

Article

Borderline Personality Disorder and Violent Crime: The Moderating Role of Sex and Race

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Abstract: People receiving treatment for substance use disorders (SUDs) are at risk of criminal justice involvement, including violent charges, but the role that personality factors play in this relationship is unclear. Although borderline personality disorder (BPD) symptoms can increase risk for violence, research has yet to examine whether BPD is associated with violent criminal charges among people with SUDs. Furthermore, prior research has found sex and race differences in the mechanisms by which BPD is related to justice involvement (e.g., aggression, substance use), as well as the relationship between BPD and violence, but these moderators have not been explored within a substance using sample. The current study drew from a sample of adults in a residential SUD treatment setting (N = 217) to examine whether BPD was associated with violent criminal charges and furthermore, if race and sex moderate this relationship. Results found that violent crime is better explained by substance use severity and antisocial personality disorder features in general, however, females with BPD may still have increased risk of violent crime. This study contributes to knowledge of how BPD impacts risk for violent crime among people receiving SUD treatment and suggests that treatments tailored specifically to females with BPD may be beneficial.

Keywords: substance use; borderline personality disorder; violent crime; sex; race

1. Introduction

It has been well established that substance use is related to both violence and violent crime [1–4] and that people with substance use disorders (SUDs) are grossly overrepresented in the criminal legal system [5]. In fact, violent incidents and incarceration are common disruptions that occur during substance use treatment [6] and are related to dropout [7]. However, there has been limited research identifying factors that increase risk for violent crime among people with SUDs who are receiving treatment. A specific subsample of individuals with SUDs who may be particularly at risk for engaging in violent acts are those with borderline personality disorder (BPD), which can increase risk for both violence and criminal involvement [8–11]. A review published in 2018 examining the rates of co-occurrence between BPD and SUDs in 70 studies found co-occurrence rates of up to 53% [12]. Studies drawing from justice-involved samples have found even higher levels of comorbidity, with 28–63.6% and 42–72.7% of justice-involved individuals with BPD having comorbid alcohol use disorder (AUD) and drug use disorder (DUD) respectively [13,14]. Given the elevated risk of criminal involvement among people with BPD [9,11], it is important to examine the degree to which having a BPD diagnosis increases risk for violent crime among people receiving SUD treatment, as well as identify which individuals with BPD may be most at risk (i.e., sex/race differences). Moreover, BPD is a highly stigmatized diagnosis and as such, it is important to have a nuanced understanding of its relation to violent crime. Doing so may help to decrease substance use treatment failures due to violent incidents or incarceration, and better tailor interventions for individuals with comorbid BPD and SUDs. Additionally,



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furthering our understanding of how sex and race may affect the relationship between BPD and violent crime is crucial for identifying gaps in care, particularly for historically vulnerable and minoritized individuals.

1.1. BPD and Violent Crime

Borderline personality disorder (BPD) is a psychiatric disorder that is characterized by a pervasive pattern of instability of interpersonal relationships, self-image, and affect, and is marked by impulsivity [15]. Although many people with BPD never engage in any violent behavior, aggression and violence can be part of the symptom set for some people with BPD. Several studies have found that BPD traits such as anger, impulsivity, and desire to avoid abandonment are significantly associated with violence (defined by the WHO as ‘the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, which either results in or has high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation’ [16–18]. It has also been well-established that emotion regulation difficulties are prominent in individuals with BPD and contribute to many symptoms and difficulties associated with BPD [19,20]. More specifically, some have posited that emotion regulation difficulties may increase the likelihood of experiencing anger, which in turn also increases risk for aggression [8]. Relevantly, studies evaluating violence have found that BPD symptoms are indirectly related to aggression via emotion dysregulation [21–23].

Regarding criminal justice involvement, multiple studies have shown that BPD symptoms are positively associated with criminal charges in general [9], including disorderly conduct, driving under the influence, drug use violations (i.e., possession, sale, or use of illegal drugs), and public intoxication [10,11]. More relevantly, BPD symptoms are also associated with violent charges like simple and aggravated assault [10]. Much of the research evaluating BPD and justice involvement for violent charges has been conducted in relation to intimate partner violence (IPV) [16]. Research has found that borderline personality traits (e.g., instability of self and relationships, anger, impulsivity, emotional volatility) are associated with the perpetration of physical, psychological, and sexual IPV [24]. Additionally, one study found that women who were court-mandated to participate in violence intervention programs had 20.3 times greater odds of having BPD than women in the general population [25]. One reason people with BPD become involved in the justice system may be due to engagement in violent behaviors during times of emotional distress or interpersonal conflict [8]. Dysregulated anger and aggression are diagnostic criteria for BPD, and multiple studies have shown that people with BPD have increased risk of engaging in illegal aggressive behaviors like domestic assault [16]. However, research has rarely examined engagement in violent crime more broadly among people with BPD, especially among those who also have co-occurring SUDs.

1.2. Other Factors Contributing to Violent Crime

When exploring the relationship between BPD and violent crime risk among people with SUDs, it is important to account for other factors that contribute to violent crime more broadly. In particular, substance use severity and antisocial personality disorder (ASPD) may be relevant to explaining risk for violent crime. Research has consistently found that substance use is related to interpersonal violence [4,26,27]. Studies drawing from samples receiving SUD treatment have found that violent incidents are not uncommon [6] and that polysubstance use is associated with an increased risk of violence [28] and violent offending [26,27,29,30]. ASPD is a well-documented risk factor for aggression, violence, and violent crime that overlaps with BPD [9,16,17,22,31] and SUD [13,32]. Studies have found that individuals with comorbid ASPD and BPD have more contact with the criminal justice system [32], and an increased risk of violence [31] and externalized aggression [33].

1.3. Potential Moderators

1.3.1. BPD, Sex, and Violent Crime

Research has consistently found that BPD is more common among women in both community and legal-involved samples [11,34,35]. Of relevance to violent charges, Gonzalez and colleagues [16] found a stronger relationship between BPD symptoms and violence among women compared to men, suggesting that, “women are more susceptible to becoming violent with increasing BPD traits” [16], p. 7. Moreover, it has been found that BPD symptoms are related to partner aggression only for women with BPD [36]. Studies have also found that BPD and violence may be related through different mechanisms between sexes. Specifically, paranoid ideation has been found to be associated with violence for men with BPD whereas unstable relationships has been related to violence among women with BPD [16]. Regarding other relevant factors, some studies have found sex differences in levels of aggression [37], rates of comorbid ASPD [38,39], and number of BPD traits [17].

1.3.2. BPD, Race, and Violent Crime

Compared to sex differences, there is a limited amount of research evaluating racial and ethnic differences among people with BPD. Some studies have found differences in prevalence rates of BPD among races [40,41] whereas other studies have not found any racial/ethnic differences in rates of BPD [19]. Similarly, some studies have found racial/ethnic differences in rates of violence [42], frequency of aggressive behaviors [43], emotion dysregulation [19], as well as thoughts of interpersonal violence [44], however, other studies have also found no such differences. It should be noted that the previously mentioned studies which found racial differences also emphasized the importance of considering culture and exposure to discrimination and oppression in interpreting such differences.

1.3.3. Current Study

The personality factors associated with violent crime among people with SUDs are not well understood, despite research suggesting that a BPD diagnosis increases risk for violence and criminal involvement across settings and samples. The current study first aims to fill this gap by evaluating the relationship between BPD diagnosis and violent charges among a SUD treatment sample. Moreover, given that research has found sex and race differences in BPD prevalence, traits, and relationship to violence, the current study also seeks to determine whether such differences moderate the relationship between BPD and violent criminal charges in a substance using sample. Due to the relevance of ASPD and substance use to violent crime, both will be analyzed as covariates. Among people receiving treatment for SUD, our hypotheses are as follows:

- individuals with a BPD diagnosis will be more likely to report prior violent charges
- sex will moderate the relationship between BPD and violent charges
- race will moderate the relationship between BPD and violent charges

Given that previous research has found a stronger relationship between BPD symptoms and violence for females, in addition to social expectations (i.e., when females act violently it does not align with societal expectations of how they should act), it is predicted that females with BPD will report having more violent charges. Due to racial disparities in the criminal justice system, it is hypothesized that Black individuals with BPD will report more violent charges than White individuals with BPD. Thus, we anticipate the relationship between BPD symptoms and violence will be stronger for Black individuals.

2. Method

2.1. Participants and Procedures

Participants included 223 inpatients receiving treatment in a residential SUD treatment facility in central Mississippi in 2012. Standard treatment at this facility drew on strategies from Alcoholics Anonymous and Narcotics Anonymous in addition to groups that covered a variety of topics such as coping skills and relapse prevention. This treatment facility required complete abstinence from drugs and alcohol, with the exception of nicotine and caffeine. No patients were receiving medication-assisted treatment for their SUD at the time of this study, and methadone maintenance was not available at this facility. Patients were not permitted to leave the facility apart from scheduled activities.

All procedures were reviewed and approved by the Institutional Review Boards of the University of Mississippi Medical Center and the Mississippi State Hospital. Eligibility criteria included (a) reported dependence on alcohol and/or cocaine, (b) obtained a score of ≥ 24 on the Mini-Mental State Examination (MMSE) [45], and (c) exhibited no current psychotic disorders (as determined by the Mini International Neuropsychiatric Interview; [46]). Individuals who met inclusion criteria were provided with information regarding study procedures and the associated risks as part of obtaining written informed consent. To limit possible interference of withdrawal symptoms, eligible participants for this study were recruited no sooner than 72 h after entry into the facility. This study involved three separate sessions conducted on separate days, which included a pre-test, stress induction, and post-test. Data used in the present study comes from the baseline questionnaire, which participants were compensated \$25 for. All interviews were administered by post-baccalaureate or doctoral-level clinical assessors trained to reliably assess personality and other mental health disorders and all interviews were reviewed by a PhD level clinician, with diagnosis confirmed in census meetings.

2.2. Measures

2.2.1. Demographic Information

All participants completed a demographics form including sex, age, race/ethnicity, marital, education, and income in the past year. Sex and race were used in the current study as moderators (see Table 1).

2.2.2. BPD and ASPD

The Diagnostic Interview for Personality Disorders (DIPD-IV) was administered to determine whether people met criteria for BPD and ASPD (which was included as a relevant covariate). Each DSM-IV criterion for BPD and ASPD was assessed through the use of one or more questions and was rated on a 3-point scale (0 = not present, 1 = subthreshold, and 2 = present). Consistent with the DSM-IV [15], participants who had a score of two on at least five of the nine BPD criteria were determined to have BPD. Participants who had a score of two on at least three of the conduct criteria and at least three of the adult criteria were determined to have a lifetime history of ASPD. BPD and ASPD were coded dichotomously as 0 = absent and 1 = present.

2.2.3. Violent Crime

The legal status section of the Addiction Severity Index (ASI) [47] was used to evaluate self-reported violent criminal charges. The ASI assesses substance use and its consequences and is widely used in both research and clinical settings [48]. For the purposes of this study, only items evaluating violent charges out of a longer list of possible charges were used (e.g., “How many times in your life have you been arrested and charged with rape?”, “How many times in your life have you been arrested and charged with assault?”). Charges were considered to be violent based on the Bureau of Justice Statistics definition of violent crime, which includes murder, rape, sexual assault, robbery, and assault [49].

2.2.4. Substance Use Severity

A count variable of SUDs was created based on the SUD module of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I/P) which determines the lifetime and current presence of SUDs. The SUD module of the SCID has shown good validity [50] and high inter-rater reliability [51].

2.2.5. Data Analytic Plan

ASPD and substance use severity (i.e., number of SUDs) were considered as potential covariates due to their established relation to violent crime risk. Bivariate correlations were conducted to examine relationships between potential covariates, the independent variable, moderators, and the dependent variable. To examine whether presence of BPD is associated with prior violent charges, a dichotomous variable of violent charges was created to represent whether individuals reported having been charged with assault, murder, rape, or robbery as an adult.

Two logistic regressions were conducted to test hypothesis 1 (i.e., individuals with BPD will be more likely to report lifetime violent charges). The first model only included the main effect of BPD on violent charges, and the second model included the covariates (ASPD and SUD severity).

Two hierarchical logistic regressions were used to test hypotheses 2 and 3 (i.e., sex/race will moderate the relationship between BPD and violent charges). Interaction terms were created by multiplying BPD*sex and BPD*race. The first hierarchical logistic regression included BPD and sex in the first block and the interaction between BPD*sex in the second block. The second hierarchical logistic regression was conducted with BPD, sex, and covariates in the first block, and the interaction between BPD*sex in the second block. The third hierarchical logistic regression included BPD and race in the first block and the interaction between BPD*race in the second block. A fourth hierarchical regression was conducted, including covariates which were entered in the first block with BPD and race. The second block consisted of the interaction between BPD*race. Interactions significant at the 0.10 level were graphed and probed by conducting split file correlations and running simple slopes analyses.

3. Results

3.1. Sample Demographics

Sample demographics are reported in Table 1. Participants ranged in age from 18 to 65 ($M = 34.43$, $SD = 10.41$) and were 51.6% male ($n = 112$) and 48.4% female ($n = 105$). Regarding race, 62.2% identified as White/Caucasian ($n = 135$), 37.8% as Black/African American ($n = 82$), 0.4% as Asian/Southeast Asian ($n = 1$), 1.4% as Hispanic/Latino ($n = 3$), and 0.9% as Native American ($n = 2$). Lastly, 34.3% ($n = 73$) and 39% ($n = 83$)

of participants met criteria for BPD and ASPD (as determined by the Diagnostic Interview for Personality Disorders for DSM-IV), respectively, with 16.9% ($n = 36$) meeting criteria for both disorders. The number of substance use disorders participants had ranged from 0 to 9, including alcohol use disorder (74.6%), cannabis use disorder (32.4%), stimulant use disorder (29.6%), opioid use disorder (29.6%), sedative use disorder (24.4%), cocaine use disorder (65.7%), hallucinogen use disorder (7.5%), polysubstance use disorder (9.9%), or other drug use disorder diagnosis (3.3%). Participants' primary substance of choice was reported as follows: alcohol (24.1%), stimulants (e.g., methamphetamine, cocaine/crack, speed; 50%), opioids (e.g., heroin, oxycontin, medications for opioid use disorder used not as prescribed; 17.7%), marijuana (7.2%), and sedatives (0.45%). One person denied substance use entirely (0.45%). Due to small sample sizes within the other races, we limited our sample to Black/African American and White/Caucasian individuals, resulting in a final analyzed sample of 217 (see Table 1).

Table 1. Demographic Information ($n = 217$).

	n (%)	Mean (SD)	Actual Range
Sociodemographics			
Age		34.43 (10.41)	18–65
Sex			
Female	105 (48.4%)		
Male	112 (51.6%)		
Race/Ethnicity			
White/Caucasian	135 (62.2%)		
Black/African American	82 (37.8%)		
Household Income			
\$0–\$9999	106 (49.8%)		
\$10,000–\$19,999	37 (17.4%)		
\$20,000–\$29,999	17 (8.0%)		
\$30,000–\$39,999	16 (7.5%)		
\$40,000–\$49,999	11 (5.2%)		
\$50,000–\$59,999	6 (2.8%)		
\$60,000–\$69,999	5 (2.3%)		
\$70,000–\$79,999	4 (1.9%)		
\$80,000–\$89,999	3 (1.4%)		
\$90,000–\$99,999	1 (0.5%)		
\$100,000 or more	7 (3.3%)		
Education			
None	1 (0.5%)		
1st to 8th grade	9 (4.2%)		
Some high school	49 (22.7%)		
High school graduate	37 (17.1%)		
G.E.D	37 (17.1%)		
Some college	51 (23.6%)		
Technical or business school	12 (5.6%)		
College graduate	14 (6.5%)		
Some graduate school	3 (1.4%)		
Graduate or professional degree	3 (1.4%)		
Variables			
BPD (present)	73 (34.3%)		
ASPD (present)	83 (39.0%)		
Substance Use Disorder Severity		2.77 (1.73)	0–9
Violent Charges			
Yes	49 (24.6%)		
No	150 (75.4%)		

3.2. Preliminary Analyses

A total of 217 cases were included in analyses. Regarding presence of violent charges, 1 (0.5%) participant reported a prior charge of homicide, 3 participants (1.6%) reported a prior charge of rape, 9 participants (4.7%) reported a prior charge of robbery, and 40 participants (20.7%) reported a prior charge of assault. Bivariate correlations are displayed in Table 2. ASPD ($r = 0.18$, $p = 0.013$) and SUD severity ($r = 0.22$, $p = 0.002$) were significantly correlated with violent charges. The presence of violent charges was significantly correlated with the presence of BPD ($r = 0.15$, $p = 0.038$) and male sex ($r = 0.21$, $p = 0.003$). BPD and race were significantly correlated ($r = -0.18$, $p = 0.009$), showing that Black individuals were less likely to have a BPD diagnosis. Assumptions of multicollinearity were checked through tolerance and VIF values, which were all within normal limits. Missing data were handled using listwise deletion; a total of 18 cases (8.3% missing on the violent charges variable) were excluded. When comparing participants who were missing on the violent charges variable ($n = 18$) to those who had complete data ($n = 199$), there were no statistically significant differences in BPD diagnosis, substance use severity, ASPD, age, race, or sex.

Table 2. Correlations between study variables.

	1	2	3	4	5	6 ^a	7 ^a	8	9
1. BPD (1 = yes)	1								
2. ASPD (1 = yes)	0.15 *	1							
3. Race (1 = Black)	-0.18 **	-0.09	1						
4. Sex (1 = male)	-0.02	0.15 *	0.17 *	1					
5. Age	-0.09	-0.13	0.23 **	-0.02	1				
6. Education ^a	0.05	-0.17 *	-0.26 **	-0.18 **	0.10	1			
7. Household Income ^a	0.08	0.04	-0.21 **	0.14 *	-0.17	0.25 **	1		
8. SUD Severity	0.17 *	0.15 *	-0.37 **	-0.02	-0.10	0.20 **	0.10	1	
9. Violent Charges (Y/N)	0.15 *	0.18 *	-0.04	0.21 **	-0.10	-0.05	-0.02	0.22 **	1

Note ^a Indicates that Kendall's tau was reported. BPD and ASPD were coded as 0 = absent and 1 = present. Race was coded as 0 = White and 1 = Black. Sex was coded as 0 = female and 1 = male. Education ranged from 1 (none) to 10 (graduate or professional school). Household income ranged from 0 (\$0–\$9999) to 10 (\$100,000 or more). * significant at the 0.05 level; ** significant at the 0.01 level.

3.3. BPD and Violent Charges

A logistic regression was conducted to assess the effect of BPD on the likelihood of having a violent crime charge. The overall model was statistically significant, ($\chi^2(1) = 4.20, p = 0.040$) explaining 2% of the variance in violent charges (Cox and Snell $R^2 = 0.02$) and correctly categorizing 3.1% of cases (Nagelkerke $R^2 = 0.031$). Results indicated that individuals with BPD were twice as likely to report prior violent charges ($OR = 2.00, 95\% CI = 1.03–3.87, p = 0.039$) (see Table 3). When introducing the covariates, the overall model remained significant ($\chi^2(3) = 15.80, p = 0.001$), explaining 7.6% of the variance in violent charges (Cox and Snell $R^2 = 0.076$) and correctly categorizing 11.4% of cases (Nagelkerke $R^2 = 0.114$). Individuals with greater SUD severity ($OR = 1.29, 95\% CI = 1.07–1.57, p = 0.009$) as well as individuals with ASPD ($OR = 2.01, 95\% CI = 1.02–3.97, p = 0.043$) were more likely to report previous violent charges (see Table 3). Notably, results indicated that BPD was no longer associated with violent crime once ASPD and SUD severity were accounted for.

Table 3. Logistic regression of the relationship between BPD and violent crime (n = 199).

Variable	B	SE	Exp(B)	95% CI		p
				Lower Bound	Upper Bound	
No Covariates						
BPD	0.69	0.34	2.0	1.03	3.87	0.039 *
With Covariates						
BPD	0.47	0.35	1.61	0.81	3.20	0.179
SUD Severity	0.26	0.10	1.29	1.07	1.57	0.009 **
ASPD	0.70	0.35	2.01	1.02	3.97	0.043 *

* significant at the 0.05 level; ** significant at the 0.01 level.

3.4. Sex as a Moderator

The first model (see Table 4) with BPD and sex predicting violent charges, not involving covariates, was statistically significant ($\chi^2(3) = 16.78, p < 0.001$) explaining 8.1% of the variance in violent charges (Cox and Snell $R^2 = 0.08$) and correctly categorizing 12% of cases (Nagelkerke $R^2 = 0.12$). Results indicated that those with BPD were 4.64 times more likely to report previous violent charges ($OR = 4.64, 95\% CI = 1.44–14.97, p = 0.010$). Additionally, males were 5.3 times more likely to report previous violent charges ($OR = 5.30, 95\% CI = 1.86–15.12, p = 0.002$). The p value for the interaction effect of BPD*Sex ($p = 0.098$) was less than the chosen alpha for probing interactions (see below). The next model (see Table 4), controlling for SUD severity and ASPD, was statistically significant ($\chi^2(5) = 27.41, p < 0.001$) explaining 12.9% of the variance in violent charges (Cox and Snell $R^2 = 0.129$) and correctly categorizing 19.1% of cases (Nagelkerke $R^2 = 0.191$). Individuals with BPD were 4.06 times more likely to report previous violent charges ($OR = 4.06, 95\% CI = 1.22–13.55, p = 0.022$), males were 5.44 times more likely to report previous violent charges ($OR = 5.44, 95\% CI = 1.83–16.15, p = 0.002$), and those with greater SUD severity were 1.33 times more likely to report violent charges ($OR = 1.33, 95\% CI = 1.09–1.63, p = 0.006$). The interaction effect of BPD*Sex was less than the chosen alpha (.10) for probing interactions. When probed via post hoc correlations and graphing (See Figure 1), correlational analyses revealed that among females, there was a significant relationship between presence of BPD and previous violent charges ($r = 0.28, p = 0.006$). For males, there was no significant correlation between presence of BPD and prior violent charges ($r = 0.069, p = 0.493$). A graph of this interaction is displayed in Figure 1, showing that there was a stronger relationship between BPD and violent charges for females than for males. Additional post hoc correlational analyses found that

among females, there was a significant relationship between number of BPD criteria endorsed and previous violent charges ($r = 0.21$, $p = 0.043$) whereas no such relationship existed for males ($r = 0.11$, $p = 0.264$). The interaction odds ratio is considered to be a medium effect size [52].

Table 4. Moderated logistic regression of the relationship between BPD, sex, and violent crime (n = 199).

Variable	B	SE	Exp(B)	95% CI		p
				Lower Bound	Upper Bound	
No Covariates						
BPD	1.54	0.60	4.64	1.44	14.97	0.010 *
Sex	1.67	0.54	5.30	1.86	15.12	0.002 *
BPD * Sex	-1.28	0.74	0.29	0.07	1.25	0.098+
With Covariates						
BPD	1.40	0.61	4.06	1.22	13.55	0.022 *
Sex	1.70	0.56	5.44	1.83	16.15	0.002 **
SUD Severity	0.29	0.10	1.33	1.09	1.63	0.006 **
ASPD	0.56	0.36	1.75	0.87	3.54	0.118
BPD * Sex	-1.37	0.77	0.255	0.06	1.15	0.075+

+ less than 0.10; * significant at the 0.05 level; ** significant at the 0.01 level.

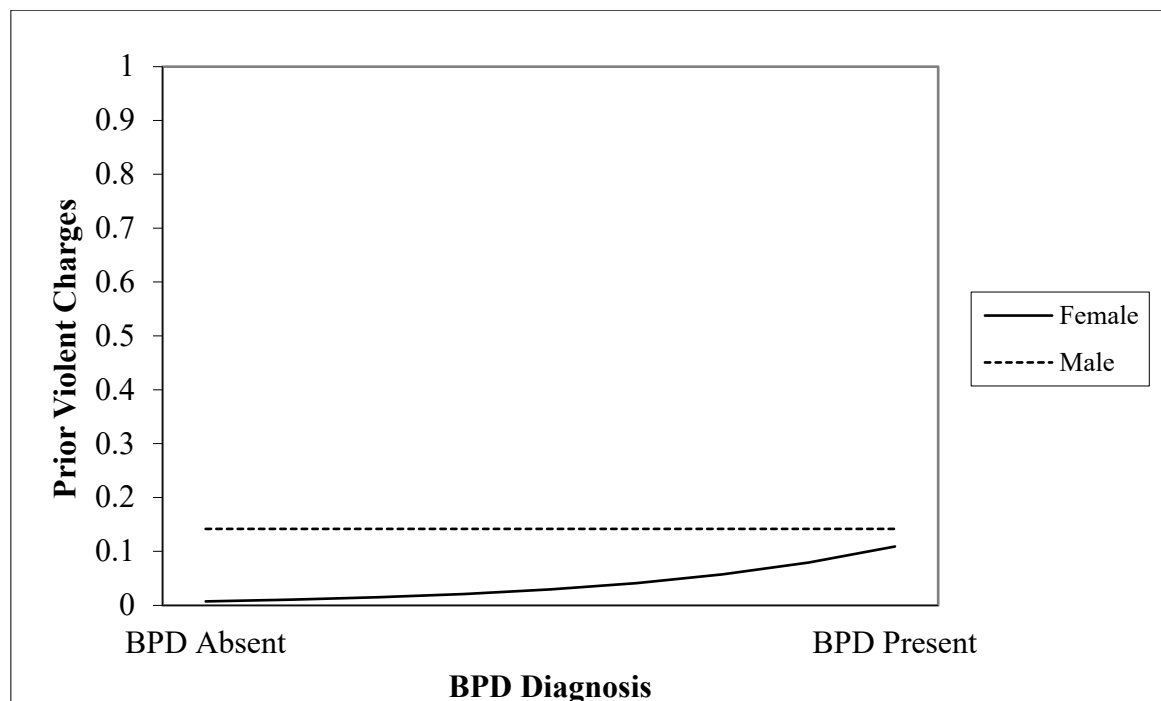


Figure 1. Interaction graph between BPD, sex, and violent crime.

3.5. Race as a Moderator

The overall model of the logistic regression involving race as a moderator was not statistically significant. Although the interaction between BPD and race was below the chosen alpha level of 0.10, this effect did not persist in the model including covariates and thus was not probed. The model for the second logistic regression, including ASPD and SUD severity as covariates, was statistically significant, ($\chi^2(5) = 18.01$, $p = 0.003$) explaining 8.7% of the variance in violent charges (Cox and Snell $R^2 = 0.087$) and correctly categorizing 12.9% of cases (Nagelkerke $R^2 = 0.129$). SUD severity was significantly associated with violent charges ($OR = 1.31$, 95% CI = 1.07–1.61, $p = 0.010$), indicating that those with greater substance use severity were 1.31 times more likely to report previous violent charges. Additionally, those with ASPD were 1.94 times more likely to report previous violent charges ($OR = 1.94$, 95% CI = 0.98–3.85, $p = 0.058$). BPD, race, and the interaction between BPD*race were not statistically significant (see Table 5).

Table 5. Moderated logistic regression of the relationship between BPD, race, and violent crime (n = 199).

Variable	B	SE	Exp(B)	95% CI		p
				Lower Bound	Upper Bound	
No Covariates						
BPD	0.27	0.41	1.31	0.58	2.95	0.511
Race	−0.52	0.46	0.59	0.24	1.45	0.254
BPD * Race	1.31	0.73	3.69	0.88	15.54	0.075+
With Covariates						
BPD	0.21	0.43	1.24	0.53	2.86	0.622
Race	−0.05	0.50	0.95	0.36	2.50	0.913
SUD Severity	0.27	0.11	1.31	1.07	1.61	0.010 **
ASPD	0.68	0.35	1.94	0.98	3.85	0.058+
BPD * Race	0.94	0.76	2.56	0.58	11.35	0.216

+ less than 0.10; * significant at the 0.05 level; ** significant at the 0.01 level.

4. Discussion

The current study was drawn from a sample of people with SUD to examine the relationship between BPD and violent charges. This study also sought to evaluate sex and race as moderators of the relationship between BPD and previous violent charges. In line with previous literature, it was hypothesized that females with BPD would be more likely to report previous violent charges than males with BPD. It was also hypothesized that Black individuals with BPD would be more likely to have previous violent charges than White individuals with BPD given racial disparities in the criminal justice system. Our results partially supported these hypotheses.

4.1. BPD and Violent Charges

Among individuals in SUD treatment, being diagnosed with BPD was related to having a history of violent charges at the bivariate level and in main effects models (with no covariates), which is consistent with some literature evaluating violence and risk factors related to such. Specifically, previous studies have found that BPD symptoms are related to simple and aggravated assault charges [10] and the perpetration of IPV [16,23]. While research has supported such a relationship, many individuals with BPD would not and do not engage in violent behaviors. Importantly, in the current study, BPD diagnosis was not associated with violent charges beyond ASPD and SUD severity when these covariates were included in the model. This is in contrast to some studies which have shown that BPD diagnosis contributes unique variance to the prediction of violent behavior above and beyond ASPD [22]. Studies have also found that BPD increases violence risk above and beyond the risk associated with SUDs. For example, one study assessed violence among a nationally representative sample and found that individuals with BPD were 2.4 times more likely than those without BPD to engage in violence directed at others, even after controlling for AUD and DUDs [53]. However, this finding is consistent with the results of another study that found BPD was no longer a significant predictor of IPV perpetration after introducing ASPD into analyses [54]. This makes sense, as ASPD is strongly related to violent and nonviolent criminal involvement, possibly leaving little unique variance for borderline features to explain. Results of the current study suggest SUD severity and ASPD are more important in the relationship to violent crime than BPD diagnosis among people in treatment for SUD. This is an important finding when considering the stigma towards individuals with BPD, particularly females and racial minorities with BPD. Merely having a BPD diagnosis does not equate to violent charges, rather the risk appears to be related to specific factors like substance use severity and antisocial traits.

4.2. Moderators of BPD and Violent Crime

In evaluating the relationship between BPD and violent crime, our results showed that there may be sex differences between males and females. The BPD*Sex interaction suggested that there was a significant positive relationship between the presence of BPD and prior violent crime for females only. Post hoc analyses also showed that there was also a significant positive relationship between number of BPD criteria participants met and previous violent charges for females only. This is consistent with studies using community samples that have found there is a higher linear increase between BPD traits and violence in women compared to men [16]. Other studies have found similar results in that BPD symptoms are related to IPV only for women [36]. There are various possible explanations for why females with BPD may report having more violent charges than males with BPD. This may be explained by gender norms, as some researchers have stated that “the femininity stereotypes (e.g., weakness, submission, domestication, nurturance, and ‘ladylike’ behavior) are basically incompatible with qualities valued in the criminal underworld...while the dividing line between what is considered masculine and what is criminal is

often thin” [55]. Thus, when females act violently, they may be more likely to receive a violent charge because that form of behavior does not align with what is expected. Alternatively, it may be due to differences in how males and females meet criteria for BPD, as different combinations of criteria can result in diagnosis [56].

Both models assessing race as a moderator in the relationship between BPD and violent charges were not significant. This is consistent with previous research that has found no racial differences in rates of violence or diagnosis among individuals with BPD [19,44]. However, our results are inconsistent with other research on mechanisms between BPD and violence. For example, previous studies have found racial differences in emotion regulation difficulties [19], frequency of aggressive behaviors, comorbid SUDs, and rates of ASPD symptoms [43]. Although no moderation was observed by race, it is possible that other social determinants of health (e.g., socioeconomic status, systemic racism) that impact diagnosis of BPD as well as criminal involvement would have been more appropriate to assess. This is an important direction for future research.

4.3. Strengths, Limitations, and Future Directions

This study contributes to the dearth of literature examining the relationship between BPD and criminal justice involvement, especially among high-risk samples of people with SUDs. It is also the first study, to our knowledge, to evaluate the roles of sex and race in the relationship between BPD and prior violent charges. Additionally, as previously mentioned, most studies evaluating violent charges have specifically done so within the realm of IPV. We built upon this literature by evaluating more types of violent crime (i.e., murder, assault, robbery, rape).

Despite these strengths, there are also limitations. First, due to small sample sizes for other racial/ethnic groups, we were only able to compare Black and White individuals, thus results may not generalize to other racial/ethnic groups. Future studies should include more diverse samples in comparing the moderating role of race in the relationship between BPD and violent charges. Additionally, violent criminal charges were assessed via self-report using the Addiction Severity Index. While this is common in clinical research, it introduces limitations as it does not account for recall biases or structural biases in arrests and charges. Reports of violent charges may more accurately reflect criminal justice contact rather than actual engagement in violent behaviors, which is driven by a multitude of other social and environmental factors. Moreover, violent crime may have been underreported due to social desirability bias. While this is important to keep in mind, research has indicated that self-reported criminal charges are highly correlated with official arrest records [57]. In addition, research, including the current study, has only evaluated whether BPD is associated with any prior violent charges rather than the number or types of prior violent charges, which would have provided additional information about the nature of this relationship. The number of people reporting any violent charges in this sample was low (24.5%), thus requiring the use of a dichotomous violent charge variable. A higher risk sample with more violent charges would be necessary to investigate this question; this is a direction for future research. Further, assessing violent incidents and charges that occur during the course of substance use treatment episodes would provide additional insights relevant to substance use treatment failure. Finally, the interaction effect of BPD and sex did not reach statistical significance at more conservative p value thresholds (e.g., $p < 0.05$), and although 0.10 is the default threshold for probing interactions in commonly used statistical software packages (e.g., SPSS PROCESS macro), this effect should be considered preliminary and replicated in additional research.

5. Conclusions and Clinical Implications

Overall, the results of this study contribute to research on personality factors contributing to violent criminal involvement among people receiving SUD treatment. BPD was not associated with violent charges when ASPD and SUD severity were entered into the model, suggesting that in general, BPD does not increase risk for violent charges above and beyond the risk associated with these other forms of psychopathology. This is an important distinction given the stigmatizing perception of individuals with BPD as merely aggressive and/or violent. However, moderation models showed preliminary evidence that females with co-occurring SUDs and BPD may have an increased risk of violent crime compared to men. Future research should further explore criminal involvement among females with BPD to better understand mechanisms (e.g., emotion dysregulation, intimate partner violence) explaining this relationship. Regarding clinical implications, it has been well-established that individuals with BPD often exhibit high treatment drop-out rates, including in substance use treatment settings [58]. Practitioners should consider assessing legal involvement and risk (among females with BPD in particular) and focus on clinical practices that reduce dropout rates and prevent arrest during treatment.

Author Contributions

Conceptualization, methodology, software: G.J.A.; Data curation: K.E.M.; Writing—original draft preparation: G.J.A. and K.E.M.; Visualization, investigation: G.J.A. and K.E.M.; Supervision: K.E.M.; Writing—reviewing and editing: K.E.M. and D.M.R. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by The University of Mississippi Medical Center Institutional Review Board and the Mississippi State Hospital (2011-0108 and 13 June 2012).

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

Data are not publicly available but requests can be emailed to mooreke2@etsu.edu.

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Conflicts of Interest

The authors declare no conflict of interest.

Use of AI and AI-Assisted Technologies

No AI tools were utilized for this paper.

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