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## Initiation and Retention in Couples Outpatient Treatment for Parents with Drug and Alcohol Use Disorders

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### Abstract

The focus of the current study was to identify mental health, relationship factors, substance use related problems, and individual factors as predictors of couples-based substance abuse treatment initiation and attendance. Heterosexual couples with children that met study criteria were invited to attend 12 sessions of outpatient behavioral couples therapy (BCT). Men were more likely to initiate treatment if they had a higher income, had greater relationship satisfaction, were initiating treatment for alcohol use disorder only, if they were younger when they first suspected a problem, and had higher depression but lower hostility or phobic anxiety. Men attended more treatment sessions if they reported less intimate partner victimization, if they sought treatment for both alcohol and drug use disorder, if they were older when they first suspected a substance use problem, and if they were more obsessive-compulsive, more phobic anxious, less hostile, and experienced less somatization and less paranoid ideation. For women, treatment initiation was associated with less cohesion in their relationships, more somatization, and being older when they first suspected an alcohol or drug use problem. Trends were observed between women's treatment retention and being older, experiencing more somatization, and suspecting drug-related problems when they were younger; however, no predictors reached statistical significance for women. Results suggest that different factors may be associated with men and women's willingness to initiate and attend conjoint treatment for substance abuse.

### Keywords

Addictive Behaviors; Behavioral Couples Therapy; Treatment Initiation; Treatment Retention; Alcohol and Drug Use

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Engaging and retaining clients in outpatient substance abuse treatment is challenging (Dutra et al., 2008; Mitchell & Selmes, 2007). Barriers to initiating and completing substance abuse treatment have been examined in women randomized to (Graff et al., 2009) or given the choice of individual or couples-based treatment (McCrary, Epstein, Cook, Jensen, & Ladd, 2011), men in couples therapy for drug abuse (Kelly, Epstein, & McCrary, 2004), individuals receiving outpatient treatment for alcohol, drugs, or both (McCaul, Svikis, & Moore, 2001; Weisner & Matzger, 2002), and those receiving detoxification, residential, or outpatient treatment (Weisner, Mertens, Tam, & Moore, 2001). Although couples-involved

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approaches to substance abuse treatment are often shown to be more efficacious than individual treatments (e.g., McCrady, Epstein, Cook, Jensen, & Hildebrandt, 2009; O'Farrell & Clements, 2012), couples treatment rests on the willingness of both partners to take part in treatment. In the present study we examined treatment initiation and retention among couples with children who were invited to couples treatment. One or both partners met criteria for alcohol, drugs, or both.

## Initiation Rates for Substance Abuse Treatment

In a study conducted in the United Kingdom, 25% of those seeking treatment for drug abuse and 37% seeking treatment for alcohol abuse did not attend their first treatment session (Mitchell & Selmes, 2007). In contrast, Delgadillo et al. (2015) found only 42% of participants who met criteria for substance abuse and potentially met criteria for depression and consented to take part in an intervention study, actually attended at least one treatment session. After combining rates across eight studies, Kelly et al. (2004) argued that for every 100 callers attending the first treatment session, between 26 and 46 will actually attend their first treatment session.

Among participants who begin treatment, a meta-analysis of 34 controlled psychosocial treatment studies found approximately one-third of participants dropped out before treatment completion (Dutra et al., 2008). Graff et al. (2009) found, on average, women attended 68.5% of individual or couples treatment sessions for alcohol abuse. However, Gregoire and Schultz (2001) found less than one-quarter of parents referred to substance abuse treatment from child welfare services completed treatment. The difference in attendance may reflect the nature of the samples. Women in the Graff et al. study volunteered for alcohol abuse treatment, whereas parents involved in child welfare services may reflect those ordered to attend treatment or with more severe substance use and barriers that may decrease substance abuse treatment attendance.

## Predictors of Substance Abuse Treatment Initiation

At present there is conflicting evidence on whether variables such as sex, type of substance use, and severity of use are associated with treatment initiation and attendance. In a study of individuals ( $N = 1204$ ) seeking outpatient treatment for alcohol or drug abuse, individuals with alcohol use disorder only were more likely to begin treatment. Further, among those with alcohol use disorder, women were more likely to begin treatment than men. Among those seeking treatment for drug abuse, greater severity and employment were associated with treatment initiation (Weisner et al., 2001). In a longitudinal study that examined alcohol treatment-seeking activities among a population with alcohol problems, Weisner and Matzger (2002) found that drug use severity was positively associated with initiating treatment both 1 and 3 years after initial assessment.

Among men who initiated couples-therapy for men's substance abuse, higher income, partner abstinence from alcohol or drug use, referral by local program and practitioner (as compared to responding to newspaper advertisements), longer delay before their first appointment, and older age (a non-significant but large effect) were associated with

treatment initiation (Kelly et al., 2004). When all significant individual predictors were examined simultaneously, only treatment referral emerged as a significant predictor of treatment initiation.

## Predictors of Substance Abuse Treatment Retention

Although being White, male, and higher levels of employment were associated with higher retention, type of substance use type (alcohol only, drug only, or polysubstance abuse) was not associated with retention among outpatients (McCaul et al., 2001). Among women receiving individual versus couples treatment for alcohol abuse, better retention was associated with older age, fewer symptoms of alcohol dependence, having a partner who drank, marital satisfaction, and a match between preferred and assigned treatment (Graff et al., 2009). Further, later age of onset has been associated with better treatment engagement through assigned homework (Graff et al., 2009).

Comorbid psychiatric disorders have been associated with poorer substance abuse treatment engagement (typically thought of a step between initiation and full participation; Brown, Bennett, Li, & Bellack, 2011). Further, major depressive disorders have been associated with relapse from heroin, cocaine, or alcohol use disorder (Hasin et al., 2002). Similarly, there was a non-significant tendency for individuals with drug-dependence and antisocial personality disorder (ASPD) to have greater dropout from treatment as compared to those with drug dependence but without ASPD (Kokkevi, Stefanis, Anatasopoulou, & Kostogianni, 1998). Collectively, studies suggest that higher income, employment, and positive feelings toward family members may be associated with greater compliance to treatment, whereas comorbid mental health disorders may reduce program retention.

Both results of individual studies (Cisler, Silverman, Gromov, & Gastfriend, 2010; Conners, Grant, Crone, & Whiteside-Mansell, 2006; McKay, 2005; Simpson, Joe, & Brown, 1997; Stark, 1992) and large scale, multi-site, multi-program studies conducted in the United States (Greenfield et al., 2004; Simpson, Joe, & Brown, 1997; Zhang, Friedmann, & Gerstein, 2003) and Australia (Darke et al., 2005) have shown that retention in treatment has widely been confirmed as the most reliable predictor of improved outcomes. The importance of program adherence cannot be underestimated as continued substance abuse not only has implications for the physical and emotional health of those who abuse substances, but substance abuse has consequences for their loved ones. For instance, among men being treated for a history of alcohol use disorder and partner violence, relapse was associated with greater likelihood of subsequent partner violence (e.g., Mignone, Klostermann, & Chen, 2009).

Beyond the clinical consequences, lack of follow-through from intake to attendance and high levels of dropout may unduly burden program staff and have serious implications for nonprofit substance abuse programs that rely largely on state or local funds or non-private health insurance plans with little or no co-payments. Moreover, a critical review of nine studies that were among the first funded outpatient clinical trials for substance abuse treatment revealed recruitment was a universal challenge regardless of therapy or population. Project staff often had to increase their recruitment and retention efforts, which reduced their

ability to address other aspects of the study. These challenges reduced staff morale, extended time lines, reduced power to detect effective treatments (possibly making erroneous conclusions regarding efficacy), and often required investigators to seek additional funding (Ashery & McAuliffe, 1992).

## Couples Treatment for Alcohol or Drug Use Disorder

Couples approaches add a level of complexity to therapy. Not only does the client have to agree to treatment, their partner must also agree to attend and support their partners' recovery attempts. One such conjoint treatment for substance abuse is Behavioral Couples Therapy (BCT). BCT is designed to reduce substance use and improve relationship functioning (O'Farrell & Fals-Stewart, 2006). Not surprisingly, women with alcohol use disorder assigned to couples treatment missed significantly more sessions than those assigned to individual treatment (Graff et al., 2009). Further, women seeking treatment for alcohol abuse who chose couples treatment over individual treatment were significantly less likely to enter treatment (McCrary et al., 2011). In fact, the lack of partner support was one of the reasons women entering treatment for alcohol abuse chose individual versus couples' treatment (McCrary et al., 2011). Despite these drawbacks, reviews have shown that BCT results in greater reductions in frequency and negative consequences from use and improved relationship satisfaction, compared to individual-based treatments (Klostermann et al., 2011; Meis et al., 2013; O'Farrell & Clements, 2012; Powers, Vedel, & Emmelkamp, 2008).

Further, women who took part in BCT showed greater reduction in alcohol use and fewer alcohol-related problems as compared to those who took part in individual treatment (Schumm, O'Farrell, Kahler, Murphy, & Muchowski, 2014). Thus, while BCT may be an effective option for some couples in which one of both partners have substance use disorder, relatively little research has examined why some couples choose to initiate and continue in BCT. In one of the few studies that examined predictors of couples-based treatment for male partners' alcohol abuse, couples where husbands had higher levels of education, younger age, full-time employment, higher relationship satisfaction, more outpatient help in the previous year, and more alcohol-related arrests were more willing to attend BCT. In contrast, higher women's relationship satisfaction, greater distance to treatment location, and more alcohol-related hospitalization among husbands were associated with rejection of couples-based treatment (O'Farrell, Kleinke, Thompson, & Cutter, 1986). Identifying variables that are associated with couples' willingness to enter BCT may allow treatment programs to market these couples more effectively and to address risk factors associated with rejecting treatment.

## The Current Study

Given the documented difficulty recruiting and retaining participants in studies of substance abuse treatment efficacy (Cisler et al., 2010; Dutra et al., 2008; Mitchell & Selmes, 2007) and the association between treatment dropout and poorer outcomes (Greenfield et al., 2004; Simpson, Joe, & Brown, 1997; Zhang, Friedmann, & Gerstein, 2003), understanding why some couples take part in couples-based treatments and others do not is imperative. Thus, the focus of the current study was to identify demographic (e.g., age, income), mental health (psychiatric symptoms), relationship factors (relationship satisfaction, intimate partner

violence), and substance use related problems (e.g., type of substance use, age at which the individual first suspected alcohol or drug problems, and whether one or both partners met substance use disorder criteria) as predictors of treatment initiation and attendance among heterosexual couples with children. Couples that met study criteria were invited to attend 12 sessions of outpatient BCT. Zero-inflated Poisson (ZIP) models were used to allow for the simultaneous examination of treatment initiation and retention. ZIP models operate under the assumption that different processes may be involved when predicting who initiates treatment versus who attends more sessions among those who do initiate treatment, by treating them as two distinct processes.

## Method

### Participants

Participants were  $n = 98$  heterosexual couples seeking treatment for substance abuse for one or both partners. Eligibility criteria included at least one partner meeting Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID; First, Spitzer, Gibbon, & Williams, 2010) for substance use, married or living together, having at least one child under the age of 18 who resided in the home, no severe interparental violence (as determined by either parent endorsing one or more items that comprise severe violence on the Conflict Tactics Scale-2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), and both partners being fluent in English. Approximately half of couples ( $n = 46$ ; 46.9%) were married. On average, couples had lived together 8.20 years ( $SD = 6.71$ ). Average age was 38.20 years ( $SD = 8.35$  years) for male partners and 36.14 years ( $SD = 8.29$  years) for female partners. See Table 1 for descriptive information for the final sample, including demographic information and model variables.

### Procedure

Participants were recruited from outpatient treatment centers specializing in substance abuse treatment (one in western New York, one in southeastern Virginia) or through advertising efforts (Virginia only). The outpatient centers offered free treatment through non-profit programs. Potential participants were informed at the time of in-taken (often over the phone) or at first walk-in about the study as an alternative to standard treatment, so they were seeking treatment but had not yet engaged. Both forms of treatment (outpatient center versus the current study) were free, but clients would be paid for their time spent completing assessments as part of the current study. Moreover, the current study focused on couples treatment. Potential participants gave permission to be contacted about the study. After both partners indicated interest, a meeting was arranged with researchers in which potential participants were provided a complete description of the study and both partners provided written informed consent. After consent was obtained, interviews were conducted with each partner privately and in separate rooms by one of three licensed counseling or clinical psychologists with approximately 15 years of clinical and clinical research experience, or a trained research assistant under the supervision of the licensed psychologists. The SCID (First et al., 2010) was used to determine whether individuals met criteria for diagnosis of a substance use disorder (specifically drug, alcohol, both, or neither disorder). Diagnoses of either dependence or abuse were sufficient for study enrollment. Previous research has

demonstrated SCID I scores and diagnoses to be reliable across multiple raters (Lobbestael, Leurgans, & Arntz, 2010).

After being screened for eligibility criteria and completing the baseline assessment, participants were invited to attend 12 weekly one-hour treatment sessions of BCT. We explained that BCT is a conjoint treatment for substance use disorder that is designed to facilitate partners' ability to support one another's sobriety as well as to address relationship issues that often co-occur when one or two parents have a drug or alcohol use disorder (e.g., trust, communication). Treatment would include exercises designed to improve communication, problem-solving skills, and reinforce sobriety. Participants who were already attending self-help groups (e.g., Alcoholics Anonymous, Narcotics Anonymous, Al-Anon) at the time of study enrollment were allowed to continue during the active treatment phase of the study. However, participants were prohibited from attending other active treatments during the weekly BCT sessions. Because of the potential secondary outcomes on parenting, each couple identified one child under age 18 living in the household as an assessment target for the efficacy of parenting outcomes post-treatment. Information was also collected regarding this child's age and sex.

Therapists called each couple typically the day before the session as a reminder. Couples were permitted to reschedule sessions as needed as long as they notified research staff ahead of time. Project staff attempted to be accommodating to work, families illnesses, and so forth. Many sessions were held during the evenings or on weekends. Project staff called couples after missed sessions to reschedule. Many couples that discontinued participation or never initiated treatment notified project staff that they were no longer interested in participating or that they were moving, etc. Some couples indicated they would contact project staff with openings, but never responded. All couples were compensated \$60.00 (\$30.00 each) for completion of the baseline assessment. Treatment sessions were free. The study was conducted in accordance with the code of ethics of the American Psychological Association and human subjects approval was granted by the participating research university prior to participation.

## Measures

**Number of sessions**—After completing the baseline assessment, eligible couples were invited to attend 12 weekly one-hour sessions of BCT. Number of treatment sessions each couple actually attended (0-12) served as the outcome variable for these analyses. While many couples attended all possible session ( $n = 25$ ; 25.5%), many other couples never initiated treatment, thus attended no sessions at all ( $n = 22$ ; 22.4%). This resulted in a zero-inflated count variable.

**Relationship satisfaction**—Relationship satisfaction for the past 90 days was assessed using the Dyadic Adjustment Scale (DAS; Spanier, 1976), including the subscales of dyadic consensus (i.e., agreement about substantive life issues; 13 items, male  $\alpha = .85$ , female  $\alpha = .91$ ), dyadic satisfaction (i.e., level of happiness in the relationship; 10 items, male  $\alpha = .85$ , female  $\alpha = .89$ ), affectional expression (i.e., demonstrating physical affection; 4 items, male  $\alpha = .68$ , female  $\alpha = .66$ ), and dyadic cohesion (i.e., engaging in pleasant activities together;

5 items, male  $\alpha = .82$ , female  $\alpha = .84$ ). Although most items are scored on a 6-point response scale from *Always Agree* to *Always Disagree*, other items are scored based on the frequency of activities, degree of happiness, or item that most reflects their belief about the future or their relationship.

**Psychiatric symptoms**—Psychiatric symptoms were assessed using the Symptom Checklist-90-Revised (SCL-90; Derogatis, 1992). Participants were asked how much a problem distressed him or her in the past 7 days on a scale of 0 (*Not at all*) to 4 (*Extremely*). The 90 items in the inventory represent the nine subscales of 1) somatization (12 items, male  $\alpha = .87$ , female  $\alpha = .87$ ), 2) obsessive-compulsive (10 items, male  $\alpha = .91$ , female  $\alpha = .87$ ), 3) interpersonal sensitivity (9 items, male  $\alpha = .87$ , female  $\alpha = .87$ ), 4) depression (13 items, male  $\alpha = .90$ , female  $\alpha = .92$ ), 5) anxiety (10 items, male  $\alpha = .89$ , female  $\alpha = .88$ ), 6) hostility (6 items, male  $\alpha = .82$ , female  $\alpha = .80$ ), 7) phobic anxiety (7 items, male  $\alpha = .78$ , female  $\alpha = .89$ ), 8) paranoid ideation (6 items, male  $\alpha = .78$ , female  $\alpha = .81$ ), and 9) psychoticism (10 items, male  $\alpha = .82$ , female  $\alpha = .77$ ). Higher scores represent higher severity for that symptom type (e.g., more depressive symptoms, greater hostility).

**Intimate partner violence**—Within couple violence was assessed using the physical assault and injury subscales of the Revised Conflict Tactics Scale (CTS-2; Straus et al., 1996). Participants responded to 7 items including both minor physical assault (e.g., “grabbed my partner”) and minor injury (e.g., “had a sprain, bruise, or small cut because of a fight with my partner”), indicating how often these events occurred in the past year using a grouped frequency response scale. Items assessing severe assault or injury were excluded because participants were screened for severe violence prior to participation. Consistent with the past year scoring approach, midpoints were used in scale calculations for each response range. Responses ranged from “*this has never happened*” (scored as 0) to “*more than 20 times in the past year*” (recommended midpoint of 25). The 12 item scores were summed to create a total physical assault score. See Table 1 for mean scores by partner and violence type (e.g., perpetration versus victimization).

**Age of first experiencing problems**—Participants were asked two questions: (1) at what age they first began to experience drinking problems (e.g., criticism of their drinking, accidents, drunk driving arrests, health problems, and so forth) and (2) age at which they first began to experience problems from drug use (e.g., criticism of their drug use, accidents, arrests related to drugs, health problems, and so forth). These were each a single item, in which the participant indicated the age at which they first noticed these issues. These questions were only asked of participants who indicated they previously used alcohol (for drinking-related problems) or used drugs (for drug-related problems). However, many participants chose to skip this item, leaving 57 couples who responded to the item about experiencing alcohol-related problems, and 16 couples who responded to the item about experiencing problems related to their drug use.

**Demographics**—Participants were asked to report their age, sex, race/ethnicity, employment status, length of relationship, and age and sex of the target child. Income was assessed using ordered categories ranging from 0 (*No income at all*) to 14 (*\$60,001 or*

more). Employment was examined as a dichotomous variable (0 = *not employed*, 1 = *employed [either full-time or part-time]*). Child sex was also dichotomous (0 = *female*, 1 = *male*).

## Results

### Preliminary Analyses

The sample included 38 men (38.8%) who met DSM-IV-TR criteria for drug and alcohol dependence or abuse, 28 men (28.6%) who met criteria for alcohol dependence or abuse, 14 men (14.3%) who met criteria for drug dependence or abuse, and 18 men (18.4%) who did not meet criteria for drug or alcohol dependence or abuse. For female partners, 20 women (20.4%) met DSM-IV-TR criteria for drug and alcohol dependence or abuse, 11 women (11.2%) met criteria for alcohol dependence or abuse, and 10 women (10.2%) met criteria for drug dependence or abuse; 57 women (58.2%) did not meet criteria for drug or alcohol dependence or abuse. All dependence or abuse criteria were evaluated for the past 6 months to reflect active use. Drug use was evaluated for multiple types of drugs, including sedatives, cannabis, stimulants, opioids, cocaine, hallucinogens, or other drugs. Because of the low- $n$  for participants who meet dependence or abuse criteria for specific types (e.g., 0, 1, or 2 participants meeting criteria for diagnosis), overall drug dependence or abuse was used in the current study (i.e., collapsed across type). The most frequently endorsed drug type for male partners was cannabis ( $n = 29$ ; 29.6%), with opioids ( $n = 16$ ; 16.3%) most frequently endorsed for female partners.

A series of one-way between subjects ANOVAs examined if recruitment type (i.e., referral in New York [ $n = 42$ ; 42.9%], referral in Virginia [ $n = 19$ ; 19.4%], or advertisement [Virginia only;  $n = 37$ ; 37.8%]) had an impact on any study variables. For the outcome variable, there was not an effect on the outcome of number of sessions,  $F(2, 95) = 2.02$ ,  $p = .139$ , nor were there significant differences in variability across groups as indicated with a Levene's test,  $F(2, 95) = 1.82$ ,  $p = .168$ . Similarly, after dummy coding sessions attended to reflect initiating treatment (0 = *never initiated*, 1 = *attended any sessions*), there was not an effect of recruitment type on treatment initiation,  $\chi^2(2) = 2.04$ ,  $p = .360$ . Table 1 includes a column indicating the  $p$ -value for each additional ANOVA exploring study predictors. As seen in Table 1, recruitment type was unrelated to dyadic satisfaction, dyadic cohesion, age of first problems for alcohol or drugs, most psychiatric symptoms, and intimate partner violence. However, recruitment type was associated with dyadic consensus reported by male,  $F(2, 95) = 3.31$ ,  $p = .041$ , and female partners,  $F(2, 95) = 5.95$ ,  $p = .004$ , as well as affectional expression reported by male,  $F(2, 95) = 3.62$ ,  $p = .031$ , and female partners,  $F(2, 95) = 3.46$ ,  $p = .036$ . In all instances, couples in New York reported higher consensus and affectional expression than couples in Virginia. In addition, male partners from New York were younger ( $M = 35.24$ ,  $SD = 7.81$ ) than partners from Virginia (referral  $M = 41.21$ ,  $SD = 7.99$ ; advertisement  $M = 40.03$ ,  $SD = 8.25$ ),  $F(2, 95) = 5.17$ ,  $p = .007$ . Similarly, female partners from New York were younger ( $M = 32.50$ ,  $SD = 7.75$ ) than female partners from Virginia (referral  $M = 38.58$ ,  $SD = 8.84$ ; advertisement  $M = 39.03$ ,  $SD = 7.10$ ),  $F(2, 95) = 8.17$ ,  $p = .001$ . Male partners from Virginia had higher incomes than partners in New York,

$F(2, 95) = 5.46, p = .006$ . And finally, female partners from New York reported lower depression symptoms than female partners in Virginia,  $F(2, 95) = 4.82, p = .010$ .

Number of days lapsed from the pretreatment assessment to the first treatment session was 22.04 days on average, but with a substantial amount of variability across couples ( $SD = 20.14$  days). While every effort was made to begin treatment within a timely manner, it was not always possible for participants to return quickly. However, number of days lapsed prior to treatment initiation did not vary across recruitment sites,  $F(2, 72) = 0.43, p = .655$ , nor was it significantly related to number of sessions attended,  $r(73) = -.13, p = .254$ .

Preliminary analyses (chi-square analyses and Poisson regressions) indicated that type of substance use for male partners (alcohol only, drug[s] only, or polysubstance) was unrelated to both initiating treatment,  $\chi^2(3) = 1.80, p = .616$ , and number of sessions attended  $\chi^2(3) = 1.09, p = .779$ . Similarly, type of substance abuse for female partners was not related to initiating treatment,  $\chi^2(3) = 1.12, p = .773$ , nor number of sessions attended  $\chi^2(3) = 0.77, p = .857$ . Finally, couple type (one versus both partners dependent) was unrelated to both initiating treatment,  $b = 0.51, \beta = 0.03, p = .835$ , and number of sessions attended,  $b = -0.20, \beta = -0.44, p = .504$ . Thus, these variables were excluded from the main analyses described below.

### Analysis Approach

A total of 10 models were conducted, with number of treatment sessions attended as the outcome variable. One model each was conducted for relationship satisfaction (all subscales), intimate partner violence (perpetration and victimization), psychiatric symptoms (all subscales), age of first problematic alcohol use, age of first problematic drug use, age, income, employment status, child age, and child sex. Each model included predictors for male and female partners simultaneously, with subscales used for each relevant model. Two exceptions were created: for child age and child sex, only one partner's estimates were used (male partners). Because the values reported were for the same child, including both partners' estimates would have created issues of multicollinearity. For all models, ZIP regressions were conducted using Mplus (version 6.1; Muthén & Muthén, 1998-2010). This approach allowed for two regression components to be simultaneously estimated: a logit regression predicting values of zero (probability of abstaining from treatment; i.e., non-initiation), and a Poisson regression predicting the log of the count component (number of sessions attended; i.e., retention). The logit model allowed the identification of factors that predict if a couple never initiated treatment despite completing the screening and enrollment process for the study. The Poisson model allowed the identification of factors that predict how many sessions the couple attended.

Due to the relatively small size of the current sample (consistent with outpatient treatment research, e.g., Graff et al., 2009; Kelly et al., 2004; McCrady et al., 2011), results include beta values as an indicator of effect size for all analyses, and discussions highlight demonstrated trends that fail to reach statistical significance ( $p < .10$ ) to prevent missing clinically meaningful effects (Ashery & McAuliffe, 1992).

## Treatment Initiation

Both male dyadic satisfaction,  $b = -0.16$ ,  $\beta = -0.58$ ,  $p = .010$ , and female dyadic cohesion,  $b = 0.21$ ,  $\beta = 0.47$ ,  $p = .037$ , significantly predicted treatment initiation. Higher male satisfaction was related to starting treatment, whereas higher female dyadic cohesion was associated with not starting treatment. The other DAS subscales did not significantly predict treatment retention (see Table 2 for a full list of parameter coefficients). For intimate partner violence, both perpetration and victimization were non-significant for both men and women. However, there was a tendency for males' reports of the perpetration of partner violence to be associated with less likelihood of initiating treatment, ( $b = 0.12$ ,  $\beta = 0.51$ ,  $p = .061$ ).

For psychiatric symptoms, the subscales of male depression,  $b = -5.14$ ,  $\beta = -1.07$ ,  $p = .029$ , and female somatization,  $b = -1.99$ ,  $\beta = -0.41$ ,  $p = .024$ , significantly predicted initiating treatment in which couples with higher male depression and higher female partner somatization were more likely to start treatment, whereas male hostility,  $b = 3.04$ ,  $\beta = 0.62$ ,  $p = .003$ , and male phobic anxiety,  $b = 4.15$ ,  $\beta = 0.65$ ,  $p = .025$ , were significantly associated with a reduced likelihood of initiating treatment. Female psychoticism also trended toward a reduced likelihood of initiating treatment,  $b = 2.63$ ,  $\beta = 0.39$ ,  $p = .064$ , but not significantly so. Other psychiatric symptoms were unrelated to treatment initiation.

The age the woman first experienced problems related to her drinking,  $b = -0.31$ ,  $\beta = -1.54$ ,  $p = .019$ , or drug use,  $b = -0.13$ ,  $\beta = -0.55$ ,  $p = .025$ , were both significantly associated with initiating treatment. That is, couples in which female partners were older when they developed these problems were more likely to start treatment. However, the age the male partner first experienced problems related to his drinking,  $b = 0.31$ ,  $\beta = 1.56$ ,  $p = .017$ , was negatively significantly associated with initiating treatment. That is, couples in which male partners were older when they first noticed these issues were less likely to start treatment. Age the male partner first experienced problems related to his drug use was unassociated with initiating treatment.

For demographics, male income was also significantly associated with initiating treatment,  $b = -0.12$ ,  $\beta = -0.28$ ,  $p = .032$ , that is, couples in which male partners had higher income were more likely to start treatment. Female income was not significantly associated with initiating treatment. Age was not associated with initiating treatment. Male partner and female partner employment status were also not significantly associated with initiating treatment. Age of the target child was significantly associated with treatment initiation,  $b = -0.14$ ,  $\beta = -0.33$ ,  $p = .017$ , such that couples with older children were more likely to start treatment. Child sex, however, was unrelated to treatment initiation.

## Number of sessions

Despite its associations with treatment initiation, relationship satisfaction was unrelated to number of sessions attended by the couple. See Table 3 for a full list of parameter coefficients for predicting number of sessions. Also, contrary to treatment initiation findings, intimate partner violence predicted number of sessions attended. Couples in which the male partner reported higher levels of being the victim of violence were associated with attending

fewer sessions,  $b = -0.03$ ,  $\beta = -0.89$ ,  $p = .034$ . Male reports of perpetration of violence and female reports for both were not related to the number of sessions attended.

Regarding psychiatric symptoms, couples in which men reported more obsessive-compulsive symptoms,  $b = 0.53$ ,  $\beta = 0.82$ ,  $p = .038$ , and more phobic anxiety,  $b = 0.55$ ,  $\beta = 0.60$ ,  $p = .013$ , attended significantly more sessions. However, couples in which men reported more somatization symptoms,  $b = -0.69$ ,  $\beta = -0.90$ ,  $p = .002$ , more hostility,  $b = -0.59$ ,  $\beta = -0.85$ ,  $p = .007$ , and more paranoid ideation,  $b = -0.39$ ,  $\beta = -0.59$ ,  $p = .045$ , attended significantly fewer sessions. Females who reported more somatization symptoms,  $b = 0.43$ ,  $\beta = 0.63$ ,  $p = .056$ , trended toward attending more sessions (an effect that failed to reach significance). Other psychiatric symptoms were not associated with number of sessions attended.

The age the male partner first experienced problems related to his drinking,  $b = 0.06$ ,  $\beta = 1.82$ ,  $p = .009$ , or drug use,  $b = 0.02$ ,  $\beta = 0.54$ ,  $p = .049$ , were both significantly associated with session attendance. That is, couples in which male partners were older when they first noticed these issues attended significantly more sessions. However, the age the woman first experienced problems related to her drug use,  $b = -0.05$ ,  $\beta = -0.98$ ,  $p = .058$ , trended toward an association with session attendance, where couples in which female partners who were older when they first noticed these issues attended fewer sessions, but not significantly so. Age the female partner first experienced problems related to her drinking was unassociated with initiating treatment.

For demographics, neither male nor female partner's income was not significantly associated with session attendance. Male partner's age was also unassociated with session attendance. However, female age demonstrated a non-significant positive association, such that couples in which women were older attended more sessions, but not significantly so. Similarly, male partner employment status was unrelated to session attendance, but female partner employment status demonstrated a non-significant trend, such that women who were employed were likely to attend more sessions (though this was not significant). Neither age nor sex of the target child was significantly associated with number of sessions attended.

## Discussion

The current study was a prospective assessment of treatment initiation and retention among couples with children seeking treatment for one or both partner's substance use (alcohol only, drug[s] only, or polysubstance). ZIP models revealed differential prediction for treatment initiation versus retention among relationship factors, psychiatric symptoms, substance use history, and demographic predictors.

Similar to O'Farrell et al. (1986), couples were more likely to initiate treatment if men had a higher level of satisfaction in the relationship (i.e., dyadic satisfaction). Importantly, among problem drinkers, spouses and significant others are the most common others to suggest the problem drinker cut down drinking or to issue an ultimatum to enter treatment (Room, Matzger, & Weisner, 2004). Moreover, women often face a lack of family or partner support to enter treatment (e.g., see Greenfield et al., 2007 for a review; McCrady et al., 2011).

Given that women appear more supportive of their male partners' decisions to enter treatment for substance abuse and may be more supportive of continuing treatment, it is not surprising that for men, their *own* relationship satisfaction appears to be key for men's willingness to enter couples treatment for substance abuse.

For women, higher dyadic cohesion was associated with *less* likelihood of initiating treatment, also similar to O'Farrell et al. (1986). Women who report higher dyadic cohesion may perceive substance abuse as less of a problem for the relationship, thus, treatment is unnecessary. This sex difference may reflect that spending time together may have different meanings for men and women. Further, time together may be an especially important issue among couples with children, as couples with children often have more difficulty making time for one another (Reynolds & Knudson-Martin, 2015). It is also possible that more time apart may reflect more severe substance abuse on the part of their male partners. If so, this may help explain the association between dyadic cohesion and couples-based treatment initiation among women.

Type of substance dependence or abuse (i.e., alcohol only, drug[s] only or polysubstance) did not predict either initiation or retention. This finding is consistent with McCaul and colleagues (2001) who found type of substance use did not predict retention, but is counter to the findings of Weisner and colleagues (2001) who found those with alcohol use problems were more likely to initiate treatment. The finding that type of substance use disorder did not predict initiation or treatment may reflect the entrenched nature of drug and alcohol misuse in the sample. On average, both male and female partners with substance abuse problems reported more than 15 years of problematic alcohol or drug use. Further, 38.8% of men and 20.4% of women within the current sample met DSM-IV-TR criteria for both drug and alcohol dependence or abuse. The longstanding nature of substance abuse and the comorbid nature of drug and alcohol disorders may have reduced differences between alcohol and drug use treatment initiation and retention. Moreover, in contrast to previous research that has examined attendance in outpatient treatment that did not involve couples therapy, we examined couples willingness and retention in conjoint treatment. More globally, as compared to the type of substance, our findings suggest that among stable couples with children in which one or both partners have a long history of substance use problems, other variables such as relationship issues may be more critical for initiating and attending conjoint treatment.

Couple type (i.e., both partners met diagnostic criteria for drug or alcohol use disorder or both versus only one partner) was also not related to dropout before or during treatment. The challenge with treating only one member of a substance-abusing couple is that if the treatment-seeking partner stops using, the relationship rarely survives (O'Farrell & Fals-Stewart, 2006). Schumm, O'Farrell, and Andreas (2012) found BCT was equally effective for dual alcohol-abusing versus single-alcohol problem couples. With respect to the clinical implications of the present study, our findings suggest that BCT for dual partner drug or alcohol use disorder is equally viable as BCT for single partner substance abuse.

Women who were older when they first suspected they had a problem (both alcohol and drugs) were more likely to initiate treatment. Graff et al (2009) found later age of onset was

associated with better treatment adherence. Suspecting problems early may be a proxy for greater severity of substance abuse which in turn may be associated with less likelihood to enter treatment. In contrast, men who were older when they first suspected they had a problem with alcohol were *less* likely to initiate treatment. Early substance use is associated with more problematic substance use and psychiatric problems over time (see Dennis, Scott, Funk, & Foss, 2005 for a discussion). It is possible that men who suspected problems at later ages may downplay the significance of alcohol use or perceive alcohol problems as less problematic. If this is the case, this would be consistent with Weisner and Hatzger (2002) who found that more severe dependence was associated with being more likely to initiate treatment.

Consistent with Weisner et al. (2001), men diagnosed with alcohol use disorder only were more likely to engage in treatment. Also, men who were older when they first suspected they had a problem (both alcohol and drugs) had better retention. Given the limited marketing funds available to many substance abuse treatment programs, targeting BCT to older couples in which men have alcohol use disorder (relative to drug use disorder or alcohol and drug use disorder) may be a more effective use of existing resources.

Similar to previous research with male drug abusers (Kelly et al., 2004), higher male income was associated with a greater likelihood of initiating treatment. However, men's income was not associated with treatment retention. The finding that men's income was not associated with treatment retention and more globally the relatively low levels of program completion, may reflect that many families were poor, the typical male partner was employed in manual labor (e.g., construction worker), and many subjects experienced frequent job changes and fluctuating work schedules.

Although female income was not associated with treatment initiation, we found a non-significant trend toward better session attendance in couples where female partners were employed. Consistent with previous research (e.g., Graff et al., 2009), there was a non-significant trend for older women to have better retention. Related to these findings, couples with older target children were more likely to initiate treatment. Among women with substance use disorders, children have been shown to be a barrier to attending substance abuse treatment (e.g., Stewart, Gossop, & Trakada, 2007). These findings may reflect that employed women may have more reliable childcare and transportation. Importantly, couples-based treatment may be a more viable for option for parents of older children as older youth may not need childcare during treatment. It is also possible that parents with older target children may be more likely to initiate treatment as subject abuse progresses over time and individuals typically have years of problematic year prior to treatment (e.g., Schumm et al., 2014). Although parental age was not associated with retention in men or treatment initiation for men or women, consistent with previous research (e.g., Graff et al., 2009), there was a non-significant trend for older women to have better retention.

Although women's reports of violence were not associated with initiation and retention, men who reported greater intimate partner victimization attended fewer treatment sessions. Further, we found a non-significant trend such that men's reports of perpetrating more violence were associated with lower likelihood of initiation treatment. In instances in which

men perpetrate violence, women may not feel safe attending a conjoint treatment. It is possible that men who report greater victimization may experience lower relationship satisfaction which may undermine treatment adherence.

As expected, treatment initiation and retention were strongly associated with men's psychiatric symptoms. Couples in which men reported more depressive symptoms, less hostility, and less phobic anxiety were more likely to initiate treatment. They are also more likely to initiate treatment if women experience more somatization and less psychoticism (non-significant trend). Couples are more likely to stay in treatment if men are more obsessive-compulsive, less hostile, experience more phobic anxiety, experience less somatization, and experience less paranoid ideation. The only relationship between women's psychiatric symptoms and retention was a non-significant trend toward a relationship with somatization, in which couples were more likely to stay in treatment if the woman was more somatic. For men, hostility may be a stronger barrier to treatment and to relationship instability (e.g., Floyd, 2006). Conversely, men who experience greater phobic anxiety may fear adverse effects from their substance dependence or abuse, thus may be more ready to accept treatment to prevent these. Similarly, women higher in somatization may be more aware of bodily distress caused by substance dependence or abuse either directly or indirectly, thus may be more willing to accept treatment.

Several study limitations and suggestions for future research should also be noted which might temper conclusions. All information was collected via self-report. Future research might consider corroborating participant reports of use via other means such as urine analysis or other biological markers. Although the sample size is not atypical for outpatient treatment research (e.g., Graff et al., 2009; Kelly et al., 2004; McCrady et al., 2011), it was still relatively small. For this reason, we included effect sizes for all analyses and documented trends that failed to reach statistical significance ( $p < .10$ ) to prevent missing clinically relevant effects (Ashery & McAuliffe, 1992). However, we recognize that this approach increases the risk of inflating the type-I error rate. Further, we recommend replicating study findings with larger samples. The findings regarding age of first problematic use, in particular, should be interpreted with caution given the low- $n$  associated with responding to these questions. In addition, families represented two-parent families in which either or both parents met criteria for drug or alcohol use or both. Importantly, these were families who at least expressed interest in attending substance abuse treatment. Ideally future research should attempt to examine how couples who indicate no interest in attending conjoint treatment, or treatment more generally, differ from those who initiate and remain in treatment. Generalizations beyond this group should be made with caution. Ideally, future investigations should focus on couples in which only the female partner has substance use disorder, given its low incidence in the current sample. In addition, controlled studies are needed in which partners have the option of attending individual treatment for substance use disorder.

Despite these limitations, findings point to specific risk factors for dropping out prior to treatment initiation, and separate risk factors for dropping out during treatment, which may help guide researchers and clinicians on where they may need to focus efforts to increase initiation and retention in conjoint treatment for substance abuse. ZIP models simultaneously

examined treatment initiation and retention, revealing differential prediction across dropout type. While some findings replicated previous research, the current study also expanded on research examining couples-focused factors of SUD treatment. For example, while higher relationship satisfaction among male partners was associated with higher likelihood of treatment initiation, female partner's report of dyadic cohesion was associated with lower likelihood of initiating treatment. Moreover, men's psychiatric symptoms were more relevant for both treatment initiation and retention. His reports regarding intimate partner violence also had more salience for treatment engagement. Results suggest that different factors may be associated with men and women's willingness to initiate and attend conjoint treatment for substance abuse.

## References

- Ashery RS, McAuliffe WE. Implementation issues and techniques in randomized trials of outpatient psychosocial treatments for drug abusers: Recruitment of subjects. *The American Journal of Drug and Alcohol Abuse*. 1992; 18(3):305–329. DOI: 10.3109/00952999209026069 [PubMed: 1329493]
- Brown CH, Bennett ME, Li L, Bellack AS. Predictors of initiation and engagement in substance abuse treatment among individuals with co-occurring serious mental illness and substance use disorders. *Addictive Behaviors*. 2011; 36:439–447. DOI: 10.1016/j.addbeh.2010.12.001 [PubMed: 21196081]
- Cisler RA, Silverman BL, Gromov I, Gastfriend DR. Impact of treatment with intramuscular, injectable, extended-release naltrexone on counseling and support group participation in patients with alcohol dependence. *Journal of Addiction Medicine*. 2010; 4(3):181–185. DOI: 10.1097/ADM.0b013e3181c82207 [PubMed: 21769033]
- Conners NA, Grant A, Crone CC, Whiteside-Mansell L. Substance abuse treatment for mothers: Treatment outcomes and the impact of length of stay. *Journal of Substance Abuse Treatment*. 2006; 31:447–456. DOI: 10.1016/j.jsat.2006.06.001 [PubMed: 17084800]
- Darke S, Ross J, Teesson M, Ali R, Cooke R, Ritter A, Lynskey M. Factors associated with 12 months continuous heroin abstinence: Findings from the Australian Treatment Outcome Study (ATOS). *Journal of Substance Abuse Treatment*. 2005; 28(3):255–263. DOI: 10.1016/j.jsat.2005.01.006 [PubMed: 15857726]
- Delgadillo J, Gore S, Ali S, Ekers D, Gilbody S, Gilchrist G, McMillan D, Hughes E. Feasibility randomized controlled trial of cognitive and behavioral interventions for depression symptoms in patients accessing drug and alcohol treatment. *Journal of Substance Abuse Treatment*. 2015; 55:6–14. doi.org/10.1016/j.jsat.2015.02.008. [PubMed: 25819701]
- Dennis ML, Scott CK, Funk R, Foss MA. The duration and correlates of addiction and treatment careers. *Journal of Substance Abuse Treatment*. 2006; 28:S51–S62. DOI: 10.1016/j.jsat.2004.10.013 [PubMed: 15797639]
- Derogatis, LR. SCL-90-R, administration, scoring and procedures manual-II for the R(evised) version and other instruments of the Psychopathology Rating Scale Series. Clinical Psychometric Research; Townson: 1992.
- Dutra L, Stathopoulou G, Basden SL, Leyro TM, Powers MB, Otto MW. A meta-analytic review of psychosocial interventions for substance use disorders. *American Journal of Psychiatry*. 2008; 165:179–187. DOI: 10.1176/appi.ajp.2007.06111851 [PubMed: 18198270]
- First, MB.; Spitzer, RL.; Gibbon, M.; Williams, JBW. Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Non-patient Edition (SCID-I/NP). Biometrics Research, New York State Psychiatric Institute; New York: 2010.
- Floyd GJ, Cranford JA, Daugherty MK, Fitzgerald HE, Zucker RA. Marital interaction in alcoholic and nonalcoholic couples: Alcoholic subtype variations and wives' alcoholism status. *Journal of Abnormal Psychology*. 2006; 115:121–130. doi.org/10.1037/0021-843X.115.1.121. [PubMed: 16492103]

- Graff FS, Morgan TJ, Epstein EE, McCrady BS, Cook SM, Jensen NK, Kelly S. Engagement and retention in outpatient alcoholism treatment for women. *The American Journal on Addictions*. 2009; 18:277–288. DOI: 10.1080/10550490902925540 [PubMed: 19444731]
- Greenfield L, Burgdorf K, Chen X, Porowski A, Roberts T, Herrell J. Effectiveness of long-term residential substance abuse treatment for women: Findings from three national studies. *The American Journal of Drug and Alcohol Abuse*. 2004; 30(3):537–550. DOI: 10.1081/ADA-200032290 [PubMed: 15540492]
- Greenfield SF, Brooks AJ, Gordon SM, Green CA, Kropp F, McHugh RK, Miele GM. Substance abuse treatment entry, retention, and outcome in women: A review of the literature. *Drug and Alcohol Dependence*. 2007; 86:1–21. DOI: 10.1016/j.drugalcdep.2006.05.012 [PubMed: 16759822]
- Gregoire KA, Schultz DJ. Substance-abusing child welfare parents: Treatment and child placement outcomes. *Child Welfare: Journal of Policy, Practice, and Program*. 2001; 80(4):433–452.
- Hasin D, Liu X, Nunes E, McCloud S, Samet S, Endicott J. Effects of major depression on remission and relapse of substance dependence. *Archives of General Psychiatry*. 2002; 59:375–380. DOI: 10.1001/archpsyc.59.4.375 [PubMed: 11926938]
- Kelly S, Epstein EE, McCrady BS. Pretreatment attrition from couple therapy for male drug abusers. *The American Journal of Drug and Alcohol Abuse*. 2004; 30(1):1–19. DOI: 10.1081/ADA-120029861 [PubMed: 15083551]
- Klostermann K, Kelley ML, Mignone T, Pusateri L, Wills K. Behavioral couples therapy for substance abusers: Where do we go from here? *Substance Use & Misuse*. 2011; 46:1502–1509. DOI: 10.3109/10826084.2011.576447 [PubMed: 21707469]
- Kokkevi A, Stefanis N, Anastasopoulou E, Kostogianni C. Personality disorders in drug abusers: Prevalence and their association with AXIS I disorders as predictors of treatment retention. *Addictive Behaviors*. 1998; 23(6):841–854. DOI: 10.1016/S0306-4603(98)00071-9 [PubMed: 9801720]
- Lobbstaal J, Leurgans M, Arntz A. Inter-rater reliability of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) and Axis II Disorders (SCID II). *Clinical Psychology & Psychotherapy*. 2010; 18(1):75–79. DOI: 10.1002/cpp.693 [PubMed: 20309842]
- McCaul ME, Svikis DS, Moore RD. Predictors of outpatient treatment retention: Patient versus substance use characteristics. *Drug and Alcohol Dependence*. 2001; 62:9–17. [PubMed: 11173163]
- McCrady BS, Epstein EE, Cook S, Jensen NK, Ladd BO. What do women want? Alcohol treatment choices, treatment entry and retention. *Psychology of Addictive Behaviors*. 2011; 25(3):521–529. DOI: 10.1037/a0024037 [PubMed: 21644804]
- McCrady BS, Epstein EE, Cook S, Jensen NK, Hildebrandt T. A randomized trial of individual and couple behavioral alcohol treatment for women. *Journal of Consulting and Clinical Psychology*. 2009; 77:243–256. DOI: 10.1037/a0014686 [PubMed: 19309184]
- McKay JR. Is there a case for extended interventions for alcohol and drug use disorders? *Addiction*. 2005; 100(11):1594–1610. DOI: 10.1111/j.1360-0443.2005.01208.x [PubMed: 16277622]
- Meis LA, Griffin JM, Greer N, Jensen AC, MacDonald R, Carlyle M, Wilt TJ. Couple and family involvement in adult mental health treatment: A systematic review. *Clinical Psychology Review*. 2013; 33(2):275–286. DOI: 10.1016/j.cpr.2012.12.003 [PubMed: 23321286]
- Mignone T, Klostermann K, Chen R. The relationship between relapse to alcohol and relapse to violence. *Journal of Family Violence*. 2009; 24:497–505. DOI: 10.1007/s10896-009-9248-1
- Mitchell AJ, Selmes T. Why don't patients attend their appointments? Maintaining engagement with psychiatric services. *Advances in Psychiatric Treatment*. 2007; 13(6):423–34. DOI: 10.1192/apt.bp.106.003202
- Muthén, LK.; Muthén, BO. *Mplus User's Guide*. Sixth Edition. Muthén & Muthén; Los Angeles, CA: 1998-2010.
- O'Farrell TJ, Clements K. Review of outcome research on marital and family therapy in treatment for alcoholism. *Journal of Marital & Family Therapy*. 2012; 38(1):122–144. [PubMed: 22283384]
- O'Farrell, TJ.; Fals-Stewart, W. *Behavioral couples therapy for alcoholism and drug abuse*. Guilford Press; New York, NY, US: 2006.

- O'Farrell TJ, Kleinke C, Thompson DL, Cutter HSG. Differences between alcoholic couples accepting and rejecting an offer of outpatient marital therapy. *The American Journal of Drug and Alcohol Abuse*. 1986; 12:285–294. [PubMed: 3503571]
- Powers MB, Vedel E, Emmelkamp PMG. Behavioral couples therapy (BCT) for alcohol and drug use disorders: A meta-analysis. *Clinical Psychology Review*. 2008; 28(6):952–962. DOI: 10.1016/j.cpr.2008.02.002 [PubMed: 18374464]
- Reynolds C, Knudson-Martin C. Gender and the construction of intimacy among committed couples with children. *Family Process*. 2015; 54:293–307. DOI: 10.1111/famp.12100 [PubMed: 25263968]
- Room R, Matzger H, Weisner C. Sources of informal pressure on problematic drinkers to cut down or seek treatment. *Journal of Substance Use*. 2004; 9(6):280–295. DOI: 10.1080/14659890410001711733
- Schumm JA, O'Farrell TJ, Andreas JB. Behavioral Couples Therapy when both partners have current alcohol use disorder. *Alcoholism Treatment Quarterly*. 2012; 30(4):407–421. DOI: 10.1080/07347324.2012.718963 [PubMed: 23264718]
- Schumm JA, O'Farrell TJ, Kahler CW, Murphy MM, Muchowski P. A randomized clinical trial of Behavioral Couples Therapy versus individually based treatment for women with alcohol dependence. *Journal of Consulting and Clinical Psychology*. 2014; 82(6):993.doi: 10.1037/a0037497 [PubMed: 25045910]
- Simpson DD, Joe GW, Brown BS. Treatment retention and follow-up outcomes in the drug abuse treatment outcome study (DATOS). *Psychology of Addictive Behavior*. 1997; 11:294–307. DOI: 10.1037/0893-164X.11.4.294
- Spanier GB. Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family*. 1976; 38:15–28.
- Stark MJ. Dropping out of substance abuse treatment: A clinically oriented review. *Clinical Psychology Review*. 1992; 12:93–116.
- Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The Revised Conflict Tactics Scales (CTS2): Development and preliminary psychometric data. *Journal of Family Issues*. 1996; 17(3):283–316. DOI: 10.1177/019251396017003001
- Stewart D, Gossop M, Trakada K. Drug dependent parents: Childcare responsibilities, involvement with treatment services and treatment outcomes. *Addictive Behaviors*. 2007; 32(8):1657–1668. DOI: 10.1016/j.addbeh.2006.11.019 [PubMed: 17196752]
- Weisner C, Matzger H. A prospective study of the factors influencing entry to alcohol and drug treatment. *The Journal of Behavioral Health Services & Research*. 2002; 29(2):126–137. DOI: 10.1007/BF02287699 [PubMed: 12032970]
- Weisner C, Mertens J, Tam T, Moore C. Factors affecting the initiation of substance abuse treatment in managed care. *Addiction*. 2001; 96:705–716. [PubMed: 11331029]
- Zhang Z, Friedmann PD, Gerstein DR. Does retention matter? Treatment duration and improvement in drug use. *Addiction*. 2003; 98(5):673–684. DOI: 10.1046/j.1360-0443.2003.00354.x [PubMed: 12751985]

**Table 1**

Descriptive Statistics for Continuous Model Variables for Male and Female Partners

	<u>Men</u>		<u>Women</u>		<u>Recruitment Differences</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Male <i>p</i>	Fem. <i>p</i>
Relationship Satisfaction						
Dyadic Consensus	43.26	8.98	40.73	10.89	.041	.004
Dyadic Satisfaction	32.86	8.57	28.09	11.18	.252	.764
Affectional Expression	7.68	3.09	6.81	2.96	.031	.036
Dyadic Cohesion	14.20	5.42	13.33	5.85	.079	.552
Intimate Partner Violence						
Perpetration of Violence	4.54	9.06	12.09	24.17	.600	.227
Victim of Violence	6.66	12.25	10.90	22.55	.797	.111
Psychiatric Symptoms						
Somatization	0.70	0.68	0.95	0.76	.231	.825
Obsessive-Compulsive	0.79	0.81	1.06	0.85	.384	.547
Interpersonal Sensitivity	0.56	0.67	0.86	0.83	.857	.706
Depression	0.89	0.77	1.32	0.94	.134	.010
Anxiety	0.57	0.72	0.79	0.81	.974	.193
Hostility	0.74	0.76	1.00	0.90	.937	.397
Phobic Anxiety	0.26	0.57	0.40	0.75	.249	.714
Paranoid Ideation	0.73	0.78	0.91	0.91	.540	.942
Psychoticism	0.47	0.63	0.50	0.55	.653	.063
Age Of First Problems (Alcohol)	21.00	12.56	20.54	12.32	.088	.208
Age Of First Problems (Drug)	22.03	11.09	21.83	8.77	.586	.930
Age	38.20	8.35	36.14	8.29	.007	.001
Income	5.77	4.66	3.58	3.76	.006	.138
	<u>Men</u>		<u>Women</u>			
	<i>n</i>	%	<i>n</i>	%		
Race						
White	61	62.2	75	76.5		
Black or African-American	24	24.5	18	18.4		
American Indian or Alaskan Native	8	8.2	6	6.1		
Hispanic or Latino	7	7.1	7	7.1		
Asian	0	0.0	3	3.1		
Native Hawaiian or other Pacific Islander	0	0.0	1	1.0		
Employment						
Full-time	53	54.1	28	28.6		
Part-time	8	8.2	15	15.3		
Not employed	26	26.5	40	40.8		
Student	0	0.0	5	5.1		

	<u>Men</u>		<u>Women</u>		<u>Recruitment Differences</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Male <i>p</i>	Fem. <i>p</i>
Other	9	9.2	7	7.1		

*Note.* Fem. = Female. Recruitment differences were determined via ANOVAs across recruitment type, and associated *p*-values are included here. Participants were instructed to select all that apply for race.

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**Table 2**

## Logit Results for Predicting Zeros (Not Initiating Treatment)

	<i>n</i> (couples)	<i>b</i>	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Relationship Satisfaction	89					
Men's dyadic consensus		0.06	0.248	0.05	1.31	.189
<b>Men's dyadic satisfaction</b>		<b>-0.16 *</b>	<b>-0.575</b>	<b>0.06</b>	<b>-2.57</b>	<b>.010</b>
Men's affectional expression		0.10	0.132	0.14	0.72	.470
Men's dyadic cohesion		0.09	0.208	0.11	0.84	.399
Women's dyadic consensus		-0.02	-0.082	0.06	-0.30	.761
Women's dyadic satisfaction		-0.01	-0.047	0.07	-0.19	.852
Women's affectional expression		0.10	0.122	0.17	0.57	.569
<b>Women's dyadic cohesion</b>		<b>0.21 *</b>	<b>0.470</b>	<b>0.10</b>	<b>2.09</b>	<b>.037</b>
Intimate Partner Violence	85					
Men's perpetration of violence		0.12 <sup>†</sup>	0.512	0.06	1.87	.061
Men's victim of violence		-0.07	-0.419	0.06	-1.19	.235
Women's perpetration of violence		-0.07	-0.680	0.06	-1.04	.298
Women's victim of violence		0.05	0.462	0.05	1.01	.312
Psychiatric Symptoms	94					
Men's somatization		-0.78	-0.143	1.10	-0.71	.479
Men's obsessive-compulsive		0.48	0.105	1.13	0.43	.668
Men's interpersonal sensitivity		0.20	0.036	1.15	0.18	.861
<b>Men's depression</b>		<b>-5.14 *</b>	<b>-1.069</b>	<b>2.35</b>	<b>-2.19</b>	<b>.029</b>
Men's anxiety		-2.64	-0.512	1.83	-1.44	.150
<b>Men's hostility</b>		<b>3.04 *</b>	<b>0.622</b>	<b>1.03</b>	<b>2.95</b>	<b>.003</b>
<b>Men's phobic anxiety</b>		<b>4.15 *</b>	<b>0.646</b>	<b>1.86</b>	<b>2.24</b>	<b>.025</b>
Men's paranoid ideation		0.31	0.066	0.94	0.33	.740
Men's psychoticism		0.49	0.084	1.07	0.46	.645
<b>Women's somatization</b>		<b>-1.99 *</b>	<b>-0.409</b>	<b>0.88</b>	<b>-2.27</b>	<b>.024</b>
Women's obsessive-compulsive		-0.68	-0.152	1.01	-0.67	.503
Women's interpersonal sensitivity		-0.18	-0.039	0.88	-0.20	.841
Women's depression		-1.81	-0.460	1.44	-1.26	.209
Women's anxiety		2.93	0.648	2.00	1.47	.143
Women's hostility		-1.47	-0.319	1.00	-1.46	.144
Women's phobic anxiety		-0.49	-0.101	1.09	-0.45	.654
Women's paranoid ideation		0.89	0.194	0.95	0.94	.347
Women's psychoticism		2.63 <sup>†</sup>	0.392	1.42	1.85	.064
Age of first problems (alcohol)	57					
<b>Man</b>		<b>0.31 *</b>	<b>1.564</b>	<b>0.13</b>	<b>2.39</b>	<b>.017</b>
<b>Woman</b>		<b>-0.31 *</b>	<b>-1.543</b>	<b>0.13</b>	<b>-2.36</b>	<b>.019</b>
Age of first problems (drug)	16					

	<i>n</i> (couples)	<i>b</i>	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Man		0.01	0.026	0.05	0.09	.926
<b>Woman</b>		<b>-0.13</b> *	<b>-0.547</b>	<b>0.06</b>	<b>-2.25</b>	<b>.025</b>
Age	98					
Man		0.01	0.021	0.05	0.10	.920
Woman		-0.03	-0.149	0.05	-0.66	.510
Income	96					
<b>Man</b>		<b>-0.12</b> *	<b>-0.281</b>	<b>0.05</b>	<b>-2.14</b>	<b>.032</b>
Woman		0.02	0.036	0.07	0.25	.802
Employment	95					
Man		-0.27	-0.071	0.51	-0.54	.589
Woman		-0.72	-0.194	0.52	-1.39	.164
<b>Child age</b>	<b>98</b>	<b>-0.14</b> *	<b>-0.331</b>	<b>0.06</b>	<b>-2.38</b>	<b>.017</b>
Child sex	97	0.15	0.136	0.50	0.30	.766

*Note.* Beta ( $\beta$ ) reflects the standardized coefficient, indicating the strength of the relationship after rescaling into standard deviations from the original variable metrics. Significant findings are in bold text.

\*  $p < .05$ ,

†  $p < .10$

**Table 3**

Poisson Results for Predicting (the Log of) Number of Sessions Attended

	<i>n</i> (couples)	<i>b</i>	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Relationship Satisfaction	89					
Men's dyadic consensus		-0.02	-0.658	0.01	-1.02	.308
Men's dyadic satisfaction		0.01	0.566	0.02	0.68	.494
Men's affectional expression		-0.04	-0.565	0.04	-1.07	.283
Men's dyadic cohesion		0.02	0.591	0.03	0.89	.375
Women's dyadic consensus		0.02	1.048	0.01	1.42	.154
Women's dyadic satisfaction		-0.01	-0.374	0.02	-0.44	.660
Women's affectional expression		-0.05	-0.718	0.04	-1.19	.235
Women's dyadic cohesion		0.00	0.035	0.03	0.05	.959
Intimate Partner Violence	85					
Men's perpetration of violence		-0.01	-0.184	0.02	-0.36	.723
<b>Men's victim of violence</b>		<b>-0.03 *</b>	<b>-0.887</b>	<b>0.01</b>	<b>-2.12</b>	<b>.034</b>
Women's perpetration of violence		0.00	-0.167	0.01	-0.24	.813
Women's victim of violence		0.01	0.252	0.01	0.46	.647
Psychiatric Symptoms	94					
<b>Men's somatization</b>		<b>-0.69 *</b>	<b>-0.902</b>	<b>0.23</b>	<b>-3.06</b>	<b>.002</b>
<b>Men's obsessive-compulsive</b>		<b>0.53 *</b>	<b>0.820</b>	<b>0.26</b>	<b>2.08</b>	<b>.038</b>
Men's interpersonal sensitivity		0.02	0.030	0.27	0.09	.930
Men's depression		-0.15	-0.215	0.28	-0.52	.605
Men's anxiety		-0.01	-0.012	0.32	-0.03	.978
<b>Men's hostility</b>		<b>-0.59 *</b>	<b>-0.851</b>	<b>0.22</b>	<b>-2.69</b>	<b>.007</b>
<b>Men's phobic anxiety</b>		<b>0.55 *</b>	<b>0.603</b>	<b>0.22</b>	<b>2.49</b>	<b>.013</b>
<b>Men's paranoid ideation</b>		<b>-0.39 *</b>	<b>-0.587</b>	<b>0.20</b>	<b>-2.01</b>	<b>.045</b>
Men's psychoticism		0.30	0.363	0.32	0.95	.340
Women's somatization		0.43 <sup>†</sup>	0.632	0.23	1.91	.056
Women's obsessive-compulsive		-0.02	-0.026	0.19	-0.08	.933
Women's interpersonal sensitivity		-0.12	-0.188	0.21	-0.59	.557
Women's depression		0.18	0.331	0.22	0.84	.403
Women's anxiety		-0.24	-0.375	0.24	-1.02	.310
Women's hostility		-0.07	-0.110	0.19	-0.38	.705
Women's phobic anxiety		-0.18	-0.267	0.22	-0.82	.415
Women's paranoid ideation		0.14	0.220	0.20	0.72	.472
Women's psychoticism		-0.42	-0.446	0.32	-1.30	.193
Age of first problems (alcohol)	57					
<b>Man</b>		<b>0.06 *</b>	<b>1.822</b>	<b>0.02</b>	<b>2.63</b>	<b>.009</b>
Woman		-0.03	-0.997	0.02	-1.40	.161
Age of first problems (drug)	16					

	<i>n</i> (couples)	<i>b</i>	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
<b>Man</b>		<b>0.02</b> *	<b>0.544</b>	<b>0.01</b>	<b>1.97</b>	<b>.049</b>
Woman		-0.05 †	-0.981	0.03	-1.90	.058
Age	98					
Man		0.02	0.432	0.01	1.20	.231
Woman		0.02 †	0.645	0.01	1.88	.060
Income	96					
Man		0.01	0.455	0.02	0.50	.616
Woman		0.02	0.799	0.02	0.90	.367
Employment	95					
Man		0.10	0.297	0.18	0.58	.562
Woman		0.31 †	0.950	0.16	1.91	.056
Child age	98	0.02	1.000	0.02	1.04	.300
Child sex	97	-0.02	-1.000	0.16	-0.14	.885

**Note.** Beta ( $\beta$ ) reflects the standardized coefficient, indicating the strength of the relationship after rescaling into standard deviations from the original variable metrics. Significant findings are in bold text.

\*  $p < .05$ ,

†  $p < .10$