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Comorbid Substance Use Diagnoses and Partner Violence among Offenders Receiving Pharmacotherapy for Opioid Dependence

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Abstract

Background—While previous studies find no evidence of an association between opioid use and intimate partner violence perpetration among community samples, initial evidence has detected increased rates of partner violence among individuals receiving pharmacological intervention for opioid dependence.

Objective—The current study evaluated the role of current comorbid substance use diagnoses, a robust risk factor for violent behavior, on the likelihood of perpetrating partner violence among a high risk sample of offenders receiving pharmacological intervention for opioid dependence.

Method—We analyzed self-report data provided by 81 (55 male) opioid dependent offenders during a court-ordered substance use interview.

Results—Approximately one third of the sample evidenced the recent use of intimate partner violence. Findings indicated that cocaine and benzodiazepine use were independently associated with an increased likelihood of reporting physical partner violence. Alcohol and cannabis use were not associated with partner violence.

Conclusions—The current results offer further support for the ongoing need to conduct routine partner violence screenings among substance involved offenders and highlight the importance of developing individualized treatment plans that address comorbid substance use and partner violent behaviors among individuals in treatment for opioid dependence.

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Keywords

Partner Violence; Methadone; Suboxone; Alcohol; Cocaine; Benzodiazepine

Although it is generally recognized that substance use represents a robust risk factor for the perpetration of physical intimate partner violence (IPV), our understanding of the relationship between opioid dependence and IPV remains obscured by mixed findings among a limited number of investigations. A meta-analytic review of six studies revealed a very small cumulative relationship between opioid use and physical IPV perpetration among males ($d = .16$, $95\% CI = .05-.27$).¹ These findings were largely supported by an analysis of nationally representative data collected from a sample of 25,778 non-institutionalized adults in the United States who provided data in Wave 2 of the National Epidemiologic Study on Alcohol and Related Conditions.² Prior research suggests that rates of IPV are elevated among offender samples with previously incarcerated males being four times more likely to perpetrate IPV than non-incarcerated males.³ Clinical samples and judicially mandated treatment seeking offenders represent equally salient groups with consistent evidence indicating that between one third and one half of participants in relevant samples have perpetrated recent acts of IPV.^{4,5} In one sample of female offenders, daily opioid use was not associated with general physical IPV.⁶ However, researchers recently found stronger effects among men receiving pharmacological intervention to treat opioid dependence, reporting greater past year physical IPV perpetration among the treatment sample than community controls.⁷ Another study found that men receiving pharmacological treatment for opioid dependence also demonstrated significantly greater aggression during laboratory analogue paradigms than men in a healthy comparison group.⁸ Together, these findings suggest that the issue of severity may factor into the association between opioid use and IPV with the strongest effects emerging among dependent individuals and those who qualify for pharmacological intervention. The current study was undertaken to evaluate the association between co-occurring substance use disorders and IPV among a high-risk, clinical sample of offenders receiving pharmacological interventions for opioid dependence.

Indeed, chronic opioid use and withdrawal symptoms have been associated with heightened aggression.⁹ Yet pharmacological interventions for opioid dependence consist of opioid agonists (e.g., methadone; buprenorphine), which bind to and activate endogenous opioid receptors to reduce the painful symptoms of opioid withdrawal, and opioid antagonists (e.g., naltrexone), which bind to but do not activate opioid receptors to reduce the rewarding euphoric effects associated with illicit opioid use.¹⁰ Thus, medications like methadone and Suboxone (i.e., a combination of buprenorphine and naloxone) should reduce the symptoms of irritability associated with opioid withdrawal among offenders receiving pharmacological treatment for opioid dependence. While reduced irritability and greater anger control are protective factors against aggressive behavioral responding, many risk factors have been identified for persistent partner violent behavior, including non-opioid substance use.¹¹

A recent study of partner violent men receiving methadone treatment found that 62% of the sample demonstrated persistent substance use yet empirical data pertaining to the effects of comorbid substance use on IPV among individuals with opioid dependence remain limited,

particularly among female and offender samples.¹² The most commonly abused substances within this population include cocaine, cannabis, and alcohol, all of which have been associated with poorer outcomes and relapse rates throughout and following treatment for opioid dependence.¹³ Among clinical and community samples, problematic alcohol and cocaine use are independently associated with greater frequency and severity of IPV perpetration among males and females whereas cannabis and IPV appear to share a weaker or non-significant association.^{1,2,14,15} The relationships between partner violent behavior and alcohol as well as cocaine are often contextualized within direct effects etiological models which posit that proximal psychopharmacological effects of intoxication facilitate the restriction of attention to only the most salient (e.g., aggressive) cues and reduce inhibitory control following exposure to aversive stimuli.¹⁶ Evidence pertaining to the direct effects of cannabis use on partner aggression is mixed, though disproportionately suggests that cannabis does not proximally increase the risk of IPV perpetration.¹⁷

It remains unclear if comorbid non-opioid substance use may explain some of the variability in IPV perpetration observed across studies of opioid dependent samples or the degree to which specific substances may differentially represent risk factors for IPV perpetration. The current study is the first to identify the prevalence of comorbid IPV, alcohol, cannabis, cocaine, and benzodiazepine use among a sample of male and female offenders receiving pharmacological treatment for opioid dependence. Analyses were undertaken to provide initial insight into variability in IPV perpetration among this unique subset of offenders. Consistent with previous research, we hypothesized that (1) participants who reported any comorbid substance use disorder, as an indicator of substance use severity, would be more likely to report IPV perpetration than participants with only an opioid use disorder. We then hypothesized that (2) participants with comorbid alcohol or cocaine use disorders would be more likely to report IPV than participants without comorbid use. Finally, we hypothesized that (3) cannabis would not be associated with reports of IPV among the current sample. Due to limited empirical guidance, we evaluated but offered no a priori hypotheses about the association between IPV and benzodiazepine use or the effects of gender on the associations among IPV and specific substances.

Method

Sample

Data collected on 1,926 offenders from a larger program-evaluation investigation were examined for inclusion and exclusion criteria in the current study. Specifically, the larger investigation assessed biopsychosocial correlates and outcomes of substance use among general criminal offenders suspected of substance abuse or dependence during the commission of criminal activities.¹⁸ Participants were considered eligible for inclusion in the present analyses if they reported the current use of a single medication designated to treat opioid dependence (e.g., methadone; buprenorphine), received an opioid use diagnosis, and provided complete substance use and IPV perpetration data during the initial data collection phase of the larger investigation. Ninety-one participants reported use of a pharmacological agent used to treat opioid dependence. Three of these individuals reported naltrexone use and had not been diagnosed with an opioid use disorder. Seven participants

receiving pharmacological intervention for opioid dependence refused to provide data pertaining to IPV perpetration, resulting in a final sample of 81 (55 male) participants. Sample characteristics are displayed in Table 1.

Procedure

The procedure used in the current study is detailed elsewhere.¹⁸ Briefly, offenders opted to participate in a single-session, presentencing substance use evaluation to determine potential treatment needs and the degree to which substance use may have mitigated their culpability for criminal offenses. The comprehensive, two-hour clinical interviews were conducted by an experienced licensed clinical social worker (LCSW) with specialty training in substance use evaluation and treatment. The interviews began with a description of the limits of confidentiality and the completion of consent procedures. Interviewers made use of structured and open ended assessments as well as available collateral contacts, treatment information, court documents, and toxicology results to confirm offender reports. The interviewer recorded demographic, IPV, prescription, and substance use data for later analyses. Data used in the current study were collected at a single site in New Haven, Connecticut, de-identified, and retained for the purposes of program evaluation. The Human Investigation Committee (HIC) at the Yale University School of Medicine approved a request to conduct the study.

Measures

Socio-demographic data, including participant age, ethnicity, and education history were provided by participants in response to structured interview questions. Participants also provided a list of current medications and documentation, when possible, that was used to determine involvement in opioid treatment. Interviewers reached substance use diagnoses based upon verbal responses to an adapted version of the psychometrically sound substance abuse section of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID).¹⁹ For the purposes of the current investigation, abuse and dependence diagnoses were collapsed to produce dichotomous variables depicting the presence or absence of a current comorbid alcohol, cannabis, cocaine, or benzodiazepine-related “substance use disorder.” Immediately prior to the section of the interview inquiring about IPV, participants were informed by the interviewer that responses to IPV questions were entirely voluntary, would be used only in composite analyses, and would not be included in any official correspondence with the court. In compliance with requests from the agency conducting substance use evaluations, IPV assessments were kept brief. Participants were dichotomously categorized by the interviewer as partner violent or nonviolent based upon their verbal responses to an open-ended IPV screening question (i.e., “Have you been physically aggressive toward a romantic partner during the previous year?”).²⁰

Data analytic plan

Analyses involved preliminary exploration of the data, followed by the use of chi-square analyses to assess bivariate relationships among reported IPV and current, comorbid substance use diagnoses. A binomial logistic regression analysis was then conducted to assess relative strengths of substance use predictors as well as gender effects. With youth

and low socioeconomic status functioning as documented risk factors for a wide range of externalizing behaviors, analyses control for age and years of education.²¹

Results

Preliminary analyses

Demographic, violence, pharmacological treatment, and comorbid substance use disorder data are presented in Table 1. Analyses were conducted to determine the association between specific opioid medications and self-reported IPV as well as comorbid substance use in the current sample. Preliminary results indicated that rates of IPV were comparable among offenders prescribed methadone [0 = all other medications, 1 = methadone only: $\chi^2(1) = .71$, $p = .40$, $d = 0.24$] or Suboxone [0 = all other medications, 1 = Suboxone only: $\chi^2(1) = 0.61$, $p = .43$, $d = -0.25$]. Analyses further revealed that offenders prescribed methadone were less likely to report a current cannabis use disorder [$\chi^2(1) = 5.75$, $p = .02$, $d = -0.64$] whereas offenders prescribed Suboxone were less likely to report a current cocaine use disorder [$\chi^2(1) = 4.67$, $p = .03$, $d = -0.62$] relative to offenders not prescribed the respective medication. Meaningful analyses could not be conducted among the small subsample of offenders prescribed only buprenorphine or naltrexone. While it is possible that participants who reported using only buprenorphine were, in fact, prescribed Suboxone, there are several clinical contraindications for naloxone that would justify a buprenorphine-only prescription.

Substance use and IPV

Our first hypothesis, that participants who reported any comorbid substance use disorder would be more likely to report IPV perpetration than participants with only an opioid use disorder, was not supported by the data. Analyses revealed that having a current comorbid substance use disorder shared an effect size of medium magnitude but was not significantly associated with reported IPV among offenders receiving treatment for opioid dependence [$\chi^2(1) = 2.27$, $p = .13$, $d = .64$]. Results suggest a need to examine the relationships between IPV data and specific substance use disorders, rather than the composite categorization which may obscure important associations.

Similar analyses were applied to each specific substance use disorder to evaluate our second hypothesis, that participants with comorbid alcohol or cocaine use disorders would be more likely to report IPV than participants without comorbid use, as well as our third hypothesis, that cannabis use diagnoses would not be associated with reported IPV. Cocaine shared a large effect size and was significantly as well as positively associated with IPV [$\chi^2(1) = 9.32$, $p < .01$, $d = .96$]. Benzodiazepine use shared a similar association with IPV [$\chi^2(1) = 6.58$, $p = .01$, $d = .81$]. Alcohol [$\chi^2(1) = 0.33$, $p = .57$, $d = -.22$] and cannabis [$\chi^2(1) = 1.58$, $p = .21$, $d = -.35$] use were not associated with an increased risk of reporting IPV. Together, results from bivariate analyses of partner violence and individual substances indicate that participants with comorbid cocaine or benzodiazepine, but not alcohol or cannabis, use disorders were significantly more likely to report perpetrating acts of IPV than their counterparts who reported no use of the respective substance.

Probing the IPV-substance use relationship further, a logistic regression revealed that bivariate relationships remained in a composite model after controlling for age and education with significant main effects for current comorbid cocaine and benzodiazepine, but not alcohol or cannabis, use diagnoses in the prediction of reported IPV perpetration. A main effect emerged for gender, indicating that female participants were more likely to report IPV perpetration than male participants in the current sample. No gender-substance use interactions reached significance, indicating that associations between reported IPV and specific substances were comparable among male and female offenders. As interactions were non-significant, they were not included in the final model (see Table 2).

Discussion

The current study offers initial insight into substance use factors that may partially account for increased risk of IPV perpetration among individuals receiving pharmacotherapy for opioid dependence. Specifically, we found that current diagnoses of comorbid cocaine and benzodiazepine use were associated with a greater likelihood of reporting IPV perpetration. Thus, in addition to being particularly dangerous substances to abuse while taking medications that contain opioid agonists, such as methadone and Suboxone, cocaine and benzodiazepine use are also indicators of physical risk for relationship partners. Although the methodology utilized in the current study expressly precludes the ability to infer causality, this investigation is among the first to find support, at the correlational level, for models positing that comorbid substance use increases the risk of violence among individuals receiving pharmacotherapy for opioid dependence through direct, proximal effects. Alternatively, however, the observed relationships may be spurious with a third variable, such as antisocial traits, contributing to increased externalizing behavior across both substance use and violence domains. Participants in the current study were all offenders, suggesting that antisocial features were likely elevated in comparison to the general population.²² Future studies with a more variable subject pool may be able to determine the role of potential third variables.

Unexpectedly, and contrary to both theory as well as the wider literature,²³ comorbid alcohol use disorders were not associated with reports of IPV perpetration among offenders in the current study. This may be partially attributed to the fact that the current sample was unconventional in substance use history, such that alcohol was not the principle drug of choice. Consistent with prior research, however, cannabis use was not found to be a risk factor for IPV and female offenders were more likely to self-report IPV perpetration than male offenders. It should be noted that perpetration was assessed indiscriminate of motivation and violence severity. While evidence suggests that females perpetrate more frequent acts of IPV, males seem to be disproportionately responsible for acts of severe violence.²⁴

Limitations

Although the preliminary analyses reported here are the first to examine the relationships between comorbid substance use disorders and IPV in a clinical sample receiving pharmacotherapy for opioid dependence, the current study is not without limitations. Our

sample was homogeneous in ethnicity and relatively small, which must be acknowledged in cautiously interpreting the absence of significant gender interactions. For practical reasons, a brief physical IPV assessment was conducted. Brief, self-report IPV screening instruments similar to the one used in the current study, have demonstrated reliability and have received empirical support.²⁵ This method does, however, leave room for subjective interpretation. We recommend that future investigations conduct a more nuanced assessment of comorbid substance use effects on IPV among offenders receiving pharmacotherapy for opioid dependence by evaluating distinctions in violence perpetration, including the use of specific minor and severe forms of physical, psychological, and sexual IPV. Finally, data were primarily provided by participant self-report, which introduces the potential for inaccuracy in substance use, treatment, and IPV history. It is unlikely that offenders would be motivated to falsely deny potentially mitigating factors, such as substance use, at the presentencing phase of the trial.

We encourage additional research in the area of general aggression to replicate the observed associations between specific substances of abuse and partner violent behavior among individuals receiving pharmacotherapy for opioid dependence. With a subset of partner violence perpetrators being reliably classified as generally-violent / antisocial, indiscriminately perpetrating acts of violence against others,²⁶ future investigations that collect data on the duration of opioid treatment to assess the temporal sequencing of illicit substance use, opioid treatment, and violent behavior directed toward intimate partners and non-partners may be critical in establishing causal relationships, assessing the generalizability of the observed effects, and establishing indicators for elevated aggressive potential among treatment seekers.

Conclusions

The current results offer further support for the ongoing need to conduct routine partner violence screenings among substance involved offenders. Findings also highlight a potential need to develop individualized treatment plans that may include supportive interventions for concurrent cocaine and benzodiazepine use disorders or integrated substance abuse and partner violence protocols to reduce the risk of IPV among relationally involved patients receiving pharmacotherapy for opioid dependence.

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Demographic, pharmacotherapeutic, partner violence, and substance use comorbidity data for males, females, and the full sample of participants included in the current analyses.

Table 1

| | Males (n = 55) | | Females (n = 26) | | Total (N = 81) | |
|---------------------------------|----------------|------|------------------|------|----------------|------|
| | M (SD) | % | M (SD) | % | M (SD) | % |
| Age | 29.2 (8.7) | | 34.8 (10.0) | | 31.1 (9.5) | |
| Years of Education | 12.1 (1.7) | | 12.3 (1.8) | | 12.2 (1.7) | |
| Ethnicity | | | | | | |
| Caucasian | | 87.3 | | 96.2 | | 90.1 |
| Hispanic | | 5.5 | | 3.8 | | 4.9 |
| Other | | 7.2 | | 0.0 | | 4.9 |
| Intimate Partner Violence | | 20.0 | | 57.7 | | 32.1 |
| Pharmacotherapy | | | | | | |
| Methadone | | 60.0 | | 80.8 | | 66.7 |
| Suboxone | | 30.9 | | 11.5 | | 24.1 |
| Buprenorphine Only | | 5.5 | | 7.7 | | 6.2 |
| Naltrexone Only | | 3.6 | | 0.0 | | 2.5 |
| Comorbid Substance Use Disorder | | | | | | |
| Cocaine | | 55.5 | | 73.1 | | 60.5 |
| Cannabis | | 54.5 | | 11.5 | | 40.7 |
| Benzodiazepine | | 18.2 | | 19.2 | | 18.5 |
| Alcohol | | 14.5 | | 15.4 | | 14.8 |

Logistic regression predicting past-year partner violence perpetration with gender and specific substance use disorder diagnoses.

Table 2

| | <i>B</i> | <i>SE</i> | <i>p</i> | <i>OR</i> | 95% Confidence Interval | |
|----------------|----------|-----------|----------|-----------|-------------------------|-------|
| | | | | | Lower | Upper |
| Gender | -1.87 | 0.93 | .045 | 0.15 | 0.03 | 0.96 |
| Alcohol | 0.60 | 1.16 | .607 | 1.82 | 0.19 | 17.62 |
| Cannabis | 0.98 | 0.96 | .308 | 2.66 | 0.40 | 17.56 |
| Cocaine | 2.05 | 1.01 | .043 | 7.77 | 1.07 | 56.41 |
| Benzodiazepine | 2.32 | 0.91 | .011 | 10.13 | 1.70 | 60.26 |

Note: Model controlled for age and education.