HHS Public Access

Author manuscript

J Pers Disord. Author manuscript; available in PMC 2023 May 29.

Published in final edited form as:

J Pers Disord. 2019 October ; 33(5): 653–670. doi:10.1521/pedi_2018_32_361.

Borderline Personality Disorder and Violence Toward Self and Others: A National Study

Thomas C. Harford[a], **Chiung M. Chen**[a,*], **Bradley T. Kerridge**[b], **Bridget F. Grant**[c]

[a]CSR, Incorporated, Arlington, VA, United States

[b]Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY, United States

[c]National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, Bethesda, MD, United States

Abstract

Borderline Personality Disorder (BPD) is associated with violence toward self and others. This study aims to further identify which *DSM-5* BPD criteria are independently related to violence, using data from National Epidemiologic Survey on Alcohol and Related Conditions–III, which included a total of 36,309 U.S. respondents ages 18 and older (n = 4,301 for BPD; n = 19,404 for subthreshold BPD). Multinomial logistic regression examined the associations between BPD criteria and violence categories, including suicide attempt (self-directed), violence toward others (other-directed), combined (self-/other-directed) violence, and no violence. In the total population, identity disturbance, impulsivity, and intense anger significantly characterized violence toward others, while avoidance of abandonment, self-mutilating behavior, feelings of emptiness, and intense anger significantly characterized violence toward self. These criteria (except identity disturbance) also significantly characterized combined self- and other-directed violence. Differential associations of the BPD criteria with violence among BPD and subthreshold BPD populations also are discussed.

Keywords

Borderline Personality Disorder; Suicide Attempt; Violence; *DSM-5* Psychiatric Disorders

Borderline personality disorder (BPD) is a multifaceted disorder characterized by unstable interpersonal relationships, affective instability, and impulsivity, and may be coupled with suicidal or self-mutilating behavior (SMB) (American Psychiatric Association, 2013). Violence associated with BPD includes suicide (Doyle et al., 2016); suicidal behavior (Ansell et al., 2015); and recurrent physical fights, displays of temper, and anger (Mok et al., 2016). SMB functions to reduce negative emotional states such as tension or anxiety (Nock & Prinstein, 2005). However, SMB has also been shown to be related to anger and hostility (Herpertz, Sass, & Favazza, 1997; Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994), impulsivity

*Corresponding author: CSR, Incorporated, 4250 N. Fairfax Dr., Suite 500, Arlington, VA 22203, Tel: + 1 703 741 7125; fax: + 1 703 312 5230, cchen@csrincorporated.com (C.M. Chen).

(Maser et al., 2002; Simeon, 2006), and suicidal behavior (Brown, Comtois, & Linehan, 2002; Cooper et al., 2005; Suominen, Isometsä, Haukka, & Lönnquist, 2004), as well as with multiple forms of violence toward others (Sahlin et al., 2017; Vaughn, Salas-Wright, DeLisi, & Larson, 2015).

In addition to violence toward others and self, combined violence (i.e., toward both self and others) has been substantiated in recent reviews of this literature (Hillbrand, 2010; O'Donnell, House, & Waterman, 2015). Harford, Yi, and Grant (2013) derived a violence typology for adults in the general population based on a latent class analysis of 5 other-directed and 4 self-directed indicators of violent behavior, and the analysis identified 4 broad categories of violence: other-directed violence (4.6%), self-directed violence (9.3%), combined self- and other-directed violence (2.0%), and no violence (84.1%). When adjusted for sociodemographic characteristics and for *DSM-IV* substance use, mood, anxiety, and other personality disorders, BPD was shown to be significantly associated with the violence typology. The prevalence of BPD was higher among those who engaged in violence toward others (13.3%), violence toward self (21.6%), and combined violence toward self and others (42.9%) than those with no violence (2.9%). BPD yielded significantly greater odds for combined violence as well as other- or self-directed violence relative to no violence. However, the inclusion of BPD criteria of suicidal behavior (criterion #5) and inappropriate, intense anger such as recurrent physical fights (criterion #8) in the diagnosis of *DSM-IV* BPD calls for an inquiry as to whether these and/or other BPD criteria are implicated in these findings.

An earlier classification of aggression by Berkowitz (1993) includes instrumental (i.e., planned or goal-directed behavior) and reactive forms (i.e., aggression triggered by provocation). Aggression in BPD is typically of the reactive type (Herpertz et al., 2001; Kogan-Goloborodko, Brügmann, Repple, Habel, & Clemens, 2016). Mancke, Herpertz, and Bertsch (2015) presented a multidimensional model of aggression in BPD explaining the formation of aggression from the perspective of the bio-behavioral dimensions of affective dysregulation, impulsivity, threat hypersensitivity, and empathic functioning. In contrast with premeditated aggression, most acts of BPD violence are unplanned, occurring as a result of provocation related to negative emotions such as anger (Siever, 2008). The most significant and common symptoms of BPD are high levels of impulsivity and aggression, as well as emotional dysregulation (Kogan-Goloborodko et al., 2016).

The unique prospective associations among BPD symptoms, difficulties with emotion regulation, trait impulsivity, and psychological and physical aggression were examined in a prospective study with a mixed clinical and community sample of 150 adults (Scott, Stepp, & Pilkonis, 2014). Results from a multivariate path analysis demonstrated that the associations between BPD symptoms at baseline and later psychological and physical aggression were fully mediated by difficulties with emotion regulation, and not by trait impulsivity, which did not predict aggression after controlling for emotion dysregulation. This pattern is different from that of antisocial personality disorder (ASPD) symptoms, which were directly associated with physical assault perpetration and victimization and were not associated with emotion dysregulation, impulsivity, or psychological aggression. Compared with ASPD, BPD may be associated with different types of aggression and in

different contexts. Weinstein, Gleason, and Oltmanns (2012) showed that BPD symptoms, but not those of ASPD, were associated with aggression against romantic partners among a sample of late middle-age adults (ages 55–64), suggesting distinctions in the long-term course of BPD and ASPD and in their associations with aggressive behavior in close relational contexts. Further, a substantial proportion of those with BPD and without comorbid ASPD were found to engage in aggressive behavior directed toward others (Newhill, Eack, & Mulvey, 2009, 2012). Nevertheless, aggressive behavior in those with BPD may be attributable to comorbid ASPD features (Allen & Links, 2012). Evidence suggests that the associations between BPD and violence diminish after controlling for ASPD, and this attenuation can be explained by the common features shared by these disorders that increase the risk for reactive aggression, such as proneness to impulsivity, irritability, and anger (Newhill et al., 2009).

Studies from the Rhode Island Method to Improve Assessment and Service (MIDAS) have presented findings related to subthreshold BPD. In a sample of 1,976 outpatients, Zimmerman and colleagues (2011) found that those meeting one symptom criterion of BPD (n = 589) compared with those meeting no criteria (n = 1,387) had a greater number of other disorders, suicidal ideation, and suicide attempts, as well as poorer Global Assessment of Functioning scores. The most prevalent BPD symptom was chronic emptiness, followed by impulsivity and intense anger. In a related study, outpatients who met just one BPD criterion for impulsivity (#4), affective instability (#6), chronic emptiness (#7), or intense anger (#8) manifested impairments in several areas of functioning (Ellison, Rosenstein, Chelminski, Dalrymple, & Zimmerman, 2016). More specifically, those who met the symptom criterion for affective instability or chronic emptiness had higher levels of suicidality on a scale (rated 0–6) from absence of suicide ideation to presence of a highly lethal suicide attempt. Those who met the criterion for chronic emptiness or intense anger had a higher likelihood of making a suicide attempt.

DSM-IV and *DSM-5* require a minimum of 5 out of 9 criteria for a BPD diagnosis, resulting in diverse clinical presentation comprising 256 possible combinations of criteria (American Psychiatric Association, 1994, 2013). In light of the symptom heterogeneity of BPD diagnosis and the relevance of MIDAS studies for subthreshold criteria, it is important to assess which criteria are related to aggression. Because clinical samples of BPD tend to be heterogeneous and small, studies of the relationship between BPD criteria and aggression in the general population are needed. Given the growing recognition of the importance of BPD symptom criteria and the gaps in knowledge regarding the structure and characteristics of their criteria in the general population, the major objective of this study is to examine the distribution of BPD criteria and to assess their risk for violence against self and toward others in the general population and among both individuals with *DSM-5* BPD and those with subthreshold BPD. A related objective is to compare the BPD and subthreshold BPD populations with the population free of BP symptoms for their risk of violence.

METHODS

STUDY DESIGN

Data for this study were obtained from the National Epidemiologic Survey on Alcohol and Related Conditions–III (NESARC–III), a nationally representative survey of the noninstitutionalized U.S. civilian population ages 18 or older in 2012–2013, including people in households and group quarters (e.g., group homes, worker dormitories) (Grant, Chu, Sigman, et al., 2014). The NESARC–III collected detailed information on demographics, substance use, and mental health, among other subjects. The NESARC–III was sponsored by the National Institute on Alcohol Abuse and Alcoholism (NIAAA); the fieldwork was conducted by Westat (Rockville, MD). Participants within households and segments (i.e., groups of census-defined blocks) were randomly selected according to a multistage probability sample design, in which primary sampling units were individual or combined counties from all 50 states and the District of Columbia. High- and moderate-minority segments were oversampled relative to the low-minority segments by a ratio of 2.0 and 1.5, respectively. A total of 36,309 respondents completed the face-to-face Alcohol Use Disorder and Associated Disabilities Interview Schedule, *DSM-5* Version (AUDADIS-5) interview—a fully structured, computer-assisted diagnostic tool designed for trained lay interviewers (Grant et al., 2011). The response rate of NESARC–III was 60.1%, comparable to most current U.S. national health surveys (Centers for Disease Control and Prevention, 2014; Substance Abuse and Mental Health Services Administration, 2014). The present study analyzed data from the total sample and a subsample of 23,705 respondents who reported 1 or more BPD criteria (including 19,404 with subthreshold BPD and 4,301 with BPD).

MEASURES

Suicide attempt.—In separate sections of NESARC–III on mood disorders for both depression (low mood) and mania (high mood), respondents were asked about suicidality experiences during the times in their lives when they were not their normal selves and their mood was at its lowest and they enjoyed or cared the least about things, as well as during the times when they or others noticed that they were excited or elated/irritable or easily annoyed and also extremely revved up or energetic. Specifically, the suicidality experiences were about whether they attempted suicide or tried to kill themselves, whether they thought about committing suicide or killing themselves, and whether they felt like they wanted to die nearly every day for at least 2 weeks. The latter questions pertaining to suicidal ideation were not considered because the present study narrowly defined self-directed violence by suicide attempt. A positive response to the first question or to a standalone question on suicide attempts from the medical conditions section denotes having a suicide attempt in one's lifetime. A total of 30% of respondent-reported suicide attempts were not associated with mood episodes. Other-directed violence was based on a threshold of at least 1 of the following 5 violent behaviors since age 15: (1) ever get into a lot of fights that [the respondent] started; (2) ever hit someone so hard that [the respondent] injured them or they had to see a doctor; (3) ever physically hurt another person in any way on purpose; (4) ever use a weapon like a stick, knife, or gun in a fight; and (5) ever get into a fight that came

to swapping blows with someone like a husband, wife, boyfriend, or girlfriend (Cronbach's alpha=0.94).

A violence typology was constructed from a cross-tabulation of other-directed violence and self-directed violence, with the following 4 violence categories: none, self-directed only, other-directed only, and combined self-/other-directed.

Borderline personality disorder and diagnostic criteria.—As defined in the *DSM-5*, the BPD diagnosis requires evidence of long-term maladaptive patterns of cognition, affectivity, interpersonal functioning, and impulse control as indicated by 5 or more of the 9 diagnostic criteria. The AUDADIS-5 operationalized the 9 BPD criteria with 30 symptom items. For each symptom, respondents were instructed to answer " . . . about how you have felt or acted MOST of the time since early adulthood regardless of the situation or whom you were with. Do NOT include times when you weren't yourself or when you acted differently than usual because you were depressed or hyper, anxious or nervous or drinking heavily, using medicines or drugs or experiencing their bad aftereffects, or times when you were physically ill." To be diagnosed with *DSM-5* BPD, not only must the respondents endorse at least 5 criteria, but any one of their symptoms must also cause significant functional impairment or subjective distress. Respondents who endorsed at least 1 BPD criterion but did not meet the requirement for the *DSM-5* BPD diagnosis represent the subthreshold BPD population. The remaining respondents who did not endorse any BPD criteria represent the population free of BPD symptoms. Nine *DSM-5* BPD criteria (as listed in Tables 1-3) were examined in the analysis of violence for the BPD, subthreshold BPD, and total populations. In view of the inclusion of suicide attempt in the violence typology outcome, our analysis limited the BPD criterion #5 exclusively to SMB based on the question "When you've been under a lot of stress, have you ever cut, burned, or scratched yourself on purpose?", even though the AUDADIS-5 operationalized the BPD criteria #5 with the additional item "Have you tried to hurt or kill yourself, or threatened to do so?" for recurrent suicidal behavior, gestures, or threats. Notably, 63% of individuals with SMB also exhibited recurrent suicidal behavior.

Covariates.—The following *DSM-5* lifetime diagnoses of psychiatric disorders, as assessed by AUDADIS-5, were included as covariates in the present study: alcohol use disorder, drug use disorders, nicotine dependence, major depressive disorder, persistent depressive disorder, bipolar 1 disorder, panic disorder, agoraphobia, specific phobia, social phobia, generalized anxiety disorder, PTSD, schizotypal personality disorder, and ASPD. Consistent with *DSM-5*, all these diagnoses excluded substance- and medical illness-induced disorders. Because of hierarchical diagnoses, the mood disorders were coded into mutually exclusive categories (none, persistent depressive disorder only, major depressive disorder only, both major depressive disorder and persistent depressive disorder, and bipolar 1 disorder) in our analysis. The AUDADIS-5 measures of psychiatric disorders generally have good reliability and validity (Grant et al., 2015; Hasin et al., 2015).

Sociodemographic covariates included gender (male and female); age (18–25, 26–34, 35–49, 50+); race/ethnicity (non-Hispanic White, non-Hispanic Black, non-Hispanic American Indian/Alaska Native, non-Hispanic Asian/Native Hawaiian/Pacific Islander, Hispanic);

education (less than high school, high school or GED, some college or higher); marital status (married, divorced/separated/widowed, never married); and family income (<$10,000, $10,000–$29,999, $30,000–$79,999, ≥ $80,000).

ANALYTIC PLAN

For the *DSM-5* BPD, subthreshold BPD, and total populations separately, descriptive analyses were first conducted to compare the 4 violence categories with respect to the distributions of BPD criteria. Multinomial logistic regression of the 4 violence categories was then used to estimate the adjusted odds ratios of the violence categories for each BPD criteria. Because BPD was known to be highly comorbid with substance use disorders and with mood, anxiety, and other personality disorders (Grant et al., 2008), these psychiatric disorders, in addition to sociodemographic variables, were included as covariates in the regression. The significance level was set more stringently at 0.01 to avoid misidentifying covariates with spurious associations.

The multinomial logistic regression was fitted using the statistical software Stata 14 (StataCorp, 2015), which allows the specification of complex survey design in the models for stratification, clustering, and sampling weights that reflect unequal probabilities of selection. These three sampling features were taken into account for point estimates and the associated 95% confidence intervals.

RESULTS

Table 1 shows the percentage distribution of BPD diagnosis (i.e., BPD, subthreshold BPD, and no BPD criteria), by violence category. It is important to note that the prevalence of BPD was disproportionately higher in the group that engaged in combined violence (70.7%) than in the total population (11.4%). Age and sex distributions, by violence category, among the BPD, subthreshold BPD, and BPD symptom-free populations are shown in the Supplemental Table S1. In the BPD and subthreshold BPD populations, men were overrepresented in the group that engaged in other-directed violence, and women were overrepresented in the group that engaged in self-directed and combined violence. Moreover, older people (age 50+) were less represented in the group that engaged in combined violence, although the BPD population (42.3 years) was on average younger than the subthreshold BPD (46.9 years) or the BPD symptom-free population (47.4 years).

Additional prevalence estimates of BPD criteria among the BPD, subthreshold BPD, and total populations, by violence category, can be found in Table 1. Here we described the results of BPD and subthreshold BPD and kept the results of the total population for reference. Among the *DSM-5* BPD population, violent behaviors were distributed as follows: none, 46.2% (95% CI=44.4%– 48.0%); other-directed only, 29.4% (95% CI=27.6%–31.3%); self-directed only, 10.8% (95% CI=9.6%–12.0%); and combined self-/other-directed, 13.6% (95% CI=12.3%–15.0%). Among the subthreshold BPD population, violent behaviors were distributed as follows: none, 83.2% (95% CI=82.4%–84.0%); other-directed only, 12.1% (95% CI=11.5%–12.8%); self-directed only, 3.6% (95% CI=3.3%–3.9%); and combined self-/other-directed, 1.1% (95% CI=0.9%–1.3%). As expected, people with BPD were more likely than people with subthreshold BPD to endorse each of the BPD

criteria. In both the BPD and subthreshold BPD populations, unstable relationships were the most prevalent criterion, and SMB was the least prevalent. In the BPD population, who were required to endorse at least 5 criteria, little variation was found across the violence categories for the most prevalent criterion, which was endorsed by almost everyone (95.3%). More variation was found across the violence categories for the least prevalent criterion (i.e., SMB), which was endorsed by 32.3% of those who reported combined violence and 23.8% of those who reported self-directed violence, compared with about 6% of those who reported other-directed or no violence.

Table 2 presents the adjusted odds ratios measuring the association between BPD (exposure) and violence (outcome) for BPD relative to no BPD and subthreshold BPD, and for BPD and subthreshold BPD relative to no BPD criteria. Adjusted odds ratios with the BPD criteria as the exposure also are presented for those who met each of the BPD criteria in the total, BPD, and subthreshold BPD populations. The findings are summarized for violence versus no violence, other- versus self-directed violence, and combined violence versus other-directed and self-directed violence. Although we presented the 95% confidence intervals and flagged those odds ratios whose *p*-values were smaller than 0.01 and 0.05, we interpreted results only if they were statistically significant at the 0.01 level.

TOTAL POPULATION

For self-directed versus no violence, avoidance of abandonment, SMB, feelings of emptiness, and intense anger conferred significantly higher odds. For other-directed violence versus no violence, identity disturbance, impulsivity, and intense anger conferred significantly higher odds. For combined versus no violence, avoidance of abandonment, impulsivity, SMB, feelings of emptiness, and intense anger conferred significantly higher odds.

For other-directed versus self-directed violence, impulsivity and intense anger conferred significantly higher odds, while SMB and feelings of emptiness conferred significantly lower odds. For combined versus self-directed violence, impulsivity and intense anger conferred significantly higher odds. For combined versus other-directed violence, SMB, affective instability, and feelings of emptiness conferred significantly higher odds, while identity disturbance conferred significantly lower odds.

DSM-5 BPD POPULATION

For self-directed versus no violence, SMB conferred significantly higher odds, while affective instability conferred significantly lower odds. For other-directed violence versus no violence, impulsivity and intense anger conferred significantly higher odds, while affective instability conferred significantly lower odds. For combined versus no violence, impulsivity, SMB, feelings of emptiness, and intense anger conferred significantly higher odds, while identity disturbance conferred significantly lower odds.

For other-directed versus self-directed violence, intense anger conferred significantly higher odds, while avoidance of abandonment and SMB conferred significantly lower odds. For combined versus self-directed violence, intense anger conferred significantly higher odds.

For combined versus other-directed violence, SMB and feelings of emptiness conferred significantly higher odds, while identity disturbance conferred significantly lower odds.

SUBTHRESHOLD *DSM-5 BPD* POPULATION

For self-directed versus no violence, SMB conferred significantly higher odds, while unstable relationships conferred significantly lower odds. For other-directed violence versus no violence, impulsivity and intense anger conferred significantly higher odds, while unstable relationships conferred significantly lower odds. For combined versus no violence, SMB, feelings of emptiness, and intense anger conferred significantly higher odds.

For other-directed versus self-directed violence, impulsivity, intense anger, and stressful paranoid ideation conferred significantly higher odds, while SMB conferred significantly lower odds. For combined versus self-directed violence, intense anger conferred significantly higher odds. For combined versus other-directed violence, SMB and feelings of emptiness conferred significantly higher odds.

DSM-5 BPD VERSUS SUBTHRESHOLD DSM-5 BPD POPULATION

As shown in Table 3, for combined violence versus no violence, unstable relationships conferred significant higher odds in the BPD population than in the subthreshold BPD population. However, for other-directed versus self-directed violence, avoidance of abandonment conferred significant lower odds in the BPD population than in the subthreshold BPD population.

DISCUSSION

Findings from this general population study complement the MIDAS findings from clinical studies (Ellison et al., 2016; Zimmerman et al., 2011) regarding the importance of subthreshold BPD for the increased risk for self-directed, other-directed, and combined violence. The findings establish not only the strong associations between the BPD pathology and violence but also the moderate association between self-directed and other-directed violence in the BPD population. The latter is evidenced by the significantly increased odds of combined versus self-directed and other-directed violence for those with BPD relative to those without BPD (odds ratios = 3.0 and 2.4, respectively) or those without any BPD criteria (odds ratios = 4.73 and 4.16, respectively). Certain BPD criteria (i.e., impulsivity, self-mutilating behavior, feelings of emptiness, and intense anger) were found to be significantly associated with violence in both BPD and subthreshold BPD populations, suggesting that their associations with violence were not entirely due to the shared BPD pathology.

Consistent with the earlier findings from the NESARC study (Harford et al., 2013), the findings show that *DSM-5* BPD had significantly higher odds for violence versus no violence and significantly higher odds for combined violence versus self- and other-directed violence (Table 2). When adjusted for sociodemographics and all the relevant psychiatric disorders assessed by NESARC–III, significant direct effects on violence were observed for some BPD criteria. Among both the BPD and subthreshold BPD populations, SMB had significantly higher odds for self-directed violence versus no violence; impulsivity and

intense anger had significantly higher odds for other-directed violence versus no violence; and all three criteria (i.e., SMB, impulsivity, and intense anger) and feelings of emptiness had significantly higher odds for combined violence versus no violence. Interestingly, intense anger was found to be a risk factor not only for other-directed violence but also for self-directed and combined violence in the total population. Sadeh and McNiel (2013) similarly found that facets of anger (disposition toward physiological arousal, hostile cognitions, and angry behavior) differentially predicted suicide attempts among psychiatric patients.

In this study, the associations between BPD criteria and violence were not always the same in the BPD and subthreshold BPD populations. Among the BPD population, affective instability had significantly lower odds for self- and other-directed violence versus no violence, as did identity disturbance for combined violence versus no violence. Among the subthreshold BPD population, unstable relationships had significantly lower odds for self- and other-directed violence versus no violence. Differences between these two populations obviously were attributed to the greater number of criteria required for BPD and the larger subthreshold BPD sample that either endorsed fewer criteria or endorsed 5 to 9 criteria but did not have functioning impairment. Despite the higher prevalence of BPD criteria and overall violence in the BPD population relative to the subthreshold BPD population, the odds of violence were generally comparable between the two populations for all criteria except unstable relationships. We can infer from this finding that the effect of unstable relationships on violence varies according to the BPD severity (i.e., threshold/subthreshold or the number of endorsed criteria for each respondent), but that other criteria may have significant associations with violence in their own right, independent of BPD severity.

Of particular interest in the present study is combined violence. One possible explanation for the combined violence distinct from the separate forms of violence is that combined violence reflects the addition of criteria related to self-directed and other-directed violence. In both the BPD and subthreshold BPD populations, those who displayed combined violence had relatively higher prevalence of those criteria related to self-directed violence (i.e., avoidance of abandonment, SMB, feelings of emptiness) and other-directed violence (impulsivity and intense anger) than those who displayed no violence. However, impulsivity and intense anger did not show significantly higher odds for combined versus other-directed violence; neither did avoidance of abandonment, SMB, and feelings of emptiness for combined versus self-directed violence.

Explanations for the association between BPD or BPD criteria and violence may involve other generic higher-order constructs. In a NESARC study, Eaton and colleagues (2011) found that the internalizing–externalizing structure of common mental disorders captured the comorbidity of BPD, which showed associations with both the distress subfactor of the internalizing dimension and the externalizing dimension. In addition, diagnostic criteria such as affective instability would relate more strongly to the internalizing dimension, whereas others such as impulsivity and inappropriate, intense anger seemed to relate more strongly to the externalizing dimension. The findings of BPD connected to distress and the externalizing dimension suggested that these two separable liability dimensions each contributed to an individual’s liability level (Eaton et al., 2011). The study by Scott and

colleagues (2014) suggested that associations between BPD symptoms and aggression were mediated uniquely by difficulties regulating emotions. Despite the possibility that the associations of BPD pathology and violence may be mediated by internalizing–externalizing liabilities or other comorbid disorders, our findings affirm the presence of significant direct effects of BPD criteria, including subthreshold criteria, by taking into account the presence of other psychiatric disorders.

Although unstable relationships conferred lower odds for other-directed and self-directed violence versus no violence, and stressful paranoid ideation conferred higher odds for other-directed versus self-directed violence in the subthreshold BPD population, unstable relationships and stressful paranoid ideation were not significantly related to violence in the BPD population or in the total population. Studies have shown that stressful paranoid ideation is a consistently weak predictor for presence of BPD (Blais, Hilsenroth, & Fowler, 1999; Blais & Norman, 1997). In contrast with stressful paranoid ideation, unstable interpersonal relationships have high prevalence in this and other studies (Blais et al., 1999; Grilo et al., 2007), because disturbances in self- and interpersonal functioning have been recognized as a core feature of personality disorders (Oltmanns, Melley, & Turkheimer, 2002; Skodol et al., 2002). In view of the characterization of BPD as reflecting unstable interpersonal relationships and stressful paranoid ideation, it is of interest that these criteria were not directly associated with violence; any presumed associations could very well be mediated by other factors. Further research is required to replicate the findings reported by Scott and colleagues (2014) and to identify other potential constructs related to violence, including trait impulsivity, affective dysregulation, SMB, and aggressive traits.

A number of study limitations need to be highlighted. First, the measurement and categorization of violent behavior in the present study are based on retrospective reports and are restricted to a limited number of question items. Second, other-directed violence does not discriminate between and among the roles of instigator and victim, multiparty instigation, or incident severity. Third, the study is limited to cross-sectional data, which do not allow for assessment of directionality of important covariates. And, fourth, the NESARC was designed to estimate population prevalence estimates for *DSM-5* disorders and associated criteria, limiting the assessments for other conventional measures such as trait impulsivity and affective dysregulation.

In summary, the major finding from this study reveals variations in the pattern of associations between the BPD criteria and violence. Despite significant associations between *DSM-5* BPD and violence directed toward self and others, different clinical presentations as indicated by symptom criteria may vary in their association with types of violence. The high prevalence of BPD (70.7%) among people who engaged in combined violence is a public-health concern. Although the subthreshold BP population has lower odds for violence than the BP population, their odds for violence are higher than among the population that is free of BP symptoms. Identifying the clinical presentations of the BP and subthreshold BP populations will have clinical treatment implications for preventing or reducing such combined violence.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

REFERENCES

Allen A, & Links PS (2012). Aggression in borderline personality disorder: Evidence for increased risk and clinical predictors. Current Psychiatry Reports, 14(1), 62–69. [PubMed: 22033830]

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Arlington, VA: American Psychiatric Publishing.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Ansell EB, Wright AG, Markowitz JC, Sanislow CA, Hopwood CJ, Zanarini MC, . . . Grilo CM (2015). Personality disorder risk factors for suicide attempts over 10 years of follow-up. Personality Disorders, 6, 161–171. [PubMed: 25705977]

Berkowitz L (1993). Aggression: Its causes, consequences, and control. New York: McGraw-Hill Book Company.

Blais MA, Hilsenroth MJ, & Fowler JS (1999). Diagnostic efficiency and hierarchical functioning of the DSM-IV borderline personality disorder criteria. Journal of Nervous and Mental Disease, 187, 167–173. [PubMed: 10086473]

Blais M, & Norman D (1997). A psychometric evaluation of the DSM-IV personality disorder criteria. Journal of Personality Disorders, 11, 168–176. [PubMed: 9203111]

Brown MZ, Comtois KA, & Linehan MM (2002). Reasons for suicide attempts and nonsuicidal self-injury in women with borderline personality disorder. Journal of Abnormal Psychology, 111(1), 198–202. [PubMed: 11866174]

Centers for Disease Control and Prevention. (2014). Summary health statistics for U.S. adults: National Health Interview Survey, 2012. Hyattsville, MD: National Center for Health Statistics.

Cooper J, Kapur N, Webb R, Lawlor M, Guthrie E, Mackway-Jones K, & Appleby L (2005). Suicide after deliberate self-harm: A 4-year cohort study. American Journal of Psychiatry, 162(2), 297–303. [PubMed: 15677594]

Doyle M, While D, Mok PLH, Windfuhr K, Ashcroft DM, Kontopantelis E, . . . Webb RT (2016). Suicide risk in primary care patients diagnosed with a personality disorder: A nested case control study. BMC Family Practice, 17, 106. [PubMed: 27495284]

Eaton NR, Krueger RF, Keyes KM, Skodol AE, Markon KE, Grant BF, & Hasin DS (2011). Borderline personality disorder co-morbidity: Relationship to the internalizing-externalizing structure of common mental disorders. Psychological Medicine, 41(5), 1041–1050. [PubMed: 20836905]

Ellison WD, Rosenstein L, Chelminski I, Dalrymple K, & Zimmerman M (2016). The clinical significance of single features of borderline personality disorder: Anger, affective instability, impulsivity, and chronic emptiness in psychiatric outpatients. Journal of Personality Disorders, 30, 261–270. [PubMed: 25893552]

Grant BF, Chou SP, Goldstein RB, Huang B, Stinson FS, Saha TD, . . . Ruan WJ (2008). Prevalence, correlates, disability, and comorbidity of DSM-IV borderline personality disorder: Results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. Journal of Clinical Psychiatry, 69, 533–545. [PubMed: 18426259]

Grant BF, Chu A, Sigman R, Amsbary M, Kali J, Sugawara Y, . . . Goldstein R (2014). Source and Accuracy Statement: National Epidemiologic Survey on Alcohol and Related Conditions–III (NESARC–III). Rockville, MD: National Institute on Alcohol Abuse and Alcoholism.

Grant BF, Goldstein RB, Chou SP, Saha TD, Ruan WJ, Huang B, . . . Hasin DS (2011). The Alcohol Use Disorder and Associated Disabilities Interview Schedule—Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition Version (AUDADIS-5). Rockville, MD: National Institute on Alcohol Abuse and Alcoholism.

Grant BF, Goldstein RB, Smith SM, Jung J, Zhang H, Chou SP . . . Hasin DS (2015). The Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 (AUDADIS-5): Reliability of

substance use and psychiatric disorder modules in a general population sample. Drug & Alcohol Dependence, 148, 27–33. [PubMed: 25595052]

Grilo CM, Sanislow CA, Skodol AE, Gunderson JG, Stout RL, Bender DS, . . . McGlashan TH (2007). Longitudinal diagnostic efficiency of DSM-IV criteria for borderline personality disorder: A 2-year perspective study. Canadian Journal of Psychiatry, 52, 357–362. [PubMed: 17696021]

Harford TC, Yi H, & Grant BF (2013). Other- and self-directed forms of violence and their relationships to DSM-IV substance use and other psychiatric disorders in a national survey of adults. Comprehensive Psychiatry, 54, 731–739. [PubMed: 23587529]

Hasin DS, Greenstein E, Aivadyan C, Stohl M, Aharonovich E, Saha T, . . . Grant BF (2015). The Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 (AUDADIS-5): Procedural validity of substance use disorders modules through clinical re-appraisal in a general population sample. Drug and Alcohol Dependence, 148, 40–46. [PubMed: 25604321]

Herpertz SC, Dietrich TM, Wenning B, Krings T, Erberich SG, Willmes K, … Sass H (2001). Evidence of abnormal amygdala functioning in borderline personality disorder: A functional MRI study. Biological Psychiatry, 50(4), 292–298. [PubMed: 11522264]

Herpertz S, Sass H, & Favazza A (1997). Impulsivity in self-mutilative behavior: Psychometric and biological findings. Journal of Psychiatric Research, 31(4), 451–465. [PubMed: 9352472]

Hillbrand M (2010). Homicide–suicide and other forms of co-occurring aggression against self and against others. Professional Psychological Research Practices, 32, 626–635.

Kogan-Goloborodko O, Brügmann E, Repple J, Habel U, & Clemens B (2016). Experimentally assessed reactive aggression in borderline personality disorder. PloS One, 11(11), e0166737. [PubMed: 27851804]

Mancke F, Herpertz SC, & Bertsch K (2015). Aggression in borderline personality disorder: A multidimensional model. Personality Disorders, 6(3), 278–291. [PubMed: 26191822]

Maser JD, Akiskal HS, Schettler P, Scheftner W, Mueller T, Endicott J, … Clayton P (2002). Can temperament identify affectively ill patients who engage in lethal or near-lethal suicidal behavior? A 14-year prospective study. Suicide & Life-Threatening Behavior, 32(1), 10–32. [PubMed: 11931008]

Mok PL, Pedersen CB, Springate D, Astrup A, Kapur N, Antonsen S, . . . Webb RT (2016). Parental psychiatric disease and risks of attempted suicide and violent criminal offending in offspring: A population-based cohort study. JAMA Psychiatry, 73, 1015–1022. [PubMed: 27580483]

Newhill CE, Eack SM, & Mulvey EP (2009). Violent behavior in borderline personality. Journal of Personality Disorders, 23(6), 541–554. [PubMed: 20001173]

Newhill CE, Eack SM, & Mulvey EP (2012). A growth curve analysis of emotion dysregulation as a mediator for violence in individuals with and without borderline personality disorder. Journal of Personality Disorders, 26(3), 452–467. [PubMed: 22686232]

Nock MK, & Prinstein MJ (2005). Contextual features and behavioral functions of self-mutilation among adolescents. Journal of Abnormal Psychology, 114(1), 140–146. [PubMed: 15709820]

O'Donnell O, House A, & Waterman M (2015). The co-occurrence of aggression and self-harm: Systematic literature review. Journal of Affective Disorders, 175, 325–350. [PubMed: 25665494]

Oltmanns TF, Melley AH, & Turkheimer E (2002). Impaired social functioning and symptoms of personality disorders assessed by peer and self-report in a non-clinical population. Journal of Personality Disorders, 16, 437–452. [PubMed: 12489310]

Sadeh N, & McNiel DE (2013). Facets of anger, childhood sexual victimization, and gender as predictors of suicide attempts by psychiatric patients after hospital discharge. Journal of Abnormal Psychology, 122(3), 879–890. [PubMed: 23834063]

Sahlin H, Kuja-Halkola R, Bjureberg J, Lichtenstein P, Molero Y, Rydell M, … Hellner C (2017). Association between deliberate self-harm and violent criminality. JAMA Psychiatry, 74(6), 615–621. [PubMed: 28384711]

Scott LN, Stepp SD, & Pilkonis PA (2014). Prospective associations between features of borderline personality disorder, emotion dysregulation, and aggression. Personality Disorders, 5(3), 278–288. [PubMed: 24635753]

Siever LJ (2008). Neurobiology of aggression and violence. American Journal of Psychiatry, 165(4), 429–442. [PubMed: 18346997]

Simeon D (2006). Clinical manual of impulse-control disorders. Washington, DC: American Psychiatric Publishing.

Skodol AE, Gunderson JG, Pfohl B, Widiger TA, Livesley WJ, & Siever LJ (2002). The borderline diagnosis I: Psychopathology, comorbidity, and personality structure. Biological Psychiatry, 51, 936–950. [PubMed: 12062877]

Soloff PH, Lis JA, Kelly T, Cornelius J, & Ulrich R (1994). Risk factors for suicidal behavior in borderline personality disorder. American Journal of Psychiatry, 151(9), 1316–1323. [PubMed: 8067487]

StataCorp. (2015). Stata statistical software: Release 14. College Station, TX: StataCorp LP.

Substance Abuse and Mental Health Services Administration. (2014). Results from the 2013 National Survey on Drug Use and Health: Summary of national findings. NSDUH Series H-48, HHS Publication No. (SMA) 14–4863. Rockville, MD: Author.

Suominen K, Isometsä E, Haukka J, & Lönnqvist J (2004). Substance use and male gender as risk factors for deaths and suicide—A 5-year follow-up study after deliberate self-harm. Social Psychiatry and Psychiatric Epidemiology, 39, 720–724. [PubMed: 15672292]

Vaughn MG, Salas-Wright CP, DeLisi M, & Larson M (2015). Deliberate self-harm and the nexus of violence, victimization, and mental health problems in the United States. Psychiatry Research, 225, 588–595. [PubMed: 25500323]

Weinstein Y, Gleason MEJ, & Oltmanns TF (2012). Borderline but not antisocial personality disorder symptoms are related to self-reported partner aggression in late middle-age. Journal of Abnormal Psychology, 121(3), 692–698. [PubMed: 22732005]

Zimmerman M, Chelminski I, Young D, Dalrymple K, & Martinez J (2011). Does DSM-IV already capture the dimensional nature of personality disorders? Journal of Clinical Psychiatry, 72, 1333–1339. [PubMed: 21903031]

Table 1.

Distribution (%) of BPD and BPD criteria among BPD (*n*=4,301), subthreshold BPD (*n*=19,404), and total populations (*n*=36,309), by violence category.

DSM-5 BPD and Criteria	No violence	Other-directed violence	Self-directed violence	Combined violence	Total
	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]
BPD	6.4 [5.9, 6.8]	29.7 [27.8, 31.6]	35.0 [31.8, 38.4]	70.7 [67.1, 74.1]	11.4 [10.8, 12.0]
Subthreshold BPD	54.3 [52.9, 55.6]	57.9 [56.1, 59.7]	55.3 [52.0, 58.6]	27.0 [23.8, 30.5]	54.1 [53.0, 55.2]
No BPD Criteria	39.4 [37.9, 40.9]	12.4 [11.0, 14.0]	9.7 [7.7, 12.1]	2.3 [1.4, 3.6]	34.5 [33.0, 36.0]
BPD Population	*N*=1,942 (46.2%)	*N*=1,267 (29.4%)	*N*=505 (10.8%)	*N*=587 (13.6%)	*N*=4,301 (100%)
Avoidance of Abandonment	73.2 [70.9, 75.3]	68.8 [65.4, 72.1]	78.0 [72.8, 82.5]	78.0 [73.6, 81.7]	73.1 [71.5, 74.6]
Unstable Relationships	94.7 [93.0, 96.0]	96.0 [94.3, 97.2]	94.3 [91.1, 96.4]	96.9 [94.9, 98.1]	95.3 [94.4, 96.1]
Identity Disturbance	74.8 [72.3, 77.1]	79.4 [77.0, 81.7]	72.6 [67.1, 77.4]	75.6 [71.2, 79.6]	76.0 [74.3, 77.7]
Impulsivity	61.0 [58.1, 63.7]	83.6 [81.0, 85.9]	66.3 [59.6, 72.4]	85.4 [81.0, 88.9]	71.5 [69.7, 73.2]
Self-Mutilating Behavior[a]	6.2 [4.9, 7.7]	6.0 [4.2, 8.5]	23.8 [19.4, 28.8]	32.3 [27.6, 37.5]	11.6 [10.4, 12.9]
Affective Instability	85.9 [84.1, 87.4]	81.0 [78.0, 83.6]	84.2 [80.2, 87.5]	89.9 [86.5, 92.6]	84.8 [83.4, 86.1]
Feelings of Emptiness	63.1 [60.6, 65.5]	56.0 [52.2, 59.7]	72.9 [67.7, 77.6]	80.0 [76.3, 83.2]	64.3 [62.6, 66.0]
Intense Anger	71.9 [68.9, 74.8]	88.6 [86.0, 90.8]	70.8 [65.0, 76.0]	88.5 [85.4, 91.0]	79.0 [77.0, 80.8]
Stressful Paranoid Ideation	71.1 [68.5, 73.5]	70.7 [67.3, 73.9]	74.7 [69.7, 79.1]	78.3 [74.5, 81.8]	72.4 [70.7, 74.0]
Subthreshold BPD Population	*N*=16,019 (83.2%)	*N*=2,418 (12.1%)	*N*=728 (3.6%)	*N*=239 (1.1%)	*N*=19,404 (100%)
Avoidance of Abandonment	16.8 [16.0, 17.6]	22.3 [20.3, 24.4]	21.8 [18.7, 25.2]	27.7 [20.7, 36.1]	17.7 [17.0, 18.5]
Unstable Relationships	79.5 [78.5, 80.6]	69.2 [66.7, 71.5]	65.7 [61.0, 70.2]	68.2 [60.3, 75.2]	77.7 [76.7, 78.6]
Identity Disturbance	17.8 [17.0, 18.6]	24.4 [22.4, 26.5]	21.4 [17.9, 25.3]	24.6 [18.1, 32.4]	18.8 [18.0, 19.6]
Impulsivity	15.4 [14.6, 16.3]	44.5 [41.7, 47.4]	19.2 [15.5, 23.5]	43.2 [36.0, 50.7]	19.4 [18.5, 20.3]
Self-Mutilating Behavior[a]	0.5 [0.4, 0.6]	0.8 [0.4, 1.6]	7.8 [5.6, 10.7]	11.8 [7.8, 17.5]	0.9 [0.8, 1.1]
Affective Instability	21.0 [20.1, 22.0]	23.1 [20.9, 25.5]	30.2 [25.5, 35.3]	35.1 [28.1, 42.8]	21.8 [20.8, 22.7]
Feelings of Emptiness	7.6 [6.9, 8.2]	10.0 [8.8, 11.3]	19.4 [16.6, 22.6]	24.8 [18.9, 31.8]	8.5 [7.9, 9.1]
Intense Anger	17.9 [17.0, 18.8]	41.2 [38.8, 43.6]	23.9 [20.3, 27.9]	42.3 [35.3, 49.6]	21.2 [20.4, 22.1]
Stressful Paranoid Ideation	11.2 [10.5, 11.8]	16.0 [14.3, 17.9]	15.8 [13.0, 19.0]	18.8 [14.0, 24.9]	12.0 [11.4, 12.6]
Total Population	*N*=29,889 (83.0%)	*N*=4,196 (11.3%)	*N*=1,379 (3.5%)	*N*=845 (2.2%)	*N*=36,309 (100%)
Avoidance of Abandonment	13.8 [13.1, 14.5]	33.3 [31.4, 35.3]	39.4 [36.5, 42.3]	62.6 [58.7, 66.4]	17.9 [17.2, 18.8]
Unstable Relationships	49.2 [47.6, 50.7]	68.5 [66.5, 70.5]	69.4 [65.8, 72.8]	87.0 [84.0, 89.5]	52.9 [51.4, 54.4]
Identity Disturbance	14.4 [13.7, 15.2]	37.7 [35.6, 39.9]	37.2 [33.6, 41.0]	60.1 [55.9, 64.2]	18.8 [18.0, 19.7]
Impulsivity	12.2 [11.6, 12.9]	50.6 [48.4, 52.8]	33.8 [30.6, 37.2]	72.1 [67.8, 76.0]	18.7 [17.9, 19.4]
Self-Mutilating Behavior[a]	0.7 [0.6, 0.8]	2.3 [1.7, 3.1]	12.6 [10.6, 15.0]	26.1 [22.7, 29.8]	1.8 [1.7, 2.0]
Affective Instability	16.9 [16.1, 17.7]	37.4 [35.4, 39.4]	46.2 [43.0, 49.4]	73.1 [69.2, 76.6]	21.5 [20.6, 22.3]
Feelings of Emptiness	8.1 [7.6, 8.6]	22.4 [20.8, 24.0]	36.3 [33.3, 39.4]	63.3 [59.5, 66.9]	11.9 [11.3, 12.5]
Intense Anger	14.3 [13.5, 15.1]	50.1 [48.0, 52.2]	38.0 [34.5, 41.6]	74.0 [70.5, 77.3]	20.5 [19.6, 21.4]
Stressful Paranoid Ideation	10.6 [10.0, 11.1]	30.3 [28.6, 32.0]	34.9 [32.0, 37.9]	60.5 [56.5, 64.3]	14.7 [14.1, 15.4]

BPD, borderline personality disorder; CI, confidence interval.

[a]Excludes recurrent suicidal behaviors.

Table 2.

Adjusted odds ratios[a] for BPD (*n*=4,301) relative to no BPD (*n*=32,008) and subthreshold BPD (*n*=19,404), for BPD and subthreshold BPD relative to no BPD criteria (*n*=12,604), and for BPD criteria among BPD, subthreshold BPD, and total populations (*n*=36,309), by contrast of violence categories.

DSM-5 BPD or/and criteria	Contrast of Violence Categories											
	Self-directed vs. none		Other-directed vs. none		Combined vs. none		Other-directed vs. self-directed		Combined vs. self-directed		Combined vs. other-directed	
	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
BPD Relative to No BPD	2.11**	[1.73, 2.57]	2.63**	[2.24, 3.09]	6.31**	[4.84, 8.24]	1.25*	[1.01, 1.54]	3.00**	[2.16, 4.16]	2.40**	[1.83, 3.14]
BPD Relative to Subthreshold BPD	1.80**	[1.49, 2.19]	2.24**	[1.91, 2.61]	5.13**	[3.96, 6.64]	1.24*	[1.00, 1.53]	2.84**	[2.06, 3.92]	2.30**	[1.77, 2.98]
BPD Relative to No BPD Criteria	4.92**	[3.67, 6.61]	5.60**	[4.56, 6.89]	23.29**	[13.57, 39.98]	1.14	[0.84, 1.55]	4.73**	[2.55, 8.76]	4.16**	[2.36, 7.31]
Subthreshold BPD Relative to No BPD Criteria	2.73**	[2.12, 3.51]	2.51**	[2.18, 2.88]	4.54**	[2.80, 7.35]	0.92	[0.70, 1.20]	1.66	[0.96, 2.88]	1.81*	[1.11, 2.95]
Total Population												
Avoidance of Abandonment	1.30**	[1.10, 1.55]	1.06	[0.93, 1.20]	1.41**	[1.11, 1.80]	0.81*	[0.67, 0.99]	1.08	[0.82, 1.43]	1.34*	[1.03, 1.74]
Unstable Relationships	1.06	[0.87, 1.28]	1.08	[0.97, 1.20]	1.30	[0.97, 1.74]	1.02	[0.83, 1.26]	1.23	[0.88, 1.72]	1.21	[0.90, 1.62]
Identity Disturbance	0.98	[0.79, 1.21]	1.27**	[1.11, 1.45]	0.83	[0.66, 1.06]	1.29*	[1.01, 1.66]	0.85	[0.65, 1.12]	0.66**	[0.52, 0.83]
Impulsivity	1.25	[0.98, 1.59]	2.12**	[1.88, 2.39]	2.13**	[1.61, 2.82]	1.70**	[1.35, 2.14]	1.71**	[1.20, 2.43]	1.01	[0.75, 1.36]
Self-Mutilating Behavior[b]	5.53**	[3.84, 7.94]	1.18	[0.74, 1.88]	7.51**	[5.20, 10.85]	0.21**	[0.14, 0.33]	1.36	[0.99, 1.87]	6.37**	[4.41, 9.20]
Affective Instability	1.13	[0.92, 1.38]	0.87*	[0.77, 0.99]	1.29	[0.99, 1.68]	0.78*	[0.62, 0.97]	1.14	[0.84, 1.57]	1.48**	[1.12, 1.94]
Feelings of Emptiness	1.37**	[1.14, 1.66]	0.96	[0.82, 1.13]	1.95**	[1.48, 2.57]	0.70**	[0.54, 0.90]	1.42*	[1.01, 2.00]	2.03**	[1.59, 2.60]
Intense Anger	1.33**	[1.09, 1.62]	3.02**	[2.66, 3.41]	3.16**	[2.46, 4.06]	2.26**	[1.81, 2.83]	2.37**	[1.82, 3.09]	1.05	[0.81, 1.35]
Stressful Paranoid Ideation	0.95	[0.77, 1.17]	1.10	[0.95, 1.26]	1.05	[0.79, 1.39]	1.16	[0.93, 1.44]	1.10	[0.81, 1.51]	0.95	[0.71, 1.29]
BPD Population												
Avoidance of Abandonment	1.27	[0.95, 1.69]	0.80	[0.62, 1.03]	1.15	[0.85, 1.56]	0.63**	[0.45, 0.87]	0.91	[0.63, 1.31]	1.45*	[1.03, 2.02]
Unstable Relationships	1.16	[0.62, 2.16]	1.44	[0.91, 2.30]	1.97*	[1.09, 3.57]	1.25	[0.64, 2.42]	1.70	[0.81, 3.56]	1.36	[0.73, 2.56]
Identity Disturbance	0.78	[0.57, 1.05]	1.22	[0.98, 1.53]	0.69**	[0.53, 0.91]	1.57*	[1.08, 2.28]	0.89	[0.60, 1.32]	0.57**	[0.42, 0.76]
Impulsivity	1.17	[0.81, 1.71]	1.78**	[1.41, 2.27]	1.92**	[1.27, 2.89]	1.52*	[1.01, 2.30]	1.63*	[1.00, 2.66]	1.07	[0.72, 1.60]
Self-Mutilating Behavior[b]	4.18**	[2.90, 6.01]	1.02	[0.63, 1.64]	5.93**	[4.03, 8.74]	0.24**	[0.15, 0.39]	1.42*	[1.00, 2.01]	5.82**	[3.83, 8.85]
Affective Instability	0.64**	[0.48, 0.86]	0.70**	[0.56, 0.89]	0.96	[0.62, 1.49]	1.09	[0.79, 1.52]	1.50	[0.92, 2.44]	1.37	[0.88, 2.12]

DSM-5 BPD or/and criteria	Contrast of Violence Categories											
	Self-directed vs. none		Other-directed vs. none		Combined vs. none		Other-directed vs. self-directed		Combined vs. self-directed		Combined vs. other-directed	
	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
Feelings of Emptiness	1.12	[0.86, 1.47]	0.88	[0.70, 1.11]	1.77**	[1.28, 2.44]	0.78	[0.55, 1.11]	1.58*	[1.02, 2.43]	2.01**	[1.52, 2.66]
Intense Anger	0.98	[0.73, 1.31]	2.74**	[2.02, 3.71]	2.70**	[1.94, 3.75]	2.81**	[1.99, 3.98]	2.76**	[1.89, 4.03]	0.98	[0.69, 1.41]
Stressful Paranoid Ideation	0.88	[0.64, 1.20]	0.98	[0.79, 1.21]	1.05	[0.79, 1.39]	1.11	[0.80, 1.54]	1.19	[0.82, 1.72]	1.07	[0.75, 1.52]
Subthreshold BPD Population												
Avoidance of Abandonment	1.02	[0.82, 1.29]	1.17*	[1.01, 1.36]	1.28	[0.81, 2.01]	1.14	[0.89, 1.48]	1.25	[0.78, 2.01]	1.09	[0.68, 1.74]
Unstable Relationships	0.57**	[0.45, 0.73]	0.79**	[0.68, 0.90]	0.73	[0.50, 1.05]	1.37*	[1.07, 1.76]	1.27	[0.83, 1.95]	0.92	[0.65, 1.32]
Identity Disturbance	0.90	[0.70, 1.15]	1.18*	[1.02, 1.36]	0.83	[0.54, 1.27]	1.31*	[1.00, 1.72]	0.92	[0.60, 1.42]	0.70	[0.47, 1.06]
Impulsivity	1.03	[0.74, 1.43]	2.10**	[1.81, 2.42]	1.66*	[1.10, 2.51]	2.03**	[1.46, 2.82]	1.61*	[1.02, 2.55]	0.79	[0.51, 1.23]
Self-Mutilating Behavior[b]	8.19**	[4.77, 14.05]	1.09	[0.51, 2.33]	10.60**	[5.87, 19.13]	0.13**	[0.06, 0.31]	1.29	[0.73, 2.31]	9.71**	[4.39, 21.46]
Affective Instability	1.05	[0.80, 1.37]	0.87	[0.75, 1.02]	1.16	[0.79, 1.70]	0.83	[0.61, 1.13]	1.10	[0.70, 1.73]	1.33	[0.90, 1.95]
Feelings of Emptiness	1.32*	[1.05, 1.66]	1.01	[0.82, 1.24]	1.83**	[1.19, 2.82]	0.76	[0.57, 1.01]	1.38	[0.88, 2.18]	1.82**	[1.19, 2.77]
Intense Anger	1.13	[0.89, 1.45]	2.68**	[2.34, 3.08]	2.47**	[1.76, 3.47]	2.37**	[1.82, 3.08]	2.18**	[1.56, 3.05]	0.92	[0.66, 1.30]
Stressful Paranoid Ideation	0.80	[0.62, 1.02]	1.16	[0.98, 1.38]	0.70	[0.45, 1.09]	1.46**	[1.12, 1.89]	0.87	[0.52, 1.46]	0.60*	[0.38, 0.94]

BPD, borderline personality disorder; OR, odds ratio; CI, confidence interval.

[a]Adjusted for gender, race/ethnicity, age, education, marital status, family income, alcohol use disorder, tobacco use disorder, cannabis use disorder, opioid use disorder, other drug use disorders, mood disorders, panic disorder, agoraphobia, specific phobia, social phobia, generalized anxiety disorder, posttraumatic stress disorder, schizotypal personality disorder, and antisocial personality disorder.

[b]Excludes recurrent suicidal behaviors.

*$p<0.05$

**$p<0.01$.

Note: All criteria are significant ($p<0.01$) for overall violence, except avoidance of abandonment ($p=0.0312$), unstable relationships ($p=0.1215$) and stressful paranoid ideation ($p=0.8195$) in the BPD population; avoidance of abandonment ($p=0.1668$), identity disturbance ($p=0.0436$), and affective instability ($p=0.2354$) in the subthreshold BPD population; and unstable relationships ($p=0.2251$), affective instability ($p=0.0141$), and stressful paranoid ideation ($p=0.4556$) in the total population.

Table 3.

Adjusted odds ratios[a] for BPD criteria among the BPD (*n*=4,301) versus subthreshold BPD (*n*=19,404) population, by contrast of violence categories.

DSM-5 BPD Criteria	Contrast of Violence Categories											
	Self-directed vs. none		Other-directed vs. none		Combined vs. none		Other-directed vs. self-directed		Combined vs. self-directed		Combined vs. other-directed	
	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
BPD vs. Subthreshold BPD Population												
Avoidance of Abandonment	1.24	[0.84, 1.83]	0.68*	[0.50, 0.92]	0.90	[0.51, 1.58]	0.55**	[0.36, 0.84]	0.73	[0.40, 1.35]	1.32	[0.73, 2.41]
Unstable Relationships	2.02	[1.00, 4.11]	1.84*	[1.10, 3.07]	2.71**	[1.46, 5.03]	0.91	[0.44, 1.88]	1.34	[0.58, 3.08]	1.48	[0.77, 2.81]
Identity Disturbance	0.87	[0.59, 1.27]	1.03	[0.81, 1.33]	0.83	[0.50, 1.38]	1.20	[0.77, 1.85]	0.96	[0.55, 1.69]	0.81	[0.48, 1.35]
Impulsivity	1.14	[0.68, 1.90]	0.85	[0.65, 1.12]	1.15	[0.67, 1.98]	0.75	[0.41, 1.35]	1.01	[0.54, 1.90]	1.35	[0.77, 2.39]
Self-Mutilating Behavior[b]	0.51*	[0.27, 0.96]	0.93	[0.40, 2.15]	0.56	[0.27, 1.16]	1.83	[0.71, 4.68]	1.10	[0.57, 2.12]	0.60	[0.24, 1.50]
Affective Instability	0.61*	[0.41, 0.91]	0.80	[0.60, 1.07]	0.83	[0.47, 1.47]	1.31	[0.82, 2.09]	1.36	[0.71, 2.58]	1.03	[0.61, 1.76]
Feelings of Emptiness	0.85	[0.59, 1.22]	0.87	[0.63, 1.21]	0.97	[0.58, 1.61]	1.03	[0.67, 1.59]	1.14	[0.62, 2.09]	1.11	[0.67, 1.82]
Intense Anger	0.86	[0.60, 1.24]	1.02	[0.73, 1.43]	1.09	[0.70, 1.70]	1.19	[0.78, 1.81]	1.26	[0.79, 2.02]	1.07	[0.66, 1.72]
Stressful Paranoid Ideation	1.10	[0.75, 1.63]	0.84	[0.64, 1.12]	1.50	[0.92, 2.44]	0.76	[0.50, 1.16]	1.36	[0.77, 2.42]	1.78*	[1.07, 2.98]

BPD, borderline personality disorder; OR, odds ratio; CI, confidence interval.

[a]Adjusted for gender, race/ethnicity, age, education, marital status, family income, alcohol use disorder, tobacco use disorder, cannabis use disorder, opioid use disorder, other drug use disorders, mood disorders, panic disorder, agoraphobia, specific phobia, social phobia, generalized anxiety disorder, posttraumatic stress disorder, schizotypal personality disorder, and antisocial personality disorder.

[b]Excludes recurrent suicidal behaviors.

*$p<0.05$

**$p<0.01$.

Note: All criteria are nonsignificant ($p>0.01$) for overall violence, except unstable relationships ($p=0.0071$).