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Associations of Women's Substance Dependency Symptoms with Intimate Partner Violence

Alan Feingold and Deborah M. Capaldi

Oregon Social Learning Center

Abstract

Associations of substance dependencies and experiences with intimate partner violence (IPV) were examined in a community sample of 146 female participants in a longitudinal study of couples. The women with a history of dependence on hard drugs (but not alcohol, cannabis, or sedatives) were more likely to also have perpetrated IPV. However, only women dependent on cocaine were more likely to have been victimized by their male partners. Psychological IPV was found to be more stable across time than physical IPV, but associations of substance abuse with IPV did not vary by IPV type. Findings were compared with results from a prior study of men's substance abuse and IPV that also found associations between dependence on hard drugs (but not alcohol dependence alone) and perpetration of IPV.

Keywords

alcohol; intimate partner violence; substance abuse

Intimate partner violence (IPV) perpetrated against women is widely recognized as a major and long-standing social and public health problem (Capaldi, Knoble, Shortt, & Kim, 2012; Reed, Raj, Hiller, & Silverman, 2010; Tolan, Gorman-Smith, & Henry, 2006). Moreover, its significance is not limited to the United States, as prevalence rates for women's victimization by IPV range from 15% to 71% across a number of divergent countries (Abramsky et al., 2011).

Abuse of psychoactive substances, especially alcohol, has long been seen as an antecedent of IPV (Schumacher, Feldbau-Kohn, Smith-Step, & Heyman, 2001; Stith, Smith, Penna, Warda, & Tritt, 2004). Most of the extant empirical studies of the association of substance abuse with IPV have examined only male substance abuse as a contributing factor to men's perpetration of physical IPV (e.g., Feingold, Kerr, & Capaldi, 2008; Feingold, Tiberio, & Capaldi, 2013; see also meta-analyses of the literature by Foran & O'Leary, 2008; Moore et al., 2008). Feingold et al. (2008, 2013), for example, found that men who were (or had ever been) dependent on any type of psychoactive substance were more likely to have perpetrated IPV than their nondependent peers. However, it was primarily men with a history of polysubstance abuse who committed the most IPV.

More recently, attention has been directed to different types of associations between substance abuse and IPV in women, such as between women's substance abuse and (a) their victimization by physical IPV (e.g., Abramsky et al., 2011; Flair et al., 2012; Testa, Livingston, & Leonard, 2003), (b) their perpetration of physical IPV (e.g., Martino, Collins, & Ellickson, 2005; Temple, Weston, Stuart, & Marshall, 2008), and (c) psychological IPV (perpetration and/or victimization; e.g., Carbone-López, Kruttschnitt, & Macmillan, 2006; Moore, Elkins, McNulty, Kivisto, & Handsel, 2011).

However, a review of this growing literature reveals several areas where there are either inconsistency of findings across studies or gaps in our knowledge of the associations between substance abuse and IPV in women. The current study will extend prior work to address these concerns.

Associations of Substance Abuse with IPV Perpetration

Alcohol

Foran and O'Leary's (2008) meta-analysis found associations of alcohol abuse and physical IPV perpetration to be significantly smaller for women than for men. Indeed, the mean correlation between the two variables was only .14 for women, with a range of .06-.20 for the three representative (i.e., community) samples included in the meta-analysis. The smaller number of studies using women made their findings from the meta-analysis of IPV perpetration by alcohol-abusing women to be less definitive than corresponding summary results for men. Although this meta-analysis did not consider psychological IPV, a recent study by Moore et al. (2011) found that the association between alcohol consumption and psychological IPV was stronger for men than for women.

Drugs

A meta-analysis by Moore et al. (2008) found an association between overall drug use and IPV perpetration for women that was larger than the one found for alcohol use in the Foran and O'Leary (2008) meta-analysis, and it did not differ significantly between the sexes. Moore et al. concluded that there was little data that addressed sex differences in the associations between physical or psychological IPV perpetration and abuse of specific substances from which to draw conclusions through meta-analysis. However, subsequent studies examining the associations between specific drugs and physical IPV perpetration in women recently that used the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC; e.g., Afifi, Henriksen, Asmundson, & Sareen, 2012; Smith, Homish, Leonard, & Cornelius, 2012) found that women's abuse of cocaine and cannabis, but not opiates, was predictive of their perpetration of physical IPV.

Associations of Substance Abuse with IPV Victimization

Alcohol

Although the Foran and O'Leary (2008) meta-analysis of alcohol and IPV did not review the associations between alcohol abuse and victimization, three analyses of the NESARC data set examined such associations (Afifi, et al., 2012; Flair et al., 2012; Smith et al., 2012) and all found that women who had abused alcohol were more likely to have been victims of

physical IPV. The results replicated earlier findings of Caetano, Cunradi, Schafer, and Clark (2000). By contrast, no such association was found in another national probability study, the National Violence against Women Survey (Carbone-López, et al., 2006), or in a community sample (Testa et al., 2003).

Drugs

The Moore et al. (2008) review found there was only enough evidence in the literature on use of specific substance and IPV to conclude there was likely to be an association between women's abuse of cocaine and their victimization. Analyses of victimization data from the NESARC studies also found women's abuse of cocaine to be associated with their victimization (Afifi, et al., 2012; Smith et al., 2012) and that cannabis showed a similar association with experience of abuse by a romantic partner. Three other studies examined general drug use and found links between women's substance abuse and their victimization (Carbone-Lopez et al., 2011; Raiford, Wingood, & DiClemente, 2007; Testa et al., 2003), with one of those studies also replicating the finding from NESARC that women who abused cannabis were more likely to have been victims of IPV (Testa et al., 2003).

Limitations of Extant Research

There are several limitations of the extant work that warrant further studies of substance abuse and IPV in women. First, few studies have examined associations of women's IPV with some specific psychoactive substances that are frequently abused, namely, hallucinogens and amphetamines. Amphetamines have been found to have a stronger link to violence in general than any other substance (Boles & Miotto, 2003; see also Sommers, Baskin, & Baskin-Sommers, 2006). Feingold et al. (2008) found that dependence on hallucinogens and amphetamines to be associated with IPV perpetration but their study did not include women. Thus, it is a surprise that few, if any, studies have examined the associations between abuse of amphetamines or hallucinogens and IPV in women.

Second, relatively few studies have looked at associations of women's substance abuse with psychological IPV, and none of them examined whether differences in associations between women's substance abuse and physical IPV and respective associations between women's substance abuse and psychological IPV were statistically significant. Third, a major limitation of the studies of women's victimization is that most of them related history of alcohol and drug abuse to history of victimization. The problem with that approach is that substance abusing women may have more lifetime intimate partners because of the well-documented linkage between substance abuse and risky sexual behavior (Wu, Witkiewitz, McMahon, & Dodge, 2010). Women who have had more partners are probably more likely to also have had at least one violent partner, even after controlling for their substance abuse. Thus, there is need for research that examines associations between women's substance abuse and victimization within couples to control for confounding effects of number of partners (e.g., Testa et al., 2003).

The Current Study

In an earlier analysis of data from the Oregon Youth Study (OYS; Feingold et al., 2008, 2013), we examined the associations between lifetime dependence by the mid-20s on a number of specific substances (and classes of substances) and perpetration of IPV for men. We have since collected similar data on lifetime dependence (albeit at a generally older age) on psychoactive substances for 146 of the OYS men's female romantic partners. These women also reported on their victimization by their OYS male partners at one or more times during the course of a longitudinal study of couples, and their partners reported on the women's perpetration of physical and psychological IPV toward them at the same times. The current work extends the Feingold et al. (2008) study by conducting similar analyses that examine the associations between dependence on specific substances and perpetration of IPV for the OYS men's female partners and by studying IPV victimization as well as IPV perpetration.

The current study advances on knowledge gained from past research in several important ways. First, this study examines the associations of women's IPV with abuse of understudied substances (e.g., hallucinogens, amphetamines). Second, the study examines associations with psychological as well as physical IPV and tests the respective differences for statistical significance. Finally, the examination of associations of victimizations within couples removes biases resulting from substance abusing women having more intimate partners than women never dependent on alcohol or drugs.

Method

Participants

The data were obtained from the Couples Study associated with the OYS (Capaldi & Clark, 1998), which has followed at-risk men and their current romantic partners every 2 to 4 years from the late teens through the late 30s (Capaldi & Owen, 2001; Kim, Laurent, Capaldi, & Feingold, 2008). The OYS sampled 206 boys from two cohorts of fourth graders at risk for delinquency who were recruited over 2 consecutive years from schools with a higher incidence of delinquency in the neighborhood of a medium-sized city in the Pacific Northwest. Annual assessments for OYS continued into adulthood, across the years of the current study. The Couples Study began when the boys were ages 17-18 years. Each adolescent who had a current romantic partner was asked to participate with them in the Couples Study. The men who did not participate with a partner at ages 17-18 years (mainly because they did not have a partner at the time) were invited to do so the following year or the year after, to increase the sample size of couples. Thus, the first time point of the Couples Study (T1) consisted of paired sets of data gathered from the OYS man and his partner when the man was aged from 17-20 years.

Time 2 (T2) of the Couples Study began at ages 20-21 years. Again, men who did not participate with a partner in this year had opportunities to bring in a partner in either of the following years; thus, T2 was when men were aged 20-23 years. The five subsequent time points (T3-T7) of the Couples Study similarly involved a current romantic partner, but involved 2-year windows.

An adjunct study of women's substance use was funded to study women who had participated in Couples Study at least 2 times with a given OYS man from Couples Study T2 through T7. (T1 data were excluded because the measures of IPV used in the current study were not administered until T2.) Because some OYS men had participated two or more times with each of two different women from T2 through T7, only each man's most participating partners from those waves were included, thus ensuring independence of the women's data (i.e., only one partner per OYS man). Following T7, 160 women who were the most participating partners (and had participated at least 2 times in Couples) were identified, and 90% of them ($N = 146$) were recruited for an assessment of lifetime substance use problems that was conducted at the same time as T8. Thus, the woman used was the most participating partner of an OYS man over an approximately 10-year period. These women comprised the sample in the current analyses that had been assessed for substance abuse dependency. The women had a mean age of 35 years at the time of that assessment and were predominantly (84%) non-Hispanic Whites.

Procedure

Assessments at each wave took about 2 hours to complete and included interviews and questionnaires. An interviewer traveled to assess the participants living outside the local area at the time of the assessments. All the women were monetarily compensated for their participation at each assessment to which they contributed.

Measurements

Drug dependency—Women's drug dependency problems were determined from a psychiatric interview, Version 2.0 of the Composite International Diagnostic Interview (CIDI; World Health Organization, 1997), administered at T8. For each of a wide range of substances (including cannabis, cocaine, opiates, hallucinogens, sedatives, and amphetamines), the women were evaluated using the criteria for each of the six drug dependence symptoms that contribute to a lifetime-based diagnosis of substance dependency by DSM-IV-TR (American Psychiatric Association, 2000) for that substance. Women's substance problem status was classified in the following three ways.

1. A woman was coded as having a problem with a particular substance if she had ever experienced a symptom of dependence for that drug.
2. Dichotomous drug-problem category variables, derived from the preceding categorizations, divided the women into two groups: (a) women who were never exhibited a symptom of dependence or hard-drug problem (which excluded abuse of nicotine, alcohol, and/or cannabis) and (b) women who a hard-drug problem (dependency on at least one of the different illicit substances other than cannabis).
3. The dichotomous drug problem variables were used to sort the women into one of four mutually exclusive and exhaustive drug-dependency groups reflecting ascending levels of substance problem severity on the basis of the nature of the psychoactive substance used: (a) no problem, (b) alcohol problem but no other substance problem (not considering nicotine), (c) cannabis problem (with or

without a co-occurring alcohol problem), or (d) hard-drug problem (with or without co-occurring problems with alcohol and/or cannabis).

Intimate Partner Violence—IPV was measured by the Conflict Tactics Scales (CTS; Straus, 1979), a widely used instrument that assesses both physical and psychological aggression that was first administered at couples T2. Previous researchers who have measured IPV to examine its relation to substance abuse have used self-reports, partner reports, or a combination of the two (Foran & O'Leary, 2008). In our study, four CTS assessments were available for each couple, for (a) women's self-reported IPV perpetration, (b) women's self-reports of their victimization, (c) men's self-reports of his IPV perpetration, and (d) men's self-reports of their victimization. However, we used only two of the four measures (victimization from the women's self-reports and perpetration from the reports on her made by her partner) to avoid monomethod bias from using the same respondent to obtain the measures of both IPV perpetration and IPV victimization for each woman.

More specifically, women's perpetrations of physical and psychological IPV were assessed using the respective CTS scales completed by each woman's male OYS partner at each time she participated in the Couples Study. These IPV scores (sum of Likert-scale items representing both type of IPV and frequency of its perpetration) were first standardized separately within waves to control for age effects. Next, scores that were found to be outliers (i.e., had z scores greater than 3.0) were set to 3.0. Finally, a composite (i.e., time-aggregated) score for each type of IPV was calculated as the average of the CTS scores each woman received during the times she participated in the Couples Study, which was then standardized. Women's victimization was measured by women's self-reports at the same waves as were the men's reports of perpetration. Composite scores for physical and psychological IPV for women's victimization were calculated in the manner used to calculate scores for perpetration of both types of IPV.

Data Analyses

First, the stability of each of the four IPV composite scores, as determined from correlations across time points, was examined before IPV data were aggregated across the six Couples Study time points (T2-T7). Pairwise deletion was used in computing the correlation matrices because very few women participated in all six waves. A disadvantage of pairwise deletion is that different subsamples were used to compute the correlations between pairs of data obtained at different times. This would result most likely in greater variability in correlations across the matrices than would be expected with listwise deletion or if there were no missing data.

In order to facilitate comparisons with respective findings for the men from one of our prior studies (Feingold et al., 2008), we used the same research design as the earlier study to compare means in IPV scores between abusers and nonabusers of substances. The effects of each of eight substance dependence dichotomous variables (for lifetime history of an experience of dependency on alcohol, cannabis, cocaine, opiates, sedatives, amphetamines, hallucinogens, and any hard drugs) were examined using a series of 2 (Drug Status) $\times$ 2 (IPV Type: Physical or Psychological) split-plot analyses of variance (ANOVAs; with IPV

Type as the repeated-measures factor and Drug Status as the between-participants factor). Note that the main effect of IPV type in this analysis was meaningless because it tests the differences between the means of physical and psychological aggression across the women, which would be zero because both CTS measures were standardized prior to analysis. The main effects of drug status from the ANOVAs are mathematically equivalent to *t* tests for independent groups that compared substance abusers with nonabusers on IPV scores that were averaged across the physical and psychological CTS scales. The advantage of using ANOVA instead of *t* tests is that the interaction between IPV type and drug status tests whether respective differences between groups were the same for physical and psychological aggression, which is one of the unique contributions of the current study.

In addition, a 2 (IPV type: Physical or Psychological) $\times$ 4 (Substance Severity Category: none, alcohol, cannabis, and hard drugs) split-plot ANOVA for women's IPV perpetration and victimization assessed whether IPV was affected by (a) severity of type of psychoactive substance problem, (b) type of IPV, (c) and the interaction between the two factors. Next, the linear and quadratic trends of the means as a function of substance severity group (i.e., no problem < alcohol < cannabis < hard-drug, with differences between groups treated as equal) were examined.

Results

Data Reduction

Table 1 reports the intercorrelations of the IPV measures across time from T2 to T7, with the associations for perpetration presented in the top panel and the associations for victimization in the bottom panel. In each of the two matrices, the correlations among physical IPV scores are reported above the diagonal and the correlations among psychological IPV are reported below the diagonal. Psychological IPV scores were more stable than physical IPV scores, irrespective of whether the scores are men's reports of women's IPV (women's perpetration) or the women's reports of men's IPV (women's victimization). Scores along the diagonal, however, indicate that physical IPV at one time point was significantly associated with physical IPV at the next time point for both perpetration and victimization except for T6 to T7. Note that the prevalence and frequency of physical IPV decreases with age (Kim et al., 2008), which may have reduced the stability of scores. The intercorrelations among the four IPV composite scores were all statistically significant. The six coefficients ranged from .34 to .61 (see Table 2).

Association of Substance Dependence and IPV

We began by examining whether (a) women with a substance use problem history were higher in IPV (perpetration and/or victimization) than were other women and (b) whether drug problems had comparable effects on each of the two types of IPV (physical and psychological). A separate analysis was conducted for each substance as a dichotomous factor, and separately for IPV perpetration and IPV victimization scores as dependent measures.

Shown in Table 3 are the F ratios from the 2×2 ANOVAs, with the results with women's IPV perpetration as the outcome shown in the top panel and the results for women's victimization shown in the bottom panel. The main effects of substance dependencies indicated that the women with a history of abuse of hard drugs (including cocaine, opiates, amphetamines, and hallucinogens) perpetrated more IPV on their OYS male partner than did nondependent women. Dependencies on alcohol, cannabis, and sedatives were not significantly associated with a history of IPV perpetration. The interactions between type of IPV and substance were consistently nonsignificant, indicating that the effects of substance problems on IPV perpetration were about the same for physical and psychological IPV for all substances examined.

Women's substance dependencies were much less predictive of a woman being a victim rather than a perpetrator of IPV (see bottom panel of Table 3). Only a history of cocaine abuse significantly increased a woman's chances of being a victim of IPV, although there were trends, $p < .07$, for any hard-drug dependency and dependence on amphetamines to also predict IPV victimization of women. As in the analyses of women's IPV perpetration, interactions among type of IPV with substance problem were all nonsignificant, and effect sizes (η^2 s) for them were close to zero.

The next analysis pertained to the association of substance category (no substance problem, alcohol only problem, cannabis problem, hard-drug problem) with IPV. The 2×4 ANOVA to women's IPV perpetration found only a significant main effect of substance problem category, $F(3, 142) = 3.80$, $p < .05$. Averaged over IPV type (physical and psychological), mean IPV perpetration scores across categories were: $-.07$ for no substance problem, $-.27$ for alcohol-only problem, $-.19$ for cannabis problem, and $.40$ for hard-drug problem. The trend ANOVA found that the linear contrast of increases in IPV perpetration as a function of psychoactive drug severity was highly significant, $p < .05$, but the quadratic trend was also significant, $p < .05$. The linearity was the result of higher IPV perpetration for women with hard-drug dependency symptoms than for women with no such symptoms. The significant curvilinearity was because of the fact that women who only showed dependency symptoms for alcohol and/or cannabis perpetrated less IPV than the other women. Neither of the two corresponding 2×4 ANOVAs that used women's IPV victimization as outcomes found any significant effects.

Discussion

The associations between female IPV and substance dependencies were examined during an approximately 10-year study of women from the early 20s to mid-30s, on average, who were partners of at-risk men recruited for the Couples Study of the OYS and who were examined in prior work (Feingold et al., 2008). Women's perpetration of IPV and their victimization were measured separately using the CTS, with each form of IPV averaged over the times in which each woman participated in the study with the OYS man. Measures of both physical and psychological aggression were obtained, and ANOVAs were used to examine whether women grouped as dependent on nondependent on different psychoactive substances differed in mean IPV scores and whether these mean differences varied significantly between the two forms of IPV. It was found that association of substance abuse and IPV was

highly similar for physical and psychological IPV in every analysis. Overall, findings indicated that dependence on hard drugs, rather than alcohol or cannabis use, was predictive of women's perpetration of IPV. However, only cocaine dependence was associated with women's victimization.

IPV Perpetration

Previous research had found only a small association between women's abuse of alcohol and their perpetration of physical or psychological IPV (Foran & O'Leary, 2008; Moore et al., 2011). Thus, it was not a surprise that no significant association between alcohol dependence symptoms and IPV perpetration was observed in the current study of women. However, it is possible that there are moderators of this association, resulting in an association of alcohol abuse and IPV perpetration for women with certain characteristics (e.g., hostility; Schumacher, Homish, Leonard, Quigley, & Kearns-Bodkin, 2008).

Unlike with alcohol, studies have typically found women's abuse of drugs to be predictive of their IPV perpetration (e.g., Moore et al., 2008). Our finding that women dependent on cocaine perpetrated greater IPV was consistent with results from analyses of the NESARC data set (e.g., Afifi et al., 2012; Smith et al., 2012). However, research with the NESARC also found cannabis but not opiates to be predictive of women's IPV perpetration (Smith et al., 2012), whereas the current study found an association for opiates but not for cannabis. The current study also found associations between women's perpetration of IPV and dependence on amphetamines and hallucinogens, neither of which appears to have been examined before.

IPV Victimization

The finding that women's alcohol abuse was not predictive of their IPV victimization was consistent with findings from some previous studies (e.g., Carbone-López, et al., 2006; Testa et al., 2003) but at odds with others (Caetano et al., 2000; Flair et al., 2012). In contrast with results from other studies that had examined the association of women's drug abuse and IPV (e.g., Moore et al., 2008; Raiford et al., 2007; Testa et al., 2003), we failed to find that women who were dependent on drugs in general or on cannabis were more likely to have been victimized by a partner. However, the associations of dependence on amphetamines and hard drugs with women's victimization approached significance. Women dependent on cocaine were significantly more likely to have been victimized by their OYS partner than other women, which was the only significant association we found between women's drug abuse and their victimization. Consistent with this result, Moore et al.'s (2008) meta-analysis had specifically identified women's cocaine abuse as an important correlate of their victimization. In addition, studies analyzing the NESARC data also found an association between women's cocaine dependence and their victimization (Afifi et al., 2012; Smith et al., 2012).

Comparison with Findings from OYS Men

Given that we had previously examined associations of substance dependency symptoms and IPV perpetration (but not victimization) in the OYS men who were the romantic partners of the women included in the current study, using similar analyses (see Feingold et

al., 2008), it would be useful to compare the current findings to the earlier ones to address gender differences in the linkages between substance dependencies and IPV in the Couples Study. However, there are important differences between the prior study and the present one that preclude more than tentative conclusions about those gender differences. In the earlier study, the average age of the men when their lifetime dependency on different substances was assessed was about 10 years younger than the average age of the women in the current study, and physical IPV particularly decreases with age (Kim et al., 2008). In addition, perpetration of IPV was not measured with the CTS in the men's study because that study used T1 data (before the CTS was used), and IPV victimization was not included in that study. However, the CTS was used in a subsequent analyses of largely the same men that focused only on relating classes of substance abusers to classes of IPV perpetrators (Feingold et al., 2013) that replicated findings from the earlier study. Substance dependency symptoms in men were also measured by the CIDI, and the research design used to associate substance dependency symptoms with IPV perpetration was the same.

The current findings of associations of a history of dependency symptoms on hard drugs with a history of perpetration of IPV on an OYS partner replicated the earlier findings found in the men and, also, that dependency on sedatives was not predictive of perpetration of IPV. However, for the men but not for the women, alcohol and cannabis were both significantly associated with IPV. The sex difference regarding alcohol was consistent with prior research (see Foran & O'Leary's, 2008, meta-analysis). However, the findings regarding cannabis were a surprise because analyses of the NESARC data found a stronger association between cannabis dependence and IPV perpetration for women than for men (Smith et al., 2012). For both sexes, dependency on alcohol that was not accompanied by dependency symptoms on cannabis or hard drugs was not predictive of IPV perpetration.

Limitations and Conclusions

As with other studies using a cross-sectional paradigm, a key limitation of the current work was that data on substance-dependence symptoms were collected at a single time point, which prevents demonstration that the substance abuse preceded the IPV (Temple & Freeman, 2011). Most important, the substance dependency assessment was conducted only at the end of the study. Thus, it was not possible to do a prospective study or to model variations in IPV as a function of variations in substance dependency symptoms (e.g., Reyes, Foshee, Bauer, & Ennett, 2011; Schumacher et al., 2008). It is also possible the observed associations of substance dependency and IPV were the results of third-party variables that were correlated with both IPV and substance abuse (Leonard & Quigley, 1999). In addition, the current study measured substance abuse exclusively through dependence symptoms, rather than quantity/frequency of use. Research with the OYS men has found the two operationalizations of substance use have different antecedents (Capaldi, Feingold, Kim, Yoerger, & Washington, 2013) and thus may have different consequences (including IPV) as well.

In addition, there was a less than perfect relationship between self- and partner-reports of IPV. Thus, measurement issues would reduce associations, which may have lessened the ability to detect weaker effects of substance dependency on IPV.

Finally, the study involved a predominantly White and working-class sample, which limits the generalizability of the findings. Thus, the current findings need to be considered in conjunction with the wide range of other available studies we reviewed that addressed some of the same associations, such as meta-analyses (Foran & O'Leary, 2008; Moore et al., 2008) and the work done with the NESARC data set (e.g., Afifi, et al., 2012; Smith et al., 2012).

However, the current results have important implications for the potential efficacy of substance treatment for reducing risk toward a partner for IPV. Treating hard-drug dependence for both women and men may be more consequential than treating alcohol dependence. Further, prevention of hard-drug abuse may prevent development of substance problems that contribute to IPV. However, further research is needed to determine whether the most productive targets for intervention should be personality factors associated with drug dependence (e.g., anger and poor self-regulation; Arendt et al., 2007) or drug dependence itself.

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Table 1

Intercorrelations Among Women's CTS Scores Across the Couples Study Waves Using Pairwise Deletion

	<u>Women's IPV Perpetration</u>					
	T2	T3	T4	T5	T6	T7
Time 2 (T2)		.43**	.23	.18	-.12	.50**
Time 3 (T3)	.48**		.28*	.38**	.04	.45**
Time 4 (T4)	.55**	.57**		.68**	.38**	.24*
Time 5 (T5)	.42**	.48**	.61**		.54**	.26*
Time 6 (T6)	.55**	.55**	.67**	.67**		.03
Time 7 (T7)	.50**	.44**	.67**	.60**	.55**	
	<u>Women's IPV Victimization</u>					
	T2	T3	T4	T5	T6	T7
Time 2 (T2)		.37**	.35**	.01	.10	.69**
Time 3 (T3)	.54**		.25*	.41**	.06	-.07
Time 4 (T4)	.54**	.68**		.45**	.47**	-.07
Time 5 (T5)	.45**	.57**	.65**		.41**	-.06
Time 6 (T6)	.42**	.54**	.58**	.62**		-.05
Time 7 (T7)	.51**	.52**	.55**	.56**	.62**	

Note. Correlations for Physical Aggression are above diagonal and correlations for Psychological Aggression are below the diagonal. CTS = Conflict Tactics Scales.

Table 2

Intercorrelations Among Women's CTS Composite Scores (n = 146)

	<u>IPV Perpetration</u>		<u>IPV Victimization</u>
	Physical	Psych	Physical
Physical Perpetration			
Psychological Perpetration	.61		
Physical Victimization	.60	.46	
Psychological Victimization	.34	.55	.51

Note. Psych = Psychological. All correlations are statistically significant, $p < .001$. CTS = Conflict Tactics Scales.

Table 3

ANOVAs for Women's Intimate Partner Violence as a Function of Substance Dependency Symptoms

Women's IPV Perpetration						
	ANOVAs					
	Prevalence		Substance		Substance x IPV Type	
	<i>n</i> NP	<i>n</i> P	<i>F</i>	η^2	<i>F</i>	η^2
<i>Substances</i>						
Alcohol	89	57	.40	.003	.07	.001
Cannabis	119	27	3.14	.021	.54	.004
Cocaine	131	15	6.07*	.040	.21	.001
Opiates	138	8	6.84**	.045	.40	.003
Sedatives	137	9	.05	.000	1.73	.012
Amphetamines	124	22	10.91***	.070	2.04	.014
Hallucinogens	136	10	6.41*	.043	.02	.000
Any Hard Drug	110	36	10.38**	.067	1.61	.011
Alcohol	89	57	.22	.002	.02	.000
Cannabis	119	27	.99	.007	1.85	.013
Cocaine	131	15	7.48**	.049	.02	.000
Opiates	138	8	1.84	.013	.72	.005
Sedatives	137	9	.01	.000	1.96	.013
Amphetamines	124	22	3.53	.024	.03	.000
Hallucinogens	136	10	1.71	.012	.11	.001
Any Hard Drug	110	36	3.40	.023	.27	.002

Note. *n*NP = *n* no drug problem history, *n*P = *n* drug problem history.