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Substance Use Disorders and Intimate Partner Violence Perpetration among Male and Female Offenders

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Abstract

Objective—The current investigation sought to examine the direct associations and interactions among individual and concurrent alcohol, cocaine, cannabis, and opioid use diagnoses with the perpetration of intimate partner violence as well as to assess gender differences across these associations within a large forensic sample of male and female offenders.

Method—Participants (1,290 male and 294 female) completed a court-mandated substance abuse evaluation during which they completed a clinical interview, either endorsing or denying recent physical partner violence perpetration. Specific substance use disorders were diagnosed based primarily upon responses to the clinical interview and were used to predict partner violence perpetration using logistic regression.

Results—Alcohol and cocaine use disorders were significantly associated with IPV perpetration over the past year. Cannabis and opioid use disorders were not directly associated with IPV. A comorbid alcohol use diagnosis increased the likelihood of IPV perpetration among participants with either a cannabis or a cocaine use disorder while participants with an alcohol use disorder were less likely to be violent if they had also met criteria for a cannabis use disorder. These relationships held across males and females.

Conclusions—The current findings emphasize the importance of assessing associations between specific substances of abuse in researching and predicting partner violence and suggest that future efforts focus on the development of integrated treatments for co-occurring partner violence and substance use disorders.

Keywords

Intimate Partner Violence; Domestic Violence; Alcohol; Cannabis; Cocaine

The lifetime prevalence of substance abuse or dependence is 14.6%, and 3.8% of individuals meet criteria for a substance use disorder at any single point in time (Kessler, Chiu, Demler, & Walters, 2005). Rates of intimate partner violence (IPV) in patients seeking treatment for substance use disorders are alarmingly high, with approximately half reporting a recent history of IPV perpetration (Fals-Stewart & Kennedy, 2005; O'Farrell & Murphy, 1995). Evidence suggests that substance use rates may be equally high among inmates convicted of partner violent offenses (Greenfeld, et al., 1998) while approximately 70% of alleged intimate homicide perpetrators tested positive for alcohol use (Slade, Daniel, & Heisler, 1991). The high prevalence of co-occurring substance abuse and partner violence has prompted researchers to evaluate the efficacy of joint treatment approaches for use in both community and forensic settings (Easton et al., 2007; O'Farrell & Fals-Stewart, 2000). Treatment and prevention efforts are hindered by limited data describing the occurrence of IPV among samples with comorbid substance use disorders, particularly among female perpetrators. The current investigation sought to evaluate the gender-specific associations between partner violence perpetration and specific substance use diagnoses among a forensic sample.

While our knowledge about the independent associations between IPV and specific substances of abuse has grown considerably over the past decade, research into the relationships between IPV and comorbid substance use disorders, particularly in forensic samples, remains limited (Moore, Stuart, Meehan, Rhatigan, Hellmuth, & Keen, 2008; Stith, Smith, Penn, Ward, & Tritt, 2003). Understanding and appreciating the impact of comorbid substance use disorders could heighten the ability of practitioners to screen for, detect, and complete appropriate referrals or implement adjustments to treatment given the presence of IPV. Such steps may be critical in reducing the occurrence of IPV-related criminal recidivism. Additionally, much of the research clinical related to substance abuse and IPV has made use of samples comprised of individuals who were actively engaged in treatment during the study period. This group of active treatment clients may represent a unique sample from those referred for substance abuse evaluations by the court system. Court-referred individuals attending an initial evaluation may differ from clients who eventually seek treatment, either voluntarily or through court order, in that they may be less likely to either attend any treatment sessions due to refusal or noncompliance or be diverted into treatment due to the severity of their criminal charges. Given their potential divergence from voluntary referrals, further research is required to better understand the association between IPV and the problematic use of specific substances among male and female offenders completing court-mandated substance use evaluations.

IPV and Specific Substance Use Disorders

Alcohol

The relationship between IPV and alcohol use has been well established (Leonard, 2005). The proximal psychopharmacological effects of alcohol intoxication cause temporary impairment in executive functioning, such as disinhibition and deficits in social information processing, which have been associated with increased aggressive responding, particularly among those prone to anger and aggressive behavior (Giancola, 2000). Results of a 50-study meta-analysis suggest that the composite relationship between alcohol use and IPV is small-to-moderate in magnitude for males ($d = .23$) and small in magnitude for females ($d = .14$; Foran & O'Leary, 2008). Research indicates that greater than 40% of participants involved in alcohol treatment consistently reported IPV perpetration in the previous 12 months (e.g., Chermack, Fuller, & Blow, 2000; Shumacher, Fals-Stewart, & Leonard, 2003).

Cannabis and Cocaine

The prevalence of IPV within individuals engaged in treatment for illicit substance abuse, relative to alcohol abuse, is less well researched. Cocaine acts as a psychomotor stimulant, the acute use of which has been associated with suspiciousness, increased irritability and psychotic symptoms (Walsh et al., 2010). Like alcohol, chronic cocaine use has been associated with impulsivity, deficits in executive functioning, and long-lasting neurobehavioral impairment (Bolla, Funderburk, & Cadet, 2000). As Boles and Miotto (2003) discussed in their review, withdrawal from cocaine or cannabis may produce agitated and anxious affective states which may lead to aggressive responding (Norlander & Eckhardt, 2005). The support for a direct association between acute cannabis use and violent behavior is not compelling. Tetrahydrocannabinol (THC) may be associated with aggression, however, through the action that it takes upon cannabinoid receptors in the brain, stimulating areas that result in the impairment of coordination, problem solving, and learning (Boles & Miotto, 2003). For a comprehensive review of conceptual models that link illicit substance use to general violent behavior, see Moore and colleagues (2008).

Two meta-analytic reviews have focused on the association between illicit substance use and IPV. Stith and colleagues (2003) reported a medium overall effect size for the relationship between illicit drug use and IPV ($d = .65$, 95% CI = .58–.73) but failed to specify the effects of specific substances. Moore and colleagues (2008) examined 13 effect sizes to determine that males who used cocaine were more likely to perpetrate physical IPV than males who did not use cocaine ($d = .34$, 95% CI = .27–.44). They also reported that males who used cannabis were more likely to be violent compared to those who did not based upon 12 effect sizes ($d = .35$, 95% CI = .25–.44). The authors attributed the effect size for cannabis to the effects of withdrawal. The infrequently examined relationship between opioid use and male perpetrated physical IPV yielded a small magnitude effect ($d = .16$, 95% CI = .05–.27) based upon only 8 effect sizes. Too few studies examined the relationship between illicit substance use and female-to-male IPV to draw meaningful conclusions.

IPV and Comorbid Substance Use Disorders

Several recent studies have examined the individual influences of alcohol, cocaine, and cannabis on both male and female perpetrated IPV, with mixed results. Stuart and colleagues (2008) reported the results of a structural equation model analysis derived from the responses of 271 males and 135 females court referred to treatment for IPV offenses. Under a single model, male perpetrators demonstrated significant paths from both cannabis and stimulant use to physical IPV. No substances significantly affected female-to-male IPV. Psychological aggression mediated the relationship between alcohol use and physical IPV in both males and females. In a replication of the SEM analyses using 181 couples in treatment for problematic alcohol use, Mattson and colleagues (2011) reported that stimulant use was associated with aggression in males but not females and that cannabis use failed to significantly affect aggression in either males or females.

In examining the relationships between IPV perpetration and preferences for specific combinations of substances, initial evidence suggests that combinations of alcohol, cocaine, and cannabis may be of particular interest to the detection and reduction of violent behavior. Cocaine use among treatment seeking alcohol users has been shown to increase the risk of IPV perpetration (Murphy et al., 2001). Chermack and Blow (2002) used experience sampling methods to conclude that the interaction of alcohol and cocaine proximally contributed to predictions of interpersonal violence severity. Feingold and colleagues (2008) offered evidence that cannabis use mediated the relationship between alcohol use and male-to-female IPV, claiming that the influence of alcohol use on IPV perpetration was marginal after accounting for the presence of cannabis use. Feingold's results are inconsistent with the majority of the alcohol-IPV literature, possibly due to either the high incidence of multiple substance use whereby 86% of cannabis users also endorsed abusing alcohol or by broadly defining a substance problem as abuse at any point in the participant's lifetime.

Smith and colleagues (2011) recently published the most integrated study on the associations among alcohol, cocaine, and cannabis use disorders with IPV. Findings from the National Epidemiologic Survey of Alcohol and Related Conditions (NESARC) indicated that 21.7% of IPV perpetrators met criteria for an alcohol use disorder. In a pooled sample of males and females, participants with concurrent alcohol and cocaine use disorders were more likely to be violent than participants with alcohol use disorders alone and less likely to be violent than participants with cocaine use disorders alone. Participants with concurrent alcohol and cannabis use diagnoses were less likely to perpetrate IPV than participants with either disorder by itself. Opioid use disorders were associated with a reduced risk of IPV perpetration. Interactions between an opioid use diagnosis and other substance use diagnoses were not presented. Though this study made use of a large sample to substantially contribute to our understanding of the associations between physical IPV perpetration and specific substances use disorders, the nationally representative community sample may not generalize well to a forensic or treatment seeking sample, as evidenced by the comparatively low prevalence of specific substance use disorders.

Despite comparable rates of IPV perpetration among males and females (e.g., Archer, 2000), the collective literature described above reflects an underrepresentation of females in

research that examines associations among IPV and licit as well as illicit substances of abuse across community and institutional samples (e.g., Foran & O'Leary, 2008; Moore et al., 2008). Further research is needed to examine associations among IPV and a comprehensive set of concurrently assessed substance use problems in female samples, particularly within large forensic populations.

Present Study

We utilized the quantitative summaries of court ordered substance abuse evaluations, collected during the uniquely inclusive evaluation phase of the legal process, to examine the associations between IPV and specific substance use disorder diagnoses among male and female criminal offenders suspected of substance abuse or dependence. We hypothesized that we would detect main effects depicting associations between IPV perpetration and (1) an alcohol use diagnosis and (2) a cocaine use diagnosis but (3) not a cannabis use diagnosis. We further predicted that these associations would be qualified by interactions between specific substances, including that (4) a cannabis use disorder would moderate the association between IPV and problematic alcohol use such that IPV would be less prevalent among individuals with both an alcohol use and a cannabis use disorder in comparison to participants with an alcohol use but not a cannabis use disorder diagnosis, (5) a cocaine use diagnosis would moderate the association between IPV and problematic alcohol use such that IPV would be more prevalent among individuals with both an alcohol use and a cocaine use disorder in comparison to participants with an alcohol use but not a cocaine use disorder, and (6) an alcohol use disorder would moderate the association between IPV and a cocaine use diagnosis such that IPV would be more prevalent among individuals with both an alcohol use and a cocaine use disorder in comparison to participants with a cocaine use but not an alcohol use disorder. Due to insufficient theoretical guidance and empirical research, we explored but advanced no a priori hypotheses regarding the potential interaction between cannabis and cocaine use disorders, the relationship between IPV perpetration and opioid use disorders, or specific substance use disorder interactions with gender.

Method

Sample

A total of 1,926 offenders suspected to meet criteria for substance use disorders were court referred, evaluated, and consented to participate during the data collection phase of the current investigation through the mechanism detailed below. Participants were eliminated for incomplete data, including gender ($n=11$), ethnicity (males: $n = 134$, females: $n = 28$) and recent IPV (males: $n = 132$, females, $n = 37$) resulting in a final sample of 1,584 (1290 male and 294 female) participants available for inclusion in the analyses after listwise deletion. The average reported age of participants was 31.4 years ($SD = 10.3$ years) and ranged from 18 to 71. Caucasian offenders comprised the majority of the sample (62.6%), followed by African American (25.4%) and Hispanic (11.8%) offenders. There were 4 times as many males (81.4%) as females (18.6%). Participants reported between 6 and 21 years of education ($M = 11.5$, $SD = 2.0$) and between 0 and 50 prior arrests ($M = 7.3$, $SD = 7.5$), excluding the current incident.

Procedure

In the state of Connecticut, criminal offenders with suspected drug involvement may be referred to receive a substance abuse evaluation to determine the degree to which substance use may mitigate criminal charges. The statute (CGS 17a-694) (4) instructs the evaluator to determine whether or not the alleged offender was substance dependent during the commission of a crime and to determine if the alleged offender is in need of, could benefit from, and is capable of accessing an appropriate treatment. The evaluator then prepares and submits a report to the court with a recommendation for outpatient treatment, residential treatment, or no treatment. If treatment is recommended, it is arranged for the offender. Residential treatment beds are secured for offenders when appropriate.

Participant data used in the current investigation was collected during a comprehensive substance use evaluation ordered under statute 17a-694 at the Office of Forensic Substance Dependence Evaluations in New Haven, Connecticut between the years of 1999 and 2008. Data was stored and de-identified for the purposes of program evaluation. An IRB Waiver was obtained for the use of these data. Approval to conduct the current study was requested and granted through the Human Investigation Committee (HIC) at the Yale University School of Medicine. The 2 hour, single session evaluation consisted of a general psychosocial history and a detailed clinical interview focusing on legal involvement and substance abuse conducted by a licensed clinical social worker (LCSW) with no fewer than 12 years of experience in substance use evaluation and treatment. Prior to filing the court report, the substance abuse evaluators then completed an electronic spreadsheet containing the items used in the current investigation, including demographics, IPV history, and substance use diagnoses.

Measures

Substance use disorders—Clinical diagnoses were recorded by LCSWs and informed by a clinical interview containing an adapted version of the Addiction Severity Index (ASI; McLellan et al., 1992) and the substance abuse section of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID; First, Spitzer, Gibbon, & Williams, 1995). The ASI and the SCID have demonstrated strong psychometric properties and the use of the adapted form ASI has been described elsewhere (Scott, Edwards, Lussier, Devine, & Easton, 2011). In short, the adapted drug/alcohol section of the ASI gathered a brief summary of substance use and treatment history across all experienced substances prior to initiating the SCID interview during which sufficient information was gathered to complete initial substance use diagnoses. Whenever possible and appropriate, diagnoses were supported through the use of urine toxicology reports, corroborating reports from family members and associates, or legal and medical records. Discrepancies were reconciled with the participant prior to the submission of a final report.

Interviewers recorded substance use diagnoses in the dataset used for the current study prior to closing the file. Participants were diagnosed with all applicable substance use disorders, including alcohol, cocaine, cannabis, amphetamine, hallucinogen (e.g., ecstasy, phencyclidine), and opioid (e.g., heroin) abuse and dependence. Reported abuse (15–17.6%) and dependence (82.4–85%) were diagnosed in similar proportions across the substances of

interest in the current investigation. The diagnoses were collapsed into single variables representing the presence or absence of diagnosable substance use problems for each substance. Alcohol, cannabis, cocaine, and opioid use disorders were diagnosed frequently enough to be meaningfully examined in the current study, whereas other substances were controlled in all analyses.

Intimate partner violence—During the course of the intimate partnerships section of the clinical interview, each participant was asked if they had, “...been physically aggressive toward a romantic partner during the previous year.” The question occurred during the course of the relationship history section of the clinical interview. Brief screenings measures, such as the 4-item Hurt/Insult/Threaten/Scream (HITS; Sherin, Sinacore, Li, Zitter, & Shakil, 1998) and the 3-item Partner Violence Screen (PVS; Feldhaus, Koziol-McLain, Amsbury, Norton, Lowenstein, & Abbott, 1997) have been used to assess IPV in previous studies, demonstrate high reliability, and correlate significantly with well-validated IPV measures. Additionally, several studies have used single questions (e.g., Have you ever threatened, pushed, or shoved your partner?) to assess IPV risk when required to abbreviate assessments (e.g., Raj, Santana, Marche, Amaro, Cranston, & Silverman, 2006; Silverman, Raj, Mucci, & Hathaway, 2001; Whitfield, Anda, Dube, & Felitti, 2003). Participants were informed that responding to the domestic violence question was optional and would not influence the results of the substance abuse evaluation. Twenty-nine (1.5%) potential participants refused to answer the question and were eliminated from analyses.

Participants who reported IPV perpetration were asked all 12 physical violence perpetration questions from the revised conflict tactics scale (CTS-2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), an instrument with strong reliability ($\alpha = .79-.95$; Straus et al., 1996), to verify the occurrence of physical IPV perpetration. Following each interview, the LCSW dichotomously coded physical IPV as “present” or “absent” for each participant in the data set used for the current study.

Data Analysis

Preliminary chi-square analyses were used to explore demographic differences and differences in the frequency of substance use diagnoses and IPV perpetration between males and females. The primary analysis was run using binary logistic regression. We constructed a model in which ethnicity and legal history were entered as covariates in step 1. Infrequently occurring substance use disorder diagnoses were controlled in the first step as well, including hallucinogen, amphetamine, and sedative, hypnotic, or anxiolytic use disorders. We introduced the main effects of gender, alcohol, cannabis, cocaine, and opioid use disorders in step 2 to test hypotheses 1–3. Two-way interactions between gender, alcohol, cannabis, cocaine, and opioid use disorders were introduced in the third step to evaluate hypotheses 4 and 5 as well as to conduct exploratory analyses. Three-way interactions between gender and substance use disorders were non-significant and dropped from all analyses. Significant interactions were interpreted using simple slope analyses.

Results

Substance Use Diagnoses

One-hundred thirty-five (8.5%) participants received no substance use diagnosis while 655 (41.4%) participants received an alcohol, 570 (36.0%) received a cannabis, 817 (51.6%) received a cocaine, and 527 (33.3%) received an opioid use diagnosis. Comorbidity in the current sample was high as 583 (36.8%) participants received a single substance use diagnosis (129 (8.1%) alcohol, 113 (7.1%) cannabis, 166 (10.5%) cocaine, 169 (10.7%) opioid, 6 (0.4%) other), 478 (30.2%) participants were diagnosed with 2 substance use disorders, 349 (22.0%) participants received 3 substance use diagnoses, and 39 (2.5%) participants were diagnosed with 4 or more specific substance use disorders. Overall, female participants were significantly more likely than males to be diagnosed with illicit substance use disorders and to report the perpetration of physical IPV over the past year (See Table 1).

Logistic Regression

Table 2 offers a summary of results from the final step of unadjusted and adjusted logistic regression models used to analyze the relationships among specific and combined substance use disorders with reported IPV during the year prior to evaluation. Although controlling for legal and demographic variables resulted in shifts in magnitude, neither the significance nor the directionality of observed effects changed across the two models. The adjusted model demonstrated reliability, $\chi^2(20) = 152.36$, $p < .001$, correctly predicting the IPV status of 66.4% of participants.

Alcohol use and cocaine use disorders were both independently associated with physical IPV perpetration, as determined by the main effects model. Neither cannabis use nor opioid use disorder diagnoses were directly associated with IPV perpetration. The main effects offered support for hypotheses 1 through 3. A significant gender term was also detected, with greater IPV perpetration reported among females than males, and disappeared following the introduction of higher order interactions.

Significant substance use disorder interactions were detected between alcohol and cannabis as well as alcohol and cocaine in predicting IPV perpetration. Follow-up analyses supported an association between alcohol use disorders in the absence of a cannabis use disorder, but not cannabis use disorders in the absence of an alcohol use disorder, and IPV. Simple slope analyses further detected support for hypothesis 4 as participants with both an alcohol and a cannabis use disorder, relative to those with an alcohol but no cannabis use disorder, were less likely to have perpetrated IPV over the previous year. Similarly, participants with both diagnoses had greater odds of perpetrating IPV than those with only a cannabis use disorder. Follow-up analyses of the significant interaction between alcohol and cocaine use disorders revealed associations between IPV and both disorders in the absence of the other. Support was found for hypothesis 6 as participants with both disorders were at greater odds of committing IPV than participants with a cocaine but no alcohol use disorder. Hypothesis 5 was not supported as participants with both disorders were no more likely to have perpetrated IPV than participants with an alcohol use but no cocaine use disorder.

Exploratory analyses detected little moderation of observed associations. Interactions between gender and specific substance use disorders revealed, with the exception of opioid use, statistically comparable relationships between substance use disorders and IPV across genders. Opioid use was associated with reduced IPV among males but not females. Opioid use failed to moderate the relationships between IPV and other substance use disorders. No interaction was detected between cannabis and cocaine use disorders.

Discussion

The current investigation was designed to extend previous research that has examined the relationship between IPV and specific substance use interactions by examining the associations between partner violence and specific substance use diagnoses within a forensic sample of male and female offenders at the time of a court-ordered substance abuse evaluation (Chermack & Blow, 2002; Smith et al., 2012). Specifically, we examined the direct effects and interactions of alcohol, cocaine, cannabis, and opioid use diagnoses on past-year IPV perpetration. Consistent with previous investigations, logistic regression revealed that alcohol and cocaine, but not cannabis, use diagnoses were associated with an increased likelihood of violence among male participants. We found that these direct effects held in female offenders as well. Participants with both an alcohol and a cannabis use diagnosis were more likely to have committed IPV over the previous year than participants with a cannabis use but no alcohol use diagnosis and less likely to have perpetrated IPV than participants with an alcohol use but no cannabis use diagnosis. Male and female participants with both an alcohol and a cocaine use diagnosis had greater odds of having perpetrated IPV than participants with a cocaine use and no alcohol use diagnosis but not participants with an alcohol use and no cocaine use diagnosis.

As expected from previous meta-analyses, a cannabis use diagnosis was not associated with physical IPV perpetration and participants with an alcohol use disorder were less likely to perpetrate IPV if they had also concurrently been diagnosed with a cannabis use disorder (Moore et al., 2008; Smith et al., 2012). Contrary to the findings of Smith and colleagues (2012), participants with combined alcohol and cannabis use diagnoses were more likely to be violent than participants with a cannabis use diagnosis alone. The current findings may reflect the contraindicative relationship between the physiologically calming properties most often associated with cannabis use and the perpetration of partner violent behavior (Boles & Miotto, 2003).

It should be noted that the current methodology only allows for an analysis of concurrent diagnoses rather than simultaneous substance use (Grant & Hartford, 1990). Earleywine and Newcomb (1997) did, however, find concurrent and simultaneous substance use to be highly correlated, suggesting that individuals who consume more than one type of substance frequently do so in the same sitting. Regardless, it is possible to speculate that alcohol use, either simultaneously or as a pattern meeting diagnostic criteria, heightens the risk of perpetrating IPV among problematic cannabis users while cannabis use lowers the risk among problematic alcohol users.

The two greatest predictors of IPV perpetration within the current forensic sample were cocaine and alcohol use disorders. Alcohol and cocaine use disorders were directly associated with IPV perpetration among both males and females. Although we were unable to control for the influence of victimization on perpetration, Smith and colleagues (2011) found that participants were more likely to be violent if diagnosed with either an alcohol or cocaine use disorder regardless of victimization. We found that participants with a cocaine use disorder were significantly more likely to have perpetrated IPV if they were concurrently diagnosed with an alcohol use disorder. The presence or absence of a cocaine use disorder, however, did not significantly increase the likelihood of IPV among participants with an alcohol use disorder. Results are consistent with previous retrospective self-report studies finding that IPV and IPV severity can be predicted by general patterns of alcohol and cocaine use among male and female treatment seeking samples (Chermack & Blow, 2002).

Further, we detected no evidence of a gender interaction with alcohol, cannabis, or cocaine, indicating similar relationships between IPV perpetration and specific substance use diagnoses among males and females. Similar consistency was not observed in the nationally representative NESARC sample, where findings were mixed with a more significant alcohol-IPV association among females than males and a significant cannabis-IPV association only among females prior to controlling for victimization (Smith et al., 2012). This may reflect differences in specificity between the nationally representative sample used in the previous investigation and the specialized forensic sample examined in the current analyses. It is possible that relationships among the forensic population demonstrate greater homogeneity than those observed in the community in terms of bi-directional IPV and substance use patterns (Archer, 2000). Certainly, IPV perpetration rates were 7 times higher and substance use diagnoses were between 2 and 27 times higher with greater diagnoses of multiple substance use disorders in the forensic sample compared to the NESARC data. Male offenders, however, did demonstrate an association between opioid use and reduced IPV, unlike female offenders.

It should also be noted that, while proximal effects models indicate a relationship in which the psychopharmacological effects of various substances temporarily impair cognitive functioning and increase the likelihood of aggressive responding, the current data do not lend themselves to causal interpretation. The associations observed between IPV and substance use diagnoses may reflect relationships in which substance use preceded violence as described by the proximal effects models, violence preceded substance use as moderated by feelings such as guilt or physical pain, or the two were indirectly related through a third variable as described by the spurious effects models (e.g., antisocial personality; Leonard & Quigley, 1997). Given the severity of substance use in the current sample and the time frame during which behaviors were assessed, it is also quite likely that abuse and dependence had been a chronic problem and had contributed to the degradation of multiple life domains. Under the indirect effect model, problematic patterns of substance use contribute to recurrent, detrimental interactions within or across romantic partners resulting in unpleasant and hostile relationship environments that increase the likelihood of IPV responding (Leonard & Quigley, 1997). Within this context, alcohol and drug use may also result in cognitive change at each stage of social information processing, further reducing one's

likelihood of generating and relying upon non-violent, prosocial conflict resolution tactics over time.

Limitations

The IPV variable and, in large part, the substance abuse diagnoses were based upon self-report data. Although collateral sources were used to substantiate participant claims when possible, participants may have been motivated to falsify their reports. Participants looking to mitigate personal culpability for their crimes may have attempted to exaggerate their substance use history. Alternatively, participants may have also been motivated to underreport both IPV and substance use to present themselves more positively. Similarly, the use of a brief, non-standardized aggression screening question may have reduced the ability to detect IPV perpetration, as individuals may have been more likely to endorse specific aggressive behaviors, such as those included in the full CTS2, than general aggression. The validity of the current IPV assessment method is supported, however, as previous research has established a precedent for the validity of brief IPV assessments and the current screening question resulted in the detection of IPV perpetration roughly within the expected range for comparable substance using samples (Chermack et al., 2000; El-Bassel et al., 2007).

The current sample was derived from drug court referrals in a single state. Systematic factors, such as the criteria used in the decision to order a substance abuse referral and the substance abuse evaluation process itself, may have influenced the results directly or through the pool of potential participants available for this study. Indeed, we saw that females were more frequently diagnosed with substance abuse disorders than males, suggesting that either (a) more pathological women were referred for evaluations, while men with greater substance use pathology were sentenced without an evaluation; or (b) women with criminal involvement were somewhat arbitrarily seen as more substance dependant than males during the evaluation. Given the collateral sources used to confirm a positive substance abuse history, the former possibility seems more plausible.

Finally, we were only able to comment on associations, rather than directionality, between IPV and specific substance use diagnoses. The current methodology did not account for temporal sequencing or victimization. As previously stated, substance use may not have been proximally related to IPV perpetration and may have been a maladaptive coping technique following perpetration. Alternatively, IPV and substance use diagnoses may have been related through a spurious factor, such as victimization. It was not possible to determine the motivation behind instances of IPV perpetration, which may have been a response to victimization in some cases, in the current study.

Clinical and Policy Implications

The results described above suggest that clinicians conducting substance abuse evaluations would likely detect high rates of IPV as well. With the considerable overlap between substance use and partner violence, treatment programs that continue to move toward an integrated model may be the most appropriate method of targeting both behaviors while encouraging compliance by keeping the burden on the client low (Babcock, Robie & Green,

2004; Easton et al., 2007). The current results suggest that such integrated IPV interventions would likely benefit from widely assessing substance use in the development of individualized treatment plans that address the specific substance use needs of this highly variable population, particularly in light of the observed associations among IPV, alcohol, cocaine, and cannabis use.

The implications of reducing the use of specific substances must also be considered. For example, the findings presented in the current investigation replicate those previously reported in terms of the association between IPV and cannabis use, suggesting that the combination of alcohol and cannabis use is among the most prevalent combinations of substance use disorders within forensic populations, and that participants with an alcohol use diagnosis may be less violent if concurrently diagnosed with a cannabis use disorder. Further treatment research should incorporate longer follow-up periods to examine changes in IPV perpetration among clients who reduce or eliminate either alcohol or cannabis use while failing to reduce their dependence upon the second substance.

Research Implications

The current sample was recruited from a unique population, relative to other treatment evaluation or epidemiological investigations (e.g. Easton et al., 2007; Smith et al., 2012). Associations between IPV and specific substance use disorders in the current study largely confirmed previous findings, demonstrating the relative consistency of IPV-substance use relationships across community, pretreatment, and treatment samples. As substance use diagnoses interacted to differentially predict violence, the current results support an inclusive, detailed measurement of substance use in investigations exploring the associations among IPV and specific substances (e.g., Moore, Elkins, McNulty, Kivisto, & Handsel, 2011; Rabenhorst et al., 2012). Further, despite the greater substance use pathology detected among females relative to males in the current sample, gender consistencies suggest that models depicting the associations between IPV and specific substance use diagnoses may generalize to both males and females. Further, the observed associations may have implications when considering dyadic research with consistent and inconsistent substance use patterns. For example, future research should examine if relationships characterized by consistent alcohol and cocaine use disorders may be at particularly high risk for severe, bi-directional IPV.

Conclusions and Directions for Future Research

The results of this replication and expansion of Smith and colleagues (2011) largely confirmed previous findings and demonstrated relative consistency in the relationships between IPV and specific substance use disorders between genders and across samples. Offenders diagnosed with an alcohol and cocaine use disorder were more likely to report IPV perpetration. Cannabis use diagnoses lowered the risk of IPV among participants with an alcohol use diagnosis while alcohol use had the opposite effect upon participants with a cannabis use or cocaine use disorder. It is our hope that these results may serve to improve evidence-based, individualized treatment recommendations for integrated drug and domestic violence diversion programs. Future investigations should recruit larger samples of female offenders, examine the relationship between combined substance use disorders and

psychological aggression in addition to physical violence, conduct a follow-up examining treatment compliance and recidivism for participants with specific combined substance use disorders, and utilize experience-sampling methods to assess temporal sequencing of combined substance use and IPV.

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Table 1

Demographic Data

	<u>Male (<i>n</i> = 1290)</u>	<u>Female (<i>n</i> = 294)</u>	<i>t</i> or χ^2	<i>p</i>	<i>d</i>
	Mean(<i>SD</i>) or <i>n</i> (%)	Mean(<i>SD</i>) or <i>n</i> (%)			
Demographic					
Age Mean (SD)	31.09 (10.25)	32.62 (10.19)	−1.77	.08	−0.15
Years of Education	11.38 (1.85)	11.79 (2.11)	−2.48	.03	−0.22
Prior Arrests	7.78 (7.93)	5.12 (4.84)	4.15	<.001	0.36
Longest Incarceration	6.57 (15.51)	2.27 (6.28)	3.19	<.01	0.30
Minority <i>n</i> (%)	518 (40.16)	74 (25.17)	22.97	<.001	0.38
Past Year IPV	423 (32.79)	140 (47.62)	22.98	<.001	−0.34
Substance Use <i>n</i> (%)					
Alcohol	545 (42.25)	110 (37.41)	2.31	.13	0.11
Cannabis	503 (38.99)	67 (22.79)	27.29	<.001	0.43
Cocaine	644 (56.59)	173 (58.84)	7.63	<.01	−0.20
Opioids	408 (31.63)	119 (40.48)	8.44	<.01	−0.21
Hallucinogens	89 (6.90)	13 (4.42)	2.44	.12	0.26
Sedatives	37 (2.87)	22 (7.48)	14.22	<.001	−0.56
Amphetamines	11 (0.85)	2 (0.68)	0.09	.77	0.13

Note: IPV = Intimate Partner Violence; Longest Incarceration was measured in months.

Table 2

Substance Use Binary Logistic Regression Results for Intimate Partner Violence

	Unadjusted		Adjusted for demographic and substance use variables	
	OR	95% CI	OR	95% CI
Gender	1.06	[0.59–1.92]	1.01	[0.48–2.04]
X Alcohol Use Disorder	0.86	[0.48–1.54]	0.91	[0.50–1.63]
X Cannabis Use Disorder	0.61	[0.32–1.14]	0.62	[0.33–1.18]
X Cocaine Use Disorder	0.68	[0.39–1.19]	0.64	[0.36–1.12]
X Opioid Use Disorder	0.48*	[0.26–0.87]	0.46*	[0.25–0.84]
Male	0.67**	[0.52–0.87]	0.66**	[0.50–0.87]
Female	1.14	[0.72–1.82]	1.20	[0.74–1.94]
Alcohol Use Disorder	4.19***	[2.20–7.97]	4.21***	[2.19–8.09]
X Cannabis Use Disorder	0.52**	[0.32–0.84]	0.49**	[0.30–0.79]
Alcohol Use Disorder	2.83***	[2.17–3.69]	2.88***	[2.20–3.77]
Cannabis Use Disorder	0.99	[0.73–1.34]	1.00	[0.73–1.37]
Both Compared to Alcohol Use Disorder	0.55***	[0.40–0.76]	0.52***	[0.38–0.72]
Both Compared to Cannabis Use Disorder	1.57*	[1.12–2.26]	1.50*	[1.05–2.15]
X Cocaine Use Disorder	0.61*	[0.38–0.96]	0.59*	[0.37–0.94]
Alcohol Use Disorder	2.85***	[2.06–3.93]	2.90***	[2.09–4.02]
Cocaine Use Disorder	2.04***	[1.52–2.72]	1.92***	[1.43–2.58]
Both Compared to Alcohol Use Disorder	1.22	[0.89–1.67]	1.12	[0.81–1.55]
Both Compared to Cocaine Use Disorder	1.71**	[1.29–2.26]	1.69***	[1.27–2.25]
X Opioid Use Disorder	1.00	[0.60–1.67]	0.97	[0.57–1.62]
Cannabis Use Disorder	1.63	[0.80–3.33]	1.55	[0.75–3.20]
X Cocaine Use Disorder	1.12	[0.70–1.79]	1.13	[0.70–1.81]
X Opioid Use Disorder	0.84	[0.48–1.46]	0.94	[0.53–1.65]
Cocaine Use Disorder	2.53**	[1.39–4.59]	2.43**	[1.33–4.44]
X Opioid Use Disorder	1.10	[0.67–1.81]	1.13	[0.68–1.87]
Opioid Use Disorder	1.66	[0.87–3.15]	1.66	[0.86–3.20]

Note. OR = Odds Ratio, CI = Confidence Interval,

* p < .05,

** p < .01,

*** p < .001.