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## Associations between Relationship Satisfaction and Drinking Urges for Women in Alcohol Behavioral Couples and Individual Therapy

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### Abstract

This study examined the association between relationship satisfaction and drinking urges among women who participated in alcohol behavioral individual therapy (ABIT) and Alcohol Behavioral Couples Therapy (ABCT). Relationship satisfaction and drinking urges were not related on a daily level, but urges were related to mean levels of relationship satisfaction and this association was moderated by treatment condition and time in treatment. Women with higher relationship satisfaction had fewer drinking urges, and women in ABCT with higher relationship satisfaction experienced greater reductions in urges during treatment. These findings suggest that ABCT may target the association between relationship satisfaction and drinking urges.

### Keywords

Alcohol; treatment; women; couples therapy; alcohol behavioral couples therapy

### Introduction

In 2010, 47% of adult women were current drinkers and 6% met criteria for an alcohol use disorder (AUD); national surveys indicate that these rates are increasing (Substance Abuse and Mental Health Services Administration [SAMHSA], 2011). Women may be more vulnerable to the effects of heavy drinking than men (Greenfield et al., 2007; Mann, Hintz, & Jung, 2004), and women with AUDs are less likely to complete treatment for alcohol problems (Green, Polen, Dickinson, Lynch, & Bennett, 2002). In addition to the negative effects of AUDs on women, drinking also can affect their relationships; for instance, women with heavy drinking patterns often report marital dissatisfaction (Cranford, Floyd, Schulenberg, & Zucker, 2011; Homish & Leonard, 2007), separation, and divorce (Wilsnack & Wilsnack, 1991).

Given the central role that intimate relationships play in women's drinking patterns, including women's significant others (SOs) in treatment can provide significant benefit to women seeking treatment for AUDs (McCrady, Epstein, Cook, Jensen, & Hildebrandt, 2009). A number of studies have shown couples therapy to be efficacious for alcohol use problems among men (O'Farrell, Choquette, & Cutter, 1998), and women (McCrady et al.,

2009). One couple therapy model, Alcohol Behavioral Couples Therapy (ABCT), has been deemed a “well-established” treatment for AUDs by the American Psychological Association, Division 12 (2008), and is a manual-guided cognitive behavioral treatment that includes SOs throughout therapy. The primary treatment goals of ABCT include: (a) abstinence from alcohol for the identified patients (IP), accomplished using cognitive-behavioral and relapse prevention skills, (b) increasing SOs’ support for the IPs’ abstinence, and (c) improving the relationship between IPs and SOs via communication and other relationship skills training (McCrary & Epstein, 2009).

In a randomized controlled trial testing the efficacy of ABCT for women, McCrary et al., (2009) found that women whose partners were included in therapy had better outcomes in percent days abstinent (PDA) and percent heavy drinking days than women receiving alcohol behavioral individual therapy (ABIT), though both treatment conditions were associated with significant positive change in drinking frequency and quantity during and after treatment. During treatment, women with poorer relationship satisfaction in ABCT had greater improvements in PDA than women with poorer relationship satisfaction in ABIT, and women with higher relationship satisfaction in ABCT had greater improvement in heavy drinking days during treatment and in follow-up than women in ABIT. Addressing relationship issues related to alcohol use may be one aspect of ABCT that is central to its efficacy for women and is a proposed mechanism of ABCT that helps IPs achieve and maintain abstinence (Longabaugh, Donovan, Karno, McCrary, Morgenstern, & Tonigan, 2005). For example, when women in ABCT experience more urges to drink, rather than negatively affecting their interactions with the SOs and lowering the couples’ relationship satisfaction, their SOs may learn to be more encouraging and supportive of the IPs’ abstinence.

To better understand outcomes for women in ABCT and ABIT, it may be helpful to examine changes that occur during treatment, such as changes in relationship satisfaction and alcohol-related behaviors. One way to examine these within treatment changes is to use self-monitoring cards recorded by IPs and SOs during treatment, which can provide more precise details about daily-level changes in relationship satisfaction and drinking urges than aggregated outcome measures such as single reports of marital adjustment or percentages of days abstinent.

The purpose of the current study was to investigate the associations between relationship satisfaction and drinking urges during the course of ABCT and ABIT. The study reported secondary analyses of within-treatment daily self-monitoring data from women who participated in a randomized controlled trial comparing ABCT to ABIT. Drinking urges were examined in lieu of the number of drinks per day because most women became abstinent at the start of or early in treatment, and therefore measures of alcohol consumption during treatment contained minimal variance. Drinking urges, which can be considered to be similar to alcohol cravings, also were examined as key variables because they are related to future drinking (Flannery, Poole, Gallop, & Volpicelli, 2003; Kranzler, Mulgrew, Modesto-Lowe, & Bursleson, 1999; Yoon, Won Kim, Thuras, Grant, & Westermeyer, 2006). The hypotheses tested in the present study were: (a) there would be significant associations between women’s self-reported previous-day relationship satisfaction and next-day drinking urges, (b) there would be significant associations between previous-day drinking urges and next-day relationship satisfaction; (c) relationship satisfaction would increase and drinking urges would decrease over time in both treatment conditions; and (d) the association between relationship satisfaction and drinking urges across time would be moderated by treatment condition, such that on the daily level the association between relationship satisfaction and drinking urges for women in ABCT would be smaller in magnitude than for women in ABIT. The associations between SO reports of relationship satisfaction and IP

drinking urges also were examined, with the hypothesis that (e) lower SO relationship satisfaction would predict more next day IP drinking urges. There was no preliminary hypothesis predicting SOs' next-day relationship satisfaction from IPs' previous-day drinking urges, but this association was examined to mirror the IP models tested in hypotheses a-d.

## Method

### Participants

The current study was a secondary analysis of a randomized controlled trial comparing ABIT to ABCT (McCrary et al., 2009). A comparison of the two treatments regarding the structure of treatment and content is provided in Table 1. Participants ( $N = 101$ ) were women who were in a committed relationship with a male partner and for whom self-monitoring data were available (1 participant from the ABIT condition was excluded because the woman did not provide self-monitoring data). Female IPs were on average ( $SD$ ) 45 (9.2) years old; male partners were slightly older with an average age of 48.4 (10.3) years. The sample was largely Caucasian (95% of women, 96% of men); the remainder of the sample was African-American. Eighty-nine percent of the sample was married, and the average length of relationship for all couples was 17.5 (12.5) years. All women met current DSM-IV criteria for alcohol dependence or alcohol abuse. Additional information on the sample, including the recruitment process and inclusion/exclusion criteria, is provided elsewhere (McCrary et al., 2009).

### Measures

**Within treatment drinking urges**—Throughout the course of treatment, the women in both treatment conditions completed daily self-monitoring cards. For each day, women were instructed to record each time they experienced an urge to drink. They also recorded the intensity of the urge on a 1 (very weak) to 7 (strongest ever) scale and the trigger for the urge, and their drinking and amount (if any) on these cards.

**Within treatment relationship satisfaction**—On their self-monitoring cards, women provided a daily rating of their relationship satisfaction on a 1 (not satisfied at all) to 7 (extremely satisfied) Likert scale. In the ABCT condition only, the male partners also completed self-monitoring cards providing daily ratings of relationship satisfaction on the same 1 to 7 Likert scale.

Overall, self-monitoring card data were provided for a total of 11,736 days for the full sample of participants, and all but 1 woman provided data for some days (mean = 114.4 days,  $SD = 60.7$ , range = 5 to 189 days). If women did not complete their self-monitoring cards prior to the session then the women often completed them within session. Variability in the number of days of available self-monitoring data largely was due to variability of women's length of time in treatment, but also was due to women and their male partners not completing their self-monitoring cards prior to or within the treatment session. Information of when women and their male partners completed their self-monitoring cards was not available. Ninety-nine women provided relationship satisfaction data (mean = 112.8,  $SD = 61.1$ , range = 5 to 188 days), and of the 49 couples assigned to the ABCT condition, 46 of the male partners provided relationship satisfaction data (mean = 105.0,  $SD = 58.5$  days, range = 6 to 188 days).

### Procedure

Interested couples were recruited through community advertisements and referrals from alcohol treatment programs. After establishing eligibility via a telephone screening,

participants and their partners completed a pretreatment clinical screening interview. During this interview, participants were provided a description of the study and study procedures, completed additional screening measures, and provided informed consent. Couples completed a baseline assessment, which included information on drinking, psychopathology, and other areas of functioning. After the baseline assessment, couples were randomly assigned to the ABCT ( $n = 50$ ) or ABIT ( $n = 51$ ) condition and scheduled for their first therapy sessions.

Both ABCT and ABIT were 20-session, manual-guided therapies that promoted the goal of abstinence and were provided over a maximum of six months. During the first session, participants were presented with the rationale for daily self-monitoring, taught how to complete them, and were instructed to begin filling out self-monitoring cards on the first day of treatment. Sessions were 60 minutes in the ABIT condition and included only the female IP. As a result, self-monitoring data from the male partners of women assigned to the ABIT condition were not collected. Sessions were 90 minutes in the ABCT condition and all sessions included both partners. Although some of the specific interventions in ABCT focus on partner-related skills for increasing the women's abstinence (e.g. partner role in drink refusal), alcohol use of the male partners was not a target of the treatment.

### Analytic Plan

**Hypothesis testing**—Hypotheses were tested using four multilevel models (Raudenbush & Bryk, 2002) with daily observations of drinking urges and relationship satisfaction nested within IPs in both conditions and SOs in the ABCT condition. Daily predictor variables were centered within persons to separate within-individual from between-individual differences in these respective variables (West, Ryu, Kwok, & Cham, 2011). Each person's mean value across all days for each daily predictor variable was subtracted from his or her respective raw scores for each day, which removed the between-subjects variance and retained values that reflect only within-subjects variability. Person-mean centering the daily predictor variables allowed them to be interpreted as the degree to which a person differed from his or her own mean level of relationship satisfaction or drinking urges. Person-level mean values for these variables were retained as level-2 predictors that represent differences between individuals on mean levels of these variables (West et al., 2011). Separating within-individual and between-individual differences from daily observations in this manner allowed the model to test whether daily drinking urges or relationship satisfaction were predicted by differences in one's usual number of relationship satisfaction or drinking urges, or by mean differences between individuals on these variables over the course of treatment.

Daily IP drinking urges were predicted by two 3-way interactions of previous-day and individual mean-level IP relationship satisfaction each crossed with treatment condition and session number, with all subordinate interactions, main effects, and previous-day IP drinking urges entered as covariates. Daily IP relationship satisfaction was predicted by two 3-way interactions of previous-day and individual mean-level IP drinking urges each crossed with treatment condition and session number, with all subordinate interactions, main effects, and previous-day IP relationship satisfaction entered as covariates. Because daily SO relationship satisfaction was only recorded in the ABCT condition, SO relationship satisfaction was able to be predicted only by two 2-way interactions of previous-day and individual mean-level IP drinking urges crossed with session number, and the main effects of these variables and previous-day SO relationship satisfaction entered as covariates. Similarly, IP drinking urges were predicted by two 2-way interactions of previous-day SO relationship satisfaction and individual mean-level SO relationship satisfaction crossed with session number, and the main effects of these variables with previous-day IP drinking urges entered as covariates. Random effects for daily predictor variables were added to models to

allow relations between previous-day predictors and next-day variables to differ between couples, with nested model comparisons that utilized chi-square tests used for evaluating the significance of random effects.

Session number was recoded such that the first session was coded as 0, the second session as 1, and so on. Treatment condition was coded with ABIT as 0 and ABCT as 1. Outliers for the urge variables greater than 3 *SD* above the mean ( $M = 0.88$ ,  $SD = 1.78$ , 1.9% of observations above 3 *SD*) were Winsorized (Tukey, 1962). There were no outliers for the relationship satisfaction variables (IP  $M = 4.83$ ,  $SD = 1.41$ ; SO  $M = 4.75$ ,  $SD = 1.53$ ). Level-1 and level-2 residual errors were examined for normality in each model and were normally distributed. Models were fit using the R *nlme* package (Pinheiro, Bates, DebRoy, Sarkar, & R Core Development Team, 2011) with the EM and Newton-Raphson Maximum Likelihood estimation algorithms, which provide unbiased fixed effects when sample size is large and facilitate accurate interpretation of significance tests (Raudenbush & Bryk, 2002). Daily drinks, intensity of drinking urges, number of drinking urges, and relationship satisfaction, which each were averaged over the first 14 days of treatment for all participants, were found to be uncorrelated with the maximum number of treatment sessions attended (all  $r_s < .15$ , all  $p > .10$ ), suggesting that missing data were likely missing at random and that results are unlikely to be significantly biased by the missing data.

## Results

### Adequacy of Analytic Approach

Unconditional model intraclass correlations (ICCs) were high (ICC range = 0.41 to 0.65) and indicated that the use of multilevel modeling was appropriate. The assumption of uncorrelated residual errors was tested against model with lag-1 autoregressive residual error structures [AR(1)]. Akaike Information Criterion indices and chi-square tests indices indicated that AR(1) models provided a better fit than models with uncorrelated errors (all  $\chi^2(1) > 1490$ , all  $p < .001$ ), indicating that the inclusion of AR(1) error structures in each model would provide less biased fixed effect estimates (Diedrick et al., 2009; Liu, Rovine, & Molenaar, 2012).

### IP Relationship Satisfaction and IP Urges

Results for daily IP relationship satisfaction predicted by previous-day IP drinking urges are presented in Table 2. As shown in Table 2, the hypothesis that IP relationship satisfaction would be predicted by previous-day drinking urges was not supported, and all effects that included previous-day drinking urges as a predictor of daily relationship satisfaction were non-significant. As expected, previous-day relationship satisfaction was a significant predictor of next-day relationship satisfaction. Session number was not related to daily IP relationship satisfaction, such that this index of relationship satisfaction did not change over the course of treatment.

Results for daily IP drinking urges predicted by previous-day IP relationship satisfaction are presented in Table 3. As shown in Table 3, our hypothesis that IP drinking urges would be predicted by previous-day relationship satisfaction was unsupported for the full sample, indicating that daily fluctuations in relationship satisfaction did not predict drinking urges on subsequent days. There was, however, a significant person-mean IP relationship satisfaction  $\times$  treatment condition  $\times$  session number interaction, indicating that person-mean levels of relationship satisfaction across the duration of treatment were associated with different levels of change in drinking urges over the course of therapy for the two treatment conditions. The model-predicted number of daily drinking urges, based on mean IP relationship satisfaction, treatment condition, and session number, controlling for previous-

day drinking urges, are presented in Figure 1. For the ABIT condition, Figure 1 shows that IP drinking urges were lower when relationship satisfaction was higher, and that the degree to which IP drinking urges decreased over the course of individual treatment was the same regardless of IP relationship satisfaction. However, for the ABCT condition, Figure 1 shows that at the beginning of treatment, IP drinking urges were higher when relationship satisfaction was higher, whereas at the end of treatment IP drinking urges were lower when relationship satisfaction was higher. IP drinking urges tended to decrease more steeply over the course of ABCT treatment for IPs with higher levels of relationship satisfaction, and urges decreased less steeply for IPs with lower levels of relationship satisfaction.

### SO Relationship Satisfaction and IP Urges

Results for daily SO relationship satisfaction predicted by daily IP drinking urges are presented in Table 4. Daily SO relationship satisfaction was not predicted by previous-day IP drinking urges, mean level of IP drinking urges across treatment, session number or any of the interactions that were tested.

Results for daily IP drinking urges predicted by SO relationship satisfaction within the ABCT condition are presented in Table 5. Contrary to our hypothesis, IP drinking urges were not predicted by previous-day SO relationship satisfaction, suggesting that daily fluctuations in SO relationship satisfaction did not impact IP drinking urges. Similar to the results of the IP models, a significant session number  $\times$  mean SO relationship satisfaction interaction indicated that the overall level of relationship satisfaction over the course of treatment affected the degree to which daily IP urges decreased during treatment. The significant session number  $\times$  mean SO relationship satisfaction interaction and main effects are plotted in Figure 2, which shows that for couples in which the SO reported a high level of relationship satisfaction at the beginning of treatment, IP drinking urges were higher, whereas at the end of treatment IP drinking urges were lower. Further, Figure 2 shows that for couples in which the SO was, on average, highly satisfied with the relationship, IP drinking urges tended to decrease more steeply over the course of treatment. In contrast, for couples in which the SO was less satisfied with the relationship, the IPs had either a less steep decline or little change in drinking urges over time. As expected, previous-day IP drinking urges were strongly associated with daily IP drinking urges.

### Discussion

The purpose of the current study was to examine day-to-day associations between relationship satisfaction and drinking urges among women who participated in a randomized controlled trial of ABCT and ABIT. It was hypothesized that relationship satisfaction and drinking urges would be associated at the daily level (a-b), and that both would improve during the treatment period (c). It also was hypothesized that women in ABCT would have smaller associations between relationship satisfaction and drinking urges than women in ABIT (d). Hypotheses a-c also were examined based on SO relationship satisfaction for the ABCT condition only (e). The results showed that although relationship satisfaction and drinking urges were not related on a daily level, individuals' mean ratings of relationship satisfaction were related to drinking urges, such that women with higher relationship satisfaction reported the fewest drinking urges by the end of treatment. Further, relationship satisfaction did not appear to change throughout the first 140 days of treatment for women in either condition, but there were reductions in drinking urges for women in both treatments. Being in the ABCT condition affected the association between mean levels of relationship satisfaction and drinking urges throughout treatment, whereas being in the ABIT condition did not result in any changes in the association between relationship satisfaction and drinking urges. However, contrary to predictions, treatment condition did not affect the association between relationship satisfaction and drinking urges at the daily level.

For women in ABCT, the average number of urges and the rate of decrease in urges during treatment were predicted by overall levels of relationship satisfaction. Specifically, women in ABCT who had high relationship satisfaction experienced more urges early in treatment, but also had a greater reduction in drinking urges. The finding that women in ABCT with high levels of relationship satisfaction showed the greatest reduction in drinking urges is consistent with ABCT principles. ABCT assumes that active SO support will lead to better outcomes. Throughout the treatment, ABCT introduces SOs to skills that encourage IP abstinence and help the IP cope with urges to drink through treatment modules that focus on increasing SOs' support for IP change, SO assistance with drink refusal, and strategies for SOs to help IPs cope with urges to drink (McCrary & Epstein, 2009). SOs in couples with the highest relationship satisfaction may be the most receptive to these interventions and therefore may be maximally helpful in supporting IP change. The SOs' active and positive support for the IPs' abstinence may help to explain the greater reductions in urges to drink found in this study, as well as the better outcomes for women with higher relationship satisfaction found by McCrary et al. (2009). However, the results from this study do not directly test the association between the SOs' support for the IPs' abstinence and the IPs' urges, and fail to account for the better PDA outcomes in for women in ABCT that were observed for women with lower relationship satisfaction (McCrary et al., 2009).

In ABIT, drinking urges decreased steadily during treatment across women with high, moderate, and low levels of relationship satisfaction. Women in ABIT with higher levels of relationship satisfaction reported fewer urges to drink over the course of treatment; these women reported less than half as many urges as women with lower levels of relationship satisfaction. Additionally, the association between relationship satisfaction and urges to drink did not change based on women's time in ABIT, which is consistent with the fact that individual CBT for alcohol does not address relationship components in therapy.

Similar to predicting next-day urges to drink from IPs' previous-day relationship satisfaction, it was predicted that SOs' reports of relationship satisfaction would be related inversely to next-day IP urges to drink; this hypothesis also was not supported. However, the results of the SO models were consistent with the IP models of women in ABCT, such that person-mean levels of relationship satisfaction of SOs were related to next day IP drinking urges, and moderated by time in ABCT. The results of the SO models provide additional evidence of the effects seen in the IP models.

There are three primary goals of ABCT: helping the IP reach and maintain abstinence, increasing SO support for IP abstinence, and improving the quality of the relationship; these results provided evidence that ABCT addresses two of these goals. All women reported reductions in their urges to drink, which is related to reduced drinking (e.g., Yoon et al., 2006), and supports the first goal of ABCT. Second, women with higher relationship satisfaction in ABCT showed the greatest reduction in urges to drink, but this was not true for women with higher satisfaction in ABIT. ABCT incorporates modules that focus on increasing SO support for IP abstinence, and the results suggest that for women with higher relationship satisfaction, ABCT may mobilize spousal support for IP abstinence, as evidenced by greater reductions in drinking urges for women with higher relationship satisfaction in ABCT than ABIT. There was no evidence that supported the third goal of ABCT, but this was not an aim of the current study and this may be better addressed in future research.

The findings suggest that global, longer-term associations between relationship satisfaction and drinking behaviors may be different than more momentary associations, because daily reports of relationship satisfaction were not related to drinking urges, but overall levels of relationship satisfaction were related to drinking urges throughout treatment. Future research

that uses daily diary, Ecological Momentary Assessment (EMA, cf. Shiffman, Stone, & Hufford, 2008), or observational methods to measure relationship quality and drinking behaviors would help clarify how these constructs are associated on a moment-to-moment basis. Future research also could test the association between the IPs' and SOs' ratings of relationship satisfaction, SOs' support for abstinence and treatment, how IPs perceive SOs' support for abstinence and treatment, and IPs' urges to drink, to better understand how these factors are related. Additionally, it may be valuable to know whether or not SOs' support for abstinence and treatment is important, or if SOs' support for IPs more generally is what leads to improved outcomes for women with AUDs in couples' therapy.

Couples-based treatments for women with AUDs may lead to better outcomes if they more concretely include additional skills to help increase relationship satisfaction for couples with lower overall relationship satisfaction, such as those skills offered in ABCT. It also may be beneficial for clinicians to know that ABCT may be helpful particularly for individuals with satisfied relationships and that informing couples with higher satisfaction that they likely will have the best outcomes with ABCT may increase motivation for treatment and help establish positive expectancies for treatment. Because women with low relationship satisfaction reported more urges to drink than women with higher relationship satisfaction, clinicians may need to provide additional skills to help them cope with urges to drink. Women with low relationship satisfaction in individual therapy especially may benefit from learning more skills to cope, as they reported more than twice the number of urges throughout the first 12 weeks of treatment as did women with higher satisfaction.

The present study has several limitations. First, the impact of specific treatment elements that may have been responsible for the observed relationships between daily drinking urges and daily relationship satisfaction could not be tested. Because treatment condition was assigned randomly, it can be concluded with reasonable confidence that the observed differences in the association between person-mean levels of relationship satisfaction and drinking urges were likely to be caused by treatment assignment. However, because the ABCT and ABIT conditions differed in several ways, specific components within the treatments that might have caused this difference could not be isolated. Session length, including the SO, or couples-based skills, or a combination of these factors may have attributed to the observed differences in the trajectories of ABCT and ABIT, but the study design did not allow for determining exactly how these factors contributed to the results. Second, there are limitations in the generalizability of the results. Most notably, the eligibility criteria of the present study, which included being female, having an SO willing to participate in treatment, being in a heterosexual relationship, and the fact that most participants were Caucasian, all limit the generalizability of the results. Third, daily-level data on relationship satisfaction before or after the treatment period were not collected, and thus it was not possible to test whether the observed associations held during the pre-treatment or post-treatment periods. Measuring this type of daily data before and after treatment may be useful in future research to observe how these associations may change as a function of entering treatment and to observe whether these associations remain intact after treatment is completed.

The present study also has several strengths. Most notably, this study utilized daily-level data on relationship satisfaction and drinking urges rather than aggregated data collapsed over a longer period of time. Additionally, participants in the sample comprise an underrepresented group - treatment-seeking women with AUDs. As a final strength, the study utilized within-treatment data from a key period of time in the change process. Most treatment research has focused on post-treatment outcomes to test efficacy, and much less is known about the processes of change that occur during behavioral treatments for AUDs.



ABCT has been found to be an efficacious treatment for women with AUDs. The present study examined the associations between relationship satisfaction and urges to drink throughout ABCT and may shed light on within-treatment change processes that contribute to the efficacy of ABCT. Identifying how ABCT can affect the association between relationship satisfaction and drinking urges, and other processes, can inform therapists of what to expect when working with women in behavioral couples therapy for AUDs and how to tailor treatment to couples with higher and lower levels of relationship satisfaction. Further, ABCT aims to increase couples' relationship satisfaction, particularly because drinking can cause marital distress (McCrary et al., 2009; O'Farrell & Fals-Stewart, 2000), but the results suggest that ABCT may best activate spousal support in already functional relationships, which may help women with better relationship satisfaction to decrease their urges more than women with lower relationship satisfaction. Future research should examine possible ways that ABCT can be adapted to improve the outcomes of women with lower levels of relationship satisfaction. These results can help to engender new research to study the processes of treatment for women with AUDs engaged in behavioral couple therapy for alcohol.

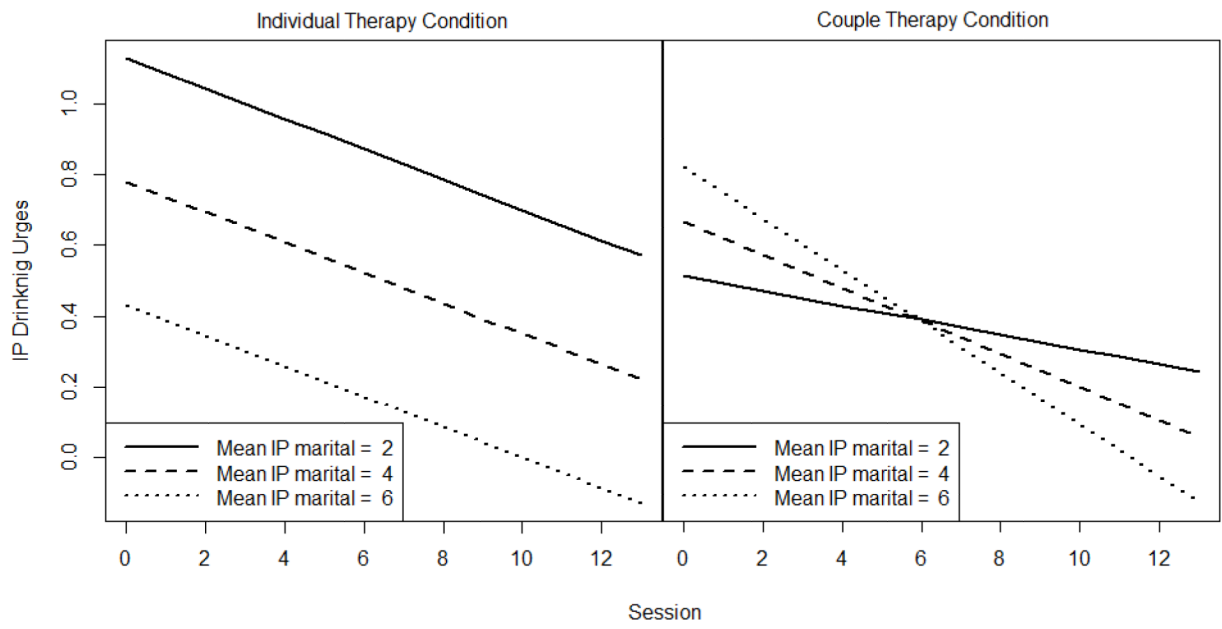
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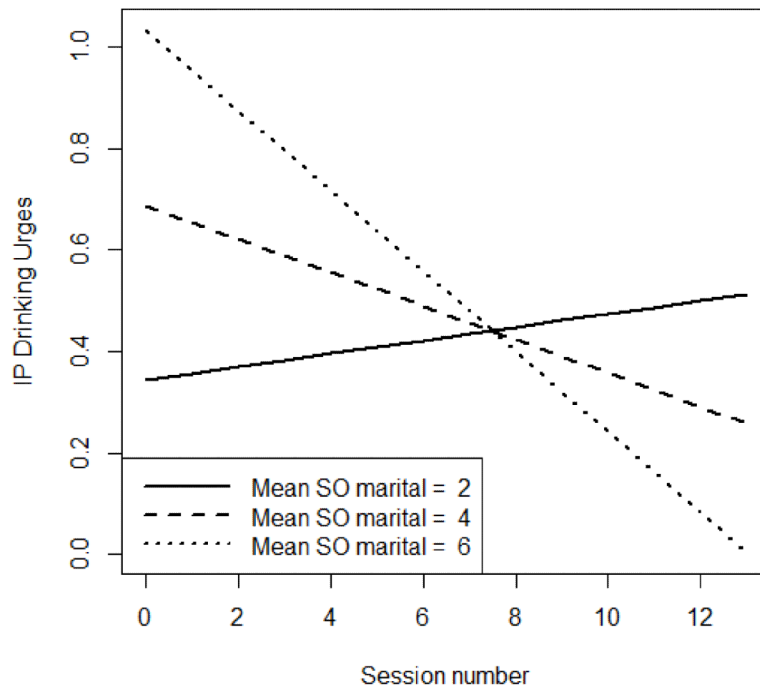
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**Figure 1.** Model-predicted drinking urges based on treatment condition, session number, and mean IP relationship satisfaction interaction



**Figure 2.** Model-predicted drinking urges based on session number and mean SO relationship satisfaction interaction for individuals in the ABCT condition.

**Table 1**

Treatment Structures of Alcohol Behavioral Couples Therapy (ABCT) and Alcohol Behavioral Individual Therapy (ABIT).

<i>Treatment Structure</i>	<i>ABCT</i>	<i>ABIT</i>
Treatment Length	20 sessions	20 sessions
Session Length	90 minutes	60 minutes
Included Significant Other In-Session	Yes	No
Manual-Guided	Yes	Yes
CBT-Based Alcohol Skills	Yes	Yes
Completed Self-Monitoring Cards	Yes	Yes
Couples-Based Skills	Yes	No
Assigned Homework	Yes	Yes

*Notes.* Examples of CBT-based alcohol skills included functional analyses and relapse prevention. Examples of Couples-based skills included reciprocity enhancement and communication skills.

**Table 2**

Predicting IP Relationship Satisfaction from IP Drinking Urges.

<i>Fixed Effects</i>	<i>Estimate</i>	<i>SE</i>	<i>Wald t</i>
(Intercept)	1.701	0.081	21.030 ***
Previous-day IP satisfaction	0.664	0.008	86.050 ***
Session number	0.004	0.003	1.388
Treatment	-0.208	0.109	-1.907
Previous-day urges	0.027	0.020	1.405
Mean urges	-0.105	0.054	-1.925
Treatment × Session number	0.006	0.005	1.151
Treatment × Previous-day urges	-0.012	0.025	-0.459
Session number × Previous-day urges	-0.002	0.003	-0.814
Treatment × Mean urges	0.090	0.085	1.057
Session number × Mean urges	0.004	0.004	1.151
Treatment × Session number × Previous-day urges	-0.001	0.004	-0.276
Treatment × Session number × Mean urges	-0.005	0.005	-1.099
<i>Random Effects</i>			<sup>2</sup> (1)
Intercept <i>SD</i>	0.360		
Previous-day IP urges <i>SD</i>	0.040		9.596 **
<i>Cor</i> (Intercept, Previous-day urges)	-0.019		0.007
Residual <i>SD</i>	0.774		
	-0.169		

\*\* Notes.  $p < .01$ .\*\*\*  
 $p < .001$

**Table 3**

Predicting IP Drinking Urges from IP Relationship Satisfaction.

<i>Fixed Effects</i>	<i>Estimate</i>	<i>SE</i>	<i>Wald t</i>
(Intercept)	1.480	0.351	4.214 ***
Previous-day urges	0.492	0.009	54.395 ***
Session number	-0.043	0.016	-2.763 **
Treatment	-1.119	0.437	-2.558 *
Previous-day IP satisfaction	-0.005	0.028	-0.182
Mean IP satisfaction	-0.175	0.070	-2.509 *
Treatment × Session number	0.048	0.022	2.233 *
Treatment × Previous-day IP satisfaction	0.048	0.039	1.208
Session number × Previous-day IP satisfaction	-0.003	0.003	-0.968
Treatment × Mean IP satisfaction	0.252	0.089	2.820 **
Session number × Mean IP satisfaction	0.003	0.003	0.899
Treatment × Session number × Previous-day IP satisfaction	0.003	0.005	0.651
Treatment × Session number × Mean IP satisfaction	-0.013	0.004	-3.102 **
<i>Random Effects</i>			<sup>2</sup> (1)
Intercept <i>SD</i>	0.455		
Previous-day IP satisfaction <i>SD</i>	0.083		149.442 ***
<i>Cor</i> (Intercept, Previous-day IP satisfaction)	-0.187		126.597 ***
Residual <i>SD</i>	1.042		
	-0.235		

\* *Notes.*  $p < .05$ .\*\*  $p < .01$ .\*\*\*  $p < .001$ .

**Table 4**

Predicting SO Relationship Satisfaction from IP Drinking Urges.

<i>Fixed Effects</i>	<i>Estimate</i>	<i>SE</i>	<i>Wald t</i>
(Intercept)	1.556	0.113	13.784 ***
Previous-day SO satisfaction	0.659	0.012	55.627 ***
Session number	0.000	0.004	-0.051
Previous-day urges	-0.004	0.018	-0.232
Mean urges	0.019	0.075	0.251
Session number × Previous-day urges	0.000	0.003	0.100
Session number × Mean urges	0.004	0.003	1.066
<i>Random Effects</i>		<i>Estimate</i>	<sup>2</sup> (1)
Intercept <i>SD</i>	0.408		
Previous-day urges <i>SD</i>	0.048		5.438 *
<i>Cor</i> (Intercept, Previous-day urges)	0.137		0.218
Residual <i>SD</i>	0.827		
	-0.186		

\*  
Notes. p < .05.\*\*\*  
p < .001.



**Table 5**

Predicting IP Drinking Urges from SO Relationship Satisfaction.

<i>Fixed Effects</i>	<i>Estimate</i>	<i>SE</i>	<i>Wald t</i>
(Intercept)	0.013	0.309	0.041
Previous-day urges	0.442	0.014	31.424 ***
Session number	0.059	0.022	2.662 **
Previous-day SO satisfaction	0.060	0.033	1.813
Mean SO marital	0.172	0.063	2.719 **
Session number × Previous-day SO satisfaction	−0.002	0.004	−0.535
Session number × Mean SO satisfaction	−0.023	0.004	−5.099 ***
<i>Random Effects</i>	<i>Estimate</i>	<sup>2</sup> (1)	
Intercept <i>SD</i>	0.490		
Previous-day SO satisfaction <i>SD</i>	0.081	4.234	*
<i>Cor</i> (Intercept, Previous-day SO satisfaction)	0.734	6.973	**
Residual <i>SD</i>	1.253		
	−0.213		

\* *Notes.* p < .05.

\*\* p &lt; .01.

\*\*\* p &lt; .001