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# The Impact of Comprehensive Services in Substance Abuse Treatment for Women With a History of Intimate Partner Violence

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**Abstract**

This study examines the impact of comprehensive services on posttreatment substance use among women with a history of intimate partner violence. The sample includes 1,123 women from 50 treatment facilities derived from the National Treatment Improvement Evaluation Study (NTIES). Generalized linear mixed modeling was used to determine whether a history of intimate partner violence moderates the association between service receipt and posttreatment substance use. Significant interactions were found between history of intimate partner violence and concrete ($p = .016$) and family services ($p = .023$) in predicting substance use.

**Keywords**

comprehensive services, intimate partner violence, substance abuse treatment

## Introduction

An extraordinarily high proportion of women who enter substance abuse treatment have experienced violence at the hands of a spouse or intimate partner (Clark & Foy, 2000; Dansky, Byrne, & Brady, 1999; Easton, Swan, & Sinha, 2000). Whereas estimates of the prevalence of intimate partner violence (IPV) in the general population range from 13% to 30% (Wilt &

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Olson, 1996), estimates for women in substance abuse treatment are approximated to be much higher, spanning from 25% to 57% (Gilbert et al., 2006). Research suggests that women who have experienced IPV enter treatment with multiple, complex problems resulting from experiences of trauma and isolation common within abusive relationships. Women who have experienced IPV may require a range of health and social services within the context of substance abuse treatment to address the psychological, physical, and social consequences of abuse and assist them to recover from violence and addiction.

In spite of the high rate of women entering substance abuse treatment with a history of IPV, little is known about the comprehensive services they receive in treatment, which may include family services, mental health counseling, medical care, concrete services such as education and employment training, and access services such as transportation and child care. Even less is known about the effect of comprehensive services on substance use outcomes for women with a history of IPV. In an attempt to address this gap in the literature, the present study will assess the impact of an array of comprehensive services on substance use among women with a history of IPV in substance abuse treatment. Drawing from a national sample of publicly funded substance abuse treatment programs, the article aims to determine whether women with and without a history of IPV differ with regard to (a) pre- and posttreatment substance use, (b) receipt of comprehensive services during treatment, and (c) the association between service receipt and posttreatment substance use.

## *The Nexus of Partner Violence, Substance Abuse, and Trauma*

Although epidemiological research suggests a strong association between substance abuse and IPV (Clark & Foy, 2000; Dansky et al., 1999; Easton et al., 2000), the specific mechanisms linking these two phenomena are not fully understood. Several theories have sought to explain the strong association between the two. One explanation suggests that trauma resulting from IPV may lead to substance use by women. Many, but not all, women who suffer abuse develop mental health problems related to their experience of violence, including posttraumatic stress disorder (PTSD), depression, and anxiety (Najavits, Weiss, & Shaw, 1997). Estimates of rates of PTSD among women with a history of IPV run as high as 64% compared with 1% to 12% in the general population (Golding, 1999). Women with such disorders may attempt to "self-medicate" as a strategy to cope with the traumatic effects of violence (Gilbert, El-Bassel, Rajah, Foleno, & Frye, 2001; Khantzian, 1997; Logan, Walker, Cole, & Leukefeld, 2002). Research suggests that the effects of past abuse, as manifested in disorders such as posttraumatic stress, can continue to impact women long after the experience of violence has ended (Herman, 1997; Najavits et al., 1997).

Conversely, substance use may increase the likelihood that a woman will be exposed to IPV, particularly in cases in which her partner is also using alcohol or drugs. Substance abuse may impair women's ability to recognize danger cues, carry out effective strategies to de-escalate conflict, or move to safety (see review in Logan et al., 2002). Drug use by both partners in the relationship may also compromise communication skills and facilitate escalation to violence during conflict. Thus, intimate relationships functioning within the context of substance abuse may be more likely to result in violent responses to relationship conflicts.

In particular, issues related to procuring, using, and splitting drugs have been identified as key sources of conflict and violence among partners (Gilbert et al., 2001). Taken together, these phenomena suggest a bidirectional relationship between substance use and violence in which both factors create a cycle of spiraling losses and increasing vulnerabilities (El-Bassel, Gilbert, Wu, Go, & Hill, 2005). A process of revictimization is implicated in this cycle in which past experiences of alcohol- and drug-related violence increase women's risk of additional abuse.

Women entering treatment who are presently involved with an abusive partner may face additional obstacles to treatment progress. Partners may isolate women from friends and family members to maximize control. This phenomenon can reduce women's chances of achieving success in recovery by cutting them off from access to emotional and material supports that are especially important for women's recovery (Gilbert et al., 2001). Moreover, several studies indicate that many substance-abusing women who are in an intimate relationship have a partner who also uses drugs (Amaro & Hardy-Fanta, 1995; El-Bassel, Gilbert, Rajah, Foleno, & Frye, 2001; Gilbert, El-Bassel, Schilling, & Friedman, 1997). Amaro and Hardy-Fanta (1995) found that some men use violence to sabotage their partner's recovery to maintain a companion with whom they can continue using. At least one study finds a positive association between women's pre- and posttreatment drug use and their partners' use of alcohol and drugs (Salomon, Bassuk, & Huntington, 2002). As such, it may be particularly difficult for women who are currently involved in a physically abusive relationship to make positive improvements in substance abuse treatment.

## *Differences in Treatment Outcomes*

Despite the high prevalence of abuse experiences among women in substance abuse treatment (Becker et al., 2005; Easton et al., 2000; Najavits et al., 1997), a majority of the studies reviewed found that neither physical nor sexual abuse is predictive of changes in substance use from pre- to posttreatment. Najavits and colleagues (1997) examined treatment outcomes among clients in substance abuse treatment with a diagnosis of PTSD. The study found that clients with PTSD made reductions in drug use similar to non-PTSD clients. Another study that compared outcomes for clients in substance abuse treatment with and without a history of physical and sexual abuse (Pirard, Sharon, Kang, Angarita, & Gastfriend, 2005) found that clients with an abuse history showed no differences in substance abuse outcomes at 1-year follow-up. Finally, several studies from the Los Angeles Target Cities project found that a history of prior physical and sexual abuse did not result in poorer outcomes in substance abuse treatment (Fiorentine, Pilati, & Hillhouse, 1999; Gil-Rivas, Fiorentine, & Anglin, 1996; Gil-Rivas, Fiorentine, Douglas Anglin, & Taylor, 1997).

Only one study found an association between intimate partner abuse and substance use (Salomon et al., 2002). This study, which focused on a population of poor, homeless single mothers, found that women with a history of IPV had 4.5 times the odds of using illegal drugs at discharge from substance abuse treatment than women without such a history. However, no differences were found between the groups with regard to alcohol use.

Overall, the findings of these studies suggest that the relationship between IPV, trauma, and substance use is complex. More research is needed to develop a thorough understanding of how IPV relates to trauma and substance use. Although the preponderance of evidence indicates that physical and sexual abuse are not associated with substance abuse treatment outcomes, this question has yet to be examined among women victimized by IPV. To date, the vast majority of studies examining the impact of abuse on substance use outcomes have used broad measures of abuse, and none has explicitly examined the impact of violence perpetrated by an intimate partner on substance use.

## *Impact of Comprehensive Services for Women*

Research suggests that many women benefit from comprehensive services in substance abuse treatment, regardless of whether they have experienced IPV (Grella, Joshi, & Hser, 2000; Marsh, D'Aunno, & Smith, 2000; Rowan-Szal, Chatham, Joe, & Simpson, 2000). Overall, women enter treatment with more co-occurring problems than men, including higher rates of mental health, family, and child care problems (Marsh, Cao, & D'Aunno, 2004). As such, they may by more likely to value access to comprehensive services. In a sample of women participating in mixed-gender substance abuse treatment programs, Nelson-Zlupko and colleagues (Nelson-Zlupko, Dore, Kauffman, & Kaltenbach, 1996) found that many women expressed a desire to receive services such as transportation, health care, and child care. Research also suggests that women are more likely to use services. A study by Marsh and colleagues (2004) that compared gender differences in service use found that women were significantly more likely to use a range of services, including access services, family counseling, and concrete services such as housing and financial assistance. Moreover, studies have found that receipt of comprehensive services by women improves outcomes in substance abuse treatment (Marsh et al., 2000; McLellan et al., 1998). A quasi-experimental field study conducted by McLellan and colleagues (1998) found that participants treated in enhanced programs—which included medical screenings, housing assistance, parenting classes, and employment services—showed significantly less substance use, fewer physical and mental health problems, and better social function at 6 months than participants in the control group. Another study determined that receipt of concrete services and receipt of mental health services were both associated with greater reductions in posttreatment substance use (Marsh et al., 2004).

## *Service Needs of Victims of Partner Violence*

No studies have explicitly examined the use of comprehensive services by women with a history of partner violence in substance abuse treatment. However, several studies have identified common issues among women victimized by IPV that are likely to require comprehensive services in addition to traditional substance abuse counseling. For example, a high proportion of women who have experienced partner violence develop mental health problems such as PTSD (Najavits et al., 1997) and chronic physical health problems (Larson et al., 2005). They may also face greater risk for contracting HIV/AIDS (Amaro & Raj, 2000).

As such, even those women who have experienced IPV in the *past* are more likely to enter substance abuse treatment with physical and mental health problems that require comprehensive services. Moreover, family counseling may be particularly important for women with a history of IPV. Women benefit from family-focused services that help to enhance social supports by reconnecting them with estranged family members. Such supports have been linked with improved mental health and reduced substance use (Logan et al., 2002).

For women entering substance abuse treatment who are currently involved with an abusive partner, access to comprehensive services may be even more critical. Women attempting to extricate themselves from abusive relationships in the context of treatment may require additional supports to achieve safety (Herman, 1997). Employment services have been linked to retention for all women and may be particularly important for women with a history of partner violence by helping them to create alternatives to dependency on an abusive partner (see review in Logan et al., 2002). In addition, access to housing and other concrete services are important in helping women to secure stable living arrangements and achieve economic stability, both of which are essential for women to break free from financial dependency (Amaro, Nieves, Johannes, & Cabeza, 1999). Finally, women with children may also benefit from family-focused services such as parenting and family counseling, enabling them to improve relationships with their children and address custody issues related to substance use that are common among women in abusive relationships (Amaro et al., 1999).

### *Differences in Service Receipt*

Although this prior research provides a useful frame of reference through which to consider the project at hand, none of the studies has focused exclusively on women, and only one examines partner violence as distinct from other forms of abuse. Thus, little is known about what services women with a history of partner violence receive in treatment. Little data are available regarding the rates of service receipt for women with a history of IPV. Moreover, it is unknown whether women with and without a history of partner violence show different relationships between service receipt and posttreatment drug use. It is the purpose of this study to examine the following research questions. First, do women with and without a history of partner violence differ in substance use at treatment intake? Second, do the two groups differ in substance use 1 year after the conclusion of treatment (measured as substance use in the past 30 days)? Third, do the two groups differ in their rates of receipt of comprehensive services in substance abuse treatment? Finally, does the association between receipt of comprehensive services and posttreatment substance use differ for women with and without a history of IPV?

## Method

### *Hypotheses*

The study will test the hypotheses listed below. These hypotheses are modeled after the research questions previously discussed and draw from the review of the literature. As prior

studies examining the impact of history of abuse on substance use have not yielded consistent findings, the directionality conjectured in the hypotheses are based on the findings of the only study that has specifically focused on the relationship between history of IPV and substance use (Salomon et al., 2002). As described above, this study found that women with a history of IPV had significantly higher rates of substance use than women without a history of IPV. Moreover, prior research indicates that women with a history of IPV are more likely to enter substance abuse treatment with special needs that require access to comprehensive services. In light of this, it is suggested here that they will be more likely to use and benefit from such services.

*Hypothesis 1*: Women with a history of partner violence will have a higher average level of substance use at treatment intake than women without such a history.
*Hypothesis 2*: Women with a history of partner violence will have a higher average level of substance use at treatment discharge than women without such a history.
*Hypothesis 3*: Women with a history of partner violence will receive more comprehensive services during treatment than women without such a history.
*Hypothesis 4*: The relationship between receipt of comprehensive services and post-treatment substance use will be positive for all women but will be stronger for women with a history of IPV.

## Analytic Sample and Measures

This study uses data from the National Treatment Improvement Evaluation Study (NTIES; Gerstein et al., 1997). NTIES is a longitudinal multisite survey of substance abuse treatment programs serving underserved populations including racial and ethnic minorities, youth, public housing residents, welfare recipients, and those involved in the criminal justice system. The study was conducted by the National Opinion Research Center with assistance from Research Triangle Institute. It was designed to evaluate the implementation and effectiveness of substance abuse treatment programs in major metropolitan areas of the United States receiving funding from the Center for Substance Abuse Treatment of the Substance Abuse and Mental Health Services Administration. Data for both organization- and client-level variables were obtained. Client and service data were acquired through computer-assisted personal interviews conducted by 70 trained interviewers. Data were obtained at treatment intake, treatment exit, and 12 months after treatment exit. Administrative data were collected by a team of approximately 15 research assistants, who were responsible for conducting interviews with treatment program administrators and clinical directors at two time points during a 12-month period. Design and sampling procedures employed in the NTIES study can be found elsewhere (Gerstein et al., 1997; Marsh et al., 2004).

The NTIES data set includes 4,526 clients who completed all intake, treatment discharge, and follow-up interviews. This study excluded clients from correctional facilities ($N = 1,384$) and men from other treatment modalities ($N = 2,019$). The final analytic sample consisted of 1,123 female clients from 50 service delivery units. Together, 734 Black (65.3%), 147 Hispanic (13.1%), and 242 White women (21.6%) are included in the sample. The NTIES

sample is largely comparable with other large-scale treatment studies, except that the NTIES sample contains higher proportions of Blacks and Hispanics (Gerstein et al., 1997).

*Dependent variable: Posttreatment substance use*. The dependent variable in the study is self-reported past-month substance use at approximately 12 months after completion of the program. Respondents were asked the number of days in the last 30 days that they had used the five most frequently used licit and illicit substances, including marijuana, crack, cocaine powder, heroin, or alcohol. The dependent variable was a sum of the number of days in the past 30 days that each of the five most common drugs was used, with a maximum score of 150. The specific questions from the NTIES survey that were included in the study's substance use measure were taken directly from the Addiction Severity Index's (ASI) Drug/Alcohol Domain (Gerstein et al., 1997). The ASI is currently the most widely used assessment instrument in the field of addictions and has been empirically validated for use as a measure of addiction severity in outcomes-focused studies (McLellan, Cacciola, Alterman, Rikoon, & Carise, 2006). However, because not all questions from the ASI were used in the NTIES studies, no studies to date have specifically examined the correlative or criterion validity of this measure against established instruments (Gerstein et al., 1997).

*Explanatory variables: Services received*. The study's explanatory variables include six categories of services received in substance abuse treatment. These categories include access services (transportation and child care), substance abuse counseling services (drug/alcohol counseling, 12-step meetings, drug prescription for alcohol/drug problems), family and life skills services (parenting, domestic violence counseling, family services, assertiveness training, life skills, family planning, nonmedical pregnancy services), health services (health services, AIDS prevention services, medical pregnancy services), mental health services (mental health counseling or treatment), and concrete services (school, job skills, housing, help collecting benefits, English training, help getting alimony/child support). At treatment exit, clients were asked whether they had received each of these services. The measure of service use in each category was calculated by adding the number of services used by each individual. As each service category was constructed from a different number of services, the measurement of each category was normalized by its mean and standard deviation to allow for comparison of coefficients.

*Control variables: Organizational-level variables*. Organizational-level variables that have been found to be significant predictors of posttreatment substance use in prior research were included as control variables. Derived from administrative interviews, these variables included accreditation, modality, ownership, on-site service availability, and counseling frequency. For accreditation, administrators reported whether their program was accredited by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Having no accreditation was referent. For modality, administrators indicated whether a program was a methadone maintenance, outpatient nonmethadone, short-term residential, or long-term residential facility. Outpatient nonmethadone program was the referent category. Ownership was a dichotomous variable in which administrators indicated whether a facility was private (private for-profit or private not-for-profit) or public (local, state, federal, or tribal government). Public status was referent. On-site service availability measured the number of on-site services provided. Frequency of counseling was a measure of resource allocation in which the administrator noted how often the typical patient is scheduled to receive individual counseling.

*Client-level variables*. At treatment entry, clients were asked a number of questions about individual characteristics. Client-level control variables included race (non-Hispanic Black, Hispanic, non-Hispanic non-Black, where non-Hispanic non-Black was the referent category), age (years from date of birth), education (years in school), history of IPV (have you ever been beaten by a spouse or partner), and health status (whether health limits the work you can do). Respondents were also asked to describe their source of payment for services: private, public, or uninsured. Previous alcohol or drug treatment experience and their pretreatment drug use are also included as client-level control variables. The pretreatment substance use variable was constructed in exactly the same way as the dependent variable, posttreatment drug use, by summing the number of days in the last 30 days that each respondent used the five most frequently used substances: alcohol, marijuana, cocaine, cocaine powder, and heroin. Finally, service duration was measured as a continuous variable indicating the length of treatment in weeks between first and last day of the client's treatment.

## Statistical Analysis

*Missing data imputation*. A multiple imputation procedure (Rubin, 1987) was conducted to fill in the missing values by assuming the data were missing at random (Little & Rubin, 1987). Each missing value was replaced with five plausible values using the Markov Chain Monte Carlo (MCMC) method (Schaefer, 1997). Imputation was conducted for the organizational variables and client-level variables independently. The resulting five imputed data sets for organizational- and client-level data were merged for further statistical analysis, using generalized linear mixed models (GLMM) to account for potential within-treatment organization correlation of substance use.

*Descriptive analyses*. Descriptive comparisons were made of organizational, service, individual, and outcome characteristics for women with and without a reported history of partner violence. Chi-square tests were used to test for group differences for categorical variables, and analysis of variance (ANOVA) was used to test for differences for continuous variables.

*Identifying correlates of treatment outcome*. To assess the differential association between services received and posttreatment substance use for women with and without a history of partner violence, GLMMs were used. GLMMs are extensions of linear mixed models for non-Gaussian-distributed outcome variables. A Poisson distribution was assumed with a log link function and an overdispersion parameter in the models. Second, to account for potential correlation within service delivery units, a risk in multi-level data sets like NTIES, an exchangeable covariance structure was assumed among clients within the same service delivery organization. The model investigated the main effects of the explanatory variable, service received (access, substance abuse counseling, family/life skills, health, mental health, concrete services), and the control variables of organizational characteristics (modality, program quality accreditation, ownership, on-site service availability), client characteristics (gender, race, age, education, whether health limits work, history of IPV, prior mental health visit, prior substance use, prior alcohol/drug treatment, payment source), and the interactions between history of IPV and specific service characteristics.

*IPV as moderator variable*. History of IPV was conceptualized as a moderator variable that could differentially influence the direction and/or strength of the relationship between the explanatory variables (services received) and the dependent variable (posttreatment substance use; Kraemer, Wilson, Fairburn, & Agras, 2002). A moderator variable is an independent variable that is antecedent or exogenous to an outcome variable (Baron & Kenny, 1986). When there is a significant interaction between the moderator and explanatory variables, a moderator hypothesis is supported. In this case, the moderating variable, reported current or past IPV, is interacted with the series of six service variable categories (explanatory variables). Differences in services affecting treatment outcome were evaluated in terms of both main effects (association with outcomes for all women) and interaction effects (association with outcomes only for women with a history of IPV). All analyses were conducted in SAS 9.1.3.

## Results

### *Descriptive Statistics*

Table 1 shows differences in client and organizational characteristics, service use, and posttreatment substance use for women with and without a partner violence history. In the sample, 519 out of 1,123 women reported current or past experience of IPV (46.2%). For the purpose of clarity, women with a history of IPV will be referred to as IPV+ women, and those without such a history will be referred to as IPV– women.

*Differences in client characteristics by history of IPV*. IPV+ women showed few differences in client characteristics when compared with IPV– women. No differences between the two groups were found with regard to race, age, self-reported health status, or type of payment used to finance treatment. However, IPV+ women entered treatment with slightly less education. Moreover, IPV+ women were significantly more likely to have received prior treatment for substance abuse, with approximately 70% of IPV+ women reporting previous treatment experience.

*Differences in organizational characteristics by history of IPV*. IPV+ women differed from other women in the types of facilities in which they received treatment. IPV+ women were almost half as likely to have received treatment in a methadone clinic; only 8.3% entered this treatment modality, as compared with 15.6% of other women. Moreover, IPV+ women were more likely to enter long-term residential treatment and outpatient treatment than IPV– women. IPV+ women were less likely to enter short-term residential programs. Across treatment modalities, IPV+ women were more likely to receive services in organizations in which services were available on-site at their facility than other women.

*Differences in service use by history of IPV*. Women with and without a history of IPV also differed in service use patterns. Services were characterized in terms of client reports of the different types of services they received, including access services (transportation and child care), substance abuse counseling, family counseling, mental health counseling, and concrete services (school, job skills, housing, help collecting benefits, help getting alimony/

**Table 1.** Descriptive Statistics

| Variable | Women without IPV history ($n$ = 604) | Women with IPV history ($n$ = 519) | $p$ value |
|---|---|---|---|
| Individual | | | |
| Race/ethnicity | | | |
| African American | 66.90% | 63.60% | .438 |
| Latino | 12.30% | 14.10% | |
| White | 20.90% | 22.40% | |
| Age (in years) | 31.57 | 32.22 | .147 |
| Education (in years) | 11.4 | 11.1 | .006** |
| Health | 1.45 | 1.49 | .359 |
| Prior treatment | 57.00% | 69.40% | <.001*** |
| Private insurance | 21.00% | 20.80% | .941 |
| Public insurance | 70.50% | 73.40% | .288 |
| Uninsured | 9.40% | 7.90% | .397 |
| Duration (in weeks) | 15.45 | 15.96 | .584 |
| Organizational | | | |
| Modality | | | |
| Methadone | 15.6% | 8.3% | <.001*** |
| Outpatient | 27.8% | 32.6% | |
| Short-term residential | 23.3% | 20.8% | |
| Long-term residential | 33.3% | 38.3% | |
| Accreditations (total number) | 1.77 | 1.75 | .471 |
| Ownership | 2.05 | 2.08 | .402 |
| Onsite services (total number) | 7.72 | 7.88 | .045* |
| Frequency (sessions per week) | 2.09 | 2.13 | .346 |
| Services[a] | | | |
| Access services | 0.457 | 0.659 | <.001*** |
| Substance abuse counseling | 1.447 | 1.528 | .066 |
| Concrete services | 0.811 | 0.913 | .115 |
| Family counseling | 1.954 | 2.08 | .215 |
| Health services | 2.045 | 2.16 | .023* |
| Mental health services | 0.657 | 0.892 | .004** |
| Outcomes[b] | | | |
| Drug use change | 7.39 | 7.47 | .907 |
| Pretreatment | 14.8 | 14.85 | .992 |
| Posttreatment | 7.51 | 7.33 | .820 |

Note: IPV = intimate partner violence.
a. Average number of services received.
b. Average number of days in the past 30 days that the client reports use of each of five substances.
$p < .05$. **$p < .01$. ***$p < .001$.

child support). Overall, IPV+ women were more likely to use comprehensive services in substance abuse treatment. Significant differences were found in use of access services (65.9% of IPV+ women vs. 45.7% of IPV– women) and mental health services (89.2% of IPV+ women vs. 65.7% of IPV– women). On average, IPV+ women also attended a greater number of medical care visits than other women.

*Differences in posttreatment substance use by history of IPV*. Despite these differences in treatment characteristics and service use, the two groups of women did not differ in their posttreatment substance use at the bivariate level.

### *Differences in the Relationship of Services to Posttreatment Substance Use*

Table 2 presents the results of fitting a GLLM to explain posttreatment substance use. This model controls for client and organizational characteristics and aims to identify the specific services and service × IPV interactions that predict posttreatment substance use for women. The analysis attempts to demonstrate the relationship of specific service components on outcome after controlling for other factors, such as client and organizational characteristics that have been shown in prior research to influence outcome (Marsh et al., 2004).

*History of IPV as a moderator*. These findings suggest that history of IPV is significantly related to posttreatment substance use as a moderator variable. Receipt of family services, which include parenting, domestic violence counseling, family services, assertiveness training, life skills, family planning, and nonmedical pregnancy services, was associated with decreased posttreatment substance use for IPV+ women but not for IPV– women ($p = .023$). In addition, findings suggest that reductions in posttreatment substance use were more strongly related to receipt of concrete services for IPV+ women ($p = .016$).

*Relationship of service receipt to posttreatment substance use*. The findings of the study indicate that receipt of comprehensive services in substance abuse treatment is associated with reduced past-month drug use at 12 months posttreatment for all women in the sample. The generalized mixed modeling results indicate that receipt of substance abuse counseling, including drug/alcohol counseling, 12-step meetings, and drug prescription for alcohol/drug problems, was significantly associated with reductions in posttreatment substance use ($p = .023$).

## Discussion

Taken together, the findings of this study highlight the importance of comprehensive services in substance abuse treatment for women with a history of IPV. In congruence with other studies of the prevalence of IPV in substance abuse treatment, this study found that nearly half of the women in the sample reported current or prior experience in an abusive intimate relationship. The study also revealed that the experience of IPV was not directly associated with substance use before or after treatment. Women with and without a history of IPV entered treatment with similar levels of substance use and achieved comparable reductions in use at 1 year after the conclusion of treatment. As such, no support was found for Hypothesis 1 or

**Table 2.** Results of Generalized Linear Mixed Models

| Parameter | Estimate | *SE* | *p* value |
|---|---|---|---|
| Intercept | 1.896 | 0.911 | .055 |
| Black | 0.057 | 0.040 | .175 |
| Latino | –0.142 | 0.060 | .034* |
| Age | –0.017 | 0.002 | <.0001*** |
| Education | –0.063 | 0.007 | <.0001*** |
| Health | 0.002 | 0.027 | .933 |
| IPV | –0.027 | 0.045 | .573 |
| Pretreatment drug use | 0.014 | 0.001 | <.0001*** |
| Prior treatment | 0.220 | 0.028 | <.0001*** |
| Private insurance | 0.136 | 0.194 | .538 |
| Government insurance | 0.308 | 0.191 | .209 |
| Uninsured | 0.362 | 0.201 | .170 |
| Duration | –0.004 | 0.002 | .023* |
| Accreditation | –0.220 | 0.295 | .467 |
| Methadone | 0.775 | 0.325 | .026* |
| Short-term residential | 0.252 | 0.361 | .491 |
| Long-term residential | 0.338 | 0.284 | .247 |
| Ownership | –0.194 | 0.245 | .436 |
| Onsite services | 0.132 | 0.079 | .106 |
| Frequency | –0.120 | 0.204 | .567 |
| Access services | –0.043 | 0.023 | .086 |
| Substance abuse services | –0.067 | 0.025 | .023* |
| Concrete services | –0.141 | 0.024 | <.0001 |
| Family counseling | –0.014 | 0.037 | .716 |
| Health services | –0.121 | 0.059 | .195 |
| Mental health counseling | –0.040 | 0.024 | .136 |
| IPV × Access | 0.020 | 0.028 | .494 |
| IPV × Substance abuse | –0.025 | 0.044 | .601 |
| IPV × Concrete | –0.090 | 0.034 | .016* |
| IPV × Family | –0.129 | 0.042 | .023* |
| IPV × Health | 0.172 | 0.074 | .139 |
| IPV × Mental health | –0.067 | 0.033 | .071 |

Note: IPV = intimate partner violence. Dependent variable: posttreatment substance use.
$p < .05$. **$p < .01$. ***$p < .001$.

Hypothesis 2. This finding complements prior literature on the impact of physical and sexual abuse on substance use outcomes, which have found no difference between clients who have been abused and those who have not with regard to substance use outcomes (Fiorentine et al., 1999; Gil-Rivas et al., 1997; Pirard et al., 2005).

In contrast, the study results show some support for the claims made in Hypothesis 3 and Hypothesis 4. Women with a history of partner violence were significantly more likely to receive comprehensive services during treatment than women without such a history. The study findings also suggest the presence of a significant relationship between posttreatment substance use and some—but not all—comprehensive services examined in the study. In particular, receipt of concrete services and receipt of substance abuse services were significantly associated with reduction in posttreatment substance use for all women. However, receipt of concrete services was more strongly associated with posttreatment substance use for women with a history of IPV. Moreover, family services predicted posttreatment substance use only for women with such a history. These findings provide tentative support for the claim that the relationship between comprehensive service receipt and posttreatment substance use is stronger for women who have been victims of IPV.

## *Implications for Addressing IPV in Treatment*

An important contribution of this study is the finding that women victimized by IPV may require a unique array of supportive services to facilitate improvement in substance abuse treatment. As a result of their experience of abuse, women with a history of IPV enter treatment with more complex service needs. Although the impact of such violence may not translate directly into higher rates of substance use, it is exemplified in their higher rates of receipt of comprehensive services and the stronger association between service receipt and posttreatment substance use for women with a history of IPV. In particular, services that connect this group of women with concrete resources and family-focused counseling and services are particularly important in facilitating their treatment success.

These results are congruent with literature on abuse and trauma among women in substance abuse treatment, which stresses the need to provide resources to help women achieve safety by meeting immediate subsistence needs, stabilizing their families, and facilitating access to social supports. Amaro and Hardy-Fanta (1995) suggest that women with children may derive benefit from family-focused services such as parenting training and family counseling by enabling them to improve relationships with their children and address custody issues related to drug use that are common among women in abusive relationships. Moreover, access to housing and other concrete services are important in helping women secure stable housing and achieve economic stability, both essential for women to break free from dependency (Amaro et al., 1999).

## *Treatment Implications*

The findings of this study highlight at least two implications for treatment providers. First, they suggest that a critical first step in the treatment process for women with a history of IPV is to assist them to increase their safety and personal stability. Women who are extricating themselves from dangerous relationships may not be able to fully benefit from standard substance abuse treatment programs and other therapeutically focused interventions until their immediate needs for safety and subsistence have been secured. As such, treatment programs

that focus solely on treating substance abuse and mental health disorders may fail to "meet clients where they are." If women lack stable housing and steady sources of income and are overwhelmed by the ramifications of IPV for their children and families, they may be unable to focus their attention on substance abuse recovery. Thus, comprehensive services that work concurrently with traditional treatment to address women's immediate needs are likely to be most effective in treating this population.

In addition, this study raises important questions regarding the availability of these services for women with a history of IPV in substance abuse treatment. In this study, women with a history of IPV were significantly more likely to use a range of comprehensive services in substance abuse treatment, including mental health counseling, medical care, and services to facilitate access to treatment, such as child care and transportation. Moreover, given that women with a history of IPV derived significantly greater benefit from receipt of concrete and family services, these two services types are particularly important for treatment programs serving this group of women. To improve substance abuse treatment outcomes for this group, there may be a need for providers to develop new assessment and treatment planning practices to insure receipt of these services.

## Research Implications

Moving forward, further empirical study is required that can parse out which specific services, and what level of service intensity, are most strongly associated with positive outcomes for women in substance abuse treatment. This study, which represents a first step toward the impact of comprehensive services for women with a history of IPV in substance abuse treatment settings, only examined how service categories—regardless of dose—were associated with substance use outcomes. In addition, further research is needed to examine the actual experiences of women in treatment to understand *how* receipt of these services by women victimized by IPV leads to decreases in substance use. Although this study identifies a broad association between service receipt and posttreatment substance use, further research is required to determine what levels of service intensity and duration are most effective in assisting women with a history of IPV to recover. Finally, it will be important to talk with the women themselves about the particular services they would find most helpful to assist them in recovery from substance abuse and addiction. Several studies have interviewed women victimized by IPV in substance abuse treatment (Amaro & Hardy-Fanta, 1995; El-Bassel et al., 2001; Gilbert et al., 2001), but none has focused specifically on their needs for comprehensive services.

## Study Limitations

An important limitation of the study results from the sample selection procedure used for the NTIES data, which employed purposive sampling of treatment programs at the first sampling stage and probability sampling of clients within programs at the second sampling stage. As such, the characteristics of the treatment organizations are not representative of the population of substance abuse treatment organizations in the United States. Furthermore,

purposive sampling at the first stage eliminates the capacity to assess nonresponse bias, that is, the extent to which study participants and nonparticipants differed. However, some information about response bias is provided by Gerstein and Johnson (2000), who compared the NTIES response rate to other large scale follow-up studies and determined the bias introduced at the first sampling stage of NTIES was limited.

A second important limitation of this study is that the NTIES data did not provide information about *when* women experienced partner violence. As such, women in the IPV+ group may include women who were currently experiencing IPV as well as women who had experienced such violence in the past. Further research is needed to address this limitation. A third limitation of the study relates to the study's reliance on self-report data on service receipt. A concordance analysis checking women's self-report of service receipt against treatment programs' administrative records of services provided found only a moderate level of agreement between the two measures. This analysis found that women were less likely to report service receipt than the administrative data indicated, suggesting that clients may not have been successful in recognizing/reporting service receipt.

In sum, this study highlights the value of comprehensive services for women with a history of IPV in substance abuse treatment. Results suggest that access to such services may be particularly important for women abused by an intimate partner, given the complex problems and service needs they are likely to bring to the treatment process. In particular, this study indicates that access to concrete services and family-focused programs are especially critical to these women's recovery from addiction. In light of the reality that almost half of women who enter substance abuse treatment report a history of intimate partner victimization, such findings have important implications for substance abuse treatment. To treat women affected by IPV effectively, providers can benefit from developing treatment approaches that integrate concrete resources and family-focused services into treatment programs.

## Authors' Note

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