

# Chronic feelings of emptiness in a large undergraduate sample: Starting to fill the void

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## Abstract

Chronic emptiness in borderline personality disorder (BPD) has received little empirical attention. We sought to examine basic properties of a single chronic emptiness item, including prevalence, reliability, validity, the relation of the emptiness item to other BPD criteria, and measures of personality. Undergraduates enrolled in psychology courses over 12 years' time completed the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD) ( $N = 22,217$ ). Subsets of participants completed the International Personality Disorder Examination—Screening Questionnaire (IPDE-SQ) ( $N = 2732$ ), The Revised NEO Personality Inventory (Anxiety, Angry Hostility, Depression, Positive Emotions [reversed], and Impulsivity facets) ( $N = 10,506$ ), and the Depression Anxiety Stress Scales (DASS) ( $N = 1110$ ) as validity indicators; 10.0% of respondents endorsed emptiness. Reliability indices suggested moderate levels of reliability between two emptiness items ( $r(2730) = 0.61$ ,  $p < 0.001$ ). Among BPD criteria, emptiness and identity disturbance correlated most strongly ( $r(22,215) = 0.81$ ,  $p < 0.001$ ). MSI emptiness was more correlated with depression on the NEO ( $r(10,504) = 0.43$ ,  $p < 0.001$ ) and DASS ( $r(1108) = 0.51$ ,  $p < 0.001$ ) than other facets of negative affect. Emptiness was more correlated with greater borderline pathology than any other MSI-BPD item (Sample 1,  $r_{tet} = 0.87$ ; Sample 2,  $r_{tet} = 0.86$ ). This criterion warrants further study and attention, especially related to assessment of BPD.

## INTRODUCTION

Emptiness has long interested those studying the human condition (Kierkegaard, 1955; Sartre, 1957) both as a normative experience and as a pathological process. It has been described in a variety of psychopathological contexts, including depression (Horney, 1952) and schizophrenia (Zandersen & Parnas, 2019). Perhaps most notable is that of chronic feelings of emptiness as in borderline personality disorder (BPD). BPD is a serious mental health condition broadly characterized by instability in mood, relationships, and one's sense of self, as well as problems with impulsivity, anger, suicidal and self-injurious behaviors, and chronic feelings of

emptiness (Yen et al., 2009). Researchers interested in BPD have tended to focus on several salient criteria of BPD, mostly notably suicidality (Klonsky et al., 2003; Yen et al., 2009), impulsivity (Lawrence et al., 2010; Whiteside & Lynam, 2001), and affective instability (Koenigsberg et al., 2002; Trull et al., 2008), but relatively less research has explored the chronic feelings of emptiness construct (see Klonsky, 2008, for an exception; see Miller et al., 2020, for a review).

## Chronic feelings of emptiness and BPD

Several researchers have described difficulties in evaluating the presence of emptiness in clinical samples

(Widiger et al., 1995). Although interview-based assessments of chronic emptiness, including the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl et al., 1997), the International Personality Disorder Examination (IPDE; Loranger et al., 1997), and screening measures such as the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD; Zanarini et al., 2003) employ face-valid questions, clinical researchers have noted that the respondents often appear confused and uncertain about the meaning of the term and request clarification about the question. Widiger et al. (1995) provide recommendations in their interview manual for additional descriptors that can be provided in the case that a person does not understand what is meant by the term, emphasizing an absence of meaning or purpose.

This difficulty has broader implications for providing a diagnosis of BPD. It is critical that clinicians are able to maximize efficiency in delivering an accurate diagnosis and in triaging clients and patients to the treatment that promises the best outcomes for that individual. However, delivering an accurate diagnosis of BPD has proven difficult. Often, clinicians rely on one especially salient characteristic that they feel is representative of the disorder in order to make the diagnosis; in the case of BPD, this criterion is typically self-harm/suicidal behavior as the criterion is unique to the disorder. Symptoms such as chronic emptiness do not convey this same urgency and thus receive relatively little clinical attention. Misdiagnosis can result in serious negative outcomes, including being prescribed with psychiatric medications inappropriately and otherwise receiving improper care.

Chronic emptiness, although overlooked, may provide improved ability to discriminate between disorders with overlapping symptom presentations. Although self-harm and suicidal behavior may be the most obvious of BPD symptoms a client may report, it is important to consider other criteria that potentially differentiate between diagnoses. Kernberg and Yeomans (2013) outline a number of challenges in differentiating between BPD and other disorders including major depressive disorder, attention-deficit/hyperactivity disorder, narcissistic personality disorder, and perhaps most notably bipolar disorder. Individuals with BPD are often misdiagnosed as having bipolar disorder (Zimmerman et al., 2010, 2018), more so than any other diagnostic group (Ruggiero et al., 2010). This does not seem surprising considering the superficial overlap of various symptoms and characteristics that cut across the disorders, including impulsivity, anger, and suicidal behavior. Importantly, as chronic feelings of emptiness are a unique criterion to BPD per the DSM-5 categorical model, they may provide an

opportunity to distinguish between BPD and other psychopathology where there is a difficult differential.

What else does the empirical literature tell us about chronic feelings of emptiness in BPD? Historically, emptiness has been conceptually associated with “boredom” and was even noted in the DSM-III definition of the criterion (American Psychiatric Association, 1980). However, Klonsky (2008) found that the hypothesized boredom aspect of BPD emptiness was indeed likely distinct from other affective states that have been more strongly associated with emptiness (e.g., hopelessness and loneliness), supporting the change in language over time. In a study investigating aspects believed to overlap between depression and BPD, Rogers et al. (1995) found that boredom was not associated with borderline pathology.

In his study, Klonsky (2008) found that emptiness was associated with feelings of hopelessness, loneliness, and isolation and posited that emptiness may play a role in the development of suicidal ideation. A recent review also suggested that emptiness is often experienced prior to engaging in self-harm and suicidal behaviors (Miller et al., 2020). Not surprisingly, the theoretical and research literature suggests that chronic feelings of emptiness are a common experience of individuals who suffer from identity disturbance (Kernberg, 1984). Several factor analytic and latent class analytic studies have shown that identity disturbance and emptiness tend to load together on the same component or class (Clarkin et al., 1993; Johnson & Levy, 2020; Lenzenweger et al., 2008; Ramos et al., 2014; Sanislow et al., 2000, 2002). Consistent with this view, the Miller et al. (2020) review also found a link between chronic emptiness and self-processes.

Research suggests that there may be gender differences in rates of chronic emptiness in the context of BPD (Benson et al., 2017; Hoertel et al., 2014; Zanarini et al., 2011), with the majority of findings suggesting that women endorse the symptom at higher rates than men, although childhood and adolescent emptiness may be a sentinel symptom in development of BPD in adolescent boys (Goodman et al., 2013).

Researchers have also found that other models of personality pathology may not closely capture the construct of chronic emptiness; in a study predicting presence of DSM-5 Section III traits from presence of DSM-5 BPD criteria, chronic emptiness was the only trait that yielded no significant association (Bach & Sellbom, 2016). In this case, the authors suggested that this symptom may be better conceptualized within a framework of overall level of dysfunction, such that presence of emptiness would be indicative of greater psychopathology on the whole but not with any particular disorder presentation. In contrast, others have argued

that a lack of self/identity is at the core of BPD, without which the disorder is not likely to occur, and that this “self-system” in BPD is composed of identity disturbance, fear of abandonment, and chronic feelings of emptiness (Meares, 1993; Meares et al., 2011).

## Clinical significance of chronic feelings of emptiness

Above all else, perhaps, is the question of clinical significance—do chronic feelings of emptiness predict certain outcomes for individuals, with or without BPD, seeking treatment? Ellison et al. (2015) conducted a study examining a group of individuals seeking psychiatric treatment who endorsed only one criterion of BPD compared with individuals who endorsed no criteria. They found that only the emptiness criterion was independently associated with all eight different indices of psychosocial morbidity measured, including unemployment, poorer social functioning, having increased numbers of comorbid mental disorders, disability status, and suicidality. It should be noted that this study was only able to analyze data for chronic emptiness, impulsivity, affective instability, and anger, as these were the only items that occurred frequently enough in the sample in isolation. Importantly, this study was unable to determine causality or temporal precedence, and it remains unclear if chronic emptiness may be antecedent to such outcomes or a product of them.

Research also suggests that less behavioral features of BPD such as emptiness may be more prevalent in older adults than in younger adults; in a large outpatient sample of individuals with BPD, chronic emptiness was reported in 65% of young adults (age 18–25) and was reported in 85% of older adults (age 45–68) (Morgan et al., 2013). In a longitudinal study of BPD, chronic emptiness was found to have the longest median time to remission (between 8 and 10 years), along with chronic anger, of 24 symptoms assessed (Zanarini et al., 2007). Korner et al. (2008) found that, in a sample of BPD patients, those who were randomly assigned to receive 2 years of psychotherapy rather than 1 year saw continued and greater improvement in emptiness, suggesting that these characteristics may be slow to change in treatment. A 1-year follow-up study measuring outcomes of interpersonal and vocational functioning found that chronic emptiness is significantly positively associated with amount of work missed and negatively associated with improvement in psychosocial functioning (Miller et al., 2018). Finally, expanding beyond individuals diagnosed with BPD, a study comparing suicide ideators with suicide attempters found that chronic emptiness

appeared in higher rates in suicide attempters (Pérez et al., 2017).

## The current study

The chronic feelings of emptiness criterion remains a poorly understood symptom of BPD. As such, it is important that researchers and clinicians develop a more complete understanding of this symptom in order to aid in making diagnoses, developing effective treatment plans, and making accurate judgments as to the severity of various forms of psychopathology. Although there is much to be learned about chronic feelings of emptiness as it relates to various clinical presentations, preliminary questions related to psychometric properties of the items currently used to assess this construct can be studied in a broad, nonclinical population. In available data from a large representative sample, we have the opportunity to observe changes over time in the endorsement of emptiness and to examine correlations between chronic emptiness and other neighboring constructs. Given the large gap in empirical research on this criterion, we sought to use preexisting data to observe these basic properties of chronic emptiness to inform future prospective research that may target more specific aspects of this construct. A more complete understanding of the function of these emptiness items can provide useful information about the emptiness construct and the utility of these assessments. This will inform future studies that are more specific and less exploratory in nature and that may help to refine the construct definition and provide a greater understanding of where it falls in a nomological network of psychopathology.

## Objectives

This study is descriptive in nature, as it uses a convenience sample of undergraduate students who participated in previous studies that screen for BPD symptoms (as described more fully in the Methods section). This study seeks to (1) explore self-report items of chronic feelings of emptiness in terms of their rates of endorsement, (2) explore psychometric properties of the item, and (3) determine its convergent/divergent validity by assessing the association between chronic feelings of emptiness and other BPD criteria as well as other personality traits. Based on relevant theoretical and limited empirical literature reviewed above, we hypothesize:

- H1.** The MSI-BPD and International Personality Disorder Examination—Screening

Questionnaire (IPDE-SQ) will demonstrate convergent validity between one another, as evidenced by a moderate-strength correlation between items. This hypothesis is based on the similarity of the items.

**H2.** Based on the literature reviewed above regarding the association of identity and emptiness in factor analytic, latent class, finite mixture modeling, and factor mixture modeling studies (Clarkin et al., 1993; Johnson & Levy, 2020; Lenzenweger et al., 2008; Ramos et al., 2014; Sanislow et al., 2000, 2002), as well as conceptual arguments (Meares, 1993; Meares et al., 2011), we predicted that there will be a stronger positive association between self-reported emptiness and identity disturbance than between emptiness and each of the other BPD criteria. There will also be a stronger positive association between self-reported identity disturbance and emptiness than between identity disturbance and each of the other BPD criteria.

**H3.** Finally, we predict that emptiness will have a stronger correlation with depression than with other aspects of negative affect. Although chronic feelings of emptiness in BPD is theoretically different from emptiness that may be more associated with depressive disorders (Levy, 1984), it is hypothesized that participants endorsing this item will be more likely to endorse higher levels of trait- and state-level depression (rather than anxiety or stress) due to its theoretical association with depressive disorders. Because the causal pathway between emptiness and these types of psychopathology is not well established, we planned to run the models to predict endorsement of emptiness from convergent measures and also to predict endorsement of convergent measures from emptiness.

We further explore the prevalence of chronic feelings of emptiness in this large nonclinical sample of college undergraduates, potential gender differences in the endorsement of emptiness as well as changes in endorsement over time, the relation between emptiness and other personality facets on the NEO, and the relation between emptiness and measures of negative affect. These analyses are exploratory and without hypothesized outcomes.

## METHODS

### Participants

The sample consisted of 22,217 undergraduate students from a large rural public mid-Atlantic university who participated in subject pool screening between 2008 and 2019. The sample was 14,322 (64.4%) women, 7738 (34.8%) men, and 21 indicating a gender identity other than male or female (gender was not reported for 136 individuals in the sample). The modal age was 18 (range = 18–55, mean = 18.77, standard deviation [SD] = 1.75). Due to the nature of the screening process, many demographic details are not available. However, the sample is believed to be representative of the general university population; 66% of students identify as White, with 7% or fewer identifying as each of the following groups: Hispanic/Latino, African American, Asian American, multiracial, or other (Admission Statistics, 2021).

### Procedure

Data were obtained from participants who completed self-report measures as part of an undergraduate psychology subject pool online screening process from the spring of 2008 to the spring of 2019. Participants were granted research credit as part of their coursework for completing the screening battery; students may only go through the screening process once as this requirement applies only to students who have not taken a prior psychology course. All participants completed the MSI-BPD (Zanarini et al., 2003), a self-report measure of BPD symptoms. Subsets of participants also received further research credit for completing supplementary measures and interviews used to measure convergent validity in this study. All procedures were approved by the university's institutional review board.

### Measures of chronic emptiness

Chronic emptiness was measured using the MSI-BPD (Zanarini et al., 2003) and the IPDE-SQ (Loranger et al., 1997). The MSI-BPD is a 10-item screening tool that contains one item assessing for chronic feelings of emptiness (“have you chronically felt empty?”), which was administered to all participants. The item is measured dichotomously with a yes/no response. In total, this tool assesses for each of the nine criteria of BPD. A subset of individuals ( $N = 2732$ ) also completed the IPDE-SQ for BPD, which also contained one item assessing for

chronic feelings of emptiness (“I often feel ‘empty’ inside”), which was measured dichotomously. Both the MSI-BPD and the IPDE-SQ have demonstrated strong psychometric properties (Lenzenweger et al., 1997; Melartin et al., 2009; Patel et al., 2011).

## Collateral measures

Subsets of participants also provided data measuring personality traits of negative affectivity (Depression Anxiety Stress Scales [DASS]; Lovibond & Lovibond, 1995) and other personality facets related to BPD (The Revised NEO Personality Inventory [NEO]—Anxiety, Angry Hostility, Depression, Positive Emotions [reversed], and Impulsivity facets; Costa & McCrae, 1992). The DASS ( $N = 1110$ ) is a 42-item self-report measure that measures state levels of depression, anxiety, and stress, over the past week; items responses range from 0 (“did not apply to me at all”) to 3 (“applied to me very much, or most of the time”). The NEO ( $N = 10,506$ ) is a self-report measure, and responses are rated on a 5-point Likert-type scale where higher values indicate greater levels of the trait.

## Data analysis

Frequency of endorsement of self-reported emptiness was examined between 2008 and 2019 using the MSI-BPD described earlier. For the MSI-BPD, data are typically collected twice a year. Changes in rates of endorsement of emptiness were examined using regression analysis.

We aimed to evaluate the validity of the MSI-BPD emptiness item by examining the pattern of correlations with collateral measures and with other MSI-BPD criteria. Convergent and divergent validity was determined by examining the pattern of correlations between emptiness items with NEO facets corresponding to negative affect, impulsivity, anger, depression, and anxiety, as well as to negative states of depression, anxiety, and stress on the DASS. In each case, point-biserial correlations were calculated, as emptiness was scored dichotomously and the NEO and DASS are scored continuously.

We examined the raw and corrected item-total correlations for each of the BPD criteria to test the reliability of the emptiness criterion relative to other criteria.

Finally, we sought to better assess the relative strength of endorsement of the emptiness criterion in contributing to greater levels of BPD pathology. We planned to conduct a logistic relative weight analysis in order to test the strengths of the different MSI-BPD criteria (Tonidandel & LeBreton, 2011); however, when

running the model, it appeared to yield “perfect” prediction of the outcome and was not able to provide results about the relative weights of the items. Instead, we tested the relative predictive validity of emptiness compared with other BPD criteria in predicting borderline psychopathology by comparing tetrachoric correlations between different MSI-BPD items and the dichotomous BPD outcome. BPD diagnosis was a dichotomous outcome, determined by the presence of seven or more reported symptoms on the MSI-BPD (the suggested cutoff for the measure) (Zanarini et al., 2003). For this analysis, the sample was split in two equal halves, each consisting of 50% of those in the larger sample with a likely BPD diagnosis and 50% of those without a likely BPD diagnosis. The second sample served to confirm results found in the first sample.

## RESULTS

In order to explore the construct validity of the emptiness criterion, we examined the correlation between the MSI-BPD emptiness item with the IPDE-SQ emptiness item, and the pattern of associations of MSI-BPD and IPDE-SQ emptiness items with the DASS and specific NEO scales that were employed as part designs from previously administered studies (see Scott et al., 2013). The IPDE-SQ was collected in a subset of the overall sample ( $N = 2732$ ) and was positively correlated with the MSI-BPD, demonstrating moderate strength ( $r(2730) = 0.61$ ,  $p < 0.001$ ); this is indicative of adequate convergent validity between items.

MSI emptiness and MSI identity were more correlated with each other than with any other BPD criteria ( $r(22,215) = 0.81$ ,  $p < 0.001$ , difference between this correlation and next largest correlation between emptiness or identity and any of the remaining criteria yields  $Z = 13.79$ ), in line with relevant psychodynamic theory (see Table A1 with tetrachoric correlations).

We examined the prevalence of emptiness. The total endorsement of emptiness was 10.0%. The mean rate of emptiness across all years in women was 10.3%, whereas mean rate of emptiness across all years in men was 8.9%. No statistically significant change in emptiness over time was detected ( $\beta = 0.08$ ,  $t(21) = 1.63$ , 95% confidence interval [CI] [9.88, 10.08],  $p = 0.12$ ), although the data show a small increase such that for each subsequent semester, there is about a 0.1% increase in chronic feelings of emptiness. This was not true when examining rates of endorsement as a function of self-reported gender identification. Mean emptiness in women was 10.3%, whereas mean emptiness in men was 8.9%. There was a significant increase in reported emptiness in women

## Chronic Emptiness in College Students Across 10+ Years by Gender

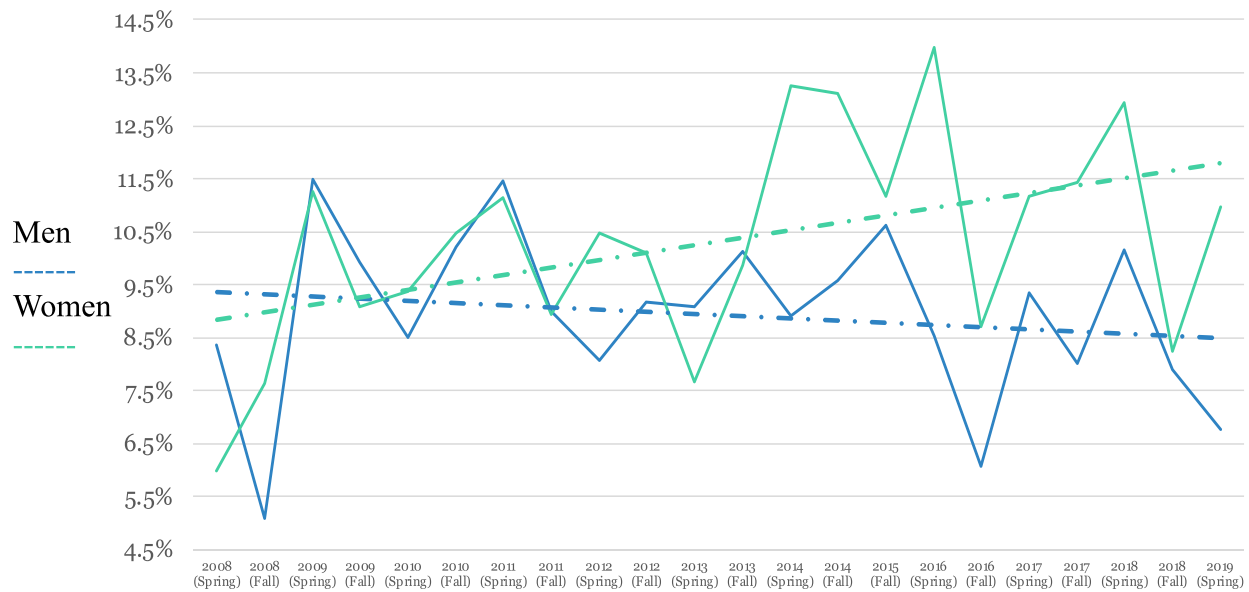


FIGURE 1 Chronic emptiness in college students across 10+ years by gender

( $\beta = 0.13$ ,  $t(21) = 2.22$ , 95% CI [9.91, 10.15],  $p = 0.04$ ), and no significant change in emptiness was detected in men ( $\beta = -0.04$ ,  $t(21) = -0.81$ , 95% CI [9.75, 9.96],  $p = 0.43$ ); 21 individuals reported a gender identity other than male or female over the course of data collection; however, due to the small sample, we were unable to assess changes in this group (Figure 1).

The NEO was administered to a subset of participants ( $N = 10,506$ ) and was examined at the facet level in connection with chronic emptiness. Emptiness was most correlated with NEO depression ( $r(10,504) = 0.46$ , the difference between this correlation and next largest correlation between emptiness and another NEO facet yields  $Z = 14.05$ ) relative to other facets (see Table A2 with point-biserial correlations). In models using emptiness to predict NEO facets, we found that depression ( $R^2 = 0.19$ ) was best predicted by the emptiness criterion relative to all other facets assessed ( $R^2 = 0.04$ – $0.07$ ), although all models did reach statistical significance ( $p < 0.001$ ). In a model predicting emptiness from all five NEO facets assessed, depression accounted for the most unique variance ( $R^2_{\text{partial}} = 0.09$ ) and was a statistically significant predictor ( $\beta = 0.16$ ,  $t(10,501) = 31.49$ , 95% CI [0.01, 0.02],  $p < 0.001$ ); in this model, aside from depression, only the positive emotionality facet reached statistical significance ( $\beta = -0.03$ ,  $t(10,501) = 6.90$ , 95% CI [-0.04, -0.02],  $p < 0.001$ ) and was somewhat negatively predictive of emptiness ( $r = -0.21$ ), but did not account for any unique variance in the model ( $R^2_{\text{partial}} = 0.00$ ).

The DASS was administered to a subset of participants ( $N = 1110$ ) and was examined at the facet level in connection with chronic emptiness. In a model using emptiness to predict the depression facet score of the DASS, a greater proportion of the variance in emptiness was accounted for ( $R^2 = 0.26$ ) than in models predicting either the anxiety ( $R^2 = 0.15$ ) or stress ( $R^2 = 0.14$ ) facet scores from emptiness (see Table A3 with point-biserial correlations). In a model using all three DASS facets to predict emptiness, depression scores also accounted for the most unique variance ( $R^2_{\text{partial}} = 0.13$ ) relative to anxiety ( $R^2_{\text{partial}} = 0.00$ ) and stress ( $R^2_{\text{partial}} = 0.00$ ), which accounted for virtually no unique variance. Depression was also the only predictor in the model to reach statistical significance ( $\beta = 0.02$ ,  $t(1109) = 12.58$ , 95% CI [0.01, 0.02],  $p < 0.001$ ).

Item-total correlations were calculated in the full sample for all those who had complete data ( $N = 22,192$ ). Raw item-total correlations ranged from  $r(22,190) = 0.49$ – $0.71$ , and emptiness was correlated at  $r(22,190) = 0.63$  with the sum of endorsed items (see Table A4 with item-total correlations). The differences in correlations indicate a small effect of emptiness (difference of  $\leq 0.1$ ) as a better predictor of the total items endorsed over self-harm/suicidality and unstable relationships and that the effect size is comparable with all other criteria. This difference was consistent when calculating the corrected item-total correlation (including only common variance in the prediction of the outcome) and in the

dropped item-total correlation (removing all of the variance associated with the item in the prediction of the outcome).

Finally, we sought to examine the relation between individuals endorsing chronic feelings of emptiness with those endorsing seven or more total items on the MSI-BPD. Because the MSI-BPD is scored true–false, or absent–present, tetrachoric correlations (see Table A5 with correlations for all criteria) were calculated to determine the relative strength of the association between endorsement of a BPD criterion and the outcome of having a likely BPD diagnosis. Chronic emptiness had the highest correlation with endorsement of seven or more BPD items in both samples (Sample 1,  $r_{tet} = 0.87$ ; Sample 2,  $r_{tet} = 0.86$ ). Table A6 shows the raw values of those who did and did not endorse seven or more BPD items and those who did and did not endorse chronic feelings of emptiness across both samples. Notably, about 40% of participants endorsing chronic emptiness also endorsed seven or more BPD items.

## DISCUSSION

In the present study, we examined the construct of chronic feelings of emptiness using data collected as part of a screening process for several studies (see Scott et al., 2013, for an example). Although the experience of emptiness in personality disorders has long been of clinical interest (Adler & Buie, 1979; Deutsch, 1942; Hartocollis, 1977; Kernberg, 1967; Levy, 1984; Singer, 1977), there is a relative paucity of research on the concept (Klonsky, 2008; Miller et al., 2020), especially compared with other aspects of personality pathology, such as affective lability, impulsivity, and suicidality. Within this large archival dataset of undergraduate students, we were able to conduct exploratory analyses to examine various aspects of the chronic feelings of emptiness criterion of BPD and its relation to several collateral measures. Chronic feelings of emptiness were assessed using self-report on a valid and commonly used screening measure (MSI-BPD). We examined the prevalence of self-reported emptiness in the sample, measured reliability of the MSI-BPD emptiness item by testing its relation to another single-item measure, determined validity of the emptiness item by assessing the association between chronic feelings of emptiness and other BPD criteria as well as other personality traits related to BPD and negative affect, and analyzed the relative importance of the item in predicting a greater levels of borderline pathology as compared with other BPD criteria.

Year to year, chronic emptiness was endorsed by 10% of the participants. Emptiness appears to be a fairly

common experience as indicated by its relatively high rate of endorsement, suggesting that it likely occurs in individuals with and without borderline pathology. The chronic emptiness item, as assessed using the MSI-BPD, appears to be moderately reliable with a similar single-item measure within the IPDE-SQ. Chronic emptiness was consistently more associated with reported trait- and state-level experiences of depression than with other related constructs (e.g., anxiety, stress, and impulsivity). Also, emptiness and identity disturbance demonstrated a stronger inter-item correlation than did both emptiness with any other BPD criterion and identity disturbance with any other BPD criterion. Finally, the presence of chronic feelings of emptiness appears to provide high predictive validity of meeting criteria for BPD in this population, yielding the highest correlation between a single criterion and BPD across split samples.

The consistent endorsement of emptiness over the past decade in this population suggests that this symptom is likely stable and perhaps less prone to change as a result of environment or historical factors; however, there was a statistically significant increase in emptiness in women. The data in the current study find a higher rate of endorsement of emptiness in women relative to men, as has been found previously, but expand upon this to show that the rate is not only higher but is also increasing. Other criteria in this sample, such as self-harm behavior and identity disturbance, have demonstrated higher incidence over time (Levy, 2017), possibly due to actual increases in these behaviors or due to reduced stigma around reporting of these behaviors. Future studies may benefit from a more comprehensive assessment of emptiness to better understand whether or not there may be changes in experiences of certain kinds of empty feelings or if there may be a normative experience of emptiness that is not being captured.

Moderate-strength estimates of convergent validity suggest that there is some variability in the response to the MSI-BPD emptiness item; although some participants may be truly experiencing and reporting on *chronic* feelings of emptiness, others may be reporting an experience that is episodic in nature. This may also speak to the vague definition of “empty” that can be interpreted a variety of ways by a respondent; for example, someone experiencing a breakup may be feeling empty interpersonally, likely a temporary state, whereas someone who is consistently uncertain about their goals and interests may experience a more chronic emptiness related to an unconsolidated identity. The items available do not differentiate between potential antecedents to emptiness, allowing the participant to report any experiences of emptiness regardless of relevance to the construct of BPD. A more comprehensive measure of emptiness

would serve to improve the reliability of measurement of this construct and provide greater qualitative information, which may be especially useful in a clinical setting.

The association of emptiness to depression is important to consider more closely. Although chronic feelings of emptiness have been conceptualized as part of personality difficulties for almost 100 years, and have been included as part of the criteria for BPD since its inception into the DSM, the experience of emptiness has been noted more broadly by philosophers (Kierkegaard, 1955; Sartre, 1957), existential psychologists (Frankl, 1946; May, 1953), and psychoanalysts (Fromm, 1958) who saw emptiness as part of a normative experience as well as across an array of disorders from depression (Horney, 1952) and narcissism (Kohut, 1977; Levy, 1984) to schizophrenia spectrum disorders (Zandersen & Parnas, 2019). Subsequent research has found emptiness related to depression (Hazell, 1984; Trull & Widiger, 1991). Others have noted the conceptual connection to other feelings that are common in depressed individuals, such as hopelessness or loneliness. It is currently unclear as to what degree of overlap exists between these constructs and feelings of emptiness, or whether feelings of emptiness may come about as a result of hopelessness or loneliness. Miller et al. (2020) note that there is sufficient evidence to distinguish feelings of emptiness from those of hopelessness and loneliness, which are believed to be adjacent constructs. Another important construct to differentiate from is anhedonia. Are anhedonic individuals reporting a lack of pleasure as emptiness? It seems plausible that an inability to derive fun and joyful feelings from activities may lead one to assume that they are empty, devoid of emotion or feeling. Another important consideration is the chronicity of empty feelings in those who experience higher levels of depression. In this group, where episodes of depression are likely as are periods of remission, are feelings of emptiness limited to periods of more intense depression or do they occur outside of episodes as well? The cross-sectional nature of the study does not allow us to examine this directly; however, it may be hypothesized that feelings of emptiness that have been described in those with personality disorders may be fundamentally different from that of those with mood disorders.

The experience of emptiness across normative non-pathological experiences and various psychological difficulties raises the question of whether or not the concept is best conceptualized as a transdiagnostic one, which would be consistent with trends in the field (Insel et al., 2010). This is the approach taken by Price et al. (2020) in the creation of their multiitem subjective emptiness scale, which consistent with a transdiagnostic

approach was found to be unidimensional. Another approach would be to conceptualize emptiness from a developmental psychopathology approach (Levy, 2005) with attention to equifinality, multifinality, and the differences in the mechanisms and experiences of emptiness across borderline and narcissistic personality disorder, major depression, persistent depression, and even schizophrenia.

Consistent with psychodynamic theory, chronic emptiness and identity disturbance demonstrate a stronger relation to one another than with other markers of BPD in the present study. Individuals with BPD are believed to experience feelings of emptiness in response to the various instabilities present in their lives, to include instability in identity, mood, interpersonal and romantic relationships, and behavior. Difficulties across these domains make it nearly impossible to experience a sense of fulfillment and comfort in one's daily life; Levy (1984) describes this in greater detail, stating "convictions, enthusiasms, and relatedness to others all seem lost and replaced by feelings of deadness, boredom, and superficiality" (p. 388), highlighting the experience of the resulting discomfort with these instabilities. It is important to note the correlational nature of these data and to emphasize that the direction of this relationship is unclear. Kernberg (1975) described those with personality difficulties in terms of identity diffusion where representations of the self and others are differentiated and unintegrated. This lack of integration is seen as defensive and results in a disconnect from the self. This disconnect can subsequently result in a feeling of emptiness. The empty feelings may lead to either reckless or impulsive behavior that can help one reconnect with the self or a more passive response that would split off the self from daily tasks of living, limiting potential fulfillment. He further emphasizes that in narcissistic individuals, this emptiness can often appear as a sense of boredom or restlessness. Alternatively, Kohut (1977) theorizes that emptiness is more likely to occur in narcissistic individuals than those with BPD or another PD. Similar to Kernberg, Kohut suggested that emptiness may develop as a coping mechanism or defensive process for addressing perceived failures, either in one's own actions or from those around them, allowing the patient to create greater psychic distance from these disappointments, but at the expense of subduing the patient's sense of themself. For both Kernberg and Kohut, the result is a less rich and nuanced sense of oneself, inability to evoke self-representations when needed, and the experience of feeling empty and barren. Adler and Buie (1979) and Blatt (1974) articulated similar ideas, hypothesizing that representational deficits in evocative constancy lead patients with BPD to experience a sense of emptiness.



Emptiness does appear to provide high predictive validity in determining those more likely to be diagnosed with BPD, although not significantly more so than several other BPD criteria. The data do show across samples a small effect size over that of the unstable relationships criteria, which is likely due to higher endorsement of unstable relationships in this population and in individuals without BPD. Because it does have the highest correlation with an outcome of BPD, the utility of the emptiness criterion for screening purposes should be considered and may be useful in discriminating among other forms of psychopathology.

## Strengths and limitations

Primary strengths of the current study include a large sample size that is representative of a typical American college population and the capacity to examine important psychometric properties of the item and measure of interest. This study is unique in that two single-item measures of emptiness can be correlated with one another and that multiple forms of validity and reliability can be examined, providing greater clarity on the utility of these tools. Given the sample size and the continuous data collection of more than a decade, findings in this sample are likely to be robust and generalizable across samples of college students.

There are thus important clinical implications that arise. Results of the current study suggest that clinicians working with college students reporting chronic feelings of emptiness should consider the possibility of a personality disorder as part of the differential diagnosis, and not simply default to a mood disorder. Although we found that chronic feelings of emptiness were associated with self-reported depression on the DASS, this criterion was as strongly associated with identity disturbance central to BPD as well as predicting the likelihood of screening positive for BPD. Consistent with this, several researchers have found that the depressive experiences in BPD could be distinguished from major depression proper by feelings of emptiness (Levy et al., 2007; Rogers et al., 1995; Westen et al., 1992; see Köhling et al., 2015, for a review).

There are several limitations to the current study. First is the use of single-item measures of emptiness. As Miller et al. (2020) noted in their review, the use of a single-item measure presents several psychometric challenges, typically limits reliability, and has contributed to a lack of clarity in the literature. Although this study relied largely on single-item measures of emptiness, responses were collected in a very large sample and used two different single-item measures of emptiness allowing for analysis of reliability and validity. Further, this

sample is robust enough to capture individuals who likely do and do not have BPD, allowing for a more comprehensive understanding of emptiness in these two groups.

A second limitation is more conceptual and related to the construct itself. As aforementioned, the concept of emptiness can be abstract. Although clinical experience suggests that the term resonates with some interviewees, others seemed confused by the term. Related, it is unclear whether participant responses reflect presence of both the experience of emptiness and a chronic experience of such feelings, or if instead they may be referring to a more temporary mental state at the time of completing the survey (or even an interview).

A third limitation is that the participants are from a nonclinical sample. Although the sample size is large enough to capture many individuals who are likely to experience a range of BPD symptoms and other forms of psychopathology, a clinical sample, with a larger age range, would likely provide greater external validity.

Finally, the study relies on self-report measures. Although certain validity checks were in place to ensure honest and effortful reporting, participants may have misunderstood the items of interest and may have systematically overreported or underreported symptoms. Trained interviewers would likely improve reliability and validity of reporting on these items in future studies.

Future studies would benefit from the use multiitem, multidomain constructed measures with a focus on qualitative experiences of chronic emptiness in individuals with BPD. The current items used to measure emptiness are narrow in scope and can be difficult for a respondent to grasp. Creation of a measure that would capture greater variance in feelings of emptiness could provide greater clinical utility and better distinguish between diagnostic groups. Along these lines, Price et al. (2020) have developed a measure of emptiness based on factor analysis of items from existing measures in an effort to develop a transdiagnostic measure. Future studies would also benefit from a prospective design that is meant to track symptoms of emptiness over time. Studies using ecological momentary assessment may be able to better connect antecedent events to subsequent feelings of more acute emptiness. Recruitment of groups with personality disorders and with mood disorders would also provide greater information about how feelings of emptiness may differ between samples.

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## CONFLICT OF INTERESTS

Other than book royalties and training fees received by Dr Kenneth N. Levy, there are no known conflicts of interest noted.

## ETHICS STATEMENT

The study was approved by the Institutional Review Board at the Pennsylvania State University.

## DATA AVAILABILITY STATEMENT

De-identified data are potentially available upon request from the authors, who would review the rationale for the request prior to distribution.

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## APPENDIX

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Emptiness	1								
2. Identity disturbance	0.81	1							
3. Unstable relationships	0.39	0.36	1						
4. Self-harm/suicidality	0.62	0.59	0.37	1					
5. Impulsivity	0.54	0.52	0.44	0.58	1				
6. Affective lability	0.64	0.59	0.49	0.56	0.68	1			
7. Anger	0.58	0.55	0.47	0.52	0.64	0.76	1		
8. Paranoia	0.57	0.53	0.45	0.49	0.53	0.59	0.64	1	
9. Dissociation	0.69	0.69	0.38	0.53	0.53	0.58	0.57	0.60	1
10. Abandonment	0.65	0.61	0.50	0.60	0.58	0.62	0.55	0.53	0.57

**TABLE A1** Tetrachoric correlations between McLean Screening Instrument for Borderline Personality Disorder items

Note: All  $ps < 0.001$ .  $N = 22,217$ .

**TABLE A2** Point-biserial correlations between MSI-BPD emptiness and NEO facets

Variable	1.	2.	3.	4.	5.
1. Emptiness	1				
2. NEO-DEP <sup>a</sup>	0.43	1			
3. NEO-ANX <sup>a</sup>	0.26	0.62	1		
4. NEO-ANG <sup>a</sup>	0.24	0.52	0.46	1	
5. NEO-IMP <sup>a</sup>	0.21	0.47	0.41	0.45	1
6. NEO-POS <sup>a</sup>	-0.21	-0.35	-0.16	-0.32	-0.06

Note: All  $ps < 0.001$ .

Abbreviations: ANG, anger; ANX, anxiousness; DEP, depression; IMP, impulsivity; MSI-BPD, McLean Screening Instrument for Borderline Personality Disorder; NEO, The Revised NEO Personality Inventory; POS, positive emotionality.

<sup>a</sup> $N = 10,506$ .

**TABLE A3** Point-biserial correlations between MSI-BPD emptiness and DASS facet and total scores

Variable	1.	2.	3.	4.
1. MSI-BPD emptiness	1			
2. DASS depression	0.51	1		
3. DASS anxiety	0.38	0.73	1	
4. DASS stress	0.38	0.76	0.82	1
5. DASS total	0.46	0.91	0.92	0.94

Note: All  $ps < 0.001$ .  $N = 1110$ .

Abbreviations: DASS, Depression Anxiety Stress Scales; MSI-BPD, McLean Screening Instrument for Borderline Personality Disorder.

**TABLE A4** Item-total correlations between MSI-BPD items

Variable	Raw	Corrected	Drop	Mean	SD
1. Unstable relationships	0.49	0.40	0.43	0.14	0.34
2. Self-harm/suicidality	0.53	0.48	0.48	0.08	0.27
3. Impulsivity	0.67	0.59	0.61	0.27	0.44
4. Affective lability	0.71	0.66	0.66	0.18	0.39
5. Anger	0.69	0.63	0.64	0.22	0.41
6. Dissociation/paranoia	0.68	0.61	0.62	0.25	0.43
7. Emptiness	0.63	0.61	0.58	0.10	0.30
8. Identity disturbance	0.62	0.59	0.57	0.12	0.32
9. Abandonment	0.65	0.60	0.59	0.15	0.36
10. Total	—	—	—	1.50	2.08

Note:  $N = 22,210$ . Raw item-total correlation indicates uncorrected correlation between item and total score. Corrected item-total correlation indicates correlation between item and total score in which only communal variance shared by the item with others is retained. Drop item-total correlation indicates correlation between item and total score in which all variance from the item, including shared variance, is removed. Abbreviations: MSI-BPD, McLean Screening Instrument for Borderline Personality Disorder; SD, standard deviation.

<b>BPD item</b>	<b>Sample 1</b>	<b>Sample 2</b>
1. Unstable relationships	0.63	0.62
2. Self-harm/suicidality	0.77	0.78
3. Impulsivity	0.77	0.80
4. Affective lability	0.85	0.82
5. Anger	0.83	0.82
6. Paranoia	0.74	0.75
7. Dissociation	0.80	0.81
8. Emptiness	0.87	0.86
9. Identity disturbance	0.83	0.83
10. Abandonment	0.80	0.82

Note: Sample 1:  $N = 11,108$ ; Sample 2:  $N = 11,109$ .

Abbreviation: MSI-BPD, McLean Screening Instrument for Borderline Personality Disorder.

**TABLE A5** Tetrachoric correlations between MSI-BPD items and score of 7 or greater on MSI-BPD

	<b>6 or fewer on MSI-BPD</b>	<b>7 or greater on MSI-BPD</b>	<b>Row total</b>
No chronic emptiness	19,750 (88.92%)	240 (1.08%)	19,990 (90.0%)
Chronic emptiness	1304 (5.87%)	916 (4.12%)	2220 (10.0%)
Column total	21,054 (94.80%)	1156 (5.20%)	22,210 (100.0%)

Note:  $\chi^2(1, N = 22,210) = 6499.17, p < 0.001$ .

Abbreviation: MSI-BPD, McLean Screening Instrument for Borderline Personality Disorder.

**TABLE A6** Score of 7 or greater on MSI-BPD by emptiness table