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ASSESSING THE RELATIONS BETWEEN ATTACHMENT STYLES AND BORDERLINE PERSONALITY DISORDER CRITERIA: A MUTLI-METHOD APPROACH

LENA BECKER
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Reviewed and approved* by the following:

Kenneth Levy
Associate Professor
Thesis Supervisor & Honors Advisor

Brian Crosby
Associate Teaching Professor
Second Reader

* Electronic approvals are on file.

ABSTRACT

Borderline personality disorder (BPD) is a highly damaging and lethal disorder that has increasingly received research attention. BPD is characterized by impulsivity, unstable relationships, and suicidality. One lens through which researchers have investigated BPD is attachment theory. Attachment theory posits that one's early childhood interactions with a caregiver influences how we create and maintain relationships in adulthood. The manner in which we interact is deemed an attachment style. Individuals with BPD often display insecure attachment styles, signifying that the way in which they form and preserve interpersonal relationships with others is often more turbulent than for the general population. Many studies have explored relations between attachment styles and BPD but have found mixed results. No study has looked at all nine BPD criteria, as defined by the DSM-5, and their individual relations to attachment patterns. In this study, we aim to clarify the relation between adult attachment style and the nine BPD criteria, as measured by interviewers and via self-report, to advance both theoretical and clinical knowledge regarding the development and treatment of BPD.

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Chapter 1

Introduction

Borderline personality disorder (BPD) is a serious mental health disorder characterized by unstable relationships and self-image, impulsivity, and suicidality. BPD affects approximately 1-5% of the U.S. population (Levy & Johnson, 2016; Trull, Jahng, Tomko, Wood, & Sher, 2010) and poses a challenge to not only the afflicted, but their family and health care providers as well (Quirk et al., 2016). The cost of BPD symptomology to society is higher in this population compared to national averages given elevated rates of occupational stress and unemployment (Jovev & Jackson, 2006; Sansone & Sansone, 2012). A major issue in understanding and treating BPD is its complexity. Five (or more) of the nine criteria for BPD, as defined by the Diagnostic and Statistical Manual of Mental Health Disorders (American Psychiatric Association, 2013), need to be met to make the diagnosis, resulting in 256 possible combinations, presenting both a conceptual and diagnostic challenge. This complexity and the reality that BPD is highly prevalent, dangerous, and associated with significant burden to both the mental health system and the individuals and families directly affected by the disorder make the investigation of BPD etiology and conceptualization vital (Frankenburg & Zanarini, 2011; Levy & Johnson, 2016; Quirk et al., 2016).

Arguably, the most serious aspect of BPD is suicidality and engagement in self-injurious behaviors such as cutting one's wrist or burning oneself with a cigarette. These self-injurious behaviors are typically engaged in without suicidal intent and thus referred to as non-suicidal self-injury (NSSI). Studies show that 60-85% of BPD patients engage in NSSI and NSSI predicts

both engagement in suicide attempts and suicide completion (Clarkin, Widiger, Frances, Hurt, & Gilmore, 1983; Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994). In fact, BPD is associated with higher risk for completed suicide than depression, eating disorders, posttraumatic stress disorder, and schizophrenia (Chesney, Goodwin, & Fazel, 2014). As many as 9% of people with BPD will die via suicide (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2005). Importantly, both NSSI and suicide attempts in BPD are precipitated by interpersonal discord (see Levy, Johnson, Clouthier, Scala, & Temes, 2015 for a review). Understanding etiological contributors to relationship difficulties in BPD has both served as the foundation for BPD treatment models (e.g., Clarkin, Yeomans, & Kernberg, 2007) and provided potential for tailoring treatment to patients characterized by different patterns of relationship challenges.

One lens through which researchers have attempted to explore relationship difficulties in BPD is through attachment theory (Levy et al., 2015). Attachment theory (Bowlby, 1969) describes the way in which early experiences with caregivers throughout childhood influence later interpersonal functioning. Bowlby proposed that attachment was an evolutionary behavioral system humans and other species use to ensure offspring are close, safe, and receive social learning needed to reach maturity. This system develops as the child identifies (or fails to identify) the primary caregiver as a safe haven of resources and affection. As the child ages, they often identify their caregiver as a secure base from which they can stray and later return to for comfort and support. These childhood experiences form "internal working models," ways of viewing oneself in relation to others, which the children will carry into adulthood. For this reason, the attachment system is active in both children (with parents) and adults (with parents, friends, and romantic partners). According to attachment theory, how people relate to others derives from internal (sometimes unconscious) ways of viewing oneself and others and

relationships between them. Per Bowlby, two broad patterns or categories of attachment have been identified: secure and insecure. Securely attached individuals tend to appropriately regulate their affects and experience interpersonal relationships as reciprocal and fulfilling. Insecurely attached individuals tend to experience greater interpersonal difficulties and are at increased risk for psychological disorders (Mikulincer & Shaver, 2012), including personality disorders (Levy, 2005; Levy et. al 2015).

Further research has expanded upon Bowlby's original findings to better describe adult attachment. In 1987, social psychologists, Hazan and Shaver, described how attachment theory can be applied to adult romantic relationships: the ways in which people regard themselves and their caregivers in childhood transfers to how they view themselves and their significant others in adulthood. They defined three potential styles of attachment. As mentioned previously, attachments can be secure or insecure. Within the category of insecure attachment, individuals may display attachment anxiety or avoidance. Anxiously attached people have a negative self-perception and depend on others for reassurance and development of self-worth. In contrast, avoidantly attached individuals have negative internal working models of others, rather than themselves. This may manifest in restraint of intimacy or emotional closeness due to their mistrust of others. Previous research has found that about 60% of individuals display secure attachment, while 20% display anxious-ambivalent attachment (which is similar in theory to anxious attachment) and 20% show avoidant attachment (Hazan & Shaver, 1987). This suggests that attachment insecurity is not all together uncommon, and the defensive mechanisms explained by Bowlby play a role in nearly half of the population's lives. In 1990, Bartholomew, also a social psychologist, classified a fourth attachment style to describe individuals who possesses both negative representations of self and negative representations of others; they are

classified as expressing fearful attachment. Such individuals feel a strong compulsion to engage in close relationships, but fear becoming too close to others (Bartholomew, 1990; Brennan, Clark, Shaver, 1998).

Individuals with BPD have consistently displayed insecure attachment patterns (Levy, 2005; Levy & Johnson, 2018). Attachment anxiety often is linked to BPD, whereas the association between attachment avoidance and BPD has been less consistent (Levy et al., 2015). Levy and colleagues (2015) posit that links may exist between BPD and attachment avoidance, but in the context of high anxiety, which indicates that fearful attachment may contribute to BPD (Levy, Meehan, Weber, Reynoso, & Clarkin, 2005). Additionally, the research into specific BPD symptoms and their correspondence to attachment has shown mixed results. For example, relations between aggressive behavior in BPD and attachment differ depending on the type of aggression being assessed. Reactive aggression (due to fear of hostility from others) is correlated with fearful attachment, self-directed aggression (self-harming behaviors) with attachment avoidance (Critchfield, Levy, Clarkin, & Kernberg, 2008), and anger and irritability with attachment anxiety (Morse et al., 2009). The characteristic unstable sense of self and others in BPD may align with the disintegrated internal working models of insecurely attached individuals (Liotti, 2000). Together, past findings suggest that attachment insecurity contributes to BPD, but the underlying mechanisms and the connections between specific BPD features and specific patterns of attachment remain obscure.

The Present Study

Understanding links between specific BPD symptoms and various attachment styles is important for several reasons: (1) A better understanding of specific BPD criteria can help to deepen current theoretical research of BPD. As attachment theory is a developmental framework,

understanding symptoms' relation to attachment could provide insight into the development of the disorder itself. In turn, this greater understanding of attachment in the context of BPD may help researchers and clinicians alike to better understand the relationship difficulties often seen in BPD. (2) As mentioned earlier, the heterogenous nature of BPD, as defined by the DSM, creates varied presentations. Examining links between attachment patterns and specific BPD criteria may offer an understanding of various BPD presentations, providing a schematic for predicting groups of symptoms associated with different attachment styles, a potentially useful tool for clinicians. (3) At the same time, these links might also provide insight into the relational difficulties most relevant for each BPD symptom. Together, this knowledge will elucidate bi-directional relationships between specific BPD features and specific attachment styles.

In the present study, we examine the nine BPD criteria as they relate to adult attachment styles. We also seek to clarify effects based on BPD symptom data via different methodologies; both self-report and semi-structured interview based. We explore correlations between each BPD criterion across methods with attachment styles as measured by the Experiences in Close Relationships-Revised Questionnaire (Fraley, Waller, & Brennan, 2000). Additionally, we investigate possible interactions between attachment anxiety and avoidance in order to understand if their confluence (i.e., "fearful attachment") influences BPD presentation. Based on prior research (Critchfield, Levy, Clarkin, & Kernberg, 2008; Levy, 2005; Levy & Johnson, 2018; Morse et al., 2009), we hypothesize that fear of abandonment and feelings of emptiness would correlate with anxious attachment, while self-harm would correlate more substantially with attachment avoidance. We also hypothesize that anger, affective instability, and impulsivity will be associated with fearful attachment. As the first examination of the specific relations between all nine BPD criteria and attachment styles, we hope to not only expand knowledge on

the manifestation and development of BPD, but also improve the ability to predict and understand relationship difficulties in the treatment of individuals who experience this lethal disorder.

Chapter 2

Methods

Participants

The data used for this project were gathered from 196 participants who participated in multiple studies between 2006 and 2019. Participants were recruited from two sources: 1) Penn State's Psychological Clinic with a suspected BPD diagnosis and 2) the Penn State Psychology Department Subject Pool. Average participant age was 22.79 years with a standard deviation of 8.31 years. Participants were predominately women, with 93.37% self-identifying as female, and the majority identified as white (69.9%). Demographic information can be found in Table 1.

Measures

International Personality Disorder Examination (IPDE)

The IPDE is a semi-structured clinical interview, scored by the interviewer, and created to assess personality disorders, and was used in this study to assess specific BPD criteria (Loranger, 1999). Responses from the IPDE provide both a criterion score and a dimensional score for each personality disorder. Each item represents a personality disorder criterion with a score of "2" representing the criterion being fully endorsed, a "1" indicating a subthreshold endorsement, and "0" being an absent criterion. In the current study, criterion scores from each BPD criteria were combined to represent the nine symptoms DSM symptoms of the disorder with an alpha of .88. The IPDE has shown to be reliable and valid for assessing DSM-IV Axis II pathology (Loranger et al., 1994).

The McLean Screening Instrument for BPD (MSI-BPD)

The MSI-BPD is a 10-item patient self-report screening measure utilized as a brief self-report screening inventory for BPD (Zanarini et al., 2003). Items are rated Yes/No and correspond to the nine DSM–5 criteria for BPD (two items for paranoia/dissociation); examples include "Have you chronically felt empty?" and "Have you been extremely moody?" It displays adequate internal consistency ($\alpha = .77$) and test–retest reliability ($r = .72$), and adequate criterion validity with semi-structured interviews in community and clinical samples (Melartin, Häkkinen, Koivisto, Suominen, & Isometsä, 2009; Patel, Sharp, & Fonagy, 2011; Zanarini et al., 2003). In our sample, results also displayed adequate internal consistency ($\alpha = .93$).

The Experiences in Close Relationships-Revised Questionnaire (ECR-R)

The ECR-R, a revised version of the 1998 original (Brennan, Clark, & Shaver, 1998), is a reliable and valid self-report measure of attachment style (Fraley, Waller, & Brennan, 2000). The ECR-R is a 36-item self-report questionnaire assessing the two basic dimensions of insecure attachment: anxiety and avoidance. Participants rate how descriptive each item is of their feelings in close relationships on a 7-point scale that ranges from 1 (strongly disagree) to 7 (strongly agree). Eighteen items assess attachment anxiety, and 18 assess attachment avoidance. International empirical research has shown both external and internal validity for the measure (Kooiman, Klaassens, Van Heloma Lugt, & Kamperman, 2013; Sibley, Fischer, & Liu, 2005). The internal consistency of the ECR-R is high for both dimensions ($\alpha_{anx} = .95$, $\alpha_{avd} = .93$; Sibley et al. 2005). A short form of the ECR-R (the ECR-S; Wei, Russell, Mallinckrodt, Vogel, 2007) has also been developed, using 12 items from the original measure (6 assessment attachment anxiety and 6 avoidance). The psychometric properties of the ECR-S resemble those of the ECR-R ($\alpha_{anx} = .78$, $\alpha_{avd} = .84$) with high correlations between the two measures ($r_{anx} = .94$, $r_{avd} = .95$)

(Wei, et al. 2007). In our sample, we found similar reliability results. The ECR-R anxiety subscale had an alpha of .94 and the avoidance subscale had an alpha of .96. The ECR-S had internal consistencies for anxiety and avoidance subscales of .78 and .81, respectively.

Procedure

All participants (N = 196) completed computerized self-report measures in the laboratory which included a version of the ECR, described above. A subset of our participants (n = 45, 22.96%) were administered the ECR-R and another subset (n = 151, 77.04%) the ECR-S. To maximize the amount of data included in our analyses and given the psychometric equivalence of the two measures, we used subscale scores (anxiety and avoidance) from all participants with available data, regardless of ECR form administered. The majority of participants (n = 148, 75.51%) completed the MSI-BPD as part of their self-report measures. Most participants (n = 175, 89.29%) completed the IPDE, after the self-report measures, with trained interviewers. Both the MSI-BPD and the IPDE were completed by 128 (65.31%) participants while, 48 (24.49%) completed only the IPDE, and 21 (10.71%) completed only the MSI-BPD. All participants included in this analysis completed a version of the ECR and at least one BPD assessment. Participants were compensated with either class credit or at the rate of $12 an hour. All study procedures were approved by the university's Institutional Review Board prior to subjects' participation.

Data Analysis

Due to the ordinal nature of the MSI-BPD and IPDE items, Spearman correlational analyses were run to examine the strength of the associations between BPD criteria (IPDE & MSI-BPD) and attachment dimensions (ECR-R). BPD criteria were taken from the self-report MSI-BPD scale and interviewer-rated IPDE scores. Partial correlations between attachment styles and BPD criteria were also run, controlling for the other attachment dimension (e.g., the correlation between attachment anxiety and BPD criteria, controlling for avoidance) to account for potential effects due to the other dimension. Unless otherwise stated, partial correlations (rather than zero-order correlations) are interpreted to ensure the robustness of the findings. Multiple regression was used to examine the significance of the interaction between attachment anxiety and avoidance (i.e., fearful attachment) in predicting BPD criteria. All analyses were run using SPSS Version 26.

Chapter 3

Results

Significant correlations between attachment anxiety and all nine BPD criteria in both measures BPD measures were found (Table 2). Attachment anxiety correlated most strongly with the IPDE criterion of avoidance of abandonment, after controlling for attachment avoidance (ρ = .44; $p < .001$). In contrast, the IPDE criterion of dissociative symptoms correlated most weakly with attachment anxiety, after controlling for attachment avoidance (ρ = .21; $p < .01$). Similarly, the strongest correlation was found between the MSI-BPD avoidance of abandonment criterion and attachment anxiety, after controlling for attachment avoidance (ρ = .65; $p < .001$). The weakest correlation was found between the MSI-BPD impulsivity criterion and attachment anxiety, after controlling for attachment avoidance, (ρ = .30; $p < .001$).

The correlations between BPD symptomology and attachment avoidance when controlled for attachment anxiety were weaker. Attachment avoidance correlated most strongly with the IPDE criterion of unstable and intense relationships, after controlling for attachment anxiety (ρ = .17; $p < .05$). Otherwise, the IPDE criterion of affective instability produced a significant correlation (ρ = .15; $p < .05$). Similarly, the MSI-BPD only produced three significant correlations out of nine comparisons after controlling for attachment anxiety. Attachment avoidance correlated most strongly with the MSI-BPD criterion of identity disturbance, after controlling for attachment anxiety (ρ = .30; $p < .001$). The MSI-BPD criteria of emptiness and dissociative symptoms also produced significant correlations, when controlled for attachment anxiety (ρ = .17; $p < .05$) and (ρ = .25; $p < .01$), respectively.

We also explored differences in the pattern of correlations with the ECR-R between the IPDE and the MSI-BPD as an exploratory, post-hoc analysis. Between the IPDE and MSI-BPD,

for attachment anxiety, the pattern of correlations across the measures was highly similar (r = .78), though the MSI-BPD correlations had a higher magnitude on average ($\mu_{\text{MSI-BPD avg.}}$ = .41, $\mu_{\text{IPDE avg}}$ = .29) (Figure 1). In attachment avoidance, however, the pattern of correlations across the IPDE and MSI-BPD were largely unrelated (r = .28). Additionally, the individual measures had low correlation averages ($\mu_{\text{MSI-BPD avg.}}$ = .12, $\mu_{\text{IPDE avg}}$ = .10) (Figure 2).

The interaction between attachment anxiety and avoidance did not significantly predict MSI scores. One significant interaction between attachment avoidance and anxiety was produced in the analysis of IPDE data, with an R square change of .02 (p < .05) (Table 3).

Chapter 4

Discussion

In this study, we hoped to expand knowledge on the internal working models that contribute to BPD and improve the treatment of individuals who experience this lethal disorder. In a mixed clinical/non-clinical sample, we explored the relations between self-reported and interviewer-assessed BPD criteria and self-reported attachment styles. We hypothesized that fear of abandonment and feelings of emptiness would correlate with anxious attachment, while self-harm would correlate with attachment avoidance. We also hypothesize that anger, affective instability, and impulsivity would be associated with fearful attachment.

As predicted, relations between BPD symptoms and styles of insecure attachment in general were confirmed; stronger relations were present between BPD and attachment anxiety than attachment avoidance. Attempts to avoid abandonment was most strongly correlated with attachment anxiety in both measures of BPD. In contrast, only two criteria as measured by the IPDE (unstable relationships and affective instability) produced significant associations with attachment avoidance and three (identity disturbance, emptiness, and dissociation) from the MSI-BPD. The discrepancy between the strength of associations with attachment anxiety and avoidance may indicate that attachment avoidance does not play as strong of a role in BPD symptoms as some have argued (Meyer, Pilkonis, & Beevers, 2004). Additionally, correlations between the ECR and MSI-BPD show stronger effects, likely due to shared method variance, as the IPDE is scored by an interviewer.

When controlling for the other form of attachment insecurity between measures, each style's association with BPD criteria remained similar, suggesting that attachment anxiety and

avoidance play independent roles in BPD, with attachment anxiety having a much larger effect. The one significant result found in the interaction analysis was likely due to chance.

This study adds to a body of inconsistent literature of attachment patterns and BPD's influence on one another (Levy et. al 2015; Agrawal, Gunderson, Holmes, & Lyons-Ruth, 2004). If these results are replicable, an increased focus on anxious attachment and its developmental implications, rather than the broader concept of insecure attachment, will be warranted in efforts to understand BPD and its manifestation. Unsurprisingly, data confirmed that avoidance of abandonment correlated with attachment anxiety; however, all nine criteria, as measured by both instruments correlated significantly with BPD. Though symptoms such as dissociation, suicidality, and affective instability may appear to be only indirectly related to interpersonal functioning, our findings demonstrate that a negative internal working model of the self, or anxiety in relationships, may contribute to these BPD criteria as well, not only those explicitly characterized by interpersonal functioning. This pattern of significant correlations may also suggest that the same inconsistently reliable early relationships which create attachment anxiety (Bowlby, 1973) also may have a role in developing BPD.

Similarly, a secure early life environment may possibly act as a buffer against later BPD development, or at the very least delay the onset and severity of symptomology. These protective factors for BPD are especially important to investigate given that even the presence of one BPD criterion is associated with greater risk for suicide attempts, other comorbid mental health disorders, and time missed from work due to mental illness (Zimmerman, Chelminski, Young, Dalrymple, & Martinez, 2012). Promoting early secure attachment in order to prevent even individual symptoms of BPD from occurring will be an important direction for future research.

Additionally, previous research has theorized that fearful attachment plays a role in BPD (Beeney et al., 2017; MacDonald, Berlow, & Thomas, 2013). Here, the absence of an interaction between attachment avoidance and anxiety may suggest that fearful attachment, as measured by the ECR, does not affect BPD symptomology in its own right. However, this non-significant finding is more likely due to typically lower power for moderator analysis combined with the moderate size of our sample. This methodological concern may be especially likely, given recent data from a 2020 meta-analysis suggesting fearful attachment does predict the severity of BPD symptoms (Smith & South).

The results regarding attachment anxiety and BPD criteria support the long-established finding of shared method variance and the importance of multimethod designs (e.g., Campbell & Fiske, 1959). The MSI-BPD consistently correlated with the ECR at a higher magnitude than the IPDE. It is likely that this is due to shared method variance, which should help to inform future research in the field, by instilling that it may be unwise to overemphasize strong correlations between BPD and other variables when both are measured via self-report. Additionally, for attachment anxiety, in Figure 1 it is apparent that while the method influences the magnitude of correlation, the trends for each symptom remain consistent. This suggests that, while shared method variance might affect the *absolute* magnitude of correlations, the *relative* magnitude across BPD criteria appears unaffected by measurement type. The consistency in relative magnitudes suggests that among empirically supported measures for the same or similar constructs, patterns of results should be the same. So, while it is important to consider shared method variance, using measures with (or without) the same method of evaluation should not significantly impact the result's pattern.

Conversely, the associations between BPD criteria and attachment avoidance did not follow the same pattern across measures. While this could be due to statistical noise, this more likely indicates a need for caution in our abilities to make robust statements about the relation between attachment avoidance and BPD symptoms. As shown in Figure 2, unstable relationships, identity disturbance, and dissociative symptoms (all correlations which were found to be significant) break the trend of relatively similar spikes and dips in correlations between the IPDE and MSI-BPD seen throughout the graph. The construct of avoidant attachment correlated with identity disturbance and dissociative symptoms more highly on the self-report measure, the MSI-BPD, than on the IPDE. This difference may be explained by withholding of essential diagnostic information in more avoidantly attached individuals. Conversely, unstable relationships correlated more strongly with attachment avoidance when measured by the IPDE, rather than the MSI-BPD. This could potentially be due to an interviewer's ability to perceive problematic interactions better than the individual who is self-reporting, especially in cases of individuals who have negative models of others. The underlying attachment insecurity in a symptom like unstable relationships may influence presentation and a participant's reporting abilities, which may lead to ambiguous connections between this symptom and internal working models of relationships when assessed via self-report, an important caveat for research relying on this measurement method.

Previous research has demonstrated the importance of attachment as both a predictor and moderator of psychotherapy outcome (Levy, Kivity, Johnson, & Gooch, 2018). Utilizing therapy techniques based on a focus on a client's attachment style often leads to greater progress in therapy (Levy & Johnson, 2018). It has long been understood that attachment insecurity contributes heavily to BPD characteristics (see Levy et al., 2015, for a review) and that

attachment anxiety likely plays a larger role than attachment avoidance (see Smith & South, 2020, for a meta-analytic review). Our findings corroborate those of past research. Not only does attachment anxiety play a role in the disorder, it appears to play a role in every criterion of the disorder. As mentioned previously, the presence of even one BPD criterion can have a significant impact on health outcomes (Zimmerman et al., 2012). Therefore, even individuals who do not meet full criteria for the disorder (which includes much of our sample) might have attachment anxiety underlying the specific symptom(s) they display. This may be important in evaluating and treating these individuals given the effect on safety, comorbidity, and occupational stress even one symptom can produce. Moreover, in symptoms like avoidance of abandonment and feelings of emptiness, we see a greater correlation of attachment anxiety. As one may imagine, the characteristic fear of being left by a partner, often seen in anxiously attached people, would lead such an individual to act so as to avoid real or imagined abandonment and feel a sense of emptiness in the instance of being abandoned, whether real or imagined. For clinicians, this could mean an increased focus on treating attachment anxiety in the presence of these symptoms specifically. Additionally, previous research has suggested the clinical importance of confluence of attachment anxiety and avoidance (e.g., Agrawal et al., 2004), suggesting that clients who exhibit a fearful attachment will have poorer outcomes than those with anxiety or avoidance alone. Our results call into question whether fearfully attached individuals have greater symptomology than other types insecurely attached individuals, though ongoing research is needed to overcome the methodological limitations of the present study.

Clinicians may also find use in assessing attachment style to help diagnose individuals and create a treatment plan. Using both a PD assessment and attachment assessment at intake could give mental healthcare providers a better sense of the client in order to create the best

treatment plan. Additionally, assessing for either attachment style or BPD should indicate risk for the other, which could be an efficient way to diagnose clients. The knowledge that all symptoms are related to attachment anxiety, for example, might indicate risk for a number of BPD symptoms when a clinician is aware of a patient's anxious attachment style. As shown here, attachment anxiety plays a significant role in all BPD criteria, so addressing attachment anxiety and associated problematic relationship patterns may serve as a route to changing BPD symptomology. This finding is consistent with existing treatments for BPD that focus on mental representations of self and other (e.g., Clarkin, Yeomans, & Kernberg, 2007). And while attachment avoidance seems to play a lesser role in our study, viewing symptoms such as unstable relationships or dissociation in particular through the lens of attachment avoidance may prove useful.

This study was limited by a relatively small sample size, which restricted the analytic power, especially in terms of the interaction analyses. This may have led to Type II errors in terms of the fearful attachment findings in particular, especially given the growing literature suggesting the presence of this relationship (Smith & South, 2020). A homogenous population of mostly White undergraduate students limits the generalizability to non-White non-undergraduate populations. Additionally, only 128 of 196 participants completed both BPD measures, suggesting that the correlations between attachment styles and BPD criteria within each method may be less stable than in a sample with more overlapping measure completion.

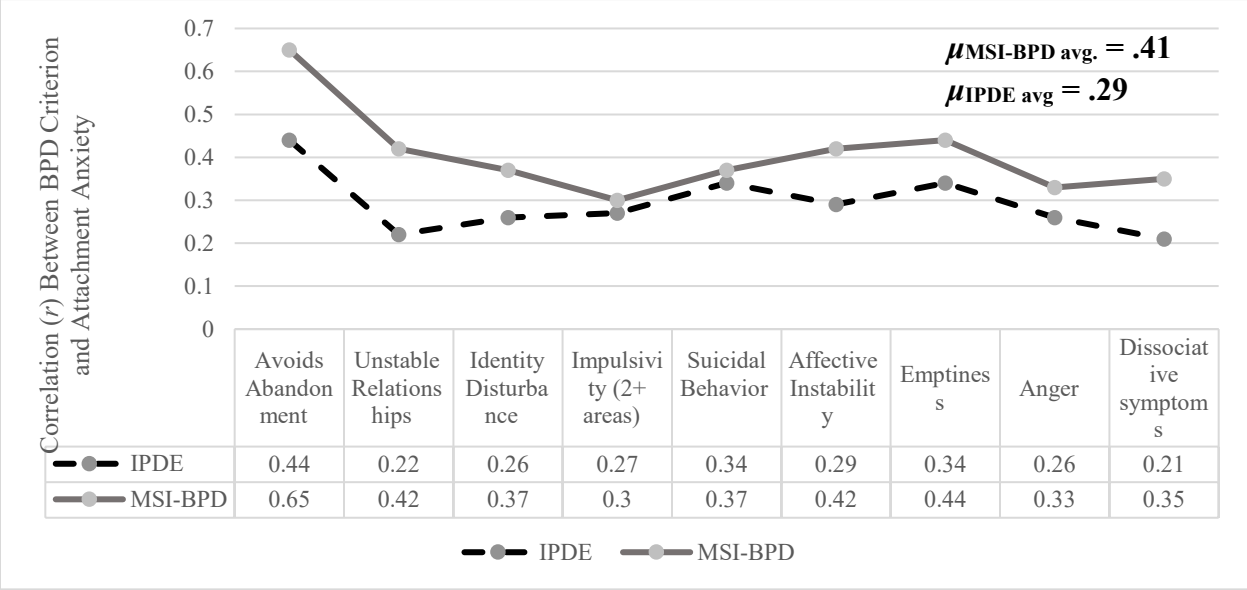
In future research, it will be important to analyze outcomes when an interviewer-rated measure of attachment style, such as the Adult Attachment Interview (George, Kaplan, & Main, 1985), is included in analysis to give further insight into the effect of shared method variance. Further studies regarding specific BPD criteria may also provide additional insight into the

correlation of attachment avoidance in BPD, which in this study were both weak and inconsistent. Additionally, our findings demonstrated that attachment anxiety plays a far larger role in BPD than avoidance and that the confluence of the two has little to no association with BPD criteria. While, this could be due to a small sample size in this study, it may also be indicative of a narrower avenue for research, assessing attachment anxiety's relation to BPD development and manifestation. In a clinical setting, it may be useful to study how attachment style analysis may better help a clinician to treat BPD.

BPD presents unique challenges for those afflicted, their social network, and their treatment team. Attachment theory provides a powerful lens through which we can better understand the disorder and its many facets. Although attachment avoidance and fearfulness did not relate strongly with BPD criteria in this study, anxiety clearly played a significant role in BPD. Further research will bring more clarity in theory and diagnosis and in the same vain, enhanced treatments for the disorder.

Appendix A

Figures



	Avoids Abandonment	Unstable Relationships	Identity Disturbance	Impulsivity (2+ areas)	Suicidal Behavior	Affective Instability	Emptiness	Anger	Dissociative symptoms
IPDE	0.44	0.22	0.26	0.27	0.34	0.29	0.34	0.26	0.21
MSI-BPD	0.65	0.42	0.37	0.3	0.37	0.42	0.44	0.33	0.35

Figure 1. Borderline Personality Disorder (BPD) Measures and Attachment Anxiety using the International Personality Disorder Examination (IPDE) and McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD)

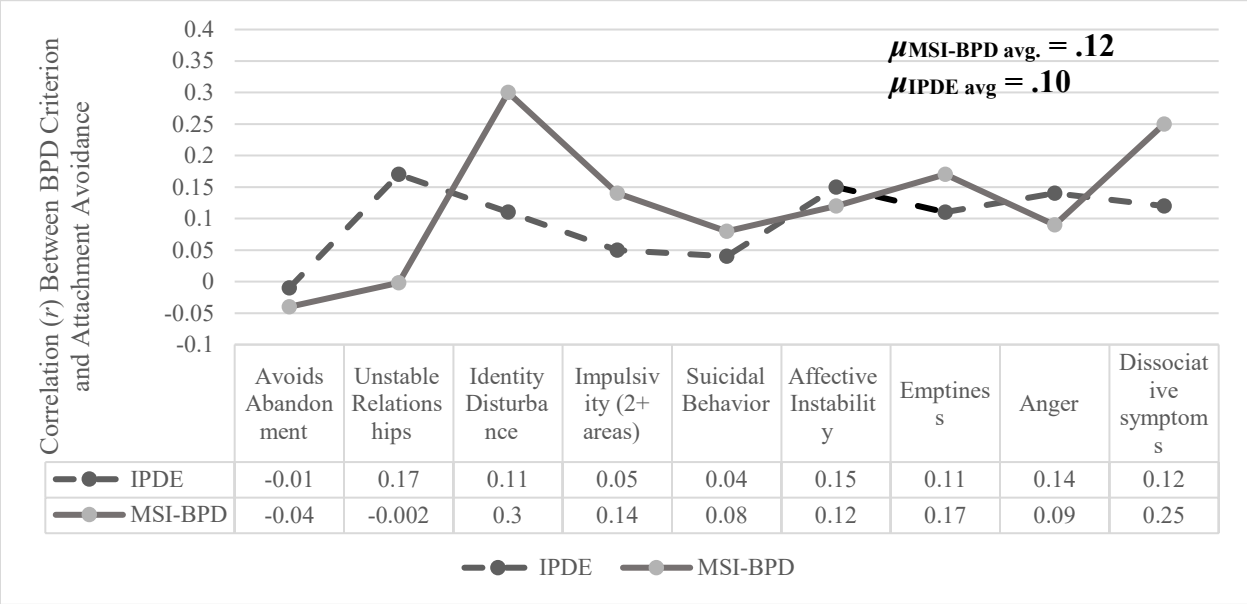


Figure 2. Borderline Personality Disorder (BPD) Measures and Attachment Avoidance using the International Personality Disorder Examination (IPDE) and McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD)

Appendix B

Tables

Table 1. Demographics (*N*=196)

	M	*SD*
Age	22.79	8.31
	n	%
Gender		
Female	183	93.37
Male	11	5.61
Transgender	2	1.02
Race		
African American, Black	8	4.08
Asian/Pacific Islander	20	10.20
Hispanic, Latina/o	12	6.12
Native American/American Indian	1	0.51
White	137	69.90
Multiracial	8	4.08
Other	6	3.06
Unknown	4	2.04
Relationship Status		
Single	102	52.04
Dating	70	35.71
Married/Domestic Partnership	9	4.59
Divorced	8	4.08
Separated	3	1.53
Unknown	4	2.04
Currently in School		
Yes	161	82.14
No	14	7.14
Unknown	21	10.71
Employment		
Yes	83	42.35
No	113	57.65

Table 2. MSI-BPD and IPDE Correlations with ECR

	IPDE (n = 175)				MSI-BPD (n = 148)			
	Anx	Partial Anx	Avd	Partial Avd	Anx	Partial Anx	Avd	Partial Avd
Avoids Abandonment	**.44*****	**.44*****	.05	-.01	**.63*****	**.65*****	.05	-.04
Unstable Relationships	**.25****	**.22****	**.20****	**.17***	**.42*****	**.42*****	.05	-.002
Identity Disturbance	**.28*****	**.26*****	.14	.11	**.38*****	**.37*****	**.32*****	**.30*****
Impulsivity (2+ areas)	**.28*****	**.27*****	.08	.05	**.32*****	**.30*****	**.17***	.14
Suicidal Behavior	**.35*****	**.34*****	.09	.04	**.38*****	**.37*****	.12	.08
Affective Instability	**.31*****	**.29*****	**.18***	**.15***	**.43*****	**.42*****	.15	.12
Emptiness	**.36*****	**.34*****	**.16***	.11	**.45*****	**.44*****	**.20***	**.17***
Anger	**.27*****	**.26*****	**.18***	.14	**.34*****	**.33*****	.12	.09
Dissociative symptoms	**.22****	**.21****	**.15***	.12	**.37*****	**.35*****	**.27*****	**.25****

Notes. Zero-order correlations run using pairwise deletion. Partial correlations run using listwise deletion. ECR = Experiences in Close Relationships; IPDE = International Personality Disorder Examination; MSI-BPD = McLean Screening Inventory for Borderline Personality Disorder
*Correlation is significant at $p < .05$. **Correlation is significant at $p < .01$. ***Correlation is significant at $p < .001$.

Table 3. MSI-BPD and IPDE Interactions with ECR Sub-Scales

	MSI-BPD		**IPDE**	
	R Square Change	Sig. f Change	R Square Change	Sig. f Change
Avoids Abandonment	.008	.18	.000	.30
Unstable Relationships	.003	.49	.002	.51
Identity Disturbance	.02	.09	.005	.35
Impulsivity (2+ areas)	.002	.52	.002	.54
Suicidal Behavior	.001	.72	.003	.44
Affective Instability	.005	.35	.002	.57
Emptiness	.001	.60	.000	.97
Anger	.00	.97	.000	.99
Dissociative Symptoms	.001	.58	.020	.05

Notes. ECR = Experiences in Close Relationships; IPDE = International Personality Disorder Examination; MSI-BPD = McLean Screening Inventory for Borderline Personality Disorder

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ACADEMIC VITA

Lena G. Becker

Education

The Pennsylvania State University, University Park, PA (2016- 2020)

Psychology Student Marshal
Bachelor of Science & Bachelor of Arts
Psychology (with neuroscience focus) and Spanish

Universidad Iberoamericana, Puebla, México (Summer 2017)

Study Abroad Program Participant; All classes in Spanish

Research

Kenneth Levy's Laboratory for Personality, Psychopathology, & Psychotherapy Research (2017-present)
Lab Manager, Clinical Interviewer, Research Assistant, Study Coordinator

In preparation: "Assessing the Relations Between Attachment Styles and Borderline Personality Disorder Criteria: A Multi-Method Approach"

Yale Hospital Department of Pediatrics Hematology and Oncology (Summer 2018)
Internship which resulted in the production of a psychological measure to be used in the pediatric survivorship clinic

Awards and Honors

1. Psychology Student Marshal
2. Schreyer Honors Scholar (2017-present)
3. Paterno Fellow (2016-present)
4. Wisniewski Award in Psychology (2020)
5. Agnes Kennedy Tiley Scholarship (2019)
6. Erikson Discovery Grant (2019)
7. Penn State Dean's List (2016- Present)
8. Strumpf Scholarship for the Liberal Arts (2017, 2018, 2019)
9. Phi Beta Kappa Society (2018)
10. John W. White Spanish Scholarship (2018)
11. Penn State Class of 1934 Grant (2018)
12. Barry Directorship Scholarship (2017)

Skills

1. Public speaking
2. Spanish language proficiency
3. Proficiency in software programs

   Microsoft Word, Microsoft Excel, Microsoft Access, Minitab, SPSS, EPIC, Praat

Volunteer Experience

Tutor for adult English language learners
Focus on grammar, vocabulary, and culturally relevant content

Centre County PAWS
Dog walker and caretaker at Centre County's animal shelter

Springfield
Organization founded to raise funds for THON, a student-run philanthropy dedicated to fighting pediatric cancer

Certifications

American Red Cross First Aid and CPR
HIPAA Human Subjects IRB Certification – Social Science and Biomedical Modules
NIH Certification – Protecting Human Research Participants
State of Pennsylvania Mandated Reporter Training

Relevant coursework

Advanced Abnormal Psychology	Introductory Physiology
Statistics	Biology: Molecules and Cells
Physiological Psychology	Psychology Research Methodology
Neurological Bases of Human Behavior	Organic Chemistry I and II

Employment

Penn State Organic Chemistry Teaching Assistant (2019)
Penn State Chemistry Tutor (2018-2019)
Knoebels Amusement Resort Pool Lifeguard and Swim Instructor (2014-2018)
Text Grid Editor for Penn State Researcher Grant Berry (2017)

Reference

Dr. Kenneth Levy
klevyphd@gmail.com
362 Bruce V. Moore Building
University Park, PA 16802