

# Journal of Consulting and Clinical Psychology

## **The Effects of Drinking Goal on Treatment Outcome for Alcoholism**

Spencer Bujarski, Stephanie S. O'Malley, Katy Lunny, and Lara A. Ray  
Online First Publication, December 10, 2012. doi: 10.1037/a0030886

### CITATION

Bujarski, S., O'Malley, S. S., Lunny, K., & Ray, L. A. (2012, December 10). The Effects of Drinking Goal on Treatment Outcome for Alcoholism. *Journal of Consulting and Clinical Psychology*. Advance online publication. doi: 10.1037/a0030886

# The Effects of Drinking Goal on Treatment Outcome for Alcoholism

Spencer Bujarski  
University of California, Los Angeles

Stephanie S. O'Malley  
Yale University School of Medicine

Katy Lunny and Lara A. Ray  
University of California, Los Angeles

**Objective:** It is well known to clinicians and researchers in the field of alcoholism that patients vary with respect to drinking goal. The objective in this study was to elucidate the contribution of drinking goal to treatment outcome in the context of specific behavioral and pharmacological interventions. **Method:** Participants were 1,226 alcohol-dependent individuals enrolled in a large, multisite trial of combined behavioral intervention, acamprosate, and naltrexone. Drinking goal was coded as follows: (a) controlled drinking, (b) conditional abstinence, and (c) complete abstinence. **Results:** Analysis revealed a main effect of drinking goal on percent days abstinent ( $p < .0001$ ), days to relapse to heavy drinking ( $p < .0001$ ), and global clinical outcome ( $p < .001$ ). These results were such that a goal of complete abstinence was associated with the best outcomes, followed by conditional abstinence; controlled drinking was associated with the poorest outcomes. Conversely, a main effect of drinking goal was observed on drinks per drinking day ( $p < .01$ ), such that controlled drinking was associated with fewer drinks per drinking day whereas complete abstinence was associated with the highest number of drinks per drinking day. Combined behavioral intervention performed better than medical management alone for participants whose drinking goal was not complete abstinence. **Conclusion:** These results suggest that drinking goal represents a highly predictive clinical variable and should be an integral part of the clinical assessment of patients with alcohol dependence. Assessment of patients' drinking goals may also help match patients to interventions best suited to address their goals and clinical needs.

**Keywords:** COMBINE study, drinking goal, alcoholism, treatment outcome

It is well known to both clinicians and researchers in the addiction field that patients in alcoholism treatment vary dramati-

cally with respect to their alcohol use goals. Patients differ on the continuum between not wanting to change their drinking at all to seeking complete and long-term abstinence from alcohol. Although drinking goal represents an important clinical variable, the literature is relatively limited as to the specific influence of drinking goal on treatment outcomes for alcoholism. Likewise, the clinical implications of drinking goal on treatment matching are largely unknown.

---

Spencer Bujarski, Department of Psychology, University of California, Los Angeles; Stephanie S. O'Malley, Department of Psychiatry, Yale University School of Medicine; Katy Lunny and Lara A. Ray, Department of Psychology, University of California, Los Angeles.

Stephanie S. O'Malley reports the following activities in the past 2 years: member of the ACNP work group, the Alcohol Clinical Trials Initiative, supported with funding from Abbott Laboratories, Alkermes, Eli Lilly, GlaxoSmith Kline, Johnson & Johnson, Lundbeck, Pfizer, and Schering Plough; consultant/advisory board member, Pfizer Pharmaceuticals, Gilead Sciences Inc.; contract as a site for a multisite study, NABI Pharmaceuticals; medication supplies, Pfizer; partner, Applied Behavior Research; scientific panel member, Hazelden Foundation. Lara A. Ray is also a consultant for GlaxoSmith Kline. Data presented in this report were collected as part of the multisite COMBINE trial sponsored by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), in collaboration with the Combine Study Research Group. (A full listing of COMBINE study staff can be found at <http://www.csc.unc.edu/combine/>). Funding for the COMBINE study was through NIAAA Cooperative Agreements U10AA11715, 11716, 11721, 11727, 11756, 11768, 11773, 11776, 11777, 11783, 11787, 11799, and 11773.

Correspondence concerning this article should be addressed to Lara A. Ray, University of California, Los Angeles, Department of Psychology, 1285 Franz Hall, Box 951563, Los Angeles, CA 90095-1563. E-mail: [lararay@psych.ucla.edu](mailto:lararay@psych.ucla.edu)

## Drinking Goals in Alcoholism Treatment

Earlier research utilizing drug use goals analogous to goals used in the present study found commitment to absolute abstinence, measured at the end of treatment, to predict days to relapse across nicotine, alcohol, and opiate dependence (Hall & Havassy, 1986; Hall, Havassy, & Wasserman, 1990). These findings were such that participants committed to complete abstinence took longer to slip and longer to relapse, defined as drug use on four or more days in a week. Critically, Hall and Havassy (1986) and Hall et al. (1990) examined participants with an abstinence goal allowing for occasional slips and found that these participants did not fare as well as participants with complete abstinence goals.

Abstinence continues to be the dominant approach to alcohol treatment in the United States, whereas nonabstinent approaches tend to be more acceptable abroad (Klingemann & Rosenberg, 2009; Luquiens, Reynaud, & Aubin, 2011). The debate between abstinence and nonabstinence approaches, specifically controlled drinking (CD), has remained a controversial topic in the alcohol-

ism field since the 1960s (Davies, 1962; Miller & Caddy, 1977). As far as treatment outcomes are considered, there is no universally accepted definition of what constitutes successful CD. Other terms have been used in the literature, including harm reduction and moderation, yet these terms also lack an operational definition although the field has increasingly focused on the reductions in heavy drinking days (typically defined by four or more standard drinks on an occasion for women and five or more drinks per occasion for men; Marlatt & Witkiewitz, 2002). It has been suggested that CD, and more specifically a reduction in heavy drinking, has a number of clinical benefits that should be taken into consideration when discussing drinking goals (Gastfriend, Garbutt, Pettinati, & Forman, 2007). For example, Maisto, Clifford, Stout, and Davis (2006, 2007) analyzed treatment outcome data from Project Match and found that patients classified as moderate drinkers, defined by at least one drink but no more than 5 heavy drinking days during the 1-year follow-up, had better clinical outcomes at 3-year follow-up than did those classified as heavy drinkers (6 or more heavy drinking days at the 1-year follow-up). Although abstainers had the best outcomes, this study suggests that moderate drinking may be considered a viable drinking goal option for some individuals who may not be willing or able to abstain completely.

Although there are many obstacles to the widespread acceptance of CD as a treatment approach (Sobell & Sobell, 2006), it is important to note that not all individuals entering treatment do so with the goal of achieving abstinence. To that end, the use of abstinence as the dominant drinking goal across alcoholism treatment programs in the United States may in fact deter individuals who would otherwise seek treatment for alcohol problems should CD be proposed as an acceptable goal. Sobell, Sobell, Bogardis, Leo, and Skinner (1992) found that many patients entering an outpatient treatment facility for alcohol problems preferred self-selection of treatment goals to adoption of the goals selected by the therapist. Treatment programs that allow for and encourage patient-driven treatment goals may be more appealing and may lead to greater treatment utilization and engagement. This is particularly important in light of the overall low treatment-seeking rates for alcoholism, with only 27.8% of alcohol-dependent individuals seeking treatment in the past year (Cohen, Feinn, Arias, & Kranzler, 2007).

Tailoring treatment approaches to patients' goals, whether complete or conditional abstinence or controlled drinking, may have positive results on treatment outcome. Additionally, for some individuals entering treatment, CD may be a viable drinking goal. For example, a recent study found that patients stating a preference for abstinence had better treatment outcome than those stating a preference for nonabstinence (Adamson, Heather, Morton, & Rastick, 2010). These effects, however, were seen for percent days abstinent but not for drinking intensity, suggesting that a comparable number of drinks per drinking episode may be achieved regardless of drinking goal. These results suggest that carefully considering drinking goals at treatment entry represents an important aspect of the initial assessment. As noted by Adamson et al. (2010), treatment goals may change over the course of treatment and must be continuously evaluated in order to promote the best possible outcomes.

## Approaches to Alcoholism Treatment

Cognitive behavioral therapy (CBT) for alcoholism has received empirical support since the 1980s (Marlatt & Gordon, 1985). CBT for alcohol use disorders is grounded in social-cognitive theory (Bandura, 1986) and employs skills training in order to help patients cope more effectively with substance use triggers, including life stressors (Longabaugh & Morgenstern, 1999; Morgenstern & Longabaugh, 2000). The ultimate goal of CBT is to provide the skills that can prevent a relapse and maintain drinking goals, whether they be abstinence or controlled drinking (Marlatt & Gordon, 1985; Marlatt & Witkiewitz, 2005). A recent meta-analysis of CBT for substance use disorders found support for a modest benefit of CBT over treatment as usual (Magill & Ray, 2009). Furthermore, one report using a trajectory analysis of the COMBINE study data found the combined behavioral intervention (CBI), which is principally grounded in CBT, to reduce the risk of being in an "increasing to nearly daily drinking" trajectory. This study suggests that CBI may help participants control their drinking as opposed to simply encouraging abstinence (Gueorguieva et al., 2010). However, no studies to date have assessed the moderating role of drinking goal on CBI efficacy.

Regarding pharmacological interventions for alcohol use disorders, recent laboratory studies of naltrexone have elucidated its mechanisms of action. Studies have suggested that naltrexone reduces alcohol-induced stimulation (Drobes, Anton, Thomas, & Voronin, 2004), decreases liking of alcohol (McCaul, Wand, Stauffer, Lee, & Rohde, 2001), increases fatigue and tension following alcohol use (King, Volpicelli, Frazer, & O'Brien, 1997), and slows the progression of drinking (Anton, Drobes, Voronin, Durazo-Avizu, & Moak, 2004; O'Malley, Krishnan-Sarin, Farren, Sinha, & Kreek, 2002). These effects are dependent upon alcohol use during the course of treatment. Importantly, one study examined the effects of naltrexone on alcohol nonabstainers and found that participants who drank regularly during the treatment period benefited more from naltrexone relative to placebo (Ray, Krull, & Leggio, 2010). Together, these findings suggest that naltrexone may be better suited to a controlled drinking approach and thus may be more effective among patients with controlled drinking goals.

The second pharmacotherapy assessed in the COMBINE study was the glutamatergic NMDA receptor antagonist, acamprosate. Several studies have begun to elucidate the mechanism of action for acamprosate and have found support for acamprosate-mediated reductions in protracted withdrawal and associated alcohol craving (Spanagel & Zieglansberger, 1997). Critically, one study found patient motivation toward abstinence to be a significant moderator of acamprosate efficacy such that acamprosate was more effective among patients who were more highly motivated toward abstinence (Mason, Goodman, Chabac, & Lehart, 2006).

## Present Study Aims

In summary, although drinking goal at treatment entry represents an important and readily accessible clinical variable, few studies have empirically examined its predictive utility in terms of clinical outcome. To our knowledge, no studies to date have examined whether specific treatment approaches may be better suited for patients stating a preference for abstinence versus non-abstinence. To that end, the present study examined drinking goal

as a predictor of treatment outcome in the COMBINE study and tested whether drinking goal interacts with treatment modality (i.e., cognitive behavioral intervention, naltrexone, and acamprosate). Primary outcomes in the COMBINE study were percent days abstinent, days to relapse to heavy drinking, and global clinical outcome. In addition to examining these three primary outcomes, we tested the effect of drinking goal on drinks per drinking day. Consistent with current literature, it is hypothesized that patients whose stated drinking goal is complete abstinence will have better clinical outcomes than patients whose drinking goal is conditional abstinence, with controlled drinking having the worst outcome.

Moreover, in light of the literature suggesting that patients who drink regularly appear to benefit from naltrexone (Anton et al., 1999; Ray, Krull, & Leggio, 2011), a drinking goal  $\times$  naltrexone interaction is hypothesized, such that the effect of naltrexone will be greater among patients with controlled drinking goals than those with abstinence goals, whereas patients who are more motivated toward complete abstinence would have better outcomes on acamprosate than would patients with controlled drinking goals. Together, these analyses seek to further elucidate the predictive utility of drinking goal as well as to identify specific treatment approaches that may be better suited for patients whose goals are abstinence versus nonabstinence oriented. Given the widespread recognition of individual differences in drinking goals for alcoholism treatment, as well as the accessible nature of this clinical variable to treatment providers, the potential clinical utility of such findings is high.

## Method

### Summary of the COMBINE Study

The rationale and methods of the COMBINE study have been described in detail elsewhere (COMBINE Study Research Group, 2003a, 2003b). In brief, the COMBINE study was a large multisite treatment study of two pharmacotherapies (i.e., naltrexone and acamprosate), and cognitive behavioral intervention for alcoholism. In total, 1,383 participants were recruited at 11 U.S. sites (see

Figure 1). All of them met criteria for alcohol dependence and had been drinking heavily for the 90-day period preceding study enrollment (i.e., at least 2 heavy drinking days; defined as four drinks/day for women and five drinks/day for men, during a consecutive 30-day period within the 90 days prior to baseline evaluation). Exclusion criteria were any serious mental illnesses or unstable medical conditions; current abuse of or dependence on any drug other than nicotine or marijuana; and taking or requiring any medication that interfered with the study medications, including any current opioid use.

Two levels of behavioral intervention were investigated in the COMBINE study. The first, medical management (MM), consisted of nine brief sessions delivered by a licensed health care professional and was intended to approximate a primary care intervention. Medications were also dispensed during each of these sessions. The second, combined behavioral intervention (CBI), consisted of up to twenty, 50-min sessions that integrated aspects of cognitive behavioral therapy, 12-step facilitation, motivational interviewing, and involvement of support systems.

Participants were randomly assigned to one of nine treatment conditions and received 16 weeks of active treatment. Eight of these groups ( $n = 1,226$ ) received medical management plus a combination of either active/placebo naltrexone or active/placebo acamprosate. These four medication groups were then further divided by two levels of behavioral counseling (i.e., CBI vs. no CBI). A ninth group ( $n = 157$ ) received CBI alone, without MM or pills; however, this group was excluded from the analyses presented herein. The target naltrexone dose in the COMBINE trial was 100 mg per day (after a 7-day titration), and the target acamprosate dose was 3 g per day.

The primary outcomes for the trial were (a) percent days abstinent and (b) days to relapse to heavy drinking (operationalized as five or more drinks in a day for men and four or more drinks in a day for women). A composite variable called global clinical outcome was analyzed to assess the clinical relevance of the findings. The global clinical outcome variable takes into account alcohol consumption as well as alcohol-related problems (Cisler & Zweben, 1999). In general, the results of the COMBINE study found a CBI  $\times$  naltrexone interaction across a range of outcomes. The pattern of findings was that either naltrexone or CBI was associated with improved outcome but that there was no additional advantage of the combination of CBI and naltrexone. In addition, there were no significant effects of acamprosate alone or in combination with the other treatments.

### Measures

*Drinking goal* was assessed as part of the Treatment Experiences and Expectancies Questionnaire (Item 6) that was administered prior to treatment using a question from the Thoughts About Abstinence Scale (Hall et al., 1990). The item asked the following: "We would like to know what GOAL you have chosen for yourself about using alcohol at this time," and seven responses were possible (see the Appendix). From participants' responses to this question, drinking goal was categorized into three groups as follows: *controlled drinking goal* (i.e., "I want to use alcohol in a controlled manner—to be in control of how often I use and how much I use" and "I don't want using alcohol to be a habit for me anymore, but I would like to occasionally use alcohol when I really



Figure 1. Flowchart indicating the number of participants with complete data who were included in study analyses. GCO = global clinical outcome; DPDD = drinks per drinking day; PDA = percent days abstinent; DV = dependent variable.

have an urge"); and *complete abstinence goal* (i.e., "I want to quit using alcohol once and for all, to be totally abstinent, and never use alcohol ever again for the rest of my life"). An intermediate group of *conditional abstinence* was created based upon face validity, clinical plausibility, and prior work with the measure in order to allow for accurate hypothesis testing. Responses encoded as conditional abstinence included "I want to be totally abstinent from all alcohol use for a period of time, after which I will make a new decision about whether or not I will use alcohol again in any way" and "I want to quit using alcohol once and for all, even though I realize I may slip up and use alcohol once in a while."

*The Alcohol Dependence Scale* (ADS; Skinner & Allen, 1982) was used to assess severity of alcohol dependence. This 25-item scale measures alcohol dependence symptoms over the past 12 months and has been shown to contain items that are very relevant for alcohol-dependent drinkers (Kahler, Strong, Stuart, Moore, & Ramsey, 2003), such as the ones recruited in the present study. The ADS contains both yes/no items and items answered on a 3- or 4-point Likert scale. Total score on the ADS is computed through a simple arithmetic sum.

*The Form 90* (Miller & Del Boca, 1994; Tonigan, Miller, & Brown, 1997) was used to obtain pretreatment measures of drinking, and the Time Line Follow-Back (TLFB) interview (Sobell & Sobell 1992) was used to obtain daily reports of the number of drinks consumed during the 16-week treatment period. The Form 90 is a standardized 90-day retrospective drinking interview. Developed for Project MATCH, the Form 90 incorporates aspects of TLFB and grid-averaging methodologies in order to accurately assess participants' alcohol consumption. Percent days abstinent (PDA), drinks per drinking day (DPDD), and days to relapse during treatment were calculated from the TLFB interview data.

## Data Analytic Strategy

Outcome variables and base covariates were culled from the COMBINE database. Some additional covariates were added (detailed below). The results presented are based on data collected through the 16 weeks of treatment. Three of the outcome variables were identical to those in the primary COMBINE report: (a) PDA; (b) days to relapse to heavy drinking, as defined as more than five drinks in a day for men and more than four drinks in a day for women (relapse); and (c) global clinical outcome (GCO), which is a binary composite measure of treatment outcome. Because the four outcome levels of GCO are not linearly distributed and consistent with the primary COMBINE paper, we coded participants as either having a good clinical outcome (i.e., abstinent or moderate drinking without problems; coded as 1) or not (i.e., heavy drinking with or without problems; coded as 0). In light of the aims in the present study we also examined DPDD.

Participants for whom there was missing data or who had dropped out of the study ( $n = 258$ ) were not included in these analyses. Additionally, for days to relapse, participants who did not relapse during the treatment period ( $n = 299$ ) were not analyzed for this outcome. Drinking goal was not associated with treatment dropout,  $F(2, 1158) = 0.03, p = .97$ .

The analytical strategy for the present study was consistent with the primary COMBINE report (Anton et al., 2006). Thus, PDA was tested with a mixed effects general linear model (PROC MIXED), relapse and DPDD were tested with a proportional

hazards model (PROC PHREG), and GCO was analyzed with a logistic regression model (PROC LOGISTIC).<sup>1</sup> All analyses were conducted with SAS Statistical Software version 9.2. Analysis accommodated the clustering of observations by site through the estimation of a random intercept term. All other factors were treated as fixed effects.

As a data check, all outcomes presented in the primary COMBINE manuscript were replicated prior to any model testing for this study. Additionally, drinking goal was initially analyzed as a five-level variable, keeping all possible self-report responses separate. Visual inspection of these results supported our classification system (i.e., controlled drinking, conditional abstinence, and complete abstinence) in that the two possible responses for both controlled drinking and conditional abstinence clustered together across outcomes. Because drinking goal is a three-level variable, following the omnibus test, we conducted planned analyses to test differences between the three drinking goal groups for effects observed on all outcome variables.

## Results

### Preliminary Analyses

Full demographic and baseline drinking results can be found in the primary COMBINE report (Anton et al., 2006). In total 1,383 (428 women) alcohol-dependent participants with a mean age of 44.12 years ( $SD = 10.17$ ) were randomized in the trial. The mean number of *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) alcohol-dependence symptoms met was 5.5 ( $SD = 1.3$ ), and the mean ADS score was 16.68 ( $SD = 7.32$ ). In this study, 346 (25.0%) of participants had a controlled drinking goal, 453 (32.8%) of participants had a goal of conditional abstinence, and 506 (36.6%) of participants had a drinking goal of complete abstinence. A total of 78 (5.6%) participants reported "I really don't have a clear goal in mind" or that the other categories did not apply to them, and they were thus excluded from further analyses.

Prior to analysis of the study hypotheses, we performed randomization checks for the drinking goal variable. Drinking goal was not found to be significantly associated with randomization cell,  $F(2, 1158) = 0.31, p = .74$ ; naltrexone condition,  $F(2, 1158) = 1.17, p = .31$ ; acamprosate condition,  $F(2, 1158) = 1.64, p = .20$ ; or CBI condition,  $F(2, 1158) = 0.57, p = 0.57$ . Drinking goal was significantly associated with sex,  $F(2, 1119) = 9.86, p < .0001$ , and with age,  $F(2, 1119) = 3.29, p < .05$ , so age and sex were entered as initial covariates in all models.

Additionally, drinking goal was significantly associated with ADS total score,  $F(2, 1297) = 68.34, p < .0001$ , such that those with higher ADS scores were more likely to have abstinence-oriented goals than controlled drinking goals. These findings are consistent with prior research suggesting that severity of dependence is positively associated with selection of abstinence goals (Heather, Adamson, Raistrick, & Slegg, 2010; Sobell & Sobell,

<sup>1</sup> Hazard ratios and/or odds ratios are not reported for significant interactions. Because no single hazard or odds ratio statistic exists to be reported for interactions, chi-square values are reported instead for simplicity of interpretation (Allison, 2010). Chi-square scores were obtained from the same statistical procedures listed.

1995). However, results revealed that higher PDA at baseline was also associated with preference for abstinence,  $F(2, 1158) = 9.28$ ,  $p = .0001$ , perhaps as a result of efforts to reduce drinking prior to enrollment. In light of these baseline differences, all initial models controlled for age, sex, ADS total score, and baseline PDA; however, only control variables that were significantly predictive were retained in the final models presented below.

### Percent Days Abstinent

Analysis of percent days abstinent (see Figure 2) revealed a significant main effect of drinking goal,  $t(2839) = 9.03$ ,  $p < .0001$ ,  $B = 9.34$ ,  $SE = 1.04$ , after controlling for sex ( $p = .08$ ) and baseline PDA ( $p < .0001$ ). Additionally, a main effect of CBI,  $t(2838) = -2.35$ ,  $p < .05$ ,  $B = -6.75$ ,  $SE = 2.87$ , and a significant drinking goal  $\times$  CBI interaction were found,  $t(2839) = 1.97$ ,  $p < .05$ ,  $B = 4.03$ ,  $SE = 2.05$ . These results suggest that individuals with a complete abstinence goal had more days abstinent and that the effects of CBI on PDA were moderated by drinking goal. The moderation was such that CBI performed better than MM alone, but not for participants with a goal of complete abstinence. No significant goal  $\times$  naltrexone or goal  $\times$  acamprostate interactions were found ( $ps > .10$ ).

Planned comparisons between participants with a controlled drinking goal and those with a conditional abstinence goal revealed a significant main effect of drinking goal,  $t(1718) = 5.10$ ,  $p < .0001$ ,  $B = 11.83$ ,  $SE = 2.32$ , and a main effect of CBI,  $t(1717) = -2.09$ ,  $p < .05$ ,  $B = -7.19$ ,  $SE = 3.43$ . No significant goal  $\times$  CBI interaction was found ( $p > .10$ ). Analysis comparing controlled drinking and complete abstinence goals revealed a significant main effect of goal,  $t(1858) = 8.95$ ,  $p < .0001$ ,  $B = 9.55$ ,  $SE = 1.07$ ; a significant main effect of CBI,  $t(1858) = -2.16$ ,  $p < .05$ ,  $B = -7.10$ ,  $SE = 3.29$ ; and a significant goal  $\times$  CBI interaction,  $t(1858) = 1.95$ ,  $p = .05$ ,  $B = 4.09$ ,  $SE = 2.10$ . As

seen in Figure 1, these results suggest that CBI resulted in greater percentage of days abstinent among patients with a controlled drinking goal than among patients with a complete abstinence goal. When participants with a complete abstinence goal and those with a conditional abstinence goal were compared, a main effect of goal was observed,  $t(2100) = 4.15$ ,  $p < .0001$ ,  $B = 7.43$ ,  $SE = 1.79$ . No significant main effect of CBI or goal  $\times$  CBI interaction was found ( $ps > 0.10$ ).

### Days to Relapse to Heavy Drinking

Analysis of days to relapse (see Figure 3) revealed a significant main effect of drinking goal (hazard ratio [HR] = 0.688; 97.5% CI = 0.616–0.769;  $p < .0001$ ) after controlling for age ( $p < .001$ ), ADS score ( $p < .01$ ), and baseline percent days abstinent ( $p < .01$ ), suggesting that participants reporting complete abstinence as their goal had significantly longer time to relapse. No significant main effect of CBI was observed, nor was there a significant goal  $\times$  CBI interaction. Additionally, no significant goal  $\times$  medication interactions were found ( $ps > 0.10$ ).

Planned comparisons between controlled drinking and conditional abstinence revealed a significant main effect of drinking goal with respect to days to relapse (HR = 0.685; 97.5% CI = 0.551–0.853;  $p = .0001$ ). Comparing controlled drinking goal to a goal of complete abstinence revealed a significant main effect of drinking goal (HR = 0.683; 97.5% CI = 0.610–0.766;  $p < .0001$ ). Comparing goals of conditional abstinence to goals of complete abstinence revealed a significant main effect of drinking goal (HR = 0.697; 97.5% CI = 0.567–0.856;  $p < .0001$ ). There was no significant main effect of CBI or a goal  $\times$  CBI interaction when comparing these groups ( $ps > 0.10$ ).

### Global Clinical Outcome

There was a significant main effect of drinking goal on global clinical outcome (see Figure 4; odds ratio [OR] = 0.704; 95% CI = 0.581–0.854;  $p < .001$ ) after controlling for age ( $p < .05$ ) and baseline percent days abstinent ( $p < .05$ ). This effect was such that participants with a goal of complete abstinence were more likely to be classified as having a good clinical outcome. Additionally, a main effect of CBI was found ( $\chi^2 = 6.59$ ,  $p < .05$ ) as well as a trend level goal  $\times$  CBI interaction ( $\chi^2 = 3.11$ ,  $p = .08$ ). No significant goal  $\times$  medication effects were found ( $ps > 0.10$ ).

Planned comparisons between controlled drinking and conditional abstinence revealed neither a significant main effect of goal nor a significant goal  $\times$  CBI interaction ( $ps > 0.10$ ). However, a significant main effect of CBI was found ( $\chi^2 = 5.13$ ,  $p < .05$ ). When comparing patients with a controlled drinking goal to those with a goal of complete abstinence, there was a significant main effect of drinking goal (OR = 0.714; 95% CI = 0.588–0.868;  $p < .001$ ). There was also a significant main effect of CBI ( $\chi^2 = 4.90$ ,  $p < .05$ ) and a trend-level goal  $\times$  CBI interaction ( $\chi^2 = 2.94$ ,  $p = .09$ ). Drinking goal also had a significant effect on GCO when comparing participants with complete abstinence goals to those with a conditional abstinence goal (OR = 0.639; 95% CI = 0.444–0.921;  $p < .05$ ), such that those with total abstinence goal were more likely to be classified as having a good clinical outcome. There was, however, no significant main effect of CBI or a goal  $\times$  CBI interaction ( $ps > 0.10$ ).

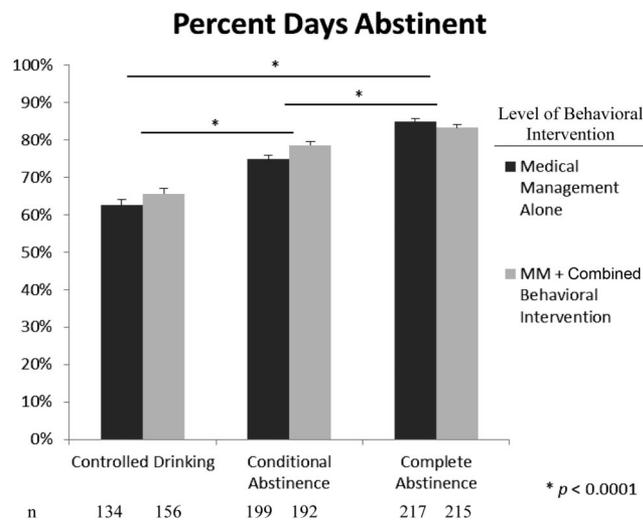


Figure 2. Percent days abstinent by drinking goal (i.e., controlled drinking, conditional abstinence, and complete abstinence). Overall main effect of drinking goal is significant ( $p < .0001$ ). Lines denote significant planned comparisons. Error bars represent standard errors. MM = medical management.

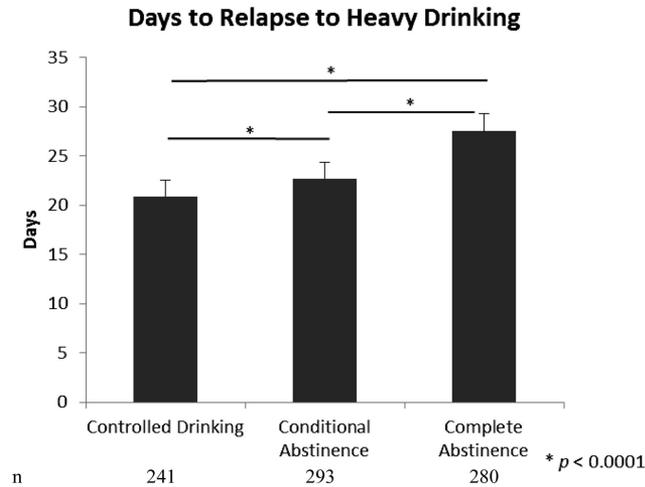


Figure 3. Days to relapse to heavy drinking by drinking goal (i.e., controlled drinking, conditional abstinence, and complete abstinence). Overall main effect of drinking goal is significant ( $p < .0001$ ). Lines denote significant planned comparisons. Error bars represent standard errors.

### Drinks per Drinking Day

Analysis revealed a significant main effect of drinking goal on DPDD (see Figure 5; HR = 0.876; 97.5% CI = 0.786–0.977;  $p < .01$ ) after controlling for baseline PDA ( $p < .05$ ), baseline DPDD ( $p < .0001$ ), sex ( $p < .0001$ ), and ADS score ( $p < .0001$ ). These results were such that a controlled drinking goal was associated with the fewest DPDD, with complete abstinence associated with the greatest number of DPDD, suggesting an abstinence violation effect (Larimer, Palmer, & Marlatt, 1999; Marlatt & Gordon, 1985). A significant drinking goal  $\times$  acamprosate interaction was

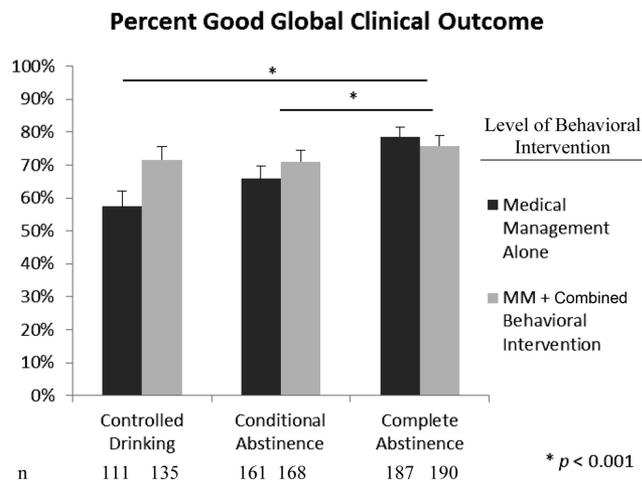


Figure 4. Global clinical outcome by drinking goal (i.e., controlled drinking, conditional abstinence, and complete abstinence) and behavioral therapy condition (i.e., MM alone vs. CBI + MM). Overall main effect of drinking goal is significant ( $p < .001$ ). Lines denote significant planned comparisons. Error bars represent standard errors. MM = medical management; CBI = combined behavioral intervention.

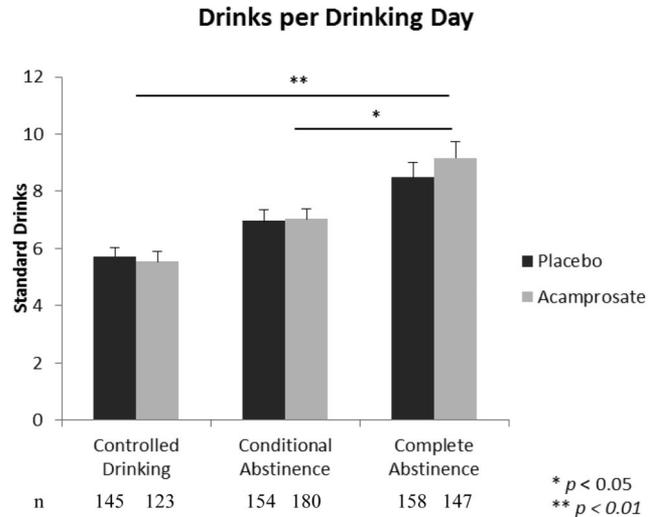


Figure 5. Drinks per drinking day as a function of drinking goal (i.e., controlled drinking, conditional abstinence, and complete abstinence) and acamprosate condition. Overall main effect of drinking goal is significant ( $p < .01$ ). Lines denote significant planned comparisons. Error bars represent standard errors.

observed ( $\chi^2 = 3.99$ ,  $p < .05$ ) such that acamprosate was associated with a greater number of DPDD compared to placebo but only among patients with a goal of complete abstinence. No significant main effect of CBI was observed, nor were there any significant goal  $\times$  CBI or goal  $\times$  naltrexone interactions ( $p > .10$ ).

Planned comparisons between controlled drinking and conditional abstinence goals did not reveal a significant main effect of goal ( $p > .10$ ). A significant drinking goal  $\times$  acamprosate interaction was observed ( $\chi^2 = 6.27$ ,  $p < .05$ ) such that acamprosate was associated with fewer DPDD than placebo, but only in patients with a controlled drinking goal. Comparing controlled drinking to complete abstinence goals revealed a significant main effect of drinking goal on DPDD (HR = 0.876; 97.5% CI = 0.781–0.983;  $p = .01$ ) and a significant goal  $\times$  acamprosate interaction ( $\chi^2 = 4.62$ ,  $p < .05$ ). No significant drinking goal  $\times$  CBI or naltrexone interactions were observed ( $p > .10$ ). When comparing participants with a goal of conditional versus complete abstinence, analysis revealed a significant main effect of drinking goal (HR = 0.809; 97.5% CI = 0.664–0.986;  $p < .05$ ). No significant drinking goal  $\times$  medication or drinking goal  $\times$  CBI interactions were observed.

### Discussion

This study examined the effects of drinking goal on clinical outcomes in the COMBINE Study. It was hypothesized that patients whose drinking goals were oriented toward complete abstinence would have better treatment outcomes as indexed by a greater percentage of days abstinent, longer period until relapse, and an overall higher global clinical outcome. These hypotheses were supported by the present study, such that participants with a self-reported goal of complete abstinence had better overall clinical outcomes following 16 weeks of alcohol-dependence treatment. Participants with a goal of controlled drinking had the worst

drinking outcomes, whereas those with a conditional abstinence goal made up an intermediate group between complete abstinence and controlled drinking. This pattern of results was robust and was replicated across all primary outcome measures. In addition, post hoc analysis of drinks per drinking day revealed that participants with a goal of controlled drinking reported fewer drinks per drinking day and those oriented toward complete abstinence as a goal reported greater drinks per drinking day.

In sum, consistent with the available literature, the present study found a goal of complete abstinence to predict better clinical outcomes than did controlled drinking goals (Adamson et al., 2010; Hall & Havassy, 1986; Hall et al., 1990; Maisto et al., 2006). However, contrary to much of the previous research, which split participants into two groups (i.e., abstinence vs. nonabstinence goals), the present study examined an intermediate group; namely, those with conditional abstinence goals. Notably, some prior research has looked at differences in time to relapse between complete abstinence and less-restrictive outcomes (including conditional abstinence) and found that a goal of complete abstinence was associated with longer time to relapse (Hall & Havassy, 1986; Hall et al., 1990). Importantly, the present study suggests that this intermediate group may be clinically dissociable from the complete abstinence group in that clinical outcomes were significantly different between the two abstinence-oriented groups. A previous study created a third drinking goal group, called “heavy, over guidelines drinkers,” and found that patients with moderate drinking and abstinence goals had similar drinking outcomes (Adamson & Sellman, 2001). The present results do not seem to support this finding, although this study was not able to split the controlled drinking group based upon self-selected acceptable consumption.

Although participants with goals of complete abstinence did succeed in drinking less frequently and taking longer to relapse to heavy drinking than did participants with controlled drinking or conditional abstinence goals, they drank more per drinking day, on average. This finding is consistent with an abstinence violation effect, wherein abstinence-oriented participants are more likely to engage in heavy drinking following an initial lapse (Marlatt & Gordon, 1985). Although CBI should theoretically reduce the impact of the abstinence violation effect by providing the opportunity to accurately process a lapse, the results presented herein did not support this effect (i.e., no goal  $\times$  CBI interaction was observed).

It was also hypothesized that, given naltrexone’s effect on hedonic response to alcohol (King et al., 1997; McCaul et al., 2001; Ray et al., 2010), naltrexone would be more effective among those with a controlled drinking goal than those with an abstinence-oriented goal. This hypothesis was not supported by the data in that there was no significant drinking goal  $\times$  naltrexone interaction in any of the outcome measures. This may be due to the fact that the vast majority of participants (78%) consumed alcohol during the trial, such that the drinking-mediated effects of naltrexone were not restricted to patients with controlled drinking goals.

Furthermore, we hypothesized that a goal of complete abstinence would be associated with better response to acamprosate (Mason et al., 2006). Although there was some evidence the acamprosate may interact with drinking goal, this interaction was not in the hypothesized direction. Instead, our results were such that acamprosate was associated with more drinks per drinking day than placebo, but only for patients with a complete abstinence

goal. As a whole, however, we found largely null results concerning the interaction of drinking goal with acamprosate. This finding limits the conclusions that can be drawn about acamprosate effects.

Further, analyses revealed several drinking goal  $\times$  CBI interactions such that the benefit of combined behavioral intervention over medical management was not supported for participants whose reported goal was complete abstinence. These findings were evident in two of four outcome measures, and some were trend level. Given the sample size of the present study, this limits the conclusions that can be drawn about matching of behavioral intervention based on drinking goal. Additionally, Type I error correction was not implemented; caution is therefore warranted when interpreting marginally significant interactions. It is, however, an important clinical finding that CBI conferred no advantage over a brief, medically oriented intervention for participants whose drinking goal was complete abstinence. However, although designed to approximate the style of intervention delivered in a primary care setting, the medical management delivered in the COMBINE study was confounded with extensive and state-of-the-art assessment and follow-up. As such, further research may be required before these findings can be generalized to real-world primary care settings.

These results presented herein should be interpreted in the context of the study’s strengths and limitations. Study strengths include the large and well-characterized sample as well as the methodological rigor of the COMBINE study. These results also represent treatment outcomes in a naturalistic drinking context (i.e., amount of participants’ drinking across 16 weeks of treatment), and in a treatment-seeking sample of participants with a current *DSM-IV* diagnosis of alcohol dependence, thus providing high external validity. One potential limitation of the study stems from the choice of outcome variables, particularly percent days abstinent, which may not be ideally suited for capturing treatment success for participants with a goal of controlled drinking. Nevertheless, the pattern of results seen for PDA was the same for GCO and days to relapse, both of which allow for moderate alcohol use, suggesting that the results are not merely the result of outcome measure selection. Interestingly, examination of DPDD revealed that participants with controlled drinking goals were more successful at limiting the quantity of alcohol use per episode (mean DPDD = 5.61) than were patients with conditional and complete abstinence goals (mean DPDD = 7.00 and 8.83, respectively); however, only the comparison between complete abstinence and controlled drinking reached statistical significance. These results must be interpreted in the context of the percentage of days in which patients drank, which was markedly less frequent in complete abstinence-oriented participants than for participants with conditional abstinence or controlled drinking (15.9%, 23.28%, and 35.8%, respectively). Taken together, these results suggest that participants committed to a goal of complete abstinence had superior outcomes, followed by those with a goal of conditional abstinence and then of controlled drinking. Moreover, post hoc analyses of drinks per drinking day revealed a pattern consistent with the abstinence violation effect, whereby participants seeking complete abstinence reported fewer drinking episodes yet consumed a higher number of drinks per drinking episode.

Additionally, given the nature of the COMBINE study, the effects of a medically oriented intervention (i.e., MM) without a pharmacological component could not be investigated. Further-

more, it should be noted that the literature does not offer consensus on the operational definition of drinking goal (Luquiens et al., 2011). Instead, the authors categorized responses to the commitment to abstinence item based largely on clinical judgment and prior research using this measure. To that end, it should be noted that the distribution of clinical outcomes across the three levels of drinking goal (complete abstinence, conditional abstinence, and controlled drinking) provided strong support for the validity of this coding system. Importantly, clinical assessment of drinking goal is a readily accessible clinical variable that, given the results presented herein, is potentially critical to treatment planning and prognosis.

Future research should assess the dynamic nature of drinking goal in predicting treatment outcomes. Clinicians have long recognized that a client's attitudes and goals toward drinking change throughout the course of treatment. The dynamic nature of drinking goal may be an important clinical variable in its own right (Hodgins, Leigh, Milne, & Gerrish, 1997). The present study was limited to the assessment of drinking goal at the onset of treatment, and future studies examining drinking goals over the course of treatment seem warranted. Likewise, further research should consider matching patients' drinking goals to specific treatment modalities, whether behavioral or pharmacological in nature.

In summary, these analyses of the COMBINE study provide strong evidence that drinking goal represents an important clinical predictor of treatment outcomes and thus should be an integral part of the clinical assessment of problem drinkers. Further, results from this study suggest that drinking goal may be useful in selecting a treatment approach. In particular, medically oriented treatments emphasizing abstinence appear to be an effective and cost-efficient treatment modality for patients whose goals are oriented toward complete abstinence. Conversely, more intensive behavioral interventions may be particularly beneficial for patients whose goals are conditional abstinence or controlled drinking. On balance, this study is one of the few to empirically examine the effect of drinking goal on treatment outcome and, in particular, matching treatment options to drinking goals. If supported in future studies, these results could be used to inform treatment planning for patients with alcoholism. To that end, an important feature of this study is the accessibility and clinical appeal of the drinking goal measure, which can be readily applied to a wide variety of treatment settings.

## References

- Adamson, S. J., Heather, N., Morton, V., & Raistrick, D. (2010). Initial preference for drinking goal in the treatment of alcohol problems: II. Treatment outcomes. *Alcohol and Alcoholism*, *45*, 136–142. doi:10.1093/alcalc/agg005
- Adamson, S. J., & Sellman, J. D. (2001). Drinking goal selection and treatment outcome in out-patients with mild-moderate alcohol dependence. *Drug and Alcohol Review*, *20*, 351–359. doi:10.1080/09595230120092670
- Allison, P. D. (2010). *Survival analysis using SAS: A practical guide* (2nd ed.). Cary, NC: SAS.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Anton, R. F., Drobos, D. J., Voronin, K., Durazo-Avizu, R., & Moak, D. (2004). Naltrexone effects on alcohol consumption in a clinical laboratory paradigm: Temporal effects of drinking. *Psychopharmacology*, *173*, 32–40. doi:10.1007/s00213-003-1720-7
- Anton, R. F., Moak, D. H., Waid, L. R., Latham, P. K., Malcolm, R. J., & Dias, J. K. (1999). Naltrexone and cognitive behavioral therapy for the treatment of outpatient alcoholics: Results of a placebo-controlled trial. *American Journal of Psychiatry*, *156*, 1758–1764.
- Anton, R. F., O'Malley, S. S., Ciraulo, D. A., Cisler, R. A., Couper, D., Donovan, D. M., . . . Zweben, A. (2006). Combined pharmacotherapies and behavioral interventions for alcohol dependence: The COMBINE study: A randomized controlled trial. *JAMA: The Journal of the American Medical Association*, *295*, 2003–2017. doi:10.1001/jama.295.17.2003
- Bandura, A. (1986). *Social foundation of thought and action*. Englewood Cliffs, NJ: Prentice Hall.
- Cisler, R. A., & Zweben, A. (1999). Development of a composite measure for assessing alcohol treatment outcome: Operationalization and validation. *Alcoholism: Clinical and Experimental Research*, *23*, 263–271.
- Cohen, E., Feinn, R., Arias, A., & Kranzler, H. R. (2007). Alcohol treatment utilization: Findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *Drug and Alcohol Dependence*, *86*, 214–221. doi:10.1016/j.drugalcdep.2006.06.008
- COMBINE Study Research Group. (2003a). Testing combined pharmacotherapies and behavioral interventions for alcohol dependence (the COMBINE study): A pilot feasibility study. *Alcoholism: Clinical and Experimental Research*, *27*, 1123–1131. doi:10.1097/01.ALC.0000078020.92938.0B
- COMBINE Study Research Group. (2003b). Testing combined pharmacotherapies and behavioral interventions in alcohol dependence: Rationale and methods. *Alcoholism: Clinical and Experimental Research*, *27*, 1107–1122. doi:10.1111/j.1530-0277.2003.tb02873.x
- Davies, D. L. (1962). Normal drinking in recovered alcohol addicts. *Quarterly Journal of Studies on Alcohol*, *23*, 94–104.
- Drobos, D. J., Anton, R. F., Thomas, S. E., & Voronin, K. (2004). Effects of naltrexone and nalmefene on subjective response to alcohol among non-treatment-seeking alcoholics and social drinkers. *Alcoholism: Clinical and Experimental Research*, *28*, 1362–1370. doi:10.1097/01.ALC.0000139704.88862.01
- Gastfriend, D. R., Garbutt, J. C., Pettinati, H. M., & Forman, R. F. (2007). Reduction in heavy drinking as a treatment outcome in alcohol dependence. *Journal of Substance Abuse Treatment*, *33*, 71–80. doi:10.1016/j.jsat.2006.09.008
- Gueorguieva, R., Wu, R., Donovan, D., Rounsaville, B. J., Couper, D., Krystal, J. H., & O'Malley, S. S. (2010). Naltrexone and combined behavioral intervention effects on trajectories of drinking in the COMBINE study. *Drug and Alcohol Dependence*, *107*, 221–229. doi:10.1016/j.drugalcdep.2009.10.017
- Hall, S. M., & Havassy, B. E. (1986). Commitment to abstinence and relapse to tobacco, alcohol, and opiates. *NIDA Research Monograph*, *72*, 118–135.
- Hall, S. M., Havassy, B. E., & Wasserman, D. A. (1990). Commitment to abstinence and acute stress in relapse to alcohol, opiates, and nicotine. *Journal of Consulting and Clinical Psychology*, *58*, 175–181. doi:10.1037/0022-006X.58.2.175
- Heather, N., Adamson, S. J., Raistrick, D., & Slegg, G. P. (2010). Initial preference for drinking goal in the treatment of alcohol problems: I. Baseline differences between abstinence and non-abstinence groups. *Alcohol and Alcoholism*, *45*, 128–135. doi:10.1093/alcalc/agg096
- Hodgins, D. C., Leigh, G., Milne, R., & Gerrish, R. (1997). Drinking goal selection in behavioral self-management treatment of chronic alcoholics. *Addictive Behaviors*, *22*, 247–255. doi:10.1016/S0306-4603(96)00013-5
- Kahler, C. W., Strong, D. R., Stuart, G. L., Moore, T. M., & Ramsey, S. E. (2003). Item functioning of the Alcohol Dependence Scale in a high-risk sample. *Drug and Alcohol Dependence*, *72*, 183–192. doi:10.1016/S0376-8716(03)00199-6
- King, A. C., Volpicelli, J. R., Frazer, A., & O'Brien, C. P. (1997). Effect of naltrexone on subjective alcohol response in subjects at high and low

- risk for future alcohol dependence. *Psychopharmacology*, *129*, 15–22. doi:10.1007/s002130050156
- Klingemann, H., & Rosenberg, H. (2009). Acceptance and therapeutic practice of controlled drinking as an outcome goal by Swiss alcohol treatment programmes. *European Addiction Research*, *15*, 121–127. doi:10.1159/000210041
- Larimer, M. E., Palmer, R. S., & Marlatt, G. A. (1999). Relapse prevention: An overview of Marlatt's cognitive-behavioral model. *Alcohol Research & Health*, *23*, 151–160.
- Longabaugh, R., & Morgenstern, J. (1999). Cognitive-behavioral coping-skills therapy for alcohol dependence: Current status and future directions. *Alcohol Research & Health*, *23*, 78–85.
- Luquiens, A., Reynaud, M., & Aubin, H. J. (2011). Is controlled drinking an acceptable goal in the treatment of alcohol dependence? A survey of French alcohol specialists. *Alcohol and Alcoholism*, *46*, 586–591. doi:10.1093/alcal/agr083
- Magill, M., & Ray, L. A. (2009). Cognitive-behavioral treatment with adult alcohol and illicit drug users: A meta-analysis of randomized controlled trials. *Journal of Studies on Alcohol and Drugs*, *70*, 516–527.
- Maisto, S. A., Clifford, P. R., Stout, R. L., & Davis, C. M. (2006). Drinking in the year after treatment as a predictor of three-year drinking outcomes. *Journal of Studies on Alcohol*, *67*, 823–832.
- Maisto, S. A., Clifford, P. R., Stout, R. L., & Davis, C. M. (2007). Moderate drinking in the first year after treatment as a predictor of three-year outcomes. *Journal of Studies on Alcohol and Drugs*, *68*, 419–427.
- Marlatt, G. A., & Gordon, J. R. (Eds.). (1985). *Relapse prevention: Maintenance strategies in the treatment of addictive behaviors*. New York, NY: Guilford Press.
- Marlatt, G. A., & Witkiewitz, K. (2002). Harm reduction approaches to alcohol use: Health promotion, prevention, and treatment. *Addictive Behaviors*, *27*, 867–886. doi:10.1016/S0306-4603(02)00294-0
- Marlatt, G. A., & Witkiewitz, K. (2005). Relapse prevention for alcohol and drug problems. In G. A. Marlatt & D. M. Donovan (Eds.), *Relapse prevention: Maintenance strategies in the treatment of addictive behaviors* (2nd ed.). New York, NY: Guilford Press.
- Mason, B. J., Goodman, A. M., Chabac, S., & Lehert, P. (2006). Effect of oral acamprosate on abstinence in patients with alcohol dependence in a double-blind, placebo-controlled trial: The role of patient motivation. *Journal of Psychiatric Research*, *40*, 383–393. doi:10.1016/j.jpsychires.2006.02.002
- McCaul, M. E., Wand, G. S., Stauffer, R., Lee, S. M., & Rohde, C. A. (2001). Naltrexone dampens ethanol-induced cardiovascular and hypothalamic-pituitary-adrenal axis activation. *Neuropsychopharmacology*, *25*, 537–547.
- Miller, W. R., & Caddy, G. R. (1977). Abstinence and controlled drinking in the treatment of problem drinkers. *Journal of Studies on Alcohol*, *38*, 986–1003.
- Miller, W. R., & Del Boca, F. K. (1994). Measurement of drinking behavior using the Form 90 family of instruments. *Journal of Studies on Alcohol Suppl.* *12*, 112–118.
- Morgenstern, J., & Longabaugh, R. (2000). Cognitive-behavioral treatment for alcohol dependence: A review of evidence for its hypothesized mechanisms of action. *Addiction*, *95*, 1475–1490. doi:10.1046/j.1360-0443.2000.951014753.x
- O'Malley, S. S., Krishnan-Sarin, S., Farren, C., Sinha, R., & Kreek, M. J. (2002). Naltrexone decreases craving and alcohol self-administration in alcohol-dependent subjects and activates the hypothalamo-pituitary-adrenocortical axis. *Psychopharmacology*, *160*, 19–29. doi:10.1007/s002130100919
- Ray, L. A., Krull, J. L., & Leggio, L. (2010). The effects of naltrexone among alcohol non-abstainers: Results from the COMBINE study. *Frontiers in Psychiatry*, *1*, 26.
- Skinner, H. A., & Allen, B. A. (1982). Alcohol dependence syndrome: Measurement and validation. *Journal of Abnormal Psychology*, *91*, 199–209. doi:10.1037/0021-843X.91.3.199
- Sobell, L. C., & Sobell, M. B. (1992). Timeline follow-back: A technique for assessing self-reported alcohol consumption. In R. Z. Litten & J. P. Allen (Eds.), *Measuring alcohol consumption: Psychosocial and biochemical methods* (pp. 41–72). Totowa, NJ: Humana Press.
- Sobell, M. B., & Sobell, L. C. (1995). Controlled drinking after 25 years: How important was the great debate? *Addiction*, *90*, 1149–1153. doi:10.1111/j.1360-0443.1995.tb01077.x
- Sobell, M. B., & Sobell, L. C. (2006). Obstacles to the adoption of low risk drinking goals in the treatment of alcohol problems in the United States: A commentary. *Addiction Research and Theory*, *14*, 19–24. doi:10.1080/16066350500489212
- Sobell, M. B., Sobell, L. C., Bogardis, J., Leo, G. I., & Skinner, W. (1992). Problem drinkers' perceptions of whether treatment goals should be self-selected or therapist-selected. *Behavior Therapy*, *23*, 43–52. doi:10.1016/S0005-7894(05)80307-7
- Spanagel, R., & Ziegansberger, W. (1997). Anti-craving compounds for ethanol: New pharmacological tools to study addictive processes. *Trends in Pharmacological Sciences*, *18*, 54–59. doi:10.1016/S0165-6147(97)89800-8
- Tonigan, J. S., Miller, W. R., & Brown, J. M. (1997). The reliability of Form 90: An instrument for assessing alcohol treatment outcome. *Journal of Studies on Alcohol*, *58*, 358–364.

(Appendix follows)

## Appendix

### Drinking Goal Item of the Treatment Experiences and Expectations Questionnaire

We would like to know what GOAL you have chosen for yourself about using alcohol at this time . . . Pick only one of the following goals.

- A. I really don't have a clear goal in mind.
- B. I want to use alcohol in a controlled manner—to be in control of how often I use and how much I use.
- C. I want to be totally abstinent from all alcohol use for a period of time, after which I will make a new decision about whether or not I will use alcohol again in any way.
- D. I don't want using alcohol to be a habit for me anymore, but I would like to occasionally use alcohol when I really have an urge.
- E. I want to quit using alcohol once and for all, even though I realize I may slip up and use alcohol once in a while.
- F. I want to quit using alcohol once and for all, to be totally abstinent, and never use alcohol ever again for the rest of my life.
- G. None of the above applies exactly to me. My own goal is:

Received October 27, 2011  
Revision received August 22, 2012  
Accepted October 9, 2012 ■