaining mental closeness, and working through current mental states (Batemen & Fonagy, 2004).

There is also general psychiatric management, which includes pharmacological treatment, case management, and psychodynamic psychotherapy (McMain et al., 2009). General

psychiatric management includes psychodynamic informed therapy with a symptom-targeted medication (McMain et al., 2009). This type of therapy consists of treating suicidal patients with BPD and was found to reduce suicidal behavior, Borderline symptoms, general distress from symptoms, depression, anger, and interpersonal functioning (McMain et al., 2009). It was found that general psychiatric management was effective in bringing broad range change in Borderline Personality functioning (McMain et al., 2009).

Cognitive behavior approaches include an outpatient treatment that was developed by Linehan. This type of therapy aims to eliminate and stabilize behavioral dyscontrol through developing effective coping strategies (McMain et al., 2009). There are many diverse ranges of cognitive behavior interventions that include balancing validation with behavior change, maximizing external validity (McMain et al., 2009).

Currently, Dialectical Behavior Therapy (DBT) is the more frequently investigated psychosocial intervention treatment for BPD (Kröger et al., 2010). This is because the treatment program targets promoting the motivation for changed by chain analysis, validation strategies, reinforcement contingencies in individual therapy twice a week, target-oriented and appropriate behavior in a weekly group-format therapy and training, mindful attention and cognition, regulation of emotions, accepting emotional distress, ensuring the transfer of new skills to everyday life, and supports therapists' motivation and skills with a weekly consultation team (Kröger et al., 2010). Dialectical Behavior Therapy has amassed the most empirical support in relation to reduced non-suicidal self-injury (NSSI), hospitalizations, and anger, as well as increased client retention rates and overall functioning (Kleim, Kröger, and Kosfelder, 2010). This is due to the therapy integrating change into the individual's lifestyle. DBT integrates mindfulness practices in which the behavioral approach, validation, and acceptance of the patient

is the center of attention; this therapy uses skills training, verbal interactions, contingency management, and addresses cognition and emotions in order to reinforce functional behaviors in the patient (Sahin et al., 2018). Finally, Dialectical Behavior Therapy can target higher and more severe levels of BPD better due to the structured treatment, external support of therapists, and the lack of transference interpretations (Sahin et al., 2018)

PTSD and BPD Treatments

In occurrences in which there is a dual diagnosis, such as PTSD and BPD, treatments require therapies that address symptoms of both disorders (Kleindienst et al., 2021). Since the individual has a high probability of problematic features such as emotional dysregulation, self-harm behavior, interpersonal difficulties, and dissociation, it is important to find a dual therapy treatment that will aid the severe symptoms (Kleindienst et al., 2021). However, there has been some controversy surrounding whether treatments should target one specific diagnosis, such as concentrating on BPD rather than PTSD and vice versa, possibly because there is a lack of treatment programs that proved successful for both aspects of the dual diagnosis when researched in a randomized controlled trial (Kleindienst et al., 2021). However, one approach, researched by Kleindienst, suggests that therapy should either treat Borderline Personality Disorder or PTSD, as focusing on one of the diagnosis of the dual diagnosis is, at least, a strong initial step of treatment (Kleindienst et al., 2021). Kliendienst et al. (2021) found that one year of Dialectic Behavior Therapy for BPD patients, the remission rate for PTSD was significantly lower than other comorbidities assessed in the study. This approach supports the idea that DBT could be complemented by components that specifically address PTSD (Kleindienst et al., 2021). This could prove beneficial to patients as BPD and PTSD individuals have a high risk and need for treatment; at a minimum, they need therapy.

Psychotherapies are the current front-line approach for treatment of individuals with comorbid PTSD and BPD, as they have been found to be effective in reducing PTSD symptoms among patients with BPD; therapies such as Prolonged Exposure (PE), Cognitive Processing Therapy (CPT), Dialectical Behavior Therapy (DBT), DBT for PTSD (DBT-PTSD), DBT Prolonged Exposure Protocol (DBT + DBT PE), and Narrative Exposure Therapy (NET) (Harned, 2014). These have all been found to be efficacious for individuals with a preliminary diagnosis of PTSD and a mild or subthreshold, BPD without suicidal or serious self-injurious behavior, and other severe comorbidities of BPD (Harned, 2014).

Prolonged Exposure (PE) Therapy is a brief outpatient treatment program that was originally developed for women with sexual assault-related PTSD; however, PE Therapy has been shown to be effective for varying levels of trauma populations (Harned, 2014). This type of therapy consists of exposure to trauma memories in a safe environment and situations and is typically a 9-to-15-week treatment program of individual therapy sessions (Harned, 2014). However, with PE, individuals who experience acute suicidality and recent suicidal or serious self-injurious behaviors, on-going abuse, substance dependence, bipolar, and psychotic disorders should be excluded from PE Therapy (Harned, 2014). Cognitive Processing Therapy (CPT) is a brief outpatient treatment program for PTSD that was originally developed for sexual assault PTSD but has also been found to treat varying levels of trauma types (Harned, 2014). It is a 12-week session program that can be delivered in a group, individual, or combined format that focuses on cognition, identifying and challenging trauma beliefs; however, individuals who experience acute suicidality, suicidal or self-injurious behaviors, on-going abuse, substance dependence, Bipolar Disorder, and current psychosis should be excluded from this type of

treatment (Harned, 2014). Both PE and CPT treatments appear to be effective for individuals with the mild subthreshold of BPD and targets PTSD symptoms primarily (Harned, 2014).

Dialectical Behavior Therapy (DBT) is considered to be a comprehensive cognitive behavioral therapy and stands as the more researched and efficacious treatment for BPD (Harned, 2014). This type of therapy combines interventions from behavior therapy such as skills training, exposure, cognitive modification, and contingency management with acceptance-based interventions (Harned, 2014). DBT was specifically designed for chronic suicidal BPD patients and targets life-threatening behaviors, therapy-interfering behaviors (noncompliance, nonattendance), and quality-of-life interfering behaviors (relationship issues, instability) in order to reduce dysfunction, emotional dysregulation, and distress tolerance while increasing interpersonal effectiveness and mindfulness (Harned, 2014).

DBT-PTSD is an adaptation of DBT in which it addresses PTSD related to childhood sexual abuse and focuses on three treatment phases: phase one targets psychoeducation, identification of typical cognitive, emotional, and behavioral escape emotions; phase two targets trauma-focused cognitive and exposure interventions; phase three targets radical acceptance of trauma-related facts and psychosocial functioning (Harned, 2014). DBT-PTSD is usually not used with those who have recent life-threatening behaviors such as suicide attempts, substance dependence, Schizophrenia, and severe anorexia nervosa; however, there is no evidence of worsening PTSD, NSSI, or suicidality found when implementing DBT-PTSD (Harned, 2014). Narrative Exposure Therapy (NET) is a brief PTSD treatment designed for survivors of multiple and complex traumas that include organized violence and conflict (Harned, 2014). This therapy is a 5-10 week treatment with individual sessions of therapy and was found to have no complications with those who have complex and comorbid PTSD and BPD.

For moderate BPD, BPD with symptoms of active non-suicidal self-injury without recent life-threatening behavior and some significant comorbid symptoms, utilizing DBT-PTSD has shown positive results (Harned, 2014). This treatment is a 12-week residential treatment with a phase-based treatment that targets comorbid problems, including emotional dysregulation and psychosocial impairment (Harned, 2014). Furthermore, individuals with severe BDP – recent suicidal behavior, serious non-suicidal self-injury, and multiple severe comorbidities – and PTSD have been treated in long term, one-year, integrated treatment including DBT and DBT+DBT PE in which both BDP, PTSD, and other related problems that may surface are targeted (Harned, 2014). Of the integrated treatment, Harned (2014) found that DBT and DBT PE appear to be more effective than DBT alone in relation to improving PTSD symptoms, suicidal and self-injurious behavior, and other trauma related symptoms included in severe BPD.

ED and BPD Treatments

Dialectical Behavior Therapy (DBT) is suggested to be the first approach treatment for Borderline Personality Disorder (Kröger et al., 2010). This is due to the treatment promoting a large scale of positive outcomes, including motivation for change, validation strategies, management of reinforcements, work and control mindful attention and cognition, regulate emotions, regulate emotional distress, and work on interpersonal situations (Kröger et al., 2010).

However, when looking at an individual with comorbid diagnosis of BPD and an Eating Disorder, such as Bulimia Nervosa or Anorexia Nervosa, an adapted approach to DBT suggests improvements regarding disorder related complaints (Kröger et al., 2010). In the study done by Kröger, twenty-four women with BPD (nine with comorbid AN and fifteen with comorbid BN) who failed to respond to previous Eating Disorder related treatments were researched and further treated with an adapted form of DBT in an inpatient program (2010). After the treatment and a

15-month post treatment follow up, the rates of remission for BN stood at 54% and AN stood at 33% (Kröger et al., 2010). Along with this, there was a significant improvement with global psychosocial functioning, which suggests that adapted DBT is a potential long-term treatment for individuals with BPD and a comorbid ED (Kröger et al., 2010).

It is important to note that, despite adapted DBT being a steady and reliable treatment for an individual with BPD and comorbid ED, the different subcategories for Eating Disorders can also change the treatment options and plans. For example, the research that Kröger and their team completed suggests that individuals with BN and comorbid BPD should most likely be treated with DBT combined with Cognitive Behavior Therapy (CBT), which is considered the first-choice treatment for those with BN and BPD (Kröger et al., 2010). Finally, Kröger and their team also recognize that DBT is the recommended treatment that should be used specifically to address the comorbid BPD psychopathology in individuals with any kind of Eating Disorders, as it more clearly and concisely targets the symptoms of Borderline Personality Disorder (2010).

Harned et al. (2008) used a randomized controlled trail that compared DBT and treatment when targeting only BPD. When comorbid ED patients were present, 27% reached criteria for full remission from their ED (Harned et al., 2008). Other studies that compared modified DBT for outpatient Binge-Eating Disorder (BED) and BN alone found that women with BED who were treated with DBT improved on their measures of binge-eating and eating-related pathology (Telch, Agras, & Linehan, 2001). Results showed that 89% of the women stopped binge-eating at the end of treatment and 56% were abstinent from binge-eating at the 6-month post treatment follow up (Safer, Telch, & Agras, 2001). The women with BN that received the same treatment reduced purging behavior by 98% and the abstinence rate showed 29% at the follow up (Safer, Telch, & Agras, 2001). DBT treatment also appeared to improve the patients' urge to eat when

responding to negative emotions (Safer, Telch, & Agras, 2001). This can be due to the DBT structure treatment and targeted areas that have been previously stated in the general BPD treatment section.

Wilson, Grilo, and Vitousek (2007) suggest that those with BN and comorbid BPD should receive treatment that combine DBT and Cognitive Behavioral Therapy (CBT), as CBT is considered first choice treatment for Bulimia Nervosa. CBT, in relation to BN, focuses on the principles of relapse prevention, establishing behavioral techniques such as stimulus control, selection reinforcement of desirable behaviors, and graded exposure (Glasofer and Devlin, 2013). However, DBT is frequently recommended in order to directly address BPD psychopathology, and other authors have proposed DBT interventions for individuals with ED and high scores of impulsivity (Bruce & Streiger, 2004).

SUD, AUD, and BPD Treatments

Based on multiple research articles, Kienast (et al., 2014) found Psychotherapy, Pharmacotherapy, Dynamic Deconstructive Psychotherapy, and Dual Focus Schema Therapy to be effective in treating comorbid BPD and AUD. Meanwhile, Gianoli (et al., 2012) found that treatment options including Psychotherapy and Pharmacotherapy, such as the drugs Topiramate, Lamotrigine, Aripiprazole, and Olanzapine, tend to be the most utilized and effective treatment routes for BPD and comorbid addiction (Gianoli et al., 2012). There are also some treatments that prove beneficial for BPD and AUD alone, but the research and overlap for a comorbid diagnosis is rare (Gianoli et al., 2012).

Psychotherapies have been tested in many patients with comorbid BPD and BPD traits; however, interventions were not initially designed for patients with comorbid BPD symptoms (Gianoli et al., 2012). Because of this, psychotherapies have been specifically developed for

concurrent treatments of BPD and SUDs, such as Dialectical Behavior Therapy-SUD (DBT-SUD), Dual Focus Schema Therapy (DFST), and Dynamic Deconstructive Psychotherapy (DDP) (Gianoli et al., 2012).

DBT-SUD is comprehensive psychosocial treatment which has been specifically developed for Substance Use Disorder and comorbid patients (Rosenthal et al., 2005). This therapy was originally developed for female clients that meet full criteria for BPD, Polysubstance Abuse Disorder, or SUDs for opiates, cocaine, amphetamines, sedatives, hypnotics, Schizoaffective Disorder, Bipolar Affective Disorder, and Psychosis Disorder (Rosenthal et al., 2005).

Dual Focus Schema Therapy (DFST) was developed in order to treat the broader range of personality disorders that are often comorbid with SUD and AUD (Gianoli et al., 2012). DFST is a 24 week, manually guided, individual cognitive behavioral therapy that integrates relapse prevention techniques and addresses chronic and maladaptive personality functioning and coping styles (Gianoli et al., 2012). Dynamic Deconstructive Psychotherapy (DDP) is a practice that targets neurocognitive functions of association, attribution, and alterity (Chlebowski et al., 2018). Association is the ability to verbalize coherent interpersonal episodes, attribution is the ability to form complex attributions of self and others, and alterity is the ability to form realistic and differentiated attributions of self and others such as self-awareness, empathetic capacity, mentalization, individuation, and self-other differentiation (Chlebowski et al., 2018).

All three of these psychotherapies have been tested in samples of patients with BPD and SUD, but only DDP has been tested repetitively in small samples of patients with comorbid BPD and AUD (Gianoli et al., 2012). Linehan and Dimeff (1997) further developed a version of DBT that treats patients with comorbid BPD and SUD; this version includes strategies for dialectics to

abstinence issues and attachment strategies in order to aid difficult to engage and easily lost patients, and the findings were promising.

Pharmacotherapy is a common form of treatment for both Borderline Personality Disorder and Alcohol Use Disorder individually (Gianoli et al., 2012). However, pharmacotherapy goals differ between Borderline Personality Disorder and Alcohol Use Disorder; thusly, there have been only slight overlaps in uses of pharmacotherapy in relation to a comorbid addiction (Gianoli et al., 2012). For individuals with AUD, the aim of pharmacotherapy is relapse prevention, which reflects in strategies used in pharmacotherapy, such as Lamotrigine, that moderate cravings and produces adverse physical reactions when alcohol is consumed (Gianoli et al., 2012).

Topiramate is a drug that was found to effectively reduce the symptom of anger in BPD patients (Nickel et al., 2004). Researchers found that Topiramate reported greater reductions in four out of the five State Trait Anger Experience Inventory subscales (Spielberger, 1988). However, it is cautioned for use in comorbid BPD and AUD cases as the dosing schedule, medication compliance, and the potential for suicidality increases (Gianoli et al., 2012). Among these, there is also risk for fetal malformation, negative reactions to birth control medication, and potential misuse such as weight loss agents (Gianoli et al., 2012). Johnson et al. (2003) found that Topiramate was more effective than a placebo when testing for reduction of alcohol consumption; the use of Topiramate effective increased the percentage of abstinence days, reducing drinks per day, drinks per drinking day, percentage of heavy drinking days, and the log plasma gamma-glutamyl transferase ratio (Johnson et al., 2003). Most recently, an open label trail suggested that a low dose of Topiramate used in conjunction with psychotherapy may be more effective than psychotherapy alone regarding reducing alcohol cravings, anxiety, and

improving mood (Paparrigopoulus, Tzavellas, Karaiskos, Kourlaba, Liappas, 2011). The mechanisms in which the reduction of alcohol consumption transpired is not entirely clear yet throughout the research; however, one hypothesis argues that it decreases the mesocorticolimbic dopamine activity and the rewarding or reinforcing properties of alcohol (Johnson et al., 2003; 2007), while another hypothesis states that it reduces alcohol consumption through the enhancement of inhibitory control and attention (Rubio, Martinez-Gras, & Manzanares, 2009). The reductions in the alcohol consumption of participants were found to be correlated moderately with improving behavior inhibition tasks which suggests that alcohol use was due to Topiramate's ability to improve and individual's inhibitory control (Gianoli et al., 2012).

Lamotrigine is a drug that was first reported being used for Borderline Personality Disorder by Pinto and Akiskal (1998). Their study analyzed patients with BPD who had previously failed to respond to previous pharmacotherapies. After the patients used lamotrigine for over a year, the study found that the drug decreased sexual impulsiveness, substance abuse, and suicidal behaviors (Pinto & Akiskal 1998). Other studies also found that Lamotrigine reduced BPD symptoms of impulsivity, mood lability, and anger (Gianoli et al., 2012). Lamotrigine was also found to reduce alcohol cravings during a case history series with three resistant schizophrenia and comorbid AUD (Kalyoncu et al., 2005). Finally, in a study that examined the effects of Lamotrigine on drinking behavior, researchers found that there was a reduction in alcohol seeking and relapse (Vengeleine, Heidbreder & Spanagel 2007).

Aripiprazole is a second-generation antipsychotic drug that has shown to reduce anger in patients with Borderline Personality Disorder (Gianoli et al., 2012). Results of the use of Aripiprazole showed more significant rates of change than a placebo on the aggression symptom found in BPD patients after eight weeks and a significant decrease in the intensity of anger and

readiness to react using aggression (Gianoli et al., 2012). There was also an improvement in self-reported ability to control anger, and these results were sustained over an eighteen-month period; this suggests that Aripiprazole may be an effective long term treatment option for Borderline Personality Disorder (Gianoli et al., 2012). In terms of treating Alcohol Use Disorder, Kranzlet found that a single dose of the antipsychotic prior to alcohol exposure resulted in increasing sedative and decreased euphoric states of alcohol and reduced drinking in nontreatment seeking alcoholics in the study (Kranzlet et al., 2008; Voronin, Randall, Myrick, & Anton, 2008). This may be due to the drugs ability to break a link connected alcohol induced stimulation and alcohol consumption (Gianoli et al., 2012). Furthermore, the retention rates of treatment for Aripiprazole were found to be comparable among other drugs such as Naltrexone; the Aripiprazole group remained abstinent from alcohol use for a longer period of time than the Naltrexone group (Gianoli et al., 2012).

Olanzapine is one medicine that has been found to reduce anger in Borderline Personality Disorder patients (Gianoli et al., 2012). In one analysis conducted with thirty-five patients, using Olanzapine was found to significantly improve all BPD symptoms with special regard to anger, impulse aggression, interpersonal sensitivity, anxiety, and paranoia after only four weeks of treatment (Gianoli et al., 2012). Researchers also found that Olanzapine significantly improved symptoms of impulsivity and aggressive behavior in BPD and AUD over Dialectic Behavior Therapy alone (Soler et al., 2005). In relation to Alcohol Use Disorder, Olanzapine has the ability to alter relationships between alcohol consumption and cravings (Gianoli et al., 2012).

Future Recommendations for Treatments

While reviewing the literature and research, Dialectical Behavior Therapy was found consistently throughout all comorbid disorders: Posttraumatic Stress Disorder, Eating Disorders,

and Substance and Alcohol Use Disorders. Dialectical Behavior Therapy is as an efficacious and empirically supported treatment option for those diagnosed with Borderline Personality Disorder.

For Borderline Personality Disorder and Posttraumatic Stress Disorder, there are many different treatment routes one can go. However, while reviewing the psychotherapy options as a frontline approach, DBT-PTSD and DBT+DBT PE seem to be the most positively reviewed and tested treatments. For those suffering with BPD and comorbid PTSD, it is important to find a treatment option that targets both set of symptoms from both disorders. With DBT + DBT PE, the patient is able to work through their BPD as well as learn to cope and work through other problems that may surface. However, it is important to note that there are different subthreshold levels to BPD, as previously stated. The individual should be tested to determine their threshold of BPD and then treated accordingly.

Regarding Eating Disorders such as Anorexia Nervosa and Bulimia Nervosa, both disorders have different treatment plans that show positive results for efficacy. Firstly, the use of DBT for the comorbid patient would help their BPD symptoms and traits. For Anorexia Nervosa patients, the treatment options are muddled due to the rare disorder and limited literature. However, Cognitive Remediation Therapy (CRT) seems to show optimistic results in terms of teaching the individual how to cope, develop strategies, become more cognitively flexible, regulate emotional distress (Safer & Chen, 2011). This strategy is also the most empirically supported option for those struggling with Anorexia Nervosa and comorbid Borderline Personality Disorder. For Bulimia Nervosa and comorbid BPD, the baseline approach would be DBT, again, for the BPD symptoms. However, this should also be paired with Cognitive Behavior Therapy (CBT), as empirical evidence supports. These two therapies should be paired

together as they overlap is various ways, such as emotional distress and relapse prevention. The dual therapy treatment model will be sure to target symptoms of both disorders.

Substance Use and Alcohol Use Disorders can be treated by the same DBT approach for the comorbid BPD symptoms. However, with these disorders it is important to recognize what substances have been abused and take a lighter approach in terms of drugs for medicine. This can be due to a past of substance and pill abuse by the individual. If there is a past of major pill misuse, there should be some hesitancy in prescribing drugs such as Lamotrigine, Aripiprazole, Olanzapine, and Topiramate. However, if one decides the drugs would not be harmful for the treatment of the individual, either Lamotrigine or Aripiprazole are the more efficacious and supported ones to use. For the argument in favor of Lamotrigine, the drug was found to reduce impulsivity, mood, anger, and alcohol cravings, which are comorbid symptoms between both Borderline Personality Disorder and Alcohol Use Disorders. Aripiprazole can also be beneficial for treating these disorders as it was found to be comparable to Naltrexone and resulted in individuals remaining abstinent from alcohol for long periods of time. Both of these drugs help, but Lamotrigine would be better for first treatment approach, added with DBT, for the betterment of the individual with these comorbid disorders, since it targets comorbid symptoms between both disorders as well as more symptoms than Aripiprazole.

Limitations and Future Directions

Some limitations of this research include limited research, especially regarding Anorexia Nervosa and comorbid BPD. As Anorexia Nervosa is considered a rare disorder, the research reflected becomes increasingly limited. Another limitation this research poses is the differentiating thresholds of BPD in regard to comorbid PTSD. Since these three different thresholds have differentiating factors, it can become increasingly difficult to diagnose the

individual. These differentiating thresholds can pose different treatment options for the individual experiencing them.

Considering future directions, more research is needed to continue creating the best treatment options for Borderline Personality Disorder and comorbid disorders. As research becomes more available, better treatment options can be explored. Finally, this information is most relevant to clinicians as they diagnose and treat individuals with these diagnoses. It is important to take note of different BPD thresholds, differentiating symptoms, and delve into the background issues that clients have faced, such as drug abuse, in order to best serve them and their diagnosis.

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