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Drinking Goal Choice and Outcomes in a Web-based Alcohol Intervention: Results from *VetChange*

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Abstract

Objectives—To describe characteristics of participants who chose moderation and abstinence drinking goals, and to examine post-treatment drinking outcomes based on patterns of goal choice during a Web-based alcohol intervention for returning U.S. Veterans.

Method—We conducted a descriptive secondary analysis of a subsample of 305 of 600 Veterans who participated in a clinical trial of *VetChange*, an 8-module, cognitive-behavioral intervention. Participants self-selected abstinence or moderation drinking goals, initially at Module 3, and weekly during subsequent modules. Alcohol use and alcohol-related problems were measured

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using the Alcohol Use Disorders Identification Test (AUDIT), Quick Drink Screen (QDS), and Short Inventory of Problems (SIP-2R).

Results—Initial goal choices were 86.9% moderation and 13.1% abstinence. Approximately 20% of participants from each initial choice changed goals during the intervention; last goal choices were 68.6% moderation and 31.4% abstinence. Participants who initially chose moderation reported higher percent heavy drinking days at baseline; participants who initially chose abstinence were more likely to report recent substance abuse treatment and were older. Post-intervention levels of alcohol use and alcohol-related problems were significantly reduced in all goal-choice patterns (i.e., Moderation Only, Abstinence Only, Moderation to Abstinence, and Abstinence to Moderation; all measures $p < 0.05$ or less). Baseline drinking severity did not differentially relate to outcomes across goal-choice patterns.

Conclusions—Participants in a Web-based alcohol intervention for returning U.S. Veterans demonstrated improvements in drinking regardless of whether they chose an abstinence or moderation drinking goal, and whether the goal was maintained or changed over the course of the intervention.

Keywords

Alcohol; Veterans; Web intervention; Internet; Drinking goal; Outcomes

1. Introduction

Current evidence supports moderation as a viable treatment goal for individuals with high-risk or problematic drinking, and even for those with mild to moderate alcohol dependence.¹⁻⁴ The small number of controlled studies using random assignment to either abstinence or moderation drinking goals have not found differences in outcome on overall drinking levels between goal groups.^{2,5} Studies in which participants could choose their drinking goals have also not found consistent differences in post-treatment drinking levels between those choosing abstinence versus moderation.^{3,6,7} However, recent secondary analyses of the COMBINE study have found that participants choosing abstinence were more likely to have comparatively favorable outcomes on some drinking measures.^{8,9}

Individuals seeking assistance with problem drinking have been shown to prefer having a choice when setting a drinking goal¹⁰ and often reject an assigned goal.^{2,11} Furthermore, there is evidence that participants have better outcomes when allowed to participate in goal selection rather than having a drinking goal assigned.^{6,12,13} Indeed, participation in goal setting is shown to enhance both self-efficacy for goal achievement¹³ and commitment to a drinking goal,¹³⁻¹⁵ factors which are important in influencing effort and performance.^{16,17} The characteristics of study participants who choose moderation versus abstinence goals are generally consistent with the characteristics of those who are most successful with moderation; i.e., younger age,^{6,18} fewer or less severe problems related to drinking,^{6,18,19, 20} relatively less heavy drinking,^{6, 20} and shorter duration of drinking problems.²¹

Web-based interventions for problem drinking may be well suited to provide flexible methods for curtailing alcohol use and reducing associated problems.^{22, 23} The types of flexibility most cited for Web-based interventions involve the ability of these interventions

to provide relatively low-cost access to individuals in broad geographic regions, convenient times for access and use by participants, and self-direction in the use of program content.^{24,25} An additional important characteristic may be flexibility in allowing participants to set either abstinence or moderation as drinking goals, and to receive techniques and support to achieve either of these goals.²⁶⁻²⁹

There are no currently published studies that describe moderation or abstinence goals among participants in Web-based alcohol interventions, and it is not known to what extent drinking outcomes might correspond to treatment goals in these interventions. Further, to our knowledge there are no published studies that report outcomes according to goal choice patterns during an intervention; more specifically, how outcomes compare between participants who maintain consistent abstinence or moderation goals between the beginning and end of an intervention and those who change their goals. We propose to examine these questions in a secondary analysis of data from *VetChange*,³⁰ an 8-module, Web-based, cognitive-behavioral intervention for U.S. Veterans returning from Operation Enduring Freedom (OEF) / Operation Iraqi Freedom (OIF) who experienced post-deployment problem drinking. The first objective of the present analysis is to describe the characteristics of participants in that trial who initially chose abstinence and moderation as drinking goals, and the proportions who maintained a consistent goal choice and changed goal choice during the intervention. The second objective is to determine whether drinking goal selection related to drinking outcomes at the end of the intervention and at a 3-month follow-up. We believe that this descriptive analysis of drinking goal choice represents the first such examination of participants in a Web-based alcohol intervention, and that it provides potentially useful information about drinking goal choice and goal attainment in self-directed, fully automated, Web-based interventions.

2. Methods

2.1. Participants

This study was approved by the Institutional Review Boards of Boston University School of Medicine and VA Boston Healthcare System. Participants were 305 male and female Veterans representing a subset of 600 *VetChange* participants randomized to the clinical trial (Figure 1). The 305 participants retained for the present analyses included all who completed Module 3, at which time they were first asked to choose a drinking goal. Participants were subsequently asked to restate their goal choice in Modules 4, 5, 6 and 7. Of these 305 participants, 252 completed a post-intervention assessment, and 229 participants completed a 3-month follow-up assessment.

2.2. Procedures

VetChange incorporates several well-established cognitive-behavioral treatment components in each module, and focuses on helping participants understand the connections between deployment to a combat zone, combat-related stress symptoms, and alcohol use.^{27,31} Participants were recruited on the Web through targeted Facebook advertising and were required to meet the following eligibility criteria: (a) self-reported status as an OEF/OIF Veteran, (b) age between 18 and 65 years, (c) score on the Alcohol Use Disorders

Identification Test (AUDIT) between 8 and 25 for men and 5 and 25 for women (i.e., drinkers identified as engaging in harmful or hazardous drinking but not likely to be heavily alcohol dependent)^{32,33} and (d) drinking above National Institute on Alcoholism and Alcohol Abuse (NIAAA) guidelines for low-risk drinking during the 30 days prior to screening, i.e., no more than four standard drinks on any day or 14 drinks per week for men and no more than three standard drinks on any day or seven drinks per week for women.^{34,35}

Eligible and consenting participants were randomized on a 2:1 basis to receive access to *VetChange* immediately ($n = 404$) or following an 8-week waiting period ($n = 196$). Participants in each group received the same module content and assessments once provided access to *VetChange*; hence, the only difference was the 8 week delay in beginning *VetChange* experienced among the delayed group. For both intervention groups, drinking significantly decreased from pre- to post-intervention and from post-intervention to 3-month follow-up. There were no significant differences in module completion or drinking goal selection between the two groups;³⁰ these groups were therefore combined for the current analyses.

2.3. Drinking goals

Setting a personal drinking goal, self-monitoring, and the completion of homework assignments to help achieve drinking goals are essential strategies in *VetChange*. During Module 3, participants were provided with education to help choose an abstinence or moderation drinking goal and were asked to specify a personal drinking goal for the upcoming week. In this study, we have designated this as the *initial* drinking goal. Participants choosing a moderation goal were asked to state the maximum number of drinks per drinking day and the maximum number of drinks per week they would drink to meet their goal. In Modules 4-7, participants were asked to restate their drinking goal (abstinence or moderation) for the next week, which allowed an opportunity to change their overall goal or to modify limits set for moderate drinking, based on experiences during the intervention. We have designated the drinking goal stated in the final module completed before the post-intervention assessment as the *last* drinking goal. We grouped the 252 study subjects completing the post-intervention assessment into drinking goal-pattern groups based on *initial* and *last* drinking goals: Abstinence Only, Abstinence to Moderation, Moderation to Abstinence, and Moderation Only.

2.4. Measures

Participants completed three assessments: 1) at baseline prior to beginning the intervention ($n = 305$), 2) at the end of the intervention, approximately 8 weeks after baseline ($n = 252$), and 3) at 3 months post-intervention ($n = 229$). All assessment measures were administered on the Web. Participants received Amazon gift coupons via email of \$20 for each of the assessments and a bonus of \$25 for completing all assessments. Assessments included the following validated instruments:

The *AUDIT*,³⁶ assessed at eligibility screening, is a 10-item self-report measure of alcohol use and alcohol-related problems. Items are scored from 0 to 4, and summed to yield a composite score ranging from 0 to 40. The AUDIT has good sensitivity (.71) and specificity

(.85) in Veterans.^{33,37} Across 18 studies, Reinert & Allen (2007)³⁸ calculated a median reliability coefficient of .83.

The *Short Inventory of Problems* (SIP-2R), assessed at baseline and 3 months post-intervention, is a 15-item self-report measure of alcohol-related problems.³⁹ Participants indicate how often each of the consequences occurred during the past three months on a scale of 0-3. The overall problem severity score was used in analyses. The SIP demonstrates good internal consistency (Cronbach's alpha = .95)⁴⁰ and test-retest reliability ($r = .89$).³⁹

The *Quick Drink Screen* (QDS),⁴¹ administered at baseline, end of intervention, and 3 months post-intervention, is a 4-item self-report measure of alcohol consumption focused on quantity and frequency of drinking in the last 30 days. The scale is considered a valid and expedient method for collecting data on alcohol use. The QDS and Time Line Follow Back intraclass correlation coefficients over one year range from .65 to .82.⁴¹

Six drinking outcome variables were determined from the QDS. These were: a) average number of Drinks per Drinking Day (DDD), b) Average Weekly Drinks (AWD), c) Percent Heavy Drinking Days (PHDD; i.e., percentage of drinking days in which 5 (4 for women) standard drinks were consumed), d) Drinking within NIAAA Guidelines (DWG), e) Abstinence, and f) Percent Meeting Last Goal (i.e., last goal selected by participants during intervention). The latter three variables were included to describe how participants fared from their point of view, as well as from the perspectives of NIAAA health guidelines and abstinence-based models of recovery.

2.5. Data analysis

Preliminary data analyses included examination of dependent variables for skewness and kurtosis. Based on the analyses, the natural log transformation was used for DDD and AWD and the square root transformation used for PHDD across all time points for analyses of statistical significance. Raw values are represented in tables.

To determine whether there were baseline differences between participants who chose abstinence or moderation as a starting goal or between the four goal-pattern groups, we conducted one-way analyses of variance (ANOVA) comparing all continuous demographic and outcome variables at baseline, and Fisher's Exact tests to compare categorical measures ($n = 305$ for all baseline tests).

General linear models accounting for correlated data within subjects were used to model DDD, AWD and PHDD longitudinally from baseline to post-intervention assessment and 3-month follow-up. All available data from each timepoint were included in these analyses. The model-based restricted maximum likelihood (REML) estimates of the outcome values with corresponding 95% confidence intervals were computed and the changes from baseline to post-intervention assessment and to 3-month follow-up were analyzed with linear contrasts.

To address the possibility that outcome results were biased due to attrition, we first conducted a missing data analysis by examining the three types of missing data as defined

by Rubin (1976).⁴² We conducted permutation tests examining assumptions of *missingness completely at random* (MCAR).⁴³ Results showed that study attrition did not significantly affect inferences based on the reduced sample for DDD, AWD, and PHDD, allowing us to proceed with our planned analyses without violating assumptions of the methods we used.⁴⁴

Finally, the percentages of participants who met various categorical drinking goals were computed for post-intervention ($n = 252$) and 3-month follow-up ($n = 229$): percentages of participants who met their final goal during intervention, were drinking within NIAAA low-risk drinking guidelines,^{34,35} or reported being abstinent in the 30 days prior to assessment.

SPSS statistical software package (Version 18) and SAS 9.3 statistical software was used for computations. The significance level for all statistical tests was a two-tailed $p = .05$ level of significance.

3. Results

3.1. Participant characteristics and drinking goal choices

Participants were 86.9% male and 79.1% Caucasian, and had an average age of 31.6 years. Of the 305 *VetChange* participants that selected an initial drinking goal in Module 3, 86.9% chose moderation and 13.1% chose abstinence (Table 1). Participants who chose an initial goal of moderation reported higher PHDD at baseline. Participants who chose an initial goal of abstinence were more likely to have involvement in substance abuse treatment during the three months prior to the study.

Participants were grouped into one of four goal-patterns based on *initial* and *last* drinking goals: Abstinence Only ($n = 22$; 8.7%), Abstinence to Moderation ($n = 9$; 3.6%), Moderation to Abstinence ($n = 54$; 21.4%) and Moderation Only ($n = 167$; 66.3%). Similar proportions of those with an initial abstinence or moderation choice remained consistent in their drinking goals or changed goals between initial and last goal choice (Table 2). Loss to follow-up did not differ significantly between those who chose abstinence or moderation as an initial goal (22.5% and 16.6%, respectively; Fisher's Exact test, $p = .372$).

When baseline characteristics were compared according to goal-patterns, groups differed at baseline in their history of recent treatment (percent with any recent treatment: Abstinence Only = 76%, Abstinence to Moderation = 73%, Moderation Only = 68%, Moderation to Abstinence = 57%; Fisher's Exact test, $p = .023$) in that goal-pattern groups with an initial goal of abstinence had the highest rates of involvement in treatment during the three months prior to the study. Goal-pattern groups also differed significantly in age ($F(3, 302) = 3.62$, $p = .014$); groups with initial goals of abstinence were older than the goal-pattern groups with initial goals of moderation.

3.2. Drinking goals and reductions in drinking

Alcohol use decreased in three of the four goal-pattern groups from baseline to post-intervention and 3-month follow-up (Table 3). The Abstinence to Moderation group did not show statistically significant reductions at the post-intervention assessment, but the overall

trend and the changes from baseline to 3-month follow-up were significant for this group in each drinking variable.

Longitudinal reductions in DDD, AWD, PHDD, and SIP were significant across all four goal-pattern groups ($p < .001$, $p < .001$, $p = .022$, and $p < .001$, respectively). When broken down by group, the Abstinence Only group demonstrated reductions in Log DDD ($B = -.061$, $SE = .007$, $p < .001$), Log AWD ($B = -.100$, $SE = .011$, $p < .001$), Square Root PHDD ($B = -.019$, $SE = .003$, $p < .001$), and SIP ($B = -.748$, $SE = .097$, $p < .001$) from baseline to 3-month follow-up. The Moderation to Abstinence group showed reductions in Log DDD ($B = -.047$, $SE = .005$, $p < .001$), Log AWD ($B = -.079$, $SE = .007$, $p < .001$), Square Root PHDD ($B = -.016$, $SE = .002$, $p < .001$), and SIP ($B = -.607$, $SE = .065$, $p < .001$). The Abstinence to Moderation group also demonstrated significant reductions in Log DDD ($B = -.043$, $SE = .010$, $p < .001$), Log AWD ($B = -.073$, $SE = .016$, $p < .001$), Square Root PHDD ($B = -.012$, $SE = .004$, $p = .002$), and SIP ($B = -.370$, $SE = .145$, $p = .012$). Finally, the Moderation Only group demonstrated significant reductions in Log DDD ($B = -.024$, $SE = .002$, $p < .001$), Log AWD ($B = -.047$, $SE = .004$, $p < .001$), Square Root PHDD ($B = -.012$, $SE = .001$, $p < .001$), and SIP ($B = -.421$, $SE = .034$, $p < .001$) from baseline to 3-month follow-up.

To examine the relationship between baseline drinking severity and drinking outcomes, additional analyses were conducted including baseline AUDIT and the interaction between baseline AUDIT and goal-pattern group into analyses predicting change in DDD, AWD, PHDD and SIP. Post-intervention improvements in drinking outcomes were significantly less among those with more severe drinking at baseline ($p < .001$ for all measures); however, the observed effect was similar across all four goal-pattern groups (interaction p -values = .597, .497, .599, and .315, respectively).

3.3. Attainment of drinking goals

The proportions of each of the four goal-pattern groups that attained their personal drinking goals, were drinking within NIAAA guidelines, or reported full abstinence can be seen in Table 4. A sizable proportion of participants in each of the groups reported meeting personal drinking goals for DDD and AWD, most notably at the 3-month follow-up among participants in the two groups that ended the intervention with moderation goals. The Abstinence Only group reported relatively high rates of abstinence at post-intervention and 3-month follow-up, and a large majority reported drinking within NIAAA guidelines (note that DWG includes participants reporting full abstinence). Also of interest, both of the goal-pattern groups that changed goals reported similar rates of both abstinence and DWG at the 3-month follow-up, irrespective of the direction of goal change.

4. Discussion

The purpose of this study was to describe the patterns of drinking goal choice and corresponding drinking outcomes for returning U.S. Veterans who participated in a Web-based alcohol intervention. Whereas most baseline characteristics of participants who initially chose abstinence and moderation as a drinking goal did not differ, those choosing a moderation goal reported significantly greater percent heavy drinking days at baseline.

Those choosing abstinence as an initial goal were more likely to have had concurrent or recent alcohol or drug treatment and tended to be older.

Participants in *VetChange* chose moderation goals most often. The predominance of moderation goals may reflect the characteristics of the sample being relatively young, problematic but not heavily dependent drinkers with, presumably, short problematic drinking histories. These demographics are characteristic of participants who prefer moderation drinking goals during in-person treatment studies.^{6, 18-21} About one-fifth of participants in *VetChange* chose to change their drinking goal during the program, and the proportion of those who moved from moderation to abstinence was similar to the proportion that moved from abstinence to moderation. These reciprocal changes in goals resulted in a substantially increased proportion of participants choosing abstinence as their last drinking goal, increasing from 13.1% to 31.4%.

Each of the four goal-pattern groups reported significant reductions in drinking from baseline to a 3-month follow-up. Participants who consistently chose abstinence goals curtailed their drinking more so than those with other goal choices, as might be expected given they maintained a lower desired level of drinking. Interestingly, we found that baseline drinking severity did not differentially relate to outcomes across the different goal-choice patterns. However, it was not the purpose, nor in the design capabilities of this secondary analysis to directly compare the benefits of one drinking goal with the other, or to examine variables that may have been differentially associated with drinking outcomes across goal-pattern groups.

There are several limitations to the present study. First, this study relied on self-report data with regard to both the choices of drinking goals and drinking outcomes. Second, we are unable to determine what factors governed maintenance of abstinence and moderation goal choices over the course of the intervention, and therefore are not able to draw any conclusions about why some participants maintained consistent goals while others did not. Participants also were not asked about their current drinking goal at the 3-month follow-up assessment, and it is therefore unknown how consistently participants maintained their goals over this post-intervention period.

Approximately 50% of the 600 participants initially randomized to the trial dropped out before having a first opportunity to select a drinking goal in Module 3 (required for inclusion in the present analysis), a phenomenon noted in other internet studies.⁴⁵ In our original analysis of *VetChange*, we found no difference in overall outcomes based on two types of multiple imputation analyses conducted to address potential bias associated with attrition and missing data.³⁰ However, that study did not consider treatment goal choice so we cannot conclude that the choices elicited at Module 3 would have represented the choices of the initial, full sample of *VetChange* participants.

An upper limit to drinking problems, as measured by AUDIT, was established for inclusion in the *VetChange* clinical trial to address concerns about the safety of a self-management Web intervention for more severe drinkers. Although the sample likely included some with mild alcohol dependence, we do not know the extent to which our findings extend to those

experiencing moderate to severe levels of dependence, or how alcohol dependence may have interacted with goal choice and outcomes. This limitation, however, does not detract from the relevance of our findings to the large number of problem drinkers targeted by the *VetChange* intervention.

Despite these limitations, the results of this study provide new information on drinking goal choice and outcomes based on patterns of goal choice during a self-directed, fully automated Web-based intervention. These findings extend evidence from studies of in-person alcohol treatments that moderation drinking goals can be successfully used in the treatment of problem drinkers on the Web, and that allowing for self-selection of drinking goals and opportunities for goal modification can be associated with positive outcomes. The study also allows comparison of drinking goals across a number of drinking outcomes, including three definitions of post-intervention success; namely, percent meeting their desired drinking goal, percent drinking within NIAAA guidelines, and percent abstinent. Finally, this study adds to a growing literature supporting the general effectiveness of Web-based alcohol interventions for a range of populations, including college students,⁴⁶⁻⁴⁸ adult problem drinkers,^{49,50} active duty military,⁵¹ and U.S. Veterans.³⁰

To our knowledge, this analysis represents the first description of drinking goals and associated outcomes in a self-management, Web-based alcohol intervention. An inherent value of Web-based interventions is their accessibility to a large population of drinkers with a wide range of problematic behaviors, and thus accommodating varied drinking goals may be a key element of these interventions. Consequently, further studies are needed to determine what specific components of *VetChange*, and of other Web-based alcohol interventions, can be adapted to further understand and enhance individual goal choices in order to best curtail problematic drinking.

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Highlights

- We provide a description of drinking goals and outcomes in a Web-based intervention
- Participants in the Web intervention chose moderation goals most often
- Both abstinence and moderation goals led to significant reductions in drinking
- Drinking improved both when a goal was maintained or changed during intervention
- Allowing for self-selection of drinking goals was associated with positive outcomes

Fig. 1. Flowchart of participation through the study

Table 1

Comparison of baseline variables according to initial drinking goal choice (N = 305).

	Abstinence (<i>n</i> = 40)	Moderation (<i>n</i> = 265)		
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>	<i>p</i>
Age	33.7 (7.9)	31.4 (7.1)	3.724	.055
AUDIT	17.2 (4.5)	17.4 (4.8)	.072	.789
DDD*	6.8 (4.1)	6.5 (3.5)	.009	.924
AWD*	24.0 (19.9)	25.5 (18.6)	1.538	.216
PHDD*	.24 (.21) ^a	.32 (.27) ^a	4.072	.044
SIP	18.6 (8.3)	16.0 (8.6)	3.018	.083
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		<i>p</i>
Number of Tours	2.0 (1.3)	2.3 (2.1)		.146
Months Deployed	17.1 (11)	19.7 (14.5)		.173
	<i>n</i> (%)	<i>n</i> (%)		<i>p</i>
Gender (% Male)	33 (82.5)	232 (87.5)		.449
Race/Ethnicity				.532
White	30 (75)	211 (79.6)		
Hispanic	6 (15)	24 (9.1)		
African-Amer.	2 (5)	10 (3.8)		
Other	2 (5)	20 (7.5)		
Recent Treatment (% Yes)				.003
None	10 (25)	107 (40.4)		
Drug/Alcohol**	21 (52.5) ^b	66 (24.9) ^b		
Mental Health Only***	9 (22.5)	92 (34.7)		

Note: AUDIT = Alcohol Use Disorders Identification Test; DDD = Drinks per drinking day; AWD = Average drinks per week; PHDD = Percent heavy drinking days; SIP = Short Inventory of Problems; Past Treatment = Treatment in the past 3 months.

** Recent substance abuse treatment, with or without mental health treatment.

*** Mental health treatment only, no substance abuse treatment.

Values that share superscripts are significantly different at the *p* = .05 level.

Table 2

Initial and Last Drinking Goals in VetChange Participants.

Initial Drinking Goals (<i>N</i> = 305)					
Abstinence: <i>n</i> = 40 (13.1%)		Moderation: <i>n</i> = 265 (86.9%)			
Patterns of Stability and Change between Initial and Last Drinking Goals					
	<i>n</i>	%		<i>n</i>	%
Abstinence Only	22	55.0	Moderation Only	167	63.0
Abstinence to Moderation	9	22.5	Moderation to Abstinence	54	20.4
Abstinence to Lost to Follow-up	9	22.5	Moderation to Lost to Follow-up	44	16.6
Last Drinking Goals (<i>N</i> = 252)					
Abstinence: <i>n</i> = 76 (30.2%)			Moderation: <i>n</i> = 176 (69.8%)		

Note: Lost to Follow-up = participants who failed to complete post-intervention assessment.

Table 3
Changes in Drinking Measures, Expressed as Median (IQR) Values, Over Time by Drinking Goal Choice Patterns.

	Abstinence Only			Abstinence to Moderation			Moderation to Abstinence			Moderation Only		
	BL	Post-Int	3 Mo	BL	Post-Int	3 Mo	BL	Post-Int	3 Mo	BL	Post-Int	3 Mo
	(n = 29)	(n = 22)	(n = 19)	(n = 11)	(n = 9)	(n = 9)	(n = 59)	(n = 54)	(n = 44)	(n = 206)	(n = 167)	(n = 157)
DDD	6	3.5*	1*	6	4	2*	5	3*	2*	6	4*	3*
	(4, 10)	(0, 6)	(0, 3)	(4, 8)	(3, 5)	(1, 4)	(4, 7)	(2, 5)	(1, 3)	(4, 8)	(3, 6)	(2, 5)
AWD	16	1*	1*	20	8	3*	18	8*	2*	20	12*	7*
	(10, 36)	(0, 12)	(0, 4)	(12, 45)	(5, 18)	(2, 6)	(10, 30)	(2, 12)	(0, 8)	(12, 36)	(6, 25)	(3, 16)
PHDD	.13	0*	0*	.33	.1	0*	.2	.03*	0*	.27	.13*	.07*
	(.07, .37)	(0, .03)	(0, 0)	(.07, .4)	(.07, .40)	(0, .13)	(.07, .5)	(0, .13)	(0, .07)	(.1, .5)	(.07, .3)	(0, .17)
SIP	20		1*	14		6*	17		1.5*	15		5*
	(15, 25)		(0, 4)	(11, 24)		(2, 15)	(8, 24)		(0, 8)	(9, 21)		(2, 10)

Note: IQR = Interquartile Range; BL = Baseline; Post-Int = Post intervention; 3 Mo = 3-month follow-up; DDD = average drinks per drinking day; AWD = average drinks per week; PHDD = average percent heavy drinking days; SIP = Short Inventory of Problems.

* $p < .05$ for change from baseline.

Goal choice pattern and goal attainment at post-intervention (N = 252) and 3-month follow-up (N = 229).

Table 4

	Abstinence Only		Abstinence to Moderation		Moderation to Abstinence		Moderation Only	
	Post-Int	3 Mo	Post-Int	3 Mo	Post-Int	3 Mo	Post-Int	3 Mo
	(n = 22)	(n = 19)	(n = 9)	(n = 9)	(n = 54)	(n = 44)	(n = 167)	(n = 157)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Met last goal DDD	9 (40.9)	9 (47.4)	3 (33.3)	6 (66.7)	3 (5.6)	10 (22.7)	66 (39.5)	89 (56.7)
Met last goal AWD	9 (40.9)	9 (47.4)	2 (22.2)	7 (77.8)	3 (5.6)	10 (22.7)	68 (40.7)	100 (63.7)
DWG	10 (45.5)	16 (84.2)	1 (11.1)	5 (55.6)	21 (38.9)	24 (54.5)	16 (9.6)	39 (24.8)
Abstinent*	9 (40.9)	9 (47.4)	0 (0.0)	2 (22.2)	3 (5.6)	9 (20.5)	4 (2.4)	7 (4.5)

Note: Post-Int = Post intervention; 3 Mo = 3-month follow-up; DDD = Average Drinks per Drinking Day; AWD = Average Weekly Drinks; DWG = Drinking within NIAAA low-risk drinking guidelines (including abstinence).

* Criterion for abstinence was 30 days of non-drinking (timeframe of the QDS); results at the post-intervention timepoint preclude participants who changed drinking goal to abstinence during the last 30 days of the intervention and achieved shorter periods of abstinence.