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Problem-free drinking over 16-years among individuals with alcohol use disorders

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Abstract

Background—Limited data exist on the rates and long-term stability of non-problem drinking in individuals who sought help for an alcohol use disorder.

Methods—A sample of initially untreated individuals with alcohol use disorders (N = 420) was surveyed at baseline and 1 year and was re-assessed at 8- and 16-years.

Results—In the six months prior to the 1 year assessment, 36% (n = 152) of participants reported abstinence from alcohol, 48% (n = 200) reported drinking with problems, and 16% (n = 68) reported non-problem drinking. At each follow up, 16–21% of the sample reported non-problem drinking. Compared to individuals in the abstinent and problem-drinking groups, individuals who were drinking in a problem-free manner at 1 year had reported, at baseline, fewer days of intoxication, drinks per drinking day, alcohol dependence symptoms, and alcohol-related problems, less depression, and more adaptive coping mechanisms. Over time, 48% of participants who engaged in non-problem drinking at 1-year continued to report positive outcomes (either non-problem drinking or abstinence) throughout the long-term follow-up, whereas 77% of those abstaining at 1 year reported positive outcomes throughout the same time period. Additionally, 43% of individuals with problematic alcohol consumption at 1-year reported positive outcomes over the remaining follow-up interval, a rate that was not significantly different from the rate of positive outcomes of 48% observed in those with initial problem-free drinking.

Conclusions—Although some individuals report non-problem drinking a year after initially seeking help, this pattern of alcohol use is relatively infrequent and is less stable over time than is abstinence. An accurate understanding of the long-term course of alcohol use and problems could help shape expectations about the realistic probability of positive outcomes for individuals considering moderate drinking as a treatment goal.

Keywords

alcohol; treatment; abstinence; moderation; recovery

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1. Introduction

Treatment goals of moderate drinking have a controversial history given the tendency for addictions treatment providers to focus on abstinence as the primary goal (Cloud et al., 2003; Rosenberg and Davis, 1994). The extent to which patients with problematic alcohol use can confine their drinking to non-problematic levels has been the subject of continuing debate (el-Guebaly, 2005; Finney and Moos, 2006). Twelve-Step Facilitation treatment and 12-step self-help programs, such as Alcoholics Anonymous (AA), advocate abstinence as the only appropriate goal for individuals with problematic alcohol use and believe that failure to accept this goal is, in and of itself, an indicator of poor prognosis (Alcoholics Anonymous, 1939; Nowinski, 2003). This view contrasts sharply with those of the self-help organization, Moderation Management, which encourages individuals to pursue the goal of non-problem drinking or abstinence, depending on their preferences (Kishline, 1994). Better data on the likelihood of achieving non-problem drinking after a period of problematic alcohol use, and on the long-term stability of this outcome, could help providers and patients understand the realistic risks and benefits of choosing non-problem drinking as a goal. Additionally, identifying predictors of non-problematic drinking could help distinguish between individuals who are more or less likely to achieve this goal.

Debate about the role of moderate drinking as a goal of alcohol treatment intensified following the release of the RAND report (Armor et al., 1976), which highlighted the feasibility of controlled drinking among individuals with alcohol dependence. According to this report, 18 months after the completion of abstinence-oriented treatment, 24% of patients maintained stable abstinence, while 22% were classified as moderate drinkers. Since the mid 1970's, much of the disagreement has focused on the futility of trying to help individuals with alcohol problems pursue any goal other than abstinence versus the belief that some individuals with alcohol use disorders can resume consumption of alcohol without serious associated problems (el-Guebaly, 2005; Humphreys, 2003). This debate has been fueled by the basic tenants of the disease model of addiction, which emphasizes abstinence and is common among drug and alcohol treatment providers (Rosenberg and Davis, 1994; Rosenberg and Phillips, 2003).

Although the nature of the debate has often been colored by extreme positions, research indicates that some individuals who experience alcohol-related problems can return to problem-free drinking (Humphreys et al., 1995; Miller et al., 1992). Moreover, Sanchez-Craig et al (1984) observed that, irrespective of treatment providers' specified goals, patients often develop their own controlled drinking goals, and many individuals assigned to abstinence-oriented treatment actually achieve controlled drinking. These findings highlight the need for treatment providers to have better data about the costs and benefits of the different goals that their patients may be considering.

In addition to the findings of the RAND report, moderate drinking outcomes were also identified in Project MATCH; 12% of the outpatients and 7% of the aftercare patients were classified as having moderate drinking outcomes at the 1-year follow-up (Project MATCH Research Group, 1997). According to Dawson and colleagues (2006), based on the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), 17% of adults with alcohol dependence who sought help from treatment and/or 12-step self-help groups achieved a non-abstinent recovery. Additionally, treatment modalities such as behavioral self-control training, motivational interviewing, and guided self-change, which sometimes utilize controlled drinking goals, have clear, demonstrated efficacy (Miller and Wilbourne, 2002; Saladin and Ana, 2004).

In adults, the rate of non-problematic drinking after a period of alcohol problems varies depending on the sample and level of baseline problem severity (Finney and Moos, 1981;

Helzer et al., 1985; Miller et al., 1992; Miller et al., 2001). Most analyses indicate that individuals who achieve moderation goals tend to be younger, have fewer baseline alcohol problems, and have more social resources than do individuals who achieve abstinence (Rosenberg, 1993). In addition, non-problem drinking appears to occur more frequently among individuals who remit without treatment than among those who remit after treatment. Using cross-sectional data from the NESARC sample, Dawson et al (2006) showed that abstinent recovery was more prevalent among individuals who sought help (treatment and/or AA) for their alcohol problems than among individuals who did not; in contrast, non-abstinent recovery was more prevalent among individuals who did not seek help. However, little is known about how aspects of psychosocial functioning (e.g., coping style, self-efficacy) that have been reliably tied to long-term drinking outcomes (e.g., Moos and Moos, 2006) are associated with non-problem drinking, or about the role that treatment may play in the longitudinal prediction of non-problem drinking versus abstinence or problematic drinking.

Although non-problem drinking appears to be a less stable outcome than abstinence (Finney and Moos, 1981), less is known about the frequency and stability of non-problem drinking compared to abstinence or problematic alcohol use over a prolonged follow-up period. In the only study of which we are aware, Helzer et al (1985) reported that a very small percentage of patients who were initially treated in medical or psychiatric settings reported drinking in a non-problematic manner in the three years prior to a follow-up approximately five to seven years later. However, this was a sample of relatively severe alcohol dependent patients, and assessments of the stability of their drinking were based on a single follow-up interview and/or additional chart review. To the best of our knowledge, there is no prospective longitudinal data on the extent to which a period of non-problem drinking predicts subsequent alcohol use with or without problems.

This study provides a longitudinal analysis of recovery from drinking problems in a sample of treatment-naïve problem drinkers. We examine the prevalence and characteristics of individuals who reported abstinence, non-problem drinking, or problematic drinking one year after seeking help for alcohol-related problems. Additionally, because approximately 76% of the sample received treatment and/or participated in AA, we are able to examine whether obtaining help was associated with differential rates of abstinence, problem-free drinking, or problematic drinking. This is an important issue because it has been suggested that participation in treatment and/or AA may discourage non-problem drinking (Peele, 1987). Finally, we examine the 16-year outcomes of individuals who report either abstinence, problem-free drinking, or problematic alcohol use at the 1-year follow-up.

2. Methods

2.1. Procedures

The sample was comprised of individuals seeking information about alcohol treatment who had never received professional treatment for an alcohol use disorder prior to baseline. These individuals were initially recruited after contacting an Information and Referral (I&R) center or detox program for information about treatment for alcohol-related problems. After providing informed consent, 628 eligible individuals completed a baseline assessment inventory (for more information about the initial data collection process, see Finney and Moos, 1995). Although no specific symptom-related inclusion criteria were used, on average, individuals who comprised our sample reported 12.5 days of alcohol intoxication and 12.1 drinks per drinking day in the month prior to baseline and averaged 4.9 alcohol dependence symptoms and 4.7 alcohol-related problems at baseline.

At 1, 8, and 16 years after entering the study, participants were contacted to complete a follow-up assessment. A total of 121 of the 628 baseline participants (19%) had died by the 16-year

follow-up. Of the remaining 507 participants, 420 (83%) completed the 1-year follow-up and were categorized based on their alcohol use and problems at 1 year (see description of categories below). These 420 individuals comprise the core sample for the 1 year analyses.

Compared to surviving individuals who did not complete the 1-year assessment, those who were followed at one year were more likely to be female (51% vs. 39%; $\chi^2 = 3.9$, $p < .05$) and Caucasian (82% vs. 72%; $\chi^2 = 3.8$, $p < .05$), and to report more years of education [mean of 13.2 years vs. 12.5 years; $F(1, 505) = 7.5$, $p < .01$]. On average, individuals with complete 1-year data reported fewer days of alcohol [12.5 vs. 17.1; $F(1, 494) = 12.8$, $p < .01$], drinks per drinking day [12.1 vs. 15.6; $F(1, 505) = 7.5$, $p < .01$], alcohol dependence symptoms [4.9 vs. 6.0; $F(1, 505) = 11.2$, $p < .01$], and alcohol-related problems [4.7 vs. 5.5; $F(1, 505) = 7.6$, $p < .01$] compared to those without complete data.

At the 8- and 16-year follow-ups, 363 (86%) and 350 (83%), respectively, of these 420 participants provided follow-up data. The analyses related to the 8- and 16-year follow-ups utilized the sample of 394 (94%) individuals with 1-year data and data at either 8- or 16-years or both. The decision to use the sample of 394 instead of one that contained individuals with data at both 8- and 16-years was made for the following reasons: 1) to maximize our power to detect differences, 2) to minimize missing data and give the most accurate representation of the available data, and 3) to potentially limit the sources (or direction) of the bias. In this case, the decision to utilize all available data likely overestimates the rates of stable remission because individuals who were abstinent or problem-free drinkers at one time point and had missing data at the other were classified as stably remitted for the entire follow-up time period.

2.2. Measures

In addition to obtaining demographic information, we asked respondents about their alcohol use and alcohol-related problems, participation in professional treatment or AA and psychosocial functioning.

2.2.1. Drinking Patterns and Problems—Questions drawn from the Health and Daily Living Form (HDL; Moos et al., 1992) were used at baseline and each follow-up to assess alcohol consumption and problems related to alcohol use. First, participants were asked if they had consumed any alcohol in the past six months (no/yes). On the index of current drinking problems, respondents rated how often (on a 5-point scale varying from 1 = never to 5 = often) in the last six months they had experienced each of nine problems (e.g. health, job, money, family) as a result of drinking. All items were recoded into dichotomous indicators of the presence of each problem (no/yes) and summed; thus the measure represents the total number of alcohol-related problems experienced during the past six months (α at baseline = 0.8). Responses on the measures of six month alcohol use and alcohol problems were combined to create the three groups of interest (abstinent from alcohol, alcohol use without problems, and problematic alcohol use)

Three additional alcohol-related measures were used to characterize drinking at baseline. Days of alcohol intoxication was assessed by asking participants for the number of days in the past month (0–30) in which they drank to the point of intoxication. Drinks per drinking day was assessed by three items that asked about the usual amount of wine (glasses), beer (glasses, cans), and hard liquor (shots) consumed on the days in which the individual drank that beverage in the last month. We converted the responses to reflect the ethanol content of these beverages and then summed them. The number of alcohol dependence symptoms was drawn from the Alcohol Dependence Scale (Skinner and Allen, 1982). Respondents rated how often they had experienced each of 11 symptoms in the past six months as a result of drinking (e.g., shakes when sobering up, craving for a drink first thing when waking up) on a 5-point scale varying

from 1 = never to 5 = often. These items were recoded to reflect a count of the total number of alcohol dependence symptoms experienced (alpha at baseline = 0.8).

2.2.2. Participation in treatment and AA—At the 1-year follow-up, individuals were asked whether or not they had participated in professional treatment or AA for their drinking habits or drinking-related problems since baseline. More specifically, participants were asked, “Have you gone to anyone (a doctor, psychiatrist or psychologist, clergy or religious counselor, AA, inpatient or outpatient treatment program) about your drinking habits or drinking-related problems?” This information was utilized to identify individuals who did or did not participate in treatment or AA between baseline and 1-year.

2.2.3. Psychosocial Functioning—Controlled drinking self-efficacy or confidence to resist heavy alcohol consumption was assessed with 10 items (alpha = 0.93) from the Situational Confidence Questionnaire (Annis and Graham, 1988). The items covered situations involving negative and positive emotions, interpersonal conflict, and testing one’s self-control. Scores represent the percent confident from 0% (not at all confident) to 100% (very confident).

Depression was based on a measure derived from the Research Diagnostic Criteria and included in the HDL (Moos et al., 1992). Respondents rated how often (on a five-point scale with 0 = never and 4 = often) they experienced each of nine symptoms of depression in the last month (alpha = 0.92).

Coping was assessed by three six-item subscales, which measured problem solving, avoidance, and emotional discharge coping (average alpha of 0.57). The subscales were composed of four-point items ranging from ‘no’ to ‘fairly often’ drawn primarily from the Coping Responses Inventory (CRI; Moos, 1993).

2.3. Analytic Plan

After the 420 participants were divided into three groups, we compared the groups on their baseline demographic characteristics, alcohol use patterns, and psychosocial indices using analyses of variance (ANOVAs) for continuous variables and chi-squares for categorical ones. We also used chi-square analyses to compare the three groups on rates of participation in treatment and AA between baseline and 1-year. Finally, we examined the long-term course of alcohol use by comparing the number of individuals in the three groups who reported an absence of problems at both 8- and 16-years (referred to as stable remission).

3. Results

We divided the 420 participants into three groups on the basis of their level of alcohol use and problems in the six months prior to the one year follow up. As noted earlier, participants completed items related to the frequency of alcohol use and number of alcohol-related problems. By combining their reports on these two domains at the 1-year follow-up, participants were categorized into three groups: 1) abstinence from alcohol use (n = 152; 36%), 2) alcohol use without problems (n = 68; 16%), and 3) problematic drinking (alcohol use and at least one reported problem; n = 200; 48%). The average rate of non-problem drinking remained at 16% at the 8-year follow-up and increased to 21% at 16-years.

3.1. Baseline characteristics of abstinent, non-problem drinking, and problematic drinking individuals

We next compared the baseline characteristics of these three groups of individuals (see Table 1). With respect to their demographic characteristics, the three groups differed significantly on age, gender, and education. Compared to abstinent individuals, those with non-problematic

drinking at 1-year were better educated. Compared to individuals with problematic drinking at 1 year, problem-free drinkers were older, more likely to be women, and had somewhat more education.

Compared to individuals in the abstinent and problem-drinking groups, individuals who were drinking in a non-problematic manner at 1 year had reported, at baseline, fewer days of intoxication, and fewer drinks per drinking day, alcohol dependence symptoms, and alcohol problems. Additionally, non-problem drinkers reported more self-efficacy at baseline than the problem drinking group. Non-problem drinkers reported less depression and less emotional discharge coping at baseline than individuals in the other two groups.

3.2. Participation in treatment and AA and drinking pattern at 1-year

The type of drinking pattern at 1 year was significantly associated with participation in treatment and AA between baseline and 1-year (see Table 2). Specifically, abstinent individuals reported higher rates of participation in formal treatment and/or AA compared to individuals with problem-free drinking. Problem and non-problem drinking in the first year was not associated with significantly different rates of treatment and/or AA participation.

3.3. Pattern of alcohol use at 8- and 16-years based on drinking pattern at 1-year

We next examined the relationship between the three 1-year groups and remission status at 8- and 16-years (see Table 3). The 1-year non-problem group was less likely to report stable remission (i.e., no problematic alcohol use at 8 and/or 16-years) than were individuals in the 1-year abstinent group. Individuals with non-problem drinking at 1 year did not differ significantly from the 1-year problem drinkers in terms of their rates of stable remission over the follow-up. Forty-eight percent of individuals who reported non-problem drinking at 1-year reported no alcohol-related problems at remaining follow-ups, with 67% (20/30) of these individuals reporting continued alcohol use without problems, 20% (6/30) reporting abstinence, and 13% (4/30) reporting a mixture of abstinence and non-problem drinking.

4. Discussion

Despite the controversial nature of non-problem drinking as a treatment goal (el-Guebaly, 2005; Humphreys, 2003; Peele, 1987), 16% of individuals reported non-problem alcohol use in the first year. However, of individuals who achieved problem-free drinking at 1 year, 52% reported some future problematic alcohol use. This percentage was not significantly different from that reported by individuals who were drinking in a problematic manner at 1 year (57%), and it was substantially higher than that reported by individuals who initially reported abstinence (23%). Thus, only a relatively small proportion of individuals initially achieved non-problem drinking following a period of problem alcohol use, and fewer than half of these individuals remained free of alcohol problems over the long-term.

Although discussions of problem-free drinking in individuals who previously reported an alcohol problem are often colored by extreme positions, the present data indicate that (a) this phenomenon does occur but (b) problem-free drinking is a relatively uncommon (occurring less frequently than either abstinence or problematic drinking) and somewhat unstable outcome. The 16% rate of initial problem free drinking is notably higher than that reported by Helzer et al. (1985), likely reflecting the overall severity of Helzer and colleagues' sample and the longer interval of time covered at each of their assessment points relative to the present sample. Our rate of those drinking without problems also is slightly higher than the 1-year rates of 7% to 12% found in Project MATCH (Project MATCH Research Group, 1997), but it is slightly lower than the rate of moderate drinking at 18-months of 22% reported in the RAND report (Armor et al., 1976).

Consistent with previous research (Finney and Moos, 1981; Helzer et al., 1985; Miller et al., 1992), individuals who reported problem-free drinking at 1 year were, on average, better educated, consumed alcohol to intoxication less frequently, drank fewer drinks per drinking day, had fewer alcohol dependence symptoms and alcohol-related problems, lower depression, and less emotional discharge coping at baseline compared to abstinent individuals.

Additionally, these individuals were older, more likely to be female, better educated, consumed less alcohol, had fewer alcohol-related problems, higher self-efficacy, lower depression, and relied less on emotional discharge coping than those with drinking problems at 1 year. Thus, individuals achieving problem-free drinking have less severe alcohol-related involvement at baseline, and also have higher levels of other positive personal resources prior to making an initial contact with a treatment and referral provider.

One contribution of the present study is the finding of an association between participation in either formal treatment or AA and a higher likelihood of abstinence; in contrast, problem-free drinkers did not differ significantly from problem drinkers in terms of their participation in treatment or AA. This pattern is consistent with the idea that exposure to abstinence-oriented treatment may decrease the likelihood that individuals will choose a path of moderate alcohol use (Peele, 1987). However, problem-free drinkers may have been less likely to enter treatment or AA due to the lower severity of their alcohol related problems at baseline. Thus, the association between participation in treatment and AA and abstinence may reflect, in part, the self-selection into treatment or AA of individuals with more severe problems who were initially more oriented toward abstinence goals.

The pattern of substance use over the 16-year follow-up interval highlights the fact that individuals who initially report abstinence have a lower prevalence of problematic alcohol use over the entire follow-up period than do either those who report problem free drinking or those who have drinking problems at the 1-year follow-up. Nevertheless, almost half of the individuals who report non-problem drinking at 1 year continued to report positive outcomes (i.e. either abstinence or non-problem drinking) over the 16-year follow-up interval. Some individuals with alcohol problems may not be interested in abstinence-only treatment (Adamson and Sellman, 2001). Therefore, providing a harm-reduction approach may be one way to attract a broader array of individuals into treatment. An initial attempt at non-problem drinking may be a viable option for some individuals with alcohol problems who are not ready to follow a course of abstinence. However, it would be useful for individuals who are considering harm reduction to know that this approach may be less likely to produce favorable long-term outcomes than is abstinence.

The study has several limitations. Specifically, the sample was comprised of treatment-naïve individuals seeking information about options for decreasing their alcohol use. These individuals likely had less severe alcohol problems than patients who have a long history of drug and alcohol treatment. Additionally, participants were not administered a structured diagnostic interview at baseline so it is unknown how many would meet formal DSM-IV (American Psychiatric Association, 1994) criteria for alcohol dependence. Given the strong association between baseline severity and rates of problem-free drinking, one should be particularly cautious about applying our results to either more severe or less severe populations. In particular, the inclusion of lower severity patients in the present sample may have overestimated the rates of problem-free drinking relative to other, more severe, samples. However, this higher degree of variability in the extent of problematic alcohol use at baseline enhanced our ability to examine the role of severity as a predictor of the pattern of 1-year alcohol use/problems.

The observational nature of the present study does not allow for the determination of whether or not levels of baseline predictors or participation in treatment or AA were causally related

to the drinking outcomes. Also, our sample was limited to individuals who were alive and provided long-term follow-up data. Although our rates of follow-up were high given the length of the study, differential rates of follow-up may have significantly influenced our findings. In particular, definition of stable remission used all available data and may have miss-categorized those with no problems at either 8- or 16-years and missing data at the other time point as stably remitted. Thus, this definition likely functions as an upper bound on the rates of stable remission for the entire sample.

Similarly, we defined problem-free drinking as 6 months with some reported alcohol use and no reported problems. We do not have data on the degree to which individuals utilized alcohol and/or experienced problems outside of the period of time covered by these assessments. It is possible that participants who were classified as abstainers or non-problem drinkers experienced alcohol problems at some other point that was not measured during the follow-up interval. There is no uniform definition of non-problem alcohol use (el-Guebaly, 2005; Humphreys, 2003) and differences in the definitions would likely influence the rates, predictors, and stability of problem-free drinking. However, despite differences in the definitions of non-problem drinking, the rate of problem-free drinking in our sample was broadly consistent with that of two other large-scale studies (Armor et al., 1976; Project MATCH Research Group, 1997).

Despite these limitations, this study is the first prospective, longitudinal analysis of which we are aware to present the long-term rates, predictors, and stability of problem-free drinking in adults with prior alcohol problems. Examination of the course of different patterns of alcohol use over time can shape treatment providers' and patients' expectations about the realistic probability of positive outcomes for individuals considering moderate drinking as a treatment goal.

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2) Contributors. Mark Ilgen and Rudolf Moos designed the study. Paula Wilbourne managed the literature searches and summaries of previous related work. Mark Ilgen and Bernice Moos undertook the set-up of the data files and statistical analysis, and Mark Ilgen, Paula Wilbourne and Rudolf Moos wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

3) Conflicts of interest. All authors declare that they have no conflicts of interest.

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Table 1

Patient and treatment-related predictors of 1-year drinking pattern.

		Drinking Pattern at 1-year				
		Abstinent from alcohol (n = 152; 36%)	Alcohol use without problems (n = 68; 16%)	Problematic alcohol use (n = 200; 48%)	F or χ^2	p <
Baseline patient-factors						
Demographics						
Age		35.3 (8.8)	34.1 (9.7) ^b	31.8 (8.0) ^b	7.2	.01
Gender						
Female (%)		81 (53%)	43 (63%) ^b	89 (45%) ^b	7.8	.05
Ethnicity						
Caucasian (%)		129 (85%)	55 (81%)	159 (80%)	1.7	n.s.
Years of Education		13.1 (2.3) ^a	14.0 (2.3) ^{a b}	13.0 (2.2) ^b	5.0	.01
Alcohol use						
Days of alcohol intoxication		12.6 (11.3) ^a	9.4 (10.3) ^{a b}	13.4 (10.2) ^b	3.5	.05
Drinks per drinking day		11.8 (9.6) ^a	7.7 (9.2) ^{a b}	13.7 (11.7) ^b	8.1	.01
Number of alcohol dependence symptoms		5.5 (2.8) ^a	3.2 (2.3) ^{a b}	4.9 (2.9) ^b	16.2	.01
Number of alcohol-related problems		5.1 (2.3) ^a	3.2 (2.4) ^{a b}	4.9 (2.4) ^b	17.0	.01
Self-efficacy		67.3 (26.3)	70.1 (24.5) ^b	61.0 (24.7) ^b	4.4	.01
Affect and coping skills						
Depression		22.1 (8.7) ^a	18.2 (9.1) ^{a b}	20.8 (8.8) ^b	4.8	.01
Problem solving action		7.8 (4.0)	8.7 (3.8)	7.5 (3.8)	2.5	n.s.
Emotional discharge coping		8.7 (3.5) ^a	7.5 (3.4) ^{a b}	9.0 (3.5) ^b	5.1	.01
Avoidance coping		5.8 (2.3)	5.1 (2.0)	5.3 (2.5)	2.8	n.s.

^a abstinent significantly (p < .05) different from alcohol use without problems;

^b alcohol use without problems significantly (p < .05) different from problematic alcohol use.

Table 2

Treatment-related predictors of 1-year drinking pattern.

	Abstinent from alcohol (n = 152; 36%)	Drinking Pattern at 1-year		F or χ^2	p <
		Alcohol use without problems (n = 68; 16%)	Problematic alcohol use (n = 200; 48%)		
Treatment participation					
Participation in either formal treatment and/or AA (%)	135 (89%) ^a	45 (66%) ^a	139 (70%)	22.0	.01
Participation in formal treatment (%)	104 (68%) ^a	34 (50%) ^a	104 (52%)	11.5	.01
Participation in AA (%)	114 (75%) ^a	33 (49%) ^a	92 (46%)	31.9	.01

^a abstinent significantly (p < .05) different from alcohol use without problems;

^b alcohol use without problems significantly (p < .05) different from problematic alcohol use.

Table 3

Predictors of stable remission over the 16-year follow-up based on drinking pattern at 1-year.

	Drinking pattern at 1-year		
	Abstinent from alcohol (n = 142 [*] ; 36%)	Alcohol use without problems (n = 63 [*] ; 16%)	Problematic alcohol use (n = 189 [*] ; 48%)
Remission status at the 8-year and 16-year follow-up periods			
Stable remission	109 (77%) ^a	30 (48%) ^a	82 (43%)
Non-stable remission	33 (23%) ^a	33 (52%) ^a	107 (57%)

^a abstinent significantly (p < .05) different from alcohol use without problems.

* N's reflect that sample of 394 individuals with 1-year data and data at either 8- or 16-years or both.