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Borderline Personality Traits Do Not Moderate the Relationship Between Depression, Beliefs, and Suicidal Thoughts and Behaviors

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ABSTRACT

Adults with clinically significant borderline personality disorder traits (BPTs) are at high risk of experiencing suicidal thoughts and behaviors (STBs). STBs among those with BPTs have been associated with suicidal beliefs (e.g., that one is unlovable or that distress is intolerable). However, the extent to which suicidal beliefs uniquely mediate the relationship between emotional distress and STBs among individuals with BPTs is not known. Individuals admitted to an inpatient unit ($N = 198$) with recent STBs completed assessments of BPTs, depression, suicidal beliefs, suicidal ideation, and suicide attempt history. Moderated mediation models were used to explore whether suicidal beliefs mediated the relationship between depression and STBs conditional on BPTs. Suicidal patients with versus without BPTs reported stronger suicidal beliefs and more severe STBs (i.e., suicidal ideation, lifetime attempts). Exploratory moderated mediation analysis demonstrated that suicidal beliefs mediated the relationship between depression and suicidal ideation as well as suicide attempts. The mediation effect of suicidal beliefs on the depression-ideation and depression-attempt relationship was not significantly moderated by BPTs. This study was cross-sectional and therefore the estimated mediation models must be considered exploratory. Longitudinal research will be needed to assess the potential causal mediation of suicidal beliefs on the relationship between depression and STBs. The results of this study suggest that suicidal beliefs may play a significant role in the relationship between depression and STBs for inpatients with a history of suicidality regardless of BPTs. This suggests suicidal beliefs may be an important treatment target for adults with a history of STBs.

KEYWORDS

Borderline personality disorder; inpatient; moderation

Adults diagnosed with borderline personality disorder (BPD) are at high risk of attempting and dying by suicide (American Psychiatric Association, 2001; Turner et al., 2018). As many as 83% of patients with BPD will attempt suicide (Soloff & Chiappetta, 2019), with one study finding 60% of inpatients with BPD had made two or more attempts (Goodman et al., 2017). Approximately one in 10 with BPD will die by suicide (Paris & Zweig-Frank, 2001). Importantly, BPD is associated with higher risk for suicidal thoughts and behavior (STBs) even among all patients with history of suicide attempt (Berk et al., 2007; Suominen et al., 2000). BPD may also be a poor prognostic indicator for suicide prevention treatments (Ryberg et al., 2020). Given the salience of

BPD in individual suicide risk it is important to determine which clinical features of BPD are uniquely associated with STBs to uncover suicide prevention treatment targets for this group.

BPD is characterized by instability across emotional, cognitive, behavioral, and interpersonal domains (Lieb et al., 2004; Tomko et al., 2014). However, how these domains impact the relationship between BPD and STBs is not well established. Specific diagnostic criteria of BPD that may predict suicide attempts include identity disturbance, chronic feelings of emptiness, and efforts to avoid abandonment (Yen et al., 2021). Suicide risk for those with BPD has been associated with high rates of adverse childhood experiences and trauma (e.g., Wolf et al., 2023), impulsivity (McGirr et al., 2007), dissociation (Fitzmaurice et al., 2012) and affective instability (Rizk et al., 2019). Several studies have highlighted emotion dysregulation as a critical component in the relationship between BPD and STBs (Yen et al., 2004). BPD is associated with intense emotional reactivity and low tolerance for emotional distress (Carpenter & Trull, 2012). Ecological momentary assessments demonstrate a stronger relationship between negative affect and suicidal ideation in patients with versus without BPD (Mou et al., 2018) with other research suggesting that negative mood intensity is associated with STBs for those with BPD (Links et al., 2007). Given that STBs may function to regulate affect (Coppersmith et al., 2023) it is important to explore distress-STBs mediators and whether these mediators are unique to BPD.

One potential mediator of the distress-STBs relationship is suicidal beliefs. It has been suggested that a person's "suicidal belief system" – their beliefs about themselves, others, and the world – contributes to suicidal vulnerability (Rudd, 2006). Suicidal beliefs differ from suicidal ideation, which can be brief and limited in duration, as enduring patterns of cognition which may predispose one to acute suicidal episodes. The Interpersonal Theory of Suicide (ITS; Joiner, 2005; Van Orden et al., 2010) posits that suicidal intentions are related to beliefs including perceived burdensomeness. Other suicidal beliefs that have been theorized to play a role in suicide include hopelessness (Bryan & Rudd, 2006), perceiving suicide as an escape (Al-Dajani et al., 2019), and beliefs about the self as unlovable, feelings as unbearable, and life problems as unsolvable (Rudd & Bryan, 2021). BPD too has been associated with a unique belief system characterized by dependency on and distrust of others, distress intolerability, and the need to act preemptively to avoid threat (Bhar et al., 2008). It is possible that BPD, often associated with negative beliefs related to both self and interpersonal relationships, may accentuate the impact of suicidal beliefs on STBs. Suicide risk for those with BPD has been associated with interpersonal distress (e.g., Dombrovski et al., 2022) and previous research suggests that suicidal beliefs mediate the relationship between BPD symptoms and STBs (Gratz et al., 2022; Rogers & Joiner, 2016). However, additional research is needed to determine whether suicidal beliefs specifically mediate the relationship between emotional distress and STBs, and further if this relationship is moderated by BPD.

Those who have previously attempted suicide are at high risk of future attempt, particularly if the attempt was recent (Reutfors et al., 2021). Patients with a history of suicide attempt recently admitted for psychiatric hospitalization are at particularly high risk (Chung et al., 2017; Olfson et al., 2016). Among adults admitted to a psychiatric

inpatient unit, those with versus without BPD are more likely to have attempted suicide (Soloff et al., 2000) and BPD symptoms are higher in patients with multiple versus single attempts (Ghahramanlou-Holloway et al., 2018). While this research does suggest those with BPD in inpatient settings are more likely to have made suicide attempts, and may therefore be at higher risk of future attempts, it does not clarify differences between individuals with and without BPD who are acutely suicidal. This limits our understanding of whether there are specific, unique suicide prevention treatment targets for these groups. Recently, researchers have highlighted the importance of developing effective inpatient interventions to reduce STBs after discharge (Britton et al., 2020; Diefenbach et al., 2021; LaCroix et al., 2018). Exploring whether suicidal beliefs mediate the relationship between emotional distress and STBs for inpatients with a history of suicidality with versus without BPD may inform treatment development via personalization based upon BPD status.

The present study aimed to identify unique clinical features of STBs among acutely suicidal inpatients. Specifically, we sought to determine whether suicidal beliefs offer unique explanatory power in the relationship between emotional distress (specifically depression) and STBs for people with clinically significant borderline personality traits (BPTs). It was predicted that suicidal inpatients with versus without BPTs would report more severe depression, suicidal beliefs, and STBs (i.e., suicidal ideation; lifetime suicide attempts), that depression severity would be associated with STBs, and that suicidal beliefs would mediate the relationship between depression and STBs. Further, it was hypothesized that the depression-STB relationship would be moderated by the presence of BPTs such that suicidal beliefs would explain a significant portion of the relationship between depression and STBs in those reporting higher BPTs.

METHOD

Participants

Participants were adult psychiatric inpatients who completed study measures as part of an intake assessment for a suicide prevention clinical trial (NCT# 04168645). Eligibility criteria were age 18-65, English fluency, and recent STBs (i.e., suicide attempt prior to admission, or attempt within the past 2 years and active suicidal ideation with a plan on admission). Participants were excluded for history of schizophrenia, schizoaffective disorder, intellectual disability, organic brain disease, or any current psychiatric or medical conditions that would preclude informed consent or participation in the study. Because the present study was conducted as part of a clinical trial, participants scheduled to receive electroconvulsive therapy (ECT) or with expected length of stay fewer than 4 business days were excluded. Of the 213 participants who completed intakes, 15 were excluded from current analyses due to missing data on at least one study measure, with a final study sample of 198.

Procedures

All study procedures were approved by the hospital's Institutional Review Board. Clinician-rated measures were administered by doctoral-level clinicians, including

licensed psychologists and post-doctoral fellows under the supervision of licensed psychologists, and self-report measures were completed using Research Electronic Data Capture (REDCap), a secure online data collection platform (Harris et al., 2009).

Measures

Diagnosis

Clinical diagnoses were obtained using the Diagnostic Interview for Anxiety, Mood, and Obsessive-Compulsive and Related Disorders (DIAMOND; Tolin et al., 2018), a semi-structured interview for DSM-5 psychiatric disorders. The DIAMOND has good to excellent interrater reliability and test-retest reliability (Tolin et al., 2018). The DIAMOND was completed by a doctoral-level clinician as part of intake procedure, with diagnosis made on the basis of DSM-5 criteria. All clinicians completed training on the DIAMOND, including inter-rater reliability checks.

Borderline Personality Traits (BPTs)

BPTs were assessed using the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD; Zanarini et al., 2003). The MSI-BPD is a 10-item self-report measure with a score ≥ 7 reflecting clinically significant traits (Zanarini et al., 2003). The MSI-BPD has good sensitivity and specificity, as well as good test-retest reliability and acceptable internal consistency (Zanarini et al., 2003). Internal consistency in the current sample was also acceptable ($\alpha = .734$). As the MSI-BPD is a screening instrument rather than a diagnostic measure, data will be interpreted with respect to clinically significant BPTs rather than presence of diagnosed BPD.

Depressive Symptoms

Depressive symptom severity was assessed via self-report using the depression subscale of the 21-item Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995), which has good internal consistency and good convergent validity (Henry & Crawford, 2005). Internal consistency in the current sample was excellent, $\alpha = .914$.

Suicidal Ideation and Beliefs

Suicidal ideation severity was assessed using the Adult Suicidal Ideation Questionnaire (ASIQ), a 25-item self-report measure (Reynolds, 1991). The ASIQ has good internal consistency and good test-retest reliability (Reynolds, 1991). Internal consistency in the current sample was excellent, $\alpha = .956$. Suicidal beliefs were assessed using a shortened version of the Suicide Cognitions Scale (SCS; Bryan et al., 2016). The shortened form of the SCS is a 9-item self-report measure, adapted from the 18-item version (Bryan et al., 2014). The shortened SCS assesses core beliefs including that one is unlovable, that one's emotional experience is unbearable, and that one's problems are unsolvable. The shortened SCS has good reliability, validity,

and internal consistency (Bryan et al., 2016). Internal consistency in the current sample was excellent, $\alpha = .910$.

Lifetime Suicide Attempts

History of suicide attempts was assessed using the clinician-administered Columbia-Suicide Severity Rating Scale (C-SSRS; Posner et al., 2011). The C-SSRS has good interrater reliability for coding the number of lifetime suicide attempts (Brown et al., 2015; Gwaltney et al., 2017). The C-SSRS assesses actual, interrupted, and aborted attempts. The present study focused on the participant's report of their lifetime 'actual' suicide attempts.¹

Data Analysis

All analyses were completed using IBM SPSS v.29 software. Outliers identified in the lifetime suicide attempt variable ($n=2$) were winsorized using the highest non-outlier value. Winsorizing methods maintain good control of the probability of Type I error in large samples (Liao et al., 2017). Group comparisons were completed using independent-samples *t*-tests for dimensional variables and chi-square for categorical variables. When the assumption of homogeneity of variance was violated according to Levene's test, *t*-test results are reported not assuming equal variance. All mediation models were estimated using the SPSS PROCESS macro v4.2_beta (Hayes, 2013). The PROCESS macro estimates direct and indirect effects using percentile 5000 bootstrapped confidence intervals. Bootstrapping is a nonparametric random resampling procedure with replacement that produces a sampling distribution around the indirect effect. A confidence interval that does not include zero suggests a significant indirect effect. Our proposed model was examined using a two-step approach. In step 1, we estimated a mediation model to test if suicidal beliefs mediated the relationship between depression and STBs (PROCESS macro model 4). In step 2, we examined if this mediation model was dependent on the participant's level of BPTs (PROCESS macro model 59; see Figure 1 for a visual representation of the model). Overall, (DASS-21) was entered as the independent variable, STBs (ASIQ or CSSRS 'actual' attempts) as the dependent variables, suicidal beliefs (SCS) as the mediator, and BPTs (MSI-BPD) as the continuous moderator. The moderation of BPT was probed at the mean and ± 1 standard deviation around the mean, which offers insight into the indirect effect of suicide beliefs on the depression-suicidal ideation relationship at different levels of BPT. Three pairwise contrasts of indirect effects were conducted for each moderated mediation model to determine if the indirect effects significantly differed at different levels of BPT (i.e., indirect effect at *M* BPT minus 1SD below; 1SD above minus 1SD below; 1SD above minus *M*). Models were estimated separately for suicidal ideation (defined by the ASIQ score) and suicide attempts (number of lifetime attempts) as dependent variables for a total of four models.

¹We also completed the analyses presented in this paper for actual attempts with interrupted attempts as the dependent variable – with the same findings. Only results for actual attempts are reported here for the sake of parsimony.

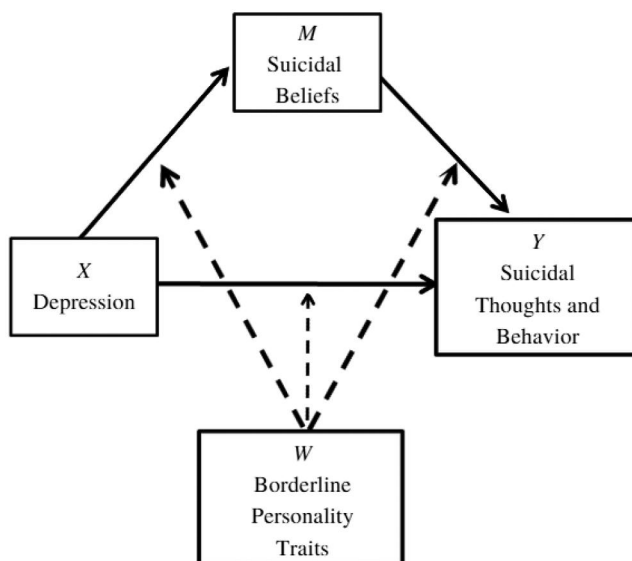


FIGURE 1. Proposed moderated mediation model: Direct effect of depression on suicidal ideation and attempts mediated by suicidal beliefs, conditional on borderline personality traits.

RESULTS

Sample Description

A majority of participants ($n = 123$, 62.1%) reported clinically significant BPTs (MSI-BPD ≥ 7). Demographic characteristics and diagnostic status are displayed in Table 1. There were no statistically significant differences between the groups on demographic variables: age: $t(196) = -0.46$, $p = .322$, sex assigned at birth (Male/Female): $\chi^2(1) = 0.41$, $p = .525$; gender identity (Cis/Diverse): $\chi^2(1) = 0.33$, $p = .565$; Race (Minority/Non-Minority): $\chi^2(1) = 0.23$, $p = .634$; Ethnicity (Hispanic/Non-Hispanic): $\chi^2(1) = 0.41$, $p = .525$. Participants in the clinically significant BPTs sample were more likely than were those without BPTs to be diagnosed with trauma and stressor disorders [$\chi^2(1) = 10.46$, $p < .001$] and substance use disorders [$\chi^2(1) = 8.04$, $p = .005$], but not mood disorders [$\chi^2(1) = 1.24$, $p = .266$], anxiety disorders [$\chi^2(1) = 2.04$, $p = .153$] or obsessive-compulsive or related disorders [$\chi^2(1) = 3.53$, $p = .060$].

Group Comparisons

Comparisons of participants with versus without clinically significant BPTs on clinical characteristics are reported in Table 2. Participants with clinically significant BPTs reported more severe depression and suicidal ideation, stronger suicidal beliefs, and a higher number of lifetime ‘actual’ suicide attempts.

Suicidal Ideation Mediation Model

The overall direct effects model was significant, $F(2, 195) = 43.970$, $p < .001$, and explained 31.08% of the variance in suicidal ideation. The direct effect of depression on

TABLE 1. Sample description.

	Total N = 198 <i>n</i> (%)	Clinically Significant BPTs N = 123 <i>n</i> (%)	No Clinically Significant BPTs N = 75 <i>n</i> (%)
Demographic Characteristics			
Age <i>M</i> (<i>SD</i>)	32.78 (12.53)	32.46 (12.16)	33.31 (13.17)
Sex assigned at birth			
Female	115 (58.1)	53 (43.1)	46 (61.3)
Male	82 (41.4)	69 (56.1)	29 (38.7)
Gender Identity			
Female	101 (51.0)	60 (48.8)	41 (54.7)
Male	73 (36.9)	48 (39.0)	25 (33.3)
Trans male	5 (2.5)	4 (3.3)	1 (1.3)
Trans female	6 (3.0)	1 (0.8)	5 (6.7)
Genderqueer/Gender non-conforming	11 (5.6)	9 (7.3)	2 (2.7)
Prefer not to answer/Missing	2 (1.0)	1 (0.8)	1 (1.3)
Ethnicity			
Not Hispanic or Latino/a	144 (72.7)	84 (68.3)	60 (80.0)
Hispanic or Latino/a	47 (23.7)	35 (28.5)	12 (16.0)
Prefer not to answer/Missing	7 (3.6)	4 (3.3)	3 (4.0)
Race*			
White	132 (66.7)	82 (66.7)	50 (66.7)
Black or African American	34 (12.2)	17 (13.8)	17 (22.7)
Asian	1 (0.5)	1 (0.8)	0 (0.0)
American Indian or Alaskan Native	6 (3.0)	3 (2.4)	3 (4.0)
Native Hawaiian or Pacific Islander	1 (0.5)	0 (0.0)	1 (1.3)
Other	29 (14.6)	23 (18.7)	6 (8.0)
Prefer not to answer	5 (2.5)	3 (2.4)	2 (2.7)
Diagnoses	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Mood Disorder	180 (90.9)	114 (92.7)	66 (88.0)
Trauma/Stressor Disorder	87 (43.9)	65 (52.8)	22 (29.3)
Anxiety Disorder	100 (50.5)	67 (54.5)	33 (44.0)
Obsessive-Compulsive/Related Disorder	40 (20.2)	30 (24.4)	10 (13.3)
Substance use disorder	120 (60.6)	84 (68.3)	36 (48.0)

Note: *Categories were not mutually exclusive, leading to a total *n* for race greater than the sample size. Clinically significant Borderline Personality Traits were defined as a score of 7 or higher on the McLean Screening Instrument for Borderline Personality Disorder.

TABLE 2. Clinical characteristics group comparisons.

	Clinically Significant BPTs N = 123 <i>M</i> (<i>SD</i>)	No Clinically Significant BPTs N = 75 <i>M</i> (<i>SD</i>)	<i>t</i> (196)	<i>p</i> -value
Clinical Characteristic				
DASS-21 Depression Subscale	29.56 (9.84)	22.03 (12.66)	4.41	<.001
Suicide Cognitions Scale Total Score	27.60 (8.20)	22.65 (8.29)	5.34	<.001
Adult Suicidal Ideation Questionnaire	94.02 (32.12)	67.58 (36.47)	4.10	<.001
# Lifetime Actual Suicide Attempts	4.08 (4.13)	2.93 (3.20)	2.06	.020
# Lifetime Interrupted Suicide Attempts	0.58 (1.18)	0.39 (0.61)	1.49	.069
# Lifetime Aborted Suicide Attempts	2.06 (5.00)	1.09 (3.93)	1.51	.067

suicide beliefs was significant, $b = 0.444$, $SE = 0.042$, $p < .001$, 95% *CI* [0.361, 0.528]. The direct effects of depression and suicide beliefs on suicidal ideation were also significant, $b = 1.290$, $SE = 0.232$, $p < .001$, 95% *CI* [0.832, 1.748] and $b = 0.849$, $SE = 0.314$, $p = .007$, 95% *CI* [0.231, 1.468], respectively. The indirect effect of suicide beliefs on the relationship between depression and suicidal ideation was also significant, $b = 0.378$, $SE = 0.150$, 95% *CI* [0.096, 0.684].

BPD as a Moderator of the Suicidal Ideation Mediation Model

Next, we examined if the indirect effect of suicide cognition on the relationship between depression and suicidal ideation varied as a function of BPT (moderated mediation). At one standard deviation below the mean of BPT (MSI-BPD = 4.37), there was no significant indirect effect, $b = 0.253$, $SE = 0.220$, 95% $CI [-0.192, 0.671]$. At the average level of BPT in the sample (MSI-BPD = 6.86), there was a significant indirect effect, $b = 0.293$, $SE = 0.140$, 95% $CI [0.029, 0.579]$. At one standard deviation above the mean of BPT (MSI-BPD = 9.36), there was no significant indirect effect, $b = 0.331$, $SE = 0.202$, 95% $CI [-0.018, 0.768]$. In sum, the indirect effect of suicide beliefs on the relationship between depression and suicidal ideation was only significant in participants scoring around the mean, but not at low or high levels of BPT. Importantly the effect at mean levels of BPD was small and pairwise contrast of the indirect effects yielded no significant difference between the effect of BPT at one standard deviation below, above, or at the mean BPT level (all confidence intervals contained zero). Thus, the proposed mediation model did not significantly vary as a function of BPT.

Lifetime Suicide Attempts Mediation Model

The overall direct effects model predicting suicide attempts was not significant, $F(2, 195) = 2.448$, $p = .089$. The direct effect of depression on suicide beliefs was significant, $b = 0.444$, $SE = 0.042$, $p < .001$, 95% $CI [0.361, 0.528]$. The direct effect of depression on suicide attempts was not significant, $b = -0.031$, $SE = 0.029$, $p = .294$, 95% $CI [-0.089, 0.027]$; however, the direct effect of suicide beliefs on suicide attempt was significant, $b = 0.087$, $SE = 0.040$, $p = .030$, 95% $CI [0.009, 0.165]$. The indirect effect of suicide beliefs on the relationship between depression and suicide attempts was significant, $b = 0.039$, $SE = 0.016$, 95% $CI [0.009, 0.071]$.

BPD as a Moderator of the Suicide Attempts Mediation Model

Next, we examined if the indirect effect of suicide beliefs on the relationship between depression and actual suicide attempt varied as a function of BPT (moderated mediation). At one standard deviation below the mean of BPT (MSI-BPD = 4.37), there was no significant indirect effect, $b = 0.044$, $SE = 0.025$, 95% $CI [-0.001, 0.098]$. At the average level of BPT in the sample (MSI-BPD = 6.86), there was a significant indirect effect, $b = 0.032$, $SE = 0.015$, 95% $CI [0.004, 0.064]$. At one standard deviation above the mean of BPT (MSI-BPD = 9.36), there was no significant indirect effect, $b = 0.020$, $SE = 0.023$, 95% $CI [-0.024, 0.067]$. In sum, the indirect effect of suicide beliefs on the relationship between depression and suicide attempts was only significant in participants scoring around the mean, but not at low or high levels of BPT. Importantly, the effect size at mean levels of BPD was small. Pairwise contrast of the indirect effects yielded no significant difference between the effect of BPT at one standard deviation below, above, or at the mean BPT level (all confidence intervals contained zero). Thus, the proposed mediation model did not significantly vary as a function of BPT.

DISCUSSION

Past research suggests adults with BPD are more likely to experience STBs than other adults, including other clinical samples. Little is known about how STBs differ between suicidal adults with and without BPD. Our findings suggest that adults admitted for psychiatric hospitalization with recent STBs who have clinically significant BPTs report greater suicidal ideation, suicidal beliefs, and lifetime suicide attempts than do those without BPTs. However, exploratory moderated-mediation analyses suggested that the relationship between depression and STBs is mediated by suicidal beliefs regardless of BPTs. That is to say, while those with significant BPTs have greater experiences of STBs on average, and suicidal beliefs mediate the relationship between depression and STBs, suicidal belief mediation does not uniquely account for that higher risk of STBs in those with BPTs.

Our analysis found that participants with clinically significant BPTs had, on average, significantly greater suicidal ideation, beliefs, and number of lifetime attempts than did those without clinically significant BPTs. This finding is consistent with past research (e.g., Soloff et al., 2000). Importantly, an inclusion criterion for our sample was acute suicidality with a past suicide attempt, whereas other samples conducted with inpatients have included broader clinical populations. For example, in their study of adults admitted for psychiatric hospitalization, Soloff et al. (2000) included those admitted for all reasons rather than solely those admitted for STBs. Our findings suggest that even at the highest level of risk for STBs (i.e., acute suicidality with a past suicide attempt) presence of clinically significant BPTs may be a relevant prognostic indicator requiring personalized treatment strategies.

The current study proposed that suicidal beliefs may play a unique role in STBs for those with BPTs. Our analyses confirmed that suicidal beliefs mediated the relationship between depression and STBs; however, our hypothesis that BPTs would moderate this relationship was not supported. These findings suggest suicidal beliefs are important treatment targets regardless of BPTs, and treatments which incorporate an explicit focus on exploring, assessing, and addressing suicidal beliefs could be important for suicide prevention in adults. Other constructs associated with STBs and BPD will need to be explored to identify pathways which may uniquely contribute to elevated suicide risk associated with BPTs, which could be specific treatment targets. For example, distress tolerance is associated with BPD and is a core component of DBT (Linehan, 2015) which appears to contribute to clinical outcome for those with BPD (Zeifman et al., 2020). Other characteristics associated with STBs for BPD that may be specific treatment targets include impulsivity (Chesin et al., 2010), difficulties with social problem solving (Berk et al., 2007), affective instability (Rizk et al., 2019), and reactivity to interpersonal challenges (Dombrovski et al., 2022). Some of these constructs are also associated with suicide risk for adults with major mental health challenges other than BPD – for example, impulsivity for those with mood disorders (Pompili et al., 2008). Further research exploring whether these constructs are uniquely associated with suicide risk for those with BPD, or associated with STBs broadly within clinical samples, is needed. It will be important for future research to test the moderating effect of BPTs on other emotion-STB mediators.

It is possible that the suicidal beliefs assessed in the current study may have been too general to uncover a moderating effect of BPTs. While the scale utilized to assess suicidal beliefs contained items related to interpersonal relationships, specifically to

beliefs about one's self as unlovable, it did not assess other BPD-related beliefs associated with STBs (e.g., distrust of others, fear of abandonment) and does not assess perceived burdensomeness as an isolated construct. It is possible these more specific beliefs may have unique relationships to STBs for those with BPTs, and could differentiate between those with and without clinically significant BPTs. Our findings suggest other beliefs play a role in STBs across our sample, including those with BPTs, as the scale we used also assessed beliefs that situations are unsolvable and distress is intolerable. Beliefs about the intolerability of situations had been proposed as a theoretical mechanism underlying suicidality for those with BPD, and suicidality for those with BPD has often been associated with distress tolerance (Linehan, 2015). Our findings suggest that these beliefs may be associated with STBs for those with and without clinically significant BPTs. This suggests that suicidal beliefs including beliefs about burdensomeness, the self as unlovable, feelings as unbearable, and problems as unsolvable may be important treatment targets for all adults with histories of STBs.

We did not find that BPD moderated the relationship between suicidal beliefs and distress. This finding is consistent with randomized-controlled trials of comprehensive cognitive-behavioral interventions which have been found to reduce suicidal ideation (e.g., DeCou et al., 2019; Ellis et al., 2017) or behaviors (e.g., Rudd et al., 2015) as well as previous research indicating changes in suicidal beliefs during treatment did not differ by BPD status (Balzen et al., 2022). Current results indicating a mediation effect without moderation point to the need for individualized case conceptualization using frameworks that are inclusive and broad, embracing the reality that elements of individual identity and related beliefs cannot be dismissed with simplified approaches targeting skill development.

The present findings are exploratory and are limited by a cross-sectional study design. The exclusion of participants receiving ECT and with a history of certain schizophrenia spectrum disorders limits the generalizability of the findings. We did not analyze medication status in this study, and so cannot comment on whether STBs were impacted by pharmacotherapy as has been found in past research (Pompili et al., 2008). Additionally, we did not analyze hopelessness or non-suicidal self-injury, both of which could be associated with the relationship between depression and suicidal behavior. However, these results highlight several promising avenues for future research and intervention design. Future longitudinal work should continue to explore this proposed mediation effect and the potential of suicidal beliefs as a predictor of STBs. Future research may wish to include detailed assessments of suicidal beliefs which allow exploration of the kinds of suicidal beliefs that may drive this relationship, including exploring whether specific beliefs associated with BPD may differentiate between those with and without clinically significant BPTs. Additional research may be beneficial for exploring if other features of BPD, such as impulsivity and affective instability, play unique roles in suicide risk and could form the foundation of effective, targeted interventions.

CONCLUSIONS

Adults hospitalized for STBs with clinically significant BPTs have higher suicidal beliefs, ideation, and number of lifetime attempts than do those without significant BPTs. The

relationship between depressive symptoms and suicidal ideation and behavior is mediated by suicidal beliefs regardless of BPTs. This suggests that while suicidal belief systems may be associated with BPD, suicidal beliefs may explain a significant portion of STBs for all adults with a history of STBs regardless of the presence of BPTs. This has important implications for the future of treatment design for STBs.

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AUTHOR NOTES

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