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Safer-drinking Strategies Used by Chronically Homeless Individuals with Alcohol Dependence

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Abstract

Chronically homeless individuals with alcohol dependence experience severe alcohol-related consequences. It is therefore important to identify factors that might be associated with reduced alcohol-related harm, such as the use of safer-drinking strategies. Whereas effectiveness of safer-drinking strategies has been well-documented among young adults, no studies have explored this topic among more severely affected populations, such as chronically homeless individuals with alcohol dependence. The aims of this study were thus to qualitatively and quantitatively document safer-drinking strategies used in this population. Participants ($N=31$) were currently or formerly chronically homeless individuals with alcohol dependence participating in a pilot study of extended-release naltrexone and harm-reduction counseling. At weeks 0 and 8, research staff provided a list of safer-drinking strategies for participants to endorse. Implementation of endorsed safer-drinking strategies was recorded at the next appointment. At both time points, strategies to buffer the effects of alcohol on the body (e.g., eating prior to and during drinking) were most highly endorsed, followed by changing the manner in which one drinks (e.g., spacing drinks), and reducing alcohol consumption. Quantitative analyses indicated that all participants endorsed safer-drinking strategies, and nearly all strategies were implemented (80–90% at weeks 0 and 8, respectively). These preliminary findings indicate that chronically homeless people with alcohol dependence use strategies to reduce harm associated with their drinking. Larger randomized controlled trials are needed to test whether interventions that teach safer-drinking strategies may reduce overall alcohol-related harm in this population.

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Keywords

safer-drinking strategies; alcohol dependence; homelessness; harm reduction

1. Introduction

In the US, 610,042 individuals were estimated to be homeless on a given night in 2013 (National Alliance to End Homelessness, 2014). Homeless individuals are a particularly vulnerable population (Booth, Sullivan, Koegel, & Burnam, 2002), affected by medical, psychiatric and substance-use disorders (Fazel, Khosla, Doll, & Geddes, 2008; Martens, 2001; Taylor & Sharpe, 2008). In fact, according to a meta-analysis, up to 58% of homeless individuals worldwide have alcohol dependence (Fazel et al., 2008).

Among chronically homeless individuals (i.e., unaccompanied individuals who have a disability and have been homeless for at least 1 year or on 4 or more separate occasions in the past 3 years; Homelessness Emergency Assistance and Rapid Transition to Housing Act, 2009), the prevalence of alcohol dependence is even higher (Kuhn & Culhane, 1998). Studies have indicated that chronically homeless individuals with alcohol dependence experience severe alcohol-related consequences (Collins, Malone, et al., 2012). Previous research has also documented that homeless individuals with alcohol dependence have interpersonal problems and difficulties maintaining housing (Drake & Brunette, 1998; Fichter, Quadflieg, Greifenhagen, Koniarczyk, & Wolz, 1997). Further, alcohol-use disorders among homeless people are associated with high comorbidity of psychiatric disorders (Fazel et al., 2008) and high rates of suicidal ideation (Prigerson, Desai, Liu-Mares, & Rosenheck, 2003). Alcohol use disorders also precipitate both acute medical problems (e.g., delirium tremens, Collins, Malone, et al., 2012; Fichter et al., 1997; falls and injuries; Hibbs et al., 1994; Roy, Boivin, Haley, & Lemire, 1998) and chronic medical problems (e.g., liver disease and cancer; Fichter et al., 1997; Hwang, Wilkins, Tjepkema, O'Campo, & Dunn, 2009). As a result, the risk of mortality due to alcohol-related problems among homeless individuals is many times that of the general population (Hwang et al., 2009).

Considering these findings, it is important to explore ways to help chronically homeless individuals with alcohol dependence reduce their alcohol-related harm. Recent qualitative studies, however, have documented that chronically homeless individuals with alcohol problems do not find abstinence-based goals to be acceptable or desirable and endorse mostly negative perceptions of abstinence-based approaches (Collins, Clifasefi, et al., 2012; Grazioli, Collins, Daeppen, & Larimer, in press). Thus, interventions that do not require abstinence and instead promote the use of safer-drinking strategies may be more acceptable treatment alternatives for this population. Safer-drinking strategies are ways in which patterns of alcohol use may be changed to reduce alcohol-related harm, including buffering the effects of alcohol on the body (e.g., eating protein- and carbohydrate-rich foods before/while drinking), changing the manner of consumption (e.g., drinking in safer places), and/or reducing alcohol consumption (e.g., engaging in non-drinking activities, Collins, Duncan, et al., 2014).

To the best of the authors' knowledge, use of safer-drinking strategies among chronically homeless individuals with alcohol dependence has not been explored. However, a close construct, namely "protective behavioral strategies" (PBS), has received considerable attention among high school (e.g., Glassman, Werch, & Jobli, 2007) and college students (e.g., Araas & Adams, 2008; Benton et al., 2004; Martens, Pederson, Labrie, Ferrier, & Cimini, 2007; Pearson, D'Lima, & Kelley, 2013). PBS are defined as cognitive and behavioral strategies that students can use while drinking to limit alcohol consumption and alcohol-related consequences (Martens, Pederson, et al., 2007). Examples of PBS include avoiding drinking games or using a designated driver. Research has documented use of PBS as a promising way to reduce alcohol-related harm among young adults (e.g., Araas & Adams, 2008; Benton et al., 2004; Delva et al., 2004; Glassman et al., 2007; Martens, Martin, Littlefield, Murphy, & Cimini, 2011; Martens, Neighbors, Dams-O'Connor, Lee, & Larimer, 2007; Napper, Kenney, Lac, Lewis, & LaBrie, 2014; Pearson, 2013). Although the PBS and safer-drinking strategies constructs both represent means of alcohol harm reduction, they were independently developed for two distinct populations: college students and chronically homeless individuals, respectively. Given the unique needs and characteristics of these populations, these constructs are parallel yet distinct (Collins, Clifasefi, et al., 2012; Collins, Kirouac, et al., 2014).

Although use of PBS has been widely studied among young adults, no studies to date have explored this topic among more severely affected populations, such as chronically homeless individuals with alcohol dependence. Further, research examining safer-drinking strategies among other populations (than college students) are needed (Pearson, 2013). The current study was designed to fill this gap in the literature. Specifically, the aims of this study were to qualitatively and quantitatively document the safer-drinking strategies endorsed by chronically homeless individuals with alcohol dependence within the context of a pilot study of a pharmacobehavioral intervention featuring extended-release naltrexone and harm-reduction counseling (for more information on the parent study, see Collins et al., 2014). In the present, secondary study, we used content analysis to classify and evaluate the frequency of participant-endorsed safer-drinking strategies. Second, we used inferential statistics to evaluate whether participant's number of endorsed and implemented safer-drinking strategies changed over the course of the study.

2. Materials and Methods

2.1 Participants

Participants ($N=31$; 12.9% women) were currently or formerly (i.e., now living in permanent supportive housing) chronically homeless individuals with alcohol dependence (see Table 1 for baseline demographic data), who participated in a pilot study assessing initial feasibility, acceptability, and alcohol outcomes after receiving treatment with extended release naltrexone and harm-reduction counseling (for a complete list of inclusion and exclusion criteria in the parent study, see Collins et al., 2014).

2.2 Measures

2.2.1 Demographic variables—The *Personal Information Form* comprises single items assessing age, gender, race, ethnicity, education level and employment status. The *Housing Timeline Followback* is a set of monthly calendars used to record where participants resided/spent the night each day over the past 30 days (Sobell & Sobell, 1992 ; Tsemberis, 2007). These measures yielded variables that were used to describe the sample at baseline.

2.2.2 Drinking variables—The *Alcohol and Substance-use Frequency Assessment* questions were adapted from the *Addiction Severity index (ASI)* and were used to assess frequency of alcohol use in the past 30 days (McLellan et al., 1992). The *Alcohol Quantity of Use Assessment (AQUA)* assessed participants' peak and typical alcohol quantity in the past 30 days (Collins, Duncan, et al., 2014). Alcohol craving in the past week was measured using the 5-item, Likert-type *Penn Alcohol Craving Scale (PACS)* (Flannery, Volpicelli, & Pettinati, 1999). Internal consistency was adequate ($\alpha = .91$). Finally, alcohol-related problems were assessed using the *Short Inventory of Problems (SIP-2R)*. The SIP-2R is a 15-item, Likertscale questionnaire that measures social, occupational and psychological alcohol problems (Miller, Tonigan, & Longabaugh, 1995). Internal consistency was adequate ($\alpha = .91$). All of the drinking measures yielded variables that were used to describe the sample at baseline.

2.2.3 Safer-drinking strategies—Participants' willingness to commit to and subsequent implementation of specific safer-drinking strategies was documented at weeks 0 and 8 using an open-ended questionnaire called the Safer-drinking and Harm Reduction Efforts (SHaRE) form (Collins, Duncan, et al., 2014). The safer-drinking portion of this form comprises a grid on which study physicians recorded safer-drinking strategies participants reported wanting to commit to after study physicians introduced a 12-item list of safer drinking strategies during the intervention (See Figure 1 for the safer-drinking strategies). Participants' open-ended responses to these prompts were recorded, and participants were informed that the study physicians would check in with them during the next meeting to see how their use of safer-drinking strategies went (i.e., whether the safer-drinking strategies were successfully implemented). Participants received the safer-drinking strategies handout to take with them. At subsequent sessions, study interventionists asked participants whether they had implemented each of the endorsed safer-drinking strategies, and these responses were recorded in the grid next to their previously endorsed strategies.

2.3 Procedures

Study procedures were approved by the institutional review board at the home institution and followed the ethical guidelines outlined in the Declaration of Helsinki (for more details on procedures, see Collins et al., 2014). All participants provided written, informed consent. Participants were administered the demographic and alcohol measures at baseline. The next week (week 0), participants were provided with harm-reduction counseling, during which study physicians provided personalized alcohol feedback, elicited participants' own goals (i.e., goals were determined by the participant and did not need to be related to alcohol use), introduced a list of safer-drinking strategies, and administered the study medication (i.e., 380 mg of extended-release naltrexone) and medication management. Participant

endorsement and implementation of safer-drinking strategies were assessed at similar counseling appointments at weeks 1, 4, 8 and 12.

2.4 Data preparation and analysis plan

2.4.1 Qualitative data analysis—Responses describing the safer-drinking strategies were transcribed from the SHaRE into a spreadsheet program. Content analysis, which is a methodology that facilitates description of a qualitative data through a systematic process of coding and classification, was conducted (Hsieh & Shannon, 2005). Participants' responses were reviewed by a team of raters, including bachelor-, post-baccalaureate and master's-level psychology students and a clinical psychologist, to identify recurring categories of safer-drinking strategies (Hsieh & Shannon, 2005; Shek & Tang, 2005). Initial coding was conducted independently and a codebook was created in consensus meetings, pooling codes and eliminating highly idiosyncratic or redundant codes. After the codebook was established, the raters independently rated the responses again. Ratings were discussed and discrepancies were resolved in meetings until interrater consistency reached acceptable standards in literature (i.e., 80%; Shek & Tang, 2005). Next, frequency analysis was conducted in SPSS 19 to describe the percentage of safer-drinking strategies categories endorsed by the participants at weeks 0 and 8.

2.4.2 Quantitative data analysis—Further quantitative analyses were conducted using SPSS 19. Preliminary descriptive analyses were conducted to describe the sample, document data distributions and identify potential outliers. Because number of safer-drinking strategies endorsed was normally distributed, we used a paired-sample *t*-test to detect significant changes on this variable over time. Proportion of safer-drinking strategies implemented was negatively skewed, and thus, nonparametric tests (i.e., Wilcoxon signed rank signed test) were used to examine significant changes over time. Alpha was set to $p = .05$, and confidence intervals (*CI*) were set to 95%.

3. Results

3.1 Qualitative Results

Interrater reliability for the content analysis categories reached 95.8% for week 0 and 94.6% for week 8. Content analysis yielded three main categories: a) buffering the effects of alcohol on the body, b) changing the manner of drinking, and c) reducing alcohol consumption. At both time points (i.e., weeks 0 and 8), buffering the effects of alcohol on the body was the most encountered category and represented almost half of responses, followed by changing the manner of drinking and reducing alcohol consumption. Table 2 shows rankordered lists of safer-drinking strategies and their frequencies across time points.

3.1.1 Buffering the effects of alcohol on the body—Changing eating habits was the most frequently stated safer-drinking strategy. Some participants mentioned wanting to eat more or more often (e.g., “eat 3 times a day”). A few participants also cited generally wanting to eat healthier (e.g., “eat better food”) or cooking their own food instead of relying on junk food or fast food. The second most common strategy in this category was to take vitamins (e.g., “take vitamins daily”). Increasing overall intake of nonalcoholic beverages to

promote hydration was the third most common strategy to buffer the effects of alcohol. Examples of responses included “drinking more fluids throughout the day,” or “drink more water.” Relatedly, the fourth most highly endorsed strategy was alternating alcoholic beverages with nonalcoholic beverages. For example, one participant reported “drinking water while drinking alcohol,” whereas another mentioned “drinking water between drinks.” The fifth most frequently encountered strategy was eating while or before drinking (e.g., “try to eat before drinking,” “don’t drink on empty stomach”) to slow the absorption of alcohol and/or reduce digestive symptoms (e.g., pain in the stomach or pancreas).

3.1.2 Changing the manner of drinking—The second most endorsed category was changing one’s manner of drinking, which represented more than one-third of participants’ responses. Within this category, spacing drinks was the most commonly cited strategy, followed by drinking in a safer place (e.g., “drink in safe place,” “drink in familiar place”). Drinking lower-proof beverages was the next most encountered strategy: some participants mentioned choosing lower-proof beverages in general (e.g., “drinking beer”), whereas others wished to replace higher-proof beverages with lower-proof beverages (e.g., “drink beer versus malt liquor,” “drink beer instead of whiskey”). Other less-represented strategies included counting drinks, drinking in a manner to avoid withdrawal symptoms, not mixing drugs and alcohol, avoiding nonbeverage alcohol (e.g., “mouthwash,” “cooking wine”), and diluting alcoholic beverages (e.g., “add ice to drinks”).

3.1.3 Reducing alcohol consumption—Within this final category, the most frequently cited strategy was incorporating short-term periods of abstinence (e.g., “choose not to drink”), whereas the second was reducing drinking while avoiding withdrawal (e.g., “avoid withdrawal while slowing down”). Finally, two less frequently cited strategies included engaging in non-drinking activities (e.g., “schedule day with activities other than drinking”) and buying alcohol less often (e.g., “buy beer less often”).

3.2 Quantitative Results

The number of endorsed safer-drinking strategies ranged from 2 to 6 at both week 0 ($M = 3.1$, $SD = 1.37$) and week 8 ($M = 3.3$, $SD = 1.01$). A paired-samples t -test indicated no significant change in the overall number of safer-drinking strategies endorsed from week 0 to week 8, $t(24) = -1.75$, $p = .09$. Similarly, a Wilcoxon signed-rank test showed no significant change in the proportion of safer-drinking strategies implemented from week 0 ($Mdn = 0.8$, $IQR = 0.5$) to week 8 ($Mdn = 0.9$, $IQR = 0.33$), $z = -.49$, $p = .62$.

4. Discussion

This secondary study had two aims. The first was to qualitatively and quantitatively document the safer-drinking strategies endorsed by chronically homeless individuals with alcohol dependence within a pilot intervention study. The second was to test whether the number of safer-drinking strategies endorsed and used by participants changed over an 8-week time frame.

Findings indicated that all study participants endorsed some kind of safer-drinking strategy. Buffering the effects of alcohol on one’s body (e.g., eating before or while drinking, taking

vitamins and drinking nonalcoholic beverages) was the most frequently documented category, representing over one-half of the endorsed strategies at weeks 0 and 8. These findings correspond to previous qualitative (Howard, Griffin, Boekeloo, Lake, & Bellows, 2007) and quantitative studies (Araas & Adams, 2008; Delva et al., 2004; Haines, Barker, & Rice, 2006; Martens et al., 2004) conducted with college students, which have also documented the relative popularity of this set of safer-drinking strategies. As discussed by Martens et al. (2004), the popularity of this set of strategies may be due to the fact that it is not very constraining and is relatively easy to implement.

The second most commonly endorsed category was changing the manner in which one drinks, which garnered well over one-third of responses at both weeks 0 and 8. Consistent with these findings, college students also endorse a range of strategies to “ensure safety while drinking” (Howard et al., 2007, p. 249). That said, the drinking milieus are different. Whereas participants in the present study most often endorsed spacing drinks, drinking in a safer place, and drinking lower-proof alcohol, college students most commonly reported using a designated driver, knowing where their drink has been at all time, or avoiding drinking games (Araas & Adams, 2008; Delva et al., 2004; Martens et al., 2005; Martens et al., 2004). Strategies used by chronically homeless individuals with alcohol dependence thus differ from those for college students. This finding is not surprising given these populations’ different experiences with alcohol (Collins, Duncan, et al., 2014; Collins, Kirouac, et al., 2014). These differences may help explain why some strategies that are priorities for chronically homeless individuals with alcohol dependence do not apply to college students and vice-versa. Importantly, our findings that relevant strategies depend upon populations suggest a strength in using open-ended data collection strategies to assess safer-drinking plans across diverse populations, facing thereby different drinking milieus, traditions and challenges.

The final category, strategies to reduce alcohol consumption, was represented in less than 10% of responses. Most participants who endorsed this category were interested in tapering or reducing their use. Only a very small minority of participants was interested in incorporating periods of abstinence into their safer-drinking plan, and among these individuals, abstinence was primarily viewed as a temporary reprieve from ongoing alcohol use instead of a long-term lifestyle change. Although college drinkers are less affected by alcohol dependence than this population, the current findings are parallel to findings for the use of PBS in college samples (Delva et al., 2004; Martens et al., 2004). One study indicated that only a minority of college drinkers were interested in setting drinking limits (Martens et al., 2004), and another study found that choosing not to drink was the least endorsed strategy among college students (Delva et al., 2004). The relatively low interest in abstinence-oriented strategies across these populations highlights the need for harm-reduction oriented interventions that may reach individuals who are not ready, willing and/or able to stop drinking to begin to reduce their alcohol-related harm and improve their quality of life.

Regarding the quantitative findings, participants endorsed a mean of three safer-drinking strategies over the course of the study. Further, participants reported implementing 80% to 90% of their endorsed safer-drinking strategies at weeks 0 and 8, respectively. Findings also indicated that neither the number of safer-drinking strategies endorsed nor the proportion of

safer-drinking strategies implemented changed significantly across the 8 weeks. Given the very high proportions of strategies that were implemented, however, it is likely that the later finding is attributable to a ceiling effect. Taken together, our preliminary findings indicate that harm-reduction interventions promoting safer-drinking strategies are likely to be well-received among chronically homeless individuals with alcohol dependence. Such interventions may help these individuals increase the number of safer-drinking strategies participants incorporate and successfully implement in their day-to-day lives, which may in turn decrease their level of alcohol-related harm.

4.1 Limitations

Interpretation of these findings should be considered in light of the study's limitations. Previous literature has suggested that self-report data can be subject to inaccuracies resulting from cognitive impairment and memory biases (Ekholm, 2004; Gelberg & Siecke, 1997). That said, our research team has shown that self-report measures among chronically homeless individuals with alcohol problems can be reliable (Clifasefi et al., 2011). Next, questions were piloted and developed with the specific study population in mind and therefore focused on the discrete, recent, and manageable time frames recommended by researchers working with homeless populations and alcohol use outcomes (Clifasefi et al., 2011; Gelberg & Siecke, 1997; Maisto, Sobell, & Sobell, 1982).

Another limitation is that this sample was small and included a specific subcategory of individuals with alcohol dependence. Generalizability and statistical power to detect significant changes are therefore limited. The small sample size also precluded an evaluation of the associations between use of safer-drinking strategies and alcohol outcomes.

Despite these limitations, this study fills a literature gap: Although a validated PBS measure exists for college students (Martens, Pederson, et al., 2007), there are no equivalent measures tailored to the drinking patterns and drinking milieu of chronically homeless individuals with alcohol dependence. This study is thereby introducing a new, open-ended measure for assessing the use of safer-drinking strategies while providing a foundation for future larger-scales studies examining the use of safer-drinking strategies and its effectiveness in this population.

5. Conclusion and Future Directions

This study indicated that chronically homeless individuals with alcohol dependence are interested in drinking safer when they do choose to drink and can commit to using safer-drinking strategies. These findings indicate that interventions aiming to increase use of safer-drinking strategies may be well-received in this population. Future research is needed to more thoroughly examine the effectiveness of interventions involving safer-drinking strategies in this population.

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Highlights

- All participants endorsed some kind of safer drinking strategies
- Strategies to buffer the effects of alcohol on the body were the most frequent
- Participants implemented nearly all strategies endorsed
- Safer-drinking strategies interventions may be well-received in this population

Safer Drinking Steps

Here are some tips to keep you safer and healthier no matter how you choose to change your drinking. Please select at least one thing on the list you would like to try over the next week. We can talk about how these different steps may reduce “not-so-good things” about your drinking, and we will check in about how it went at our next meeting.

Figure 1.
Safer-drinking strategies list.

Table 1

Baseline Descriptive Statistics for the Study Sample (N = 31)

Variable	<i>M (SD) / %</i>
Age	50.16 (6.35)
Housing status one week prior to baseline assessment	54.8% Housing First ^a residents
	45.2% Currently homeless
	29% Sleep-off shelter
	6.5% Emergency shelter
	3.2% Outside
	3.2% Friend's house
	3.2% Other
Ethnicity	3.3% Hispanic/Latino/a
Race	
American Indian/Alaska Native/First Nations	35.5%
Asian	0%
Black/African American	9.7%
Native Hawaiian/Pacific Islander	3.2%
White/European American	38.7%
"More than one race"	12.9%
Highest education level	
No high school degree	29.0%
HS graduate/GED	29.0%
Vocational school	16.1%
Some college	16.1%
College graduate	3.2%
Some graduate school/advanced degree	6.4%
Employment status	
Full time	0%
Part time	3.2%
Unemployed (no assistance)	9.7%
Unemployed (Cash Assistance Program) ^b	38.7%
Disability (SSI/SSDI)	45.2%
Other	3.2%
Self-reported alcohol outcomes	
Typical quantity	24.02 (22.40)
Peak quantity	33.21 (19.00)
Frequency	26.45 (6.15)
Craving	21.00 (7.39)
Alcohol problems	23.29 (11.24)

Notes. Percentages may not total 100% due to rounding.

^a Housing First is an innovative model of housing that entails the provision of immediate, permanent, low-barrier, nonabstinence-based supportive housing to chronically homeless people who often have co-occurring psychiatric, medical and substance-use disorders.

^b The Aged, Blind, Disabled Cash Assistance Program is a state program that provides cash grants to people who a) are 65 or older, blind or have a long-term medical condition that is likely to meet federal disability criteria; b) meet income and resource requirements; c) meet citizenship/alien status requirements; and d) reside in-state. This program is applied until individuals qualify for federal disability income.

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Table 2

Safer-drinking Strategies at Weeks 0 and 8

Rank	Category	Week 0		Week 8	
		n	%	n	%
1	Buffering the effects of alcohol	47	49.9	47	55.9
	Eating	16	17.0	18	21.4
	Taking vitamins	14	14.9	13	15.5
	Drinking non-alcoholic beverages	13	13.8	16	19.0
	Drinking non-alcoholic beverages while drinking	2	2.1	0	0
	Eating while drinking	2	2.1	0	0
2	Changing the manner of drinking	39	41.5	31	36.9
	Spacing drinks	10	10.6	8	9.5
	Drinking in a safer place	8	8.5	7	8.3
	Drinking lower-proof beverage	8	8.5	6	7.2
	Counting drinks	5	5.3	2	2.4
	Avoiding withdrawal symptoms	4	4.3	4	4.7
3	Avoiding mixture of drugs and alcohol	2	2.1	3	3.6
	Avoiding non-beverage alcohol	1	1.1	1	1.2
	Diluting alcoholic beverages	1	1.1	0	0
	Reducing alcohol consumption	8	8.6	6	7.2
	Choosing not to drink	4	4.3	1	1.2
	Drinking less	3	3.2	2	2.4
	Avoiding withdrawal symptoms while reducing	1	1.1	0	0
	Buying beer less often	0	0	1	1.2
	Engaging in non-drinking activities	0	0	2	2.4
	Total safer-drinking strategies	94	100	84	100

Notes. The order of the safer-drinking strategies is based on their ranks at week 0.