



Published in final edited form as:

Addict Behav. 2013 June ; 38(6): 2236–2245. doi:10.1016/j.addbeh.2013.02.004.

Women's Motivators for Seeking Treatment for Alcohol Use Disorders

Justine A. Grosso, B.A.^a, Elizabeth E. Epstein, Ph.D.^b, Barbara S. McCrady, Ph.D.^c, Ayorkor Gaba, Psy.D.^b, Sharon Cook, M.A.^b, Lindsey M. Backer-Fulghum, M.A.^a, and Fiona S. Graff, Psy.D.^d

^aDepartment of Psychology and Neuroscience, Baylor University

^bCenter of Alcohol Studies, Department of Psychology, Rutgers – The State University of New Jersey

^cCenter on Alcoholism, Substance Abuse, and Addictions, Department of Psychology, University of New Mexico

^dVA VISM 3 Mental Illness, Research, Education, and Clinical Center (MIRECC) & Mt. Sinai School of Medicine

Abstract

This study examined types of internal and external motivation for seeking treatment and the predictive utility of different types of motivation among 180 women with an alcohol use disorder (AUD) participating in a two-armed trial testing different individual and couple therapies for AUDs. Reasons for seeking treatment were coded for type of internal or external motivation. Most women (97%) cited internal reasons for seeking help, including: concern about progression of AUD (61.1%), health (43.3%), mental health (38.9%), and family (38.3%). Occupational concerns, an internal motivator cited by 6% of women, were associated with better drinking outcomes; interpersonal-family concerns were associated with poorer outcomes. Some motivators for seeking treatment may not be related to sustained changes in drinking, suggesting that understanding motivators for treatment may be inadequate to maintain change. Reasons for help-seeking may need to be addressed in treatment to produce long-lasting change.

Keywords

alcohol use disorders; women; motivation; treatment; outcome

Correspondence concerning this article should be addressed to: Justine Grosso, One Bear Place #97242, Waco, Texas 76798, Justine.Grosso@gmail.com, Phone: (609) 213-8939.

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1. Introduction

Alcohol use disorders (AUDs) are a disabling public health problem (Hasin, Stinson, Ogburn, & Grant, 2007; Willenbring, 2010). In 2004, approximately 17.6 million Americans 18 years and older met criteria for a current AUD (Grant, Stinson, et al., 2004). Men are approximately twice as likely as women to have an AUD, though this disparity is narrowing. In the decade prior to 2001–2002, alcohol abuse increased significantly for both men and women, and alcohol dependence significantly decreased for males but remained unchanged for females (Grant, Dawson, et al., 2004).

1.1 Seeking Treatment for Alcohol Use Disorders

A substantial body of research has focused on the efficacy of treatment for AUDs (Agosti, 1995; Berglund et al., 2003; Edwards, Marshall, & Cook, 2003; Jung, 2001; Miller & Wilbourne, 2002; Project Match Research Group, 1997). However, 85.4 percent of individuals with AUDs never seek treatment for their alcohol problem (Cohen, Feinn, Arias, & Kranzler, 2007), and this is especially true of women (Dawson, 1996; Greenfield et al., 2007). Relatively few studies have examined motivation for seeking treatment despite the need to better understand the factors and circumstances associated with treatment entry.

Women experience a unique set of barriers to seeking treatment as compared to men, such as more opposition and less support from family and friends (Beckman & Amaro, 1986; Small, Curran, & Booth, 2010), more unemployment (Substance Abuse and Mental Health Services Administration, 2010), greater economic barriers, family responsibilities, and increased stigma and social disapproval (Brady & Ashley, 2005; Covington, 2002). Furthermore, perception of alcohol problems as unsuited to femininity may lead to secrecy about and delay in seeking help for drinking and related problems (Downing, 1991; Jakobsson, Hensing, & Spak, 2005). Schober & Annis (1996) suggested that individual and treatment program barriers are more likely to affect women than men with drinking problems.

A convergence of evidence suggests that motivators to seek treatment differ by gender. However, findings on female-specific motivators for treatment are mixed and lack a common nomenclature. The concept of motivation derived from internal and external sources originates in Self-Determination Theory (SDT) (Deci & Ryan, 1985). Intrinsic motivation comes from one's need for a perceived internal locus of causality and self-determination, involving the control of one's outcomes as well as the choice of relinquishing control (Deci & Ryan, 1985). In contrast, extrinsic motivation concerns an act with the goal of achieving a certain outcome (Deci & Ryan, 2000). SDT served as the foundation for Ryan, Plant, & O'Malley's (1995) and Steinberg, Epstein, McCrady, & Hirsch's (1997) studies of internal and external motivators for seeking treatment for alcohol use disorders.

In the development of the Treatment Motivation Questionnaire, a self-report survey constructed to measure internal and external motivations for alcohol treatment, Ryan et al.'s (1995) sample consisted of 109 participants in an outpatient alcohol and drug treatment program (76% male). Ryan et al. (1995) found that participants with greater alcohol problem severity was related to a greater degree of internal motivation and that high levels of both

internal and external motivation showed the best treatment retention and patient involvement.

In a sample of 72 men seeking conjoint treatment for an AUD, Steinberg et al. (1997) found that 53 participants (73.6%) reported internal motivators and 19 participants (26.4%) reported external motivators. The most common internal motivators cited were spouse or family (27.5%), increasing problems with alcohol/wanted to stop drinking but could not (17.1%), and mental health affected (15.9%). The most common external motivator was coercion by one's spouse (90%). Steinberg et al. (1997) found that men with internal motivators for seeking treatment reported a greater degree of pretreatment drinking severity compared to those with external motivators. Furthermore, pretreatment marital satisfaction reported by males' spouses was significantly lower for males who reported spousal coercion as a motivator for seeking treatment as compared to those who did not. Moreover, for couples where spousal coercion was present, spouses reported significant increases in marital satisfaction from pre- to within-treatment.

In a qualitative study of Swedish women's (n = 5) and men's (n = 7) reasons for seeking treatment for alcohol problems, Jakobsson et al. (2005) found that women reported seeking treatment due to external motivation (pressure from a significant person in their life and disclosing their problem to others), while seeking treatment by men was internally motivated, including having a future-oriented mindset and belief in their own capability.

Moreover, parenting and motivation for substance use treatment may be uniquely complex for women, since mothers may perceive the impact of their drinking on their child as both a facilitator and a barrier to seeking treatment. For example, some women may be motivated to seek treatment if they believe their substance use is negatively impacting their child, or because they fear losing custody of their child if they do not stop drinking (Howell & Chasnoff, 1999). On the other hand, some women may be less motivated to seek treatment because of fear that their child may be taken away and/or that they will not be able to regain custody (Wilke, Kamata, & Cash, 2005).

1.2 The Current Study

The aims of the current study were to: (1) examine factors that motivated women to seek outpatient alcohol treatment, (2) explore the association between reported motivators and pre-treatment drinking, (3) explore the association between marital satisfaction and report of hypothetically related motivators for each construct at baseline, (4) explore the association between reported motivators and drinking outcomes over time including baseline and 3, 9 and 15 months post-baseline, and (5) explore the association between reported motivators for seeking treatment and readiness to change drinking behavior. Specific hypotheses tested were: (1) women would report more internal than external motivators; (2) there would be a significant relationship between the number of internal motivators and quantity and frequency of alcohol consumption pre-treatment; (3) women who reported coercion by a spouse as a motivator for seeking treatment would have lower marital satisfaction pre-treatment. Exploratory analyses examined whether certain categories of internal motivators were associated with better treatment response and readiness for change.

2. Method

2.1 Participants

Participants were 180 women with AUDs participating in a National Institute on Alcohol Abuse and Alcoholism (NIAAA)-funded outpatient alcohol treatment research program, Women's Treatment Program II (WTP II), directed by the second and third authors at the Center of Alcohol Studies, Rutgers University. Inclusion criteria included (1) being female, (2) age 18 and older; (3) having current alcohol abuse/dependence as diagnosed by the Structural Clinical Interview for *DSM-IV* (SCID; First, Spitzer, Gibbon, & Williams, 2002); (4) reporting alcohol consumption within the prior 30 days; (5) being in an intimate relationship of at least one year with a male partner with plans of continued commitment; and (6) having a partner willing to participate in treatment if in the couple's arm of the study. Exclusion criteria included (1) signs of gross cognitive impairment in the female for the individual arm or in both partners for the couples arm; (2) signs of psychotic disorders in the female (individual and couples arm) or partner (couples arm); (3) current diagnosis of drug dependence with physiological dependence in the female (individual or couples arm) or partner (couples arm); and (4) reports of severe domestic violence in the past year (couples arm).

2.2 Procedure

2.2.1 Recruitment—Participants were recruited via newspaper advertisements and referrals from mental health and medical practitioners in the community. A total of 535 individuals contacted the treatment study and completed a telephone screening interview to assess study eligibility; 442 were potentially eligible. During the telephone interview, the callers were permitted to select either individual or couples treatment until the individual study arm was full, and then women were offered couple therapy and were referred elsewhere if they did not wish to participate.

2.2.2 Baseline and Follow-up Assessment—Clinical intake interviews were scheduled individually in the individual arm and conjointly in the couple arm. In the couple arm, spouses were separated during the interview for domestic violence and cognitive impairment assessments; the rest of the clinical screen was conducted with both spouses present in that arm. During the intake interview, participants were given more information about treatment and eligibility as well as asked two open-ended questions from which the motivators for seeking treatment were coded (see Clinical Screen in section 2.3). All intake interviews were conducted by a master's- or doctoral-level clinician. Interested women (and their male partners, in the couple arm) signed informed consent forms, and were scheduled for baseline research interviews. Baseline research interviews were conducted by trained master's- or doctoral-level interviewers. After the baseline interview, women were randomly assigned to a treatment condition within each study arm. For more information on pre-treatment subject flow and randomization processes see McCrady, Epstein, Cook, Jensen, & Ladd (2011). Follow up interviews were conducted at 3 months post-baseline (immediately post-treatment), 9 months post-baseline, and 15 months post-baseline.

2.2.3 Treatment—Out of 258 individuals who scheduled a clinical intake interview, 180 completed the intake, and 158 participants (87.3%) had at least one treatment session. Women in the individual therapy arm ($n = 99$) were randomly assigned to standardized cognitive behavioral therapy for alcohol use disorders (generic CBT, $n = 55$) or Women's Specific CBT (WS-CBT, $n = 44$), while those in the couple therapy arm ($n = 59$) were randomly assigned to Alcohol Behavioral Couples Therapy (ABCT, $n = 31$ couples) or blended ABCT (BL-ABCT, $n = 28$ couples), in which the male partner attended sessions 1 and 7–12 with the woman (McCrary, Epstein, Cook, Jensen, & Ladd, 2011).

Treatment was provided in 12 sessions over a maximum of 4 months. Couple sessions were 90 minutes and individual sessions were 60 minutes. Masters or doctoral level clinicians delivered the manual-guided treatments. Psychoeducation, alcohol-focused and general skills training, motivational enhancement, and relapse prevention were incorporated in all treatment conditions. In addition, the WS-CBT emphasized women's autonomy and right to self-care as compared to other-care and included topics relevant to females, such as empowerment, assertiveness training, connecting with others, and mood and anxiety management. The couple treatment conditions stressed relationship improvement, spouse coping with the alcohol problem, and the male partner's support for the woman's abstinence. Procedures followed were in accord with the standards of the institution's Internal Review Board.

2.3 Measures

Intake Form—The intake form assessed basic demographic information including participants' age, length of relationship, ethnicity, race, number of children, employment status, education, and total household income.

Clinical Screen—The clinical screen was a semi-structured clinical interview to assess substance use, emotional functioning, and eligibility for the study. For the current study two open-ended questions from the clinical screen were coded: (1) "What have been the main difficulties that led you to call?" and (2) "Are there any additional problems that concern you?" These questions were asked of the participant after initial paperwork and introduction to the program was completed. These qualitative responses were coded (see below) for internal and/or external motivators. In addition, a self report question on external motivators assessed level of coercion from sources such as an employer, probation or parole, the Intoxicated Driver Resource Center (IDRC), other legal source, Division of Youth and Family Services (DYFS), other social service agencies, or a spouse/partner explicitly stating that the woman had to seek treatment or he/she would leave the relationship.

Timeline Follow-Back Interview (TLFB)—The TLFB (Sobell & Sobell, 1996) was used to obtain daily data on frequency, and severity of alcohol consumption from 90 days prior to the last drinking day before the baseline interview to 12 months post treatment, to calculate two outcome measures - percent days drinking (PDD) and mean standard drinks per drinking day (MDPDD). The test-retest reliability of the TLFB is high, as well as the correlations between drinker and collateral reports, ranging from $r = .84$ to $r = .94$ (Breslin, Sobell, & Sobell, 1996).

Structured Clinical Interview for DSM-IV (SCID)—The SCID I (First et al., 2002) was used to assess current and lifetime diagnoses of Axis I disorders in women in the study. Kappas reported for the SCID range from .84 to 1.00 (Schneider et al., 2004).

Treatment Attendance Record—The Treatment Attendance Record was used to track scheduled and/or attended treatment sessions.

Dyadic Adjustment Scale (DAS)—The shortened DAS (DAS-7) (Hunsley, Best, Lefebvre, & Vito, 2001) was used to measure women's relationship satisfaction. Reliability and validity data on the DAS-7 are good (Hunsley et al., 2001).

Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)—The SOCRATES (Miller & Tonigan, 1996) was used to measure women's readiness to change drinking behaviors. Reliability and validity data on the SOCRATES are strong (Green, Worden, Menges, & McCrady, 2008).

2.4 Procedure for Coding Motivator Categories from the Clinical Screen Open Ended Questions

To develop the coding procedures for qualitative responses to clinical questions, the authors implemented a deductive-inductive method (Srnrka & Koeszegi, 2007), using the Steinberg et al. (1997) coding system as a deductive foundation. An iterative strategy was used to code the responses and add new categories to the evolving coding system. Only one code was assigned per recording unit, defined for the current study as an independent phrase that communicated an idea. One paragraph and/or one sentence could contain several independent phrases (i.e., ideas). Stemler (2001) notes that recording units do not necessarily have to be bound by physical boundaries of punctuation; a sentence can include multiple recording units.

To develop the coding system, the research team first coded a sample of responses together to reach an understanding of the existing categories, agree on coding rules, and add new categories that were mutually exclusive, exhaustive, and relevant to alcohol dependent women. Then, two coders (the first author and a master's candidate in psychology) independently coded all responses to the two clinical screen questions, using the coding system developed by the research team. The two primary coders met twice during the coding process to code two samples of at least 20 participants' responses together, to help prevent inter-coder drift. Not including the responses coded jointly, inter-coder agreement (same code was assigned by both raters) was 81.2%. The research team then met to resolve all discrepancies. The coding system evolved from a detailed system (Table 1) to a collapsed system (Table 2). For more information on the coding systems' formulation see section 3.3.

2.5 Data Analysis

The available sample size for some analyses was less than 180 because of missing data on some variables. In terms of drinking data (PDD and MDPDD), 7.2% were missing at baseline, 21.6% at 3 months post-baseline, 28.3% at 9 months post-baseline, and 32.7% at 15 months post-baseline. Drinking data were missing as a result of attrition in a monotone

pattern (Schafer & Graham, 2002). SPSS v. 18, HLM v. 6.08, and Mplus v. 6.11 (Muthén & Muthén, 2010) were used for all analyses.

2.5.1 Analyzing H1: Describing internal and external motivators—Differences in endorsed internal and external motivators were examined using descriptive statistics and reported as percentages, means, and standard deviations.

2.5.2 Analyzing H2: Internal motivators and baseline drinking—To examine differences in baseline drinking (PDD and MDPDD) based on internal motivator category we conducted Pearson correlations and independent samples *t* tests.

2.5.3 Analyzing H3: Motivators and marital satisfaction—The association between spousal coercion to treatment and marital satisfaction at baseline was examined using independent samples *t* tests.

2.5.4 Exploratory analyses: Motivators, drinking outcomes, and stages of readiness—To explore the relationship between women who endorsed internal motivators and their treatment outcomes in terms of PDD, the present study used a piecewise linear growth model to evaluate different growth trajectories (i.e., changes in drinking) across different time points using the HLM 6.08 software program (Raudenbush, Bryk, & Congdon, 2004). Three growth variables were created to model change from baseline to 3 months post-baseline (C1; scored 0, 1, 1, 1 for baseline, 3 months, 9 months, and 15 months respectively), 3 to 9 months post-baseline (C2; scored 0, 0, 1, 1), and 9 to 15 months post-baseline (C3; 0, 0, 0, 1). This allowed for the possibility that different rates of change might differ across different trajectories based on the endorsed motivator (Raudenbush & Bryk, 2001). A separate model was tested for each internal motivator and only participants who had drinking data for at least two time points were included in the analyses. For participants that remained, drinking data at each time point was estimated using restricted maximum likelihood estimation, which allows for replacement of data if missing at random.

All equations followed the same basic format and used a two-level model. Level 1 included a repeated measures, while Level 2 included the between-person effects. To serve as an example, the equation for the internal motivated, interpersonal – family motivation, is described here. At the first level of analysis, growth variables (i.e., C1, C2, and C3) from a single individual's scores were used to predict PDD, and a separate set of parameters were estimated for each person in the sample. Specifically, the Level 1 equation takes the following form:

$$Y_{pi} = \beta_{p0} + \beta_{p1}(C1) + \beta_{p2}(C2) + \beta_{p3}(C3) + e_{pi}$$

For each person, PDD (the dependent variable) is assessed up to four different time points, and Y_{pi} is the score on PDD for person p for time point “ i ”. The three slopes for person p (β_{p1} , β_{p2} , and β_{p3}) are estimated using the growth variables (C1, C2, and C3) from all the assessments of person p . The slopes indicate the extent to which within-person fluctuations in the growth variables across the different time points predict corresponding within-person

changes in PDD. The intercept (β_{p0}) gives an individual's expected score on PDD when all her within-person fluctuations on the predictor and control variables are held constant. After computing four parameter estimates (one intercept and three slopes) for each person in the sample, these parameters were then used as outcome variables in the Level 2 equations.

These equations took the following form:

$$\begin{aligned}\beta_{p0} &= \gamma_{00} + \gamma_{01} (\text{number of sessions}_p) + \gamma_{02} (\text{age}_p) + \gamma_{03} (\text{interpersonal-family motivation}) + u_{0p}, \\ \beta_{p1} &= \gamma_{10} + \gamma_{11} (\text{number of sessions}_p) + \gamma_{12} (\text{age}_p) + \gamma_{13} (\text{interpersonal-family motivation}_p) \\ \beta_{p2} &= \gamma_{20} + \gamma_{21} (\text{number of sessions}_p) + \gamma_{22} (\text{age}_p) + \gamma_{23} (\text{interpersonal-family motivation}_p) \\ \beta_{p3} &= \gamma_{30} + \gamma_{31} (\text{number of sessions}_p) + \gamma_{32} (\text{age}_p) + \gamma_{33} (\text{interpersonal-family motivation}_p)\end{aligned}$$

The Level 2 equations include three predictor variables: (a) number of sessions attended, (b) age of participant, and (c) interpersonal – family motivation. The slope for the covariate, number of sessions attended (γ_{01}) indicates the extent to which a woman's number of treatment sessions she attended are associated with her baseline scores on PDD. The slope for the covariate, age (γ_{02}), indicated the extent to which a woman's age is associated with her baseline scores on PDD. The slope for the predictor variable, interpersonal – family motivation (γ_{03}), indicates the extent to which a woman either endorses or does not endorse an interpersonal – family motivation. In addition, the Level 2 coefficients γ_{10} , γ_{20} , and γ_{30} estimate the change in PDD across each time period when women did not endorse an interpersonal – family motivation after controlling for the number of sessions and age. The coefficients γ_{13} , γ_{23} , and γ_{33} estimate the change in slope strength for women who did endorse an interpersonal – family motivation after controlling for the number of sessions and age.

To examine the relationship between women who endorsed internal motivators and their treatment outcomes in terms of MDPDD, we conducted separate repeated measures ANOVAs for each time block (baseline to 3 months post-baseline, 3 to 9 months post-baseline, and 9 to 15 months post-baseline) instead of one for the whole time period (baseline to 15 months post-baseline) because missing values for any time period would result in a reduction in the total sample for analysis. In addition, ANOVAs were conducted separately for each motivation category (yes/no) because a participant could endorse more than one motivation category.

The association between internal motivators and readiness to change at baseline was examined with independent samples *t* tests.

3. Results

3.1 Sample Characteristics

Women who completed the clinical screen ($n = 180$) were 25 to 75 years old ($M = 47.58$, $SD = 9.43$) and 95.6% were Caucasian. Most (77.4%) were married or living together as if married (12.7%) and had a mean windsorized household income of \$99,365.88 ($SD = \$52,775.51$). On average, women had about 2 children ($M = 1.78$, $SD = 1.23$) of their own, with 1.20 ($SD = 2.33$) children and/or stepchildren living at home. The majority (64.1%) of the sample was employed either full time (39.8%) or part time (24.3%). All participants had

an alcohol use disorder (current dependence: 97.2%). Age of onset of alcohol abuse ranged from 11 to 71-years-old ($M = 27.71$, $SD = 12.55$) and age of onset of alcohol dependence ranged from 14 to 72-years-old ($M = 35.47$, $SD = 11.78$). In terms of previous alcohol treatment, 13.7% had attended inpatient treatment and 28.6% had attended outpatient treatment.

For those women completing the baseline interview ($n = 168$), at which detailed drinking data were obtained, there were no significant differences between those who enrolled in treatment ($n = 158$) and those who left the program after the baseline ($n = 10$) in terms of pre-baseline percent drinking days and mean drinks per drinking day (both raw and transformed). There were no significant differences between women who entered treatment versus those who did not enter treatment after the in person clinical screen interview in age or number of children at home. Women who entered treatment were significantly more likely to be employed full or part-time than women who did not enter treatment (68.4% vs. 34.8% $\chi^2 = 9.832$, $p < 0.002$).

3.2 Overall Treatment Response

Overall, percent drinking days (PDD) and mean drinks per drinking day (MDPDD) decreased from baseline (PDD: $M = 70.49\%$, $SD = 26.80$; MDPDD: $M = 6.89$, $SD = 4.27$, MDPDD) to 3 months (PDD: $M = 35.14\%$, $SD = 32.05$; MDPDD: $M = 4.50$, $SD = 3.14$) and remained stable across 3, 9, and 15 months post-treatment. There was no interaction effect of treatment arm on any outcome variable, and all chi square tests to examine relations between treatment arm and the seven internal motivators (yes/no) were not significant. Therefore, treatment arm was not entered as a covariate for subsequent outcome analyses.

3.3 Description of Motivators

The collapsed motivator coding system (Table 2) was used to test the Hypothesis 1, that women would report more internal than external motivators. Frequency distributions were employed to describe frequencies of motivator codes and a chi square was used to examine endorsing or not endorsing worrying about amount/increase in drinking by treatment entry or no treatment entry.

3.3.1 Detailed Coding System—The mean number of motivations coded for each participant was 2.57 ($SD = 1.42$). According to the detailed coding system (Table 1) only 5 women (3%) endorsed any external motivation for seeking treatment, compared to 170 participants (94.4%) who cited at least one internal motivator for seeking treatment. Every participant who endorsed an external motivator ($n = 5$) also endorsed at least one internal motivator ($n = 170$); for 10 other participants coders were unable to determine coding of motivation to seek treatment. Among all codes endorsed according to the detailed coding system, the most common internal motivators for women seeking treatment were: worry about amount and/or increase in drinking (31.1%), aware that health is being affected by drinking (22.7%), concern about drinking to regulate negative feelings (22.2%), spouse/partner affected by drinking (21.1%), children affected by drinking (21.1%) and concern about biological vulnerability for AUDs (17.2%). Of 22 women who completed the clinical intake interview but did not enter treatment (i.e., did not have at least one therapy session),

only 4% reported worrying about amount and/or an increase in drinking, in contrast to 31% of women who had at least one treatment session who mentioned this concern, $\chi^2(1) = 8.72$, $p < .01$.

3.3.2 Collapsed Coding System—The detailed coding system was collapsed into domains composed of clinically related sub-codes (Table 2), in which the mean number of motivators coded for each participant was 2.19 ($SD = 1.02$). The following categories and percentages of participants endorsing each internal motivator were: concern over lack of control of drinking (61.1%); health concerns (43.3%); intrapersonal/mental health concerns (38.9%); interpersonal – family concerns (38.3%); interpersonal – other concerns (15.0%); general functioning concerns (8.9%); and occupational concerns (6.1%).

3.3.3 Responses to Explicit Items Assessing Types of Coercion—In response to the item in the Clinical Screen intake interview regarding presence and type of coercion for seeking treatment, the following percentages of women endorsed coming to treatment due to coercion by: a male partner (4.4%), employer (0.6%), probation/parole (0.6%), IDRC (0.6%), other legal system (0.6%), or other social service (0.6%).

3.4 Baseline Correlates of Coded Categories of Motivators

3.4.1 Demographic Characteristics—One way ANOVAs (with Bonferroni correction) were conducted to examine baseline characteristics and specific motivators to identify non-ETOH variables that might be related to motivation to seek treatment. Women who endorsed interpersonal – family concerns ($n = 69$) had more children and stepchildren at home ($M = 1.57$, $SD = 1.23$) than women ($n = 112$) who did not endorse this concern ($M = .98$, $SD = 1.17$), $F(1, 179) = 10.19$, $p = .002$. In contrast, women who endorsed health concerns ($n = 78$) had fewer children and stepchildren at home ($M = .90$, $SD = 1.05$) than women ($n = 103$) who did not endorse this concern ($M = 1.44$, $SD = 1.30$) ($F(1, 179) = 9.01$, $p = .003$). Women who completed the clinical screen with their spouse present for any portion were significantly more likely to endorse interpersonal – family concerns as a motivator (52.2% vs. 47.8%; $\chi^2 = 4.233$, $p < 0.05$); there was not a significant difference between general functioning concerns, occupational concerns, health concerns, intrapersonal/mental health concerns, lack of control, and interpersonal-other concerns for women whose spouses were present for any portion of the clinic screen versus women whose spouses were not.

3.4.2 Motivators and baseline drinking—Hypothesis 2, that there would be a significant relation between the number of internal motivators cited and quantity and frequency of alcohol consumption pre-treatment, was not supported. There was not a significant correlation between the number of internal motivators reported and the quantity and frequency of alcohol consumption pre-treatment, and no significant differences in baseline drinking frequency and intensity vis a vis specific motivator categories. Furthermore, independent samples t-tests were conducted to examine the relationship between motivator endorsement and drinking at baseline; for each motivator there was not a significant difference between those who did and did not endorse it and baseline drinking.

3.4.3 Marital Satisfaction—Hypothesis 3 posited that women who reported coercion by their spouse as a motivator for seeking treatment would report lower marital satisfaction pre-treatment. An independent samples t-test was conducted to examine differences in the pre-treatment marital satisfaction score measured by the Dyadic Adjustment Scale for women who reported that drinking affected their spouse as an internal motivator ($n = 36$) and women who did not report this motivator ($n = 132$); there was no significant difference. The internal motivator, spouse affected by drinking, was used rather than the external motivator, spouse coercion, because only two participants (1.1%) endorsed the external motivator.

3.4.4 Attrition Analysis—A linear regression analysis tested the effect of internal motivators on treatment retention, measured as the percentage of total sessions attended out of 12 possible sessions. Entering all predictor (i.e., internal motivator) variables simultaneously, women who endorsed interpersonal – family motivators attended fewer treatment sessions than those who did not endorse this motivator, $\beta = -0.17$, $t(1) = -2.12$, $p < .05$. Because 50% of the sample attended all 12 sessions, this outcome was skewed, and thus, in subsequent analyses poisson and negative binomial regressions were compared testing internal motivators on sessions attended as a count variable. Results were consistent across models, with interpersonal – family motivators as the only motivator category significantly predicting sessions attended, however, the initial linear regression model of percent sessions attended appeared to be a better fit of the data based on lower AIC/BIC statistics compared to the models using a poisson distribution. A logistic regression was also conducted using a categorical measure of treatment retention (50% or less of treatment sessions attended versus more than 50% of treatment sessions attended) and produced a similar result.

3.4.5 Types of Internal Motivators, Retention in Treatment, Drinking Outcome, and Stages of Change—Baseline variables of age, employment status (employed full or part-time versus not), and number of children at home, as well as treatment arm and percent sessions attended were tested as predictors of number of drinking days at months 3, 9, and 15 post-baseline, using both poisson and negative binomial distribution, the latter which demonstrated a better fit to the data based on lower AIC/BIC fit statistics. Entering all covariates simultaneously, percent sessions attended was a significant predictor of better drinking outcome at months 3 and 9, both at $p < 0.001$; age was a significant predictor of worse drinking outcome (i.e. more drinking days) at months 9 and 15, with alpha levels at $p < 0.001$ and $p < 0.01$; as such, both age and attendance were entered as covariates in all subsequent models of motivators predicting drinking outcome.

Exploratory analyses examined whether certain categories of internal motivators were associated with better treatment response.

3.4.5.1 PDD: Separate piecewise growth models were conducted for each of the seven general categories of internal motivators in order to examine change in PDD from baseline to 3 months post-baseline, 3 to 9 months post-baseline, and 9 to 15 months post-baseline. A square root transformation was applied to the PDD variable to normalize the distribution. Age of women and the number of sessions women attended were entered as covariates for the following analyses.

Results for all seven internal motivations are displayed in Table 3. However, only the significant findings will be reported here. Women who endorsed interpersonal – family motivation at baseline increased squared root drinking days by 1.28 (1.63 PDD) from 3 to 9 months post-baseline compared to women who did not endorse interpersonal – family motivation. Women who endorsed occupational motivation at baseline had 2.36 fewer squared root drinking days (5.59 PDD) from 9 to 15 months compared to women who did not endorse occupational motivation.

3.4.5.2 MDPDD: Separate repeated measures ANOVAs for each of the seven general categories of internal motivators were done to examine change in MDPDD from baseline to 3 months post-baseline, from 3 to 9 months post-baseline, and from 9 to 15 months post-baseline while controlling for age and number of sessions attended. A square root transformation was applied to the MDPDD variable to normalize the distribution.

Table 4 summarizes interaction effects for each internal motivator by time for MDPDD. Endorsement of occupational motivators to seek treatment at baseline was associated with decreased MDPDD from baseline to 3 months, $F(1, 117) = 7.30, p < .01$, while general functioning motivators to seek treatment were associated with decreased MDPDD from baseline to 3 months, $F(1, 117) = 5.53, p < .05$. For the 3 to 9 month post-baseline follow up period, occupational motivators were associated with increased MDPDD, $F(1, 95) = 10.05, p < .01$. No other motivators were associated with change in drinking intensity during treatment or in the 6 months following treatment. For the 9 to 15 month post-baseline follow up period, women who endorsed baseline occupational motivators reported decreased MDPDD, $F(1, 82) = 4.18, p < .05$.

Multicollinearity among the seven internal motivators was examined and tolerance and VIF statistics were found to be within acceptable limits (Keith, 2006). The lowest tolerance value was 0.73 and the highest VIF value was 1.37. All seven internal motivators were entered into linear regression analyses predicting drinking (PDD and MDPDD) for 0–3, 3–9, and 9–15 months post-baseline, controlling for the baseline value of the corresponding drinking variable. Only interpersonal – family motivators predicted higher PDD 3–9 months post-baseline, $\beta = 0.19, t(8) = 2.20, p < .05$. General functioning motivators were a significant predictor of higher MDPDD within treatment, $\beta = 0.22, t(8) = 2.80, p < .01$, and 9–15 months, $\beta = 0.21, t(8) = 2.44, p < .05$. Concern about uncontrolled progression of AUD motivators also predicted higher MDPDD within treatment, $\beta = 0.16, t(8) = 2.11, p < .05$, and 9–15 months, $\beta = 0.20, t(8) = 2.41, p < .05$. Only occupational motivators significantly predicted lower MDPDD within treatment, $\beta = -0.20, t(8) = -2.51, p < .05$. Table 5 summarizes these results.

3.4.5.3 Readiness to change: Independent samples *t* tests were conducted to examine the relationship between motivation for seeking treatment and readiness to change at baseline. The results will be presented going from low levels of motivation to change (i.e. pre-contemplation and contemplation) to higher levels of motivation to change (i.e. action and maintenance). Women who endorsed health concerns had significantly higher mean contemplation scores than women who did not endorse those concerns ($t(178) = -2.31, p = .02$). Women who endorsed interpersonal-family concerns had significantly higher mean

determination/preparation stage scores than women who did not endorse those concerns ($t(179) = -2.25, p = .03$). Women who endorsed lack of control of drinking concerns had significantly higher mean action and maintenance scores than women who did not endorse those concerns ($t(179) = 2.18, p = .03$; $t(179) = 2.25, p = .03$).

4. Discussion

A coding scheme of internal and external motivators originally devised by Steinberg et al. (1997) in the same lab for a sample of men with AUDs was modified for our female sample using an iterative approach. Codes were first *detailed* and then later *collapsed* into categorical domains composed of clinically related sub-codes. Female-relevant motivators added to the original “male drinker” list included concerns about the effect of excessive alcohol use on appearance (e.g. wrinkles), functional drinking (e.g. drinking to regulate depression, anxiety, or sleep), biological vulnerability, negative interpersonal interactions or embarrassing behavior (e.g. being nasty to others, alienating friends, “drunk dialing”), risky behavior (e.g. promiscuity, driving while drunk, engaging in violence), secretive drinking, awareness that cognitive functioning is affected by drinking (e.g. memory problems, unclear thinking, blackouts), dissatisfaction with self, effect of alcohol on weight, and loss of control over increasing alcohol consumption. Concern about family affected by drinking was further broken down to specify spouse/partner and/or children affected by drinking.

Women in our sample reported more internal motivators (97% versus 74%) and had a different hierarchy of motivators than the men in the Steinberg et al. (1997) sample. However, it is important to note that in Steinberg et al. (1997), it was required that the males’ female partners be involved in the treatment, while in the current study women’s male partners did not have to be involved. This may in part account for the difference in prevalence of internal motivation versus motivation from the intimate partner. In the Steinberg et al. (1997) sample, males’ most commonly-reported internal motivators were: spouse/family being affected by drinking, increasing problems with alcohol, and mental health affected by drinking. For women in the current study, the most commonly reported internal motivators were: concern about uncontrolled progression of AUD (61.1%); health (43.3%); intrapersonal/mental health (38.9%), and interpersonal – family (38.3%). Whereas Steinberg et al. (1997) did not examine the association between men’s motivators and drinking outcomes, the present study did.

In terms of the relation between different motivators and response to treatment, in general, concerns precipitating women to seek treatment were actually negatively associated with outcome in terms of retention in treatment and changes in drinking during and in the twelve months after treatment. Overall, drinking severity (MDPDD) during and after treatment, as opposed to drinking frequency (PDD), was more commonly associated with a motivator endorsed at baseline. Only alcohol-related occupational concerns at baseline showed a fairly consistent relation with positive drinking outcomes (decreased drinking) during treatment and in the second six months after treatment, however general functioning concerns were also related to positive outcomes during treatment. Concerns at baseline about the negative effects of alcohol on family were associated with increased drinking during treatment. Concerns at baseline about health, mental health, the uncontrolled progression of the AUD,

and interpersonal problems with non-family were not related to changes in drinking frequency or intensity during or after treatment. While there are some indications suggesting specific motivators predict drinking outcomes, the predictive utility of motivators to seek treatment is not consistent on the whole. Future research including a more standardized and objective approach to assessing motivators for seeking treatment is warranted.

One might surmise that perhaps women with more internal motivators to seek treatment might be those who have the most severe alcohol use at baseline, thus making positive treatment response less likely. Our analyses showed that this was not the case. There was no relation between baseline motivators for treatment and baseline drinking levels and each model of drinking outcome included a control for the baseline value.

Furthermore, the present study examined the relationship between motivators at baseline and readiness to change one's drinking behavior. Analyses revealed that women who had health concerns at baseline had the highest contemplation stage scores, women who had interpersonal-family concerns at baseline had the highest determination/preparation stage scores, and women who had lack of control of AUD concerns at baseline had both the highest action and maintenance scores. It may be that feeling out of control of the progression of one's drinking may be particularly motivating for moving towards behavior change as compared to interpersonal-family and health concerns.

4.1 Implications

Findings from the current study may be employed throughout the recruitment, intake assessment, and therapy processes. Commonly identified drinking-related concerns can be utilized in recruitment methods in order to attract women with drinking problems to seek treatment. For instance, clinical or research teams could use commonly reported female-specific motivators when advertising treatment programs such as worry about the uncontrolled progression of alcohol use, physical ("wrinkles"), occupational or mental health concerns, and impact of drinking on the spouse/partner and/or children. Outreach materials that directly and specifically target these concerns may increase the chance that a woman reflects on her drinking and seeks treatment. In addition, a questionnaire, created systematically to assess women's drinking-related concerns prior to treatment, can be used to identify concerns unique to the female client. Then treatment could explicitly integrate specific, stated motivators (i.e. areas of concern) into patients' psycho-education and skills training treatment plan, as well as into independent or conjoint treatment techniques. The findings here, for example, support the notion of adapting Persons' case conceptualization model (Persons, 2008) in general psychotherapy, for SUD treatment. Persons' model begins with a collaborative identification of a "problem list" for each patient, upon which the subsequent treatment planning is based. That is, concerns leading to treatment entry for alcohol dependence among women may need to be targeted in treatment as explicitly as the alcohol problem. In fact, treatment directed toward multiple areas of concern (i.e. family, employment) in addition to substance use has been shown to augment outcomes and attendance for male drug abusers (McLellan et al., 1997) but this has not been explicitly examined in a sample of females with AUDs.

Internal motivation for behavior change has been hypothesized to be associated with increased engagement and retention in treatment (DiClemente, Bellino, & Neavins, 1999) and some research has supported this supposition (Ryan et al., 1995). The findings of the present study on commonly reported alcohol-related concerns that precipitated women's seeking alcohol treatment did not yield results completely consistent with previous research; perhaps the construct of motivation for seeking treatment (versus concerns about alcohol related problems) needs to be unpacked in a way that will better inform personalized treatment planning to enhance outcome. For instance, baseline interpersonal-family motivators were associated with worse drinking and retention outcome. Some motivators for help-seeking may actually be de-motivating for sustained change, such that "motivator for treatment" may be a misnomer; going forward, use of the term "concerns at entry to treatment" may more aptly describe the reasons for seeking treatment among these alcohol dependent women, and may need to be incorporated into the treatment plan if treatment is to produce long-lasting abstinence.

More specifically, it may be beneficial to discuss with each client how concerns regarding one's alcohol use may act as both motivation and barriers to treatment initiation as well as continued attendance. Information regarding motivation for seeking treatment can be integrated into treatment approaches that address treatment engagement and motivation for change (Grella, 2008) such as behavior therapies, decisional balance exercises, and brief interventions and can be used to enhance the motivational aspects of concerns at entry to treatment. Motivational Interviewing (MI; Miller & Rollnick, 2002), a client-centered, yet directive intervention that aims to reduce a client's ambivalence about changing a health behavior (e.g., alcohol use, smoking, medication adherence) by evoking a client's internal motivation for problem-change using differential responses (Miller & Moyers, 2006), might be explicitly informed by the present study's comprehensive list of motivators for seeking treatment and used to highlight the positive aspects of a client's concern at entry to treatment. For example, when working with women with alcohol dependence, the clinician may find utility in referring to the codes identified in this study as general domains in which to elicit change talk. Additionally, the present research would suggest that for women, change talk about internal occupational concerns should be preferentially reflected as it is associated with decreases in drinking. Moreover, decisional balance exercises allow clients to elucidate both sides of their ambivalence about change (Miller & Rollnick, 2002). The present study's cited domains of internal motivation for seeking treatment could be used to guide a decisional balance exercise (e.g. identifying pros and cons in interpersonal – family, health, mental health-related domains). This may encourage women to complete a particularly thorough examination of the advantages (and disadvantages) of behavior change. While a decisional balance can evoke awareness of barriers to behavior change and/or treatment attendance, it is possible that a more systematic decisional balance exercise may also increase awareness of consequences of alcohol misuse and increase motivation for change. Thus, there are a variety of approaches to directly address concerns at entry to treatment that may act as facilitators or barriers to treatment entry and attendance.

4.2 Study Limitations

This study has some limitations to be taken into account when interpreting results. The sample was primarily Caucasian, educated, and had a mean household income above that of the geographic region. Additionally, all women had to be in a stable, heterosexual relationship, even though the male partner did not have to participate in the treatment. Furthermore, this sample included only participants who volunteered to be part of a treatment study protocol, which might preclude generalizability of findings to women with AUDs who are not motivated to seek treatment at all or who are unwilling to commit to a fairly high threshold of participation requirements in order to receive treatment. Thus, characteristics of this sample may also not generalize to a more diverse sample of women with alcohol dependence. In addition, enhancements to Steinberg et al.'s (1997) motivation coding system may have resulted in the more specific and higher percentage of internal motivation endorsements in the female sample as compared to the male sample of Steinberg et al. (1997), so that a direct comparison of results from the two studies would be inappropriate. Furthermore, conclusions may be limited as missing data increased over follow-up time points due to attrition. It is possible that the women who dropped out of the study may have had the worst drinking.

5. Conclusion

There has been limited research on women's motivations for seeking alcohol treatment. Results of the present study suggest that women with AUDs may have a different set of internal motivators than men with AUDs. In adapting a set of motivation categories from men for women in response to the question "What brought you to (alcohol) treatment," using a deductive-inductive iterative approach, several *women-specific* motivators were found, including: worry about the amount and/or increase in drinking, concern about functional drinking, concern about negative interactions or embarrassing behavioral while intoxicated, and concern over loss of control. Only concerns about occupational functioning at baseline were consistently associated with better treatment outcomes; however there was also some evidence that general functioning concerns were associated with better outcomes. Specifically, interpersonal – family concerns at baseline was associated with poorer outcomes. The results here augment and inform a range of existing interventions in the general psychotherapy field (i.e. Persons' case conceptualization problem list approach), the alcohol field (Motivational Interviewing), and drug treatment (e.g., use of the Addiction Severity Index (McLellan, Luborsky, Woody, & O'Brien, 1980) to assess severity of problems and concerns in different areas of functioning to guide treatment planning for alcohol dependent women. Explicitly integrating women's specific concerns into a personalized, problem targeted treatment that integrates these three existing treatment approaches might enhance treatment retention and improve outcomes. Cognitive behavioral therapy, when administered skillfully, is designed to accomplish this already (Epstein & McCrady, 2009), but has not been explicitly systematized for widespread delivery based on empirically-based concerns of sub-populations such as alcohol dependent females.

Acknowledgments

Funding for this research was provided by National Institute on Alcohol Abuse and Alcoholism Grant R37 AA07070. We gratefully acknowledge the assistance of Dr. Danielle McCarthy, Margaret Coleman, Noelle Jensen, William Christiana, Jonathan Bullinger, and Dr. Keith Sanford.

References

- Agosti V. The efficacy of treatments in reducing alcohol consumption: A meta-analysis. *Substance Use and Misuse*. 1995; 30(8):1067–1077.
- Beckman LJ, Amaro H. Personal and social difficulties faced by women and men entering alcoholism treatment. *Journal of Studies on Alcohol and Drugs*. 1986; 47(2):135–145.
- Berglund M, Thelander S, Salaspuro M, Franck J, Andreasson S, Ojehagen A. Treatment of alcohol abuse: An evidence-based review. *Alcoholism: Clinical and Experimental Research*. 2003; 27(10): 1645–1656.
- Brady, TM.; Ashley, OS., editors. *Women in substance abuse treatment: Results from the Alcohol and Drug Services Study (ADSS)*. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2005. DHHS Publication No. SMA 04-3968, Analytic Series A-26
- Breslin C, Sobell LC, Sobell MB. Aftercare telephone contacts with problem drinkers can serve a clinical and research function. *Addiction*. 1996; 91:1359–1364. [PubMed: 8854371]
- Cohen E, Feinn R, Arias A, Kranzler HR. Alcohol treatment utilization: Findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *Drug and Alcohol Dependence*. 2007; 86(2–3):214–221. [PubMed: 16919401]
- Covington, SS. Helping women recover: Creating gender-responsive treatment. In: Straussner, SLA.; Brown, S., editors. *The handbook of addiction treatment for women: Theory and practice*. San Francisco, CA: Jossey-Bass; 2002. p. 52-72.
- Dawson DA. Gender differences in the probability of alcohol treatment. *Journal of Substance Abuse*. 1996; 8(2):211–225. [PubMed: 8880661]
- Deci, EL.; Ryan, RM. *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum Press; 1985.
- Deci EL, Ryan RM. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*. 2000; 55(1):68–78. [PubMed: 11392867]
- DiClemente CC, Bellino LE, Neavins TM. Motivation for change and alcoholism treatment. *Alcohol Research & Health*. 1999; 23(2):86–92. [PubMed: 10890801]
- Downing, C. Sex role setups and alcoholism. In: Van Den Bergh, N., editor. *Feminist perspectives on addictions*. New York, NY: Springer Publishing Company; 1991. p. 47-60.
- Edwards, G.; Marshall, EJ.; Cook, CH. *The treatment of drinking problems: a guide for helping professions*. Cambridge, United Kingdom: Cambridge University Press; 2003.
- Epstein, EE.; McCrady, BS. *Therapist manual*. New York, NY: Oxford University Press; 2009. *Treatments that work: Individual cognitive behavioral therapy for alcohol use problems*.
- First, MB.; Spitzer, RL.; Gibbon, M.; Williams, JBW. *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, research version, patient edition (SCID-I/P)*. New York, NY: Biometrics Research, New York State Psychiatric Institute; 2002.
- Grant BF, Dawson DA, Stinson FS, Chou SP, Dufour MC, Pickering RP. The 12-month prevalence and trends in DSM-IV alcohol abuse and dependence: United States, 1991–1992 and 2001–2002. *Drug and Alcohol Dependence*. 2004; 74(3):223–234. [PubMed: 15194200]
- Grant BF, Stinson FS, Dawson DA, Chou SP, Dufour MC, Compton W, Pickering RP, Kaplan K. Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry*. 2004; 61:807–816. [PubMed: 15289279]
- Green, K.; Worden, B.; Menges, D.; McCrady, BS. Assessment of alcohol use disorders. In: Hunsley, J.; Mash, E., editors. *A guide to assessments that work*. NY: Oxford University Press; 2008. p. 339-369.

- Greenfield SF, Brooks AJ, Gordon SM, Green CA, Kropp F, McHugh RK, Lincoln M, Hien D, Miele GM. Substance abuse treatment entry, retention, and outcome in women: A review of the literature. *Drug and Alcohol Dependence*. 2007; 86:1–21. [PubMed: 16759822]
- Grella CE. From generic to gender-responsive treatment: Changes in social policies, treatment services, and outcomes of substance abuse treatment. *Journal of Psychoactive Drugs, SARC Supplement*. 2008; 5:327–343.
- Hasin DS, Stinson FS, Ogburn E, Grant BF. Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry*. 2007; 64(7):830–842. [PubMed: 17606817]
- Howell EM, Chasnoff IJ. Perinatal substance abuse treatment: Findings from focus groups with clients and providers. *Journal of Substance Abuse Treatment*. 1999; 17:139–148. [PubMed: 10435262]
- Hunsley J, Best M, Lefebvre M, Vito D. The seven-item short form of the Dyadic Adjustment Scale: Further evidence for construct validity. *American Journal of Family Therapy*. 2001; 29:325–335.
- Jakobsson A, Hensing G, Spak F. Developing a willingness to change treatment- seeking processes for people with alcohol problems. *Alcohol and Alcoholism*. 2005; 40(2):118–123. [PubMed: 15582987]
- Jung, John. *Psychology of alcohol and other drugs: a research perspective*. Thousand Oaks, CA: Sage Publications; 2001.
- Keith, T. *Multiple regression and beyond*. Boston, MD: Pearson; 2006.
- McCrary BS, Epstein EE, Cook S, Jensen N, Ladd B. What do women want? Alcohol treatment choices, treatment entry and retention. *Psychology of Addictive Behaviors*. 2011; 25(3):521–529. [PubMed: 21644804]
- McLellan AT, Grissom GR, Zanis D, Randall M, Brill P, O'Brien CP. Problem service “matching” in addiction treatment: A prospective study in four programs. *Archives of General Psychiatry*. 1997; 54:730–735. [PubMed: 9283508]
- McLellan AT, Luborsky L, Woody GE, O'Brien CP. An improved diagnostic evaluation instrument for substance abuse patients. *Journal of Nervous and Mental Disease*. 1980; 168:26–33. [PubMed: 7351540]
- Miller WR, Moyers TB. Eight stages in learning motivational interviewing. *Journal of Teaching in the Addictions*. 2006; 5(1):3–18.
- Miller, WR.; Rollnick, SP. *Motivational interviewing: Preparing people for change*. 2. New York, NY: The Guilford Press; 2002.
- Miller WR, Tonigan JS. Assessing drinkers' motivation for change: The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychology of Addictive Behaviors*. 1996; 10(2): 81–89.
- Miller WR, Wilbourne PL. Mesa Grande: A methodological analysis of clinical trials of treatments for alcohol use disorders. *Addiction*. 2002; 97:265–277. [PubMed: 11964100]
- Muthén, LK.; Muthén, BO. *Mplus User's guide*. 6. Los Angeles, CA: 1998–2010.
- Persons, J. *The case formulation approach to cognitive-behavior therapy*. New York, NY: Guilford Press; 2008.
- Project Match Research Group. Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. *Journal of Studies on Alcohol*. 1997; 58(1):7–29. [PubMed: 8979210]
- Raudenbush, SW.; Bryk, AS. *Hierarchical linear models: applications and data analysis methods (Advanced quantitative techniques in the social sciences)*. 2. Thousand Oaks, CA: Sage Publications; 2001.
- Raudenbush, SW.; Bryk, AS.; Congdon, R. *HLM 6 for Windows [Computer software]*. Skokie, IL: Scientific Software International, Inc; 2004.
- Ryan RM, Plant RW, O'Malley S. Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement, and dropout. *Addictive Behaviors*. 1995; 20(3):279–297. [PubMed: 7653312]
- Schafer JL, Graham JW. Missing data: Our view of the state of the art. *Psychological Methods*. 2002; 7(2):147–177. [PubMed: 12090408]

- Schneider B, Maurer K, Sargk D, Keiskel H, Weber B, Frölich L, Georgi K, Fritze J, Seidler A. Concordance of DSM-IV Axis I and II diagnoses by personal and informant's interview. *Psychiatry Research*. 2004; 127:121–136. [PubMed: 15261711]
- Schober R, Annis HM. Barrier to help-seeking for change in drinking: A gender-focused review of the literature. *Addictive Behaviors*. 1996; 21(1):81–92. [PubMed: 8729710]
- Small J, Curran GM, Booth B. Barriers and facilitators for alcohol treatment for women: Are there more or less for rural women? *Journal of Substance Abuse Treatment*. 2010; 39(1):1–13. [PubMed: 20381284]
- Sobell, LC.; Sobell, MB. *Timeline follow back: A calendar method for assessing alcohol and drug use (Users Guide)*. Toronto, Canada: Addiction Research Foundation; 1996.
- Srnka KJ, Koeszegi ST. From words to numbers: How to transform qualitative data into meaningful quantitative results. *Schmalenbach Business Review*. 2007; 59:29–57.
- Steinberg ML, Epstein EE, McCrady BS, Hirsch LS. Sources of motivation in a couples outpatient treatment program. *American Journal of Drug and Alcohol Abuse*. 1997; 23(2):191–205. [PubMed: 9143633]
- Stemler S. An overview of content analysis. *Practical Assessment, Research & Evaluation*. 2001; 7(17) Retrieved February 5, 2011 from <http://PAREonline.net/getvn.asp?v=7&n=17>.
- Substance Abuse and Mental Health Services Administration. *The Treatment Episode Data Set Report*. 2010. Retrieved from <http://www.oas.samhsa.gov/2k10/236/236WorkWom2k10.htm>
- Wilke DJ, Kamata A, Cash SJ. Modeling treatment motivation in substance-abusing women with children. *Child Abuse and Neglect*. 2005; 29:1313–1323. [PubMed: 16263166]
- Willenbring M. The past and future of research on treatment of alcohol dependence. *Alcohol Research and Health*. 2010; 33(1,2):55–63. [PubMed: 23579936]

Highlights

- We examined how motivation for seeking alcohol treatment affects drinking outcomes.
- We developed a coding system for women's reply to "what brought you to treatment?"
- Job concerns due to drinking were associated with better drinking outcomes.
- Family concerns related to drinking were associated with poorer drinking outcomes.

Table 1
Detailed Motivation Coding System for Women with Relative Endorsements of Codes and with Percent of Sample Reporting Each Motivator

A. External Source of Motivation	Total number of codes (%)	Number of subjects reporting this (%)	B. Internal Source of Motivation	Total number of codes (%)	Number of subjects reporting this (%)
A1. Coercion			B1. Client's own belief that she has a problem and needs help		
A1a. Intoxicated Driver Resource Center (or other legal coercion)	0.0 (0.0)	0.0 (0.0)	B1a. Got a DWI but not referred for treatment	9.0 (2.0)	9.0 (5.0)
A1b. Employer or job (explicit threat of job loss)	0.0 (0.0)	0.0 (0.0)	B1b. Job adversely affected by drinking	11.0 (2.4)	11.0 (6.1)
A1c. Spouse or significant other (explicit threat of divorce or separation)	2.0 (0.4)	2.0 (1.1)	B1c. Family affected by drinking	3.0 (0.7)	3.0 (1.7)
			B1c1. Spouse/partner affected by drinking	38.0 (8.3)	38.0 (21.1)
			B1c2. Children affected by drinking	38.0 (8.3)	38.0 (21.1)
			B1c3. Extended family affected by drinking	6.0 (1.3)	6.0 (3.3)
A1d. Health professional (explicit instruction to seek treatment or threat of illness)	2.0 (0.4)	2.0 (1.1)	B1d. Aware that health is being affected by drinking	41.0 (8.9)	41.0 (22.8)
			B1d1. Aware that sleep is being affected by drinking	2.0 (0.4)	2.0 (1.1)
A1e. Mental health affected by drinking (instruction to seek help from mental health professional)	1.0 (0.2)	1.0 (0.6)	B1e. Mental health affected by drinking	6.0(1.3)	6.0 (3.3)
A1f. Responsibilities affected by drinking	0.0 (0.0)	0.0 (0.0)	B1f. Responsibilities affected by drinking	7.0 (1.5)	7.0 (3.9)
A1g. Other	0.0 (0.0)	0.0 (0.0)	B1g. Feeling guilt because of drinking	7.0 (1.5)	7.0 (3.9)
			B1h. Wants to stop drinking but cannot	9.0 (2.0)	9.0 (5.0)
			B1i. Other	0.0	0.0 (0.0)
			B1j. Worry about amount and/or increase in drinking	56.0 (12.2)	56.0 (31.1)
			B1k. Concern over loss of control	22.0 (4.8)	22.0 (12.2)
			B1l. Concern over effect on appearance	5.0 (1.1)	5.0 (2.8)
			B1m. Concern about using other drugs while drinking or right after drinking	4.0 (0.9)	4.0 (2.2)
			B1n. Concern about functional drinking	40.0 (8.7)	40.0 (22.2)
			B1o. Concern about biological vulnerability	31.0 (6.7)	31.0 (17.2)
			B1p. Concern about negative interpersonal interactions or embarrassing behavior while intoxicated	27.0 (5.9)	27.0 (15.0)
			B1q. Concern about risky behavior while intoxicated	12.0 (2.6)	12.0 (6.7)
			B1r. Aware that cognitive functioning is affected by drinking	29.0 (6.3)	29.0 (16.1)
			B1s. Concern about secretive drinking or drinking alone	16.0 (3.5)	16.0 (8.9)

A. External Source of Motivation	Total number of codes (%)	Number of subjects reporting this (%)	B. Internal Source of Motivation	Total number of codes (%)	Number of subjects reporting this (%)
			B1t. Dissatisfaction with self	12.0 (2.6)	12.0 (6.7)
			B1u. Concern about effect of alcohol on weight	14.0 (3.0)	14.0 (7.7)
A2. No evidence of coercion	0.0 (0.0)	0.0 (0.0)	B2. No evidence of belief that drinking is a problem	0.0 (0.0)	0.0 (0.0)
A3. Not determinable	0.0 (0.0)	0.0 (0.0)	B3. Not determinable	10.0 (2.2)	5.6 (0.0)

Table 2
Collapsed Coding System for Women with Percent of Sample Reporting Motivator

A. External Source of Motivation	Total number of codes (%)	Number of subjects reporting this (%)	B. Internal Source of Motivation	Total number of codes (%)	Number of subjects reporting this (%)
A1. Coercion			B1. Client's own belief that she has a problem and needs help		
A1a. Intoxicated Driver Resource Center (or other legal coercion)	0.0 (0.0)	0.0 (0.0)	B1a. General functioning concerns	16.0 (4.1)	16.0 (8.9)
A1b. Employer or job (explicit threat of job loss)	0.0 (0.0)	0.0 (0.0)	B1b. Occupational concerns	11.0 (2.8)	11.0 (6.1)
A1c. Spouse or significant other (explicit threat of divorce or separation)	2.0 (0.5)	2.0 (1.1)	B1c. Interpersonal – Family	69.0 (17.6)	69.0 (38.3)
			B1c1. Interpersonal – Other	27.0 (6.9)	27.0 (15.0)
A1d. Health professional (explicit instruction to seek treatment or threat of illness)	2.0 (0.5)	2.0 (1.1)	B1d. Health concerns	78.0 (19.9)	78.0 (43.3)
A1e. Mental health affected by drinking	1.0 (0.23)	1.0 (0.6)	B1e. Intrapersonal/Mental Health concerns	70.0 (17.8)	70.0 (38.9)
A1f. Responsibilities affected by drinking	0.0 (0.0)	0.0 (0.0)	B1f. Concern about uncontrolled progression of AUD	110.0 (28.1)	110.0 (61.1)
A1g. Other	0.0 (0.0)	0.0 (0.0)	B1g. Other	0.0 (0.0)	0.0 (0.0)
A2. No evidence of coercion	0.0 (0.0)	0.0 (0.0)	B2. No evidence of belief that drinking is a problem	0.0 (0.0)	0.0 (0.0)
A3. Not determinable	0.0 (0.0)	0.0 (0.0)	B3. Not determinable	10.0 (2.6)	10.0 (5.6)

Table 3
Hierarchical linear modeling coefficients: Interpersonal motivations predicted by growth variables

	Baseline to 3 Months			3 to 9 Months			9 to 15 Months		
	Intercept (γ_{10})	Slope (γ_{13})	Intercept (γ_{20})	Slope (γ_{23})	Intercept (γ_{30})	Slope (γ_{33})			
General- Functioning	-0.70	-0.03	-2.52	-0.01	-1.73	1.20			
Interpersonal - Family	-0.46	-0.37	-3.38*	1.28*	-1.24	-0.20			
Occupational	-0.72	0.60	-2.52	0.30	-1.32	-2.36*			
Health	-1.07	0.84	-2.37	-0.33	-1.50	0.37			
Intrapersonal/Mental Health	-0.76	0.11	-2.77	0.46	-1.24	-0.31			
Lack of Control	-1.26	0.56	-2.88	0.37	-0.89	-0.52			
Interpersonal - Other	-0.63	-0.69	-2.54	0.20	-1.42	0.24			

Note: γ_{10} , γ_{20} , and γ_{30} coefficients estimate the change in PDD across each time period when women did not endorse a specific motivation after controlling for the number of sessions and age. γ_{13} , γ_{23} , and γ_{33} coefficients estimate the change in slope strength for women who did endorse a specific motivation after controlling for number of sessions and age.

* $p < .05$

Table 4

Repeated Measures ANOVAs for Mean Drinks per Drinking Day (MDPDD) from Baseline to 3 Months, 3 to 9 Months, and 9 to 15 Months Post-baseline by Category of Internal Motivator

Internal Motivator	Baseline (BL)		3 months post-BL		9 months post-BL		3 months post-BL		9 months post-BL		15 months post-BL	
	M (SD)	F	M (SD)	F	M (SD)	F	M (SD)	F	M (SD)	F	M (SD)	F
General functioning:												
Yes	2.48 (0.74)	2.34 (1.16)	5.53*	10	MDPDD	MDPDD	MDPDD	MDPDD	MDPDD	MDPDD	MDPDD	MDPDD
No	2.46 (0.65)	1.99 (0.59)		117								
Occupational ^a :												
Yes	2.71 (0.77)	1.73 (0.24)	7.30**	7	1.69 (0.24)	2.44 (1.35)	10.05**	6	2.25 (1.41)	1.89 (0.62)	4.18*	5
No	2.45 (0.65)	2.04 (0.67)		120	1.99 (0.63)	1.96 (0.62)		99	1.94 (0.60)	2.02 (0.78)		87

Note. Only significant results are reported. There were no significant interactions between MDPDD and motivators including interpersonal – family, interpersonal – other, health concerns, intrapersonal/mental health, or lack of control concerns.

^aThe means differ for the occupational motivator (yes/no) across analyses due to attrition.

* $p < .05$,

** $p < .01$

Table 5
Internal Motivators Predicting Post-baseline Mean Drinks Per Drinking Day (MDPDD) and Percent Daily Drinks (PDD) Controlling for Baseline Value of Outcome Variable

Predictor	PPD			MDPDD		
	B	SE B	β	B	SE B	β
3 months						
General Functioning	-0.80	1.03	-0.07	0.54	0.19	0.22*
Occupational	1.43	1.24	0.10	-0.56	0.22	-0.20*
Concern about uncontrolled progression of AUD	0.76	0.56	0.12	0.22	0.12	0.16*
9 months						
Interpersonal – Family	1.24	0.57	0.19*	-0.02	0.11	-0.01
15 months						
General Functioning	0.94	1.20	0.07	0.59	0.24	0.21*
Concern about uncontrolled progression of AUD	0.33	0.65	0.05	0.31	0.13	0.20*

* $p < .05$.

$R^2 = .34$ for 3 months post-baseline wave predicting MDPDD

$R^2 = .41$ for 9 months post-baseline wave predicting MDPDD

$R^2 = .45$ for 15 months post-baseline wave predicting MDPDD

$R^2 = .04$ for 3 months post-baseline wave predicting PDD

$R^2 = .17$ for 9 months post-baseline wave predicting PDD

$R^2 = .13$ for 15 months post-baseline wave predicting PDD