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## Urge-Specific and Lifestyle Coping Strategies of Alcoholics: Relationships of Specific Strategies to Treatment Outcome

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### Abstract

**BACKGROUND**—The present study examined the efficacy of various specific lifestyle and situation-specific coping skills by determining the relationship of each of these strategies to drinking outcomes.

**METHODS**—Patients with alcohol dependence in intensive day treatment were participating in a randomized trial naltrexone versus placebo and adjunctive communication and coping skills training or a control treatment. The alcohol version of the Urge-Specific Strategies (USS) questionnaire and the General Strategies for Alcoholics (GSA) were administered early in treatment. The USS assesses 16 situation-specific strategies taught in cue exposure treatment, communication skills training, or relaxation/meditation training to cope with experiencing an urge to drink (e.g., think of positive and negative consequences of drinking, use mastery messages, engage in an alternative behavior); the 21-item GSA assesses lifestyle change strategies taught in communication skills training and in the general treatment program (e.g., keep busy, exercise regularly, attend 12-Step meetings, avoid high-risk situations). Alcohol use and frequency of use of the skills were assessed 6 and 12 months following treatment.

**RESULTS**—Many specific behavioral and cognitive coping strategies were significantly related to drinking outcomes, including 13 urge-specific and 18 general lifestyle strategies, while other strategies were unrelated.

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Dr. Dolan oversaw the data analyses, wrote the conference poster of the results, and wrote the first draft of the manuscript.

Dr. Rohsenow designed the study, designed the final measures used in the study, planned data analyses, and revised the manuscript.

Dr. Monti designed the treatment study that this study was added to, participated in designing the previous versions and final measures that are the basis of this study, participated in the design of this assessment study, and participated in the writing.

Dr. Martin participated in the scientific decisions about the design of this study, provided data analysis guidance, and participated in the writing.

**Conflict of Interest:** “No conflict declared”

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**CONCLUSIONS**—Since some strategies taught in treatment are more effective in preventing relapse than others, treatment may be improved by focusing on these specific strategies. Since results may be limited to this population, replication is needed in more diverse settings and without medication.

### Keywords

Coping skills; alcohol dependence; alcohol treatment; urge to drink

## 1. INTRODUCTION

### 1.1 The need to assess types of coping skills

Coping skills are an important predictor of outcome of treatment for alcohol dependence (Noone et al., 1999; Monti et al., 2002). Treatments that target an increase in either coping skills to handle situational stress and temptations or interpersonal skills for maintaining sobriety have accumulating evidence for efficacy when part of a comprehensive treatment program (see reviews by Morganstern and Longabaugh, 2000; Rohsenow and Pinkston-Camp, in press). Patients who report an increase in adaptive coping and/or a decrease in maladaptive coping have better long-term alcohol-related outcomes (e.g., Chung et al., 2001; Rohsenow et al., 2001; Monti et al., 1993, 2001). Increased use of coping skills is a primary mechanism of change in cognitive-behavioral treatments for substance use disorders (e.g., Gossop, Stewart, Browne and Marsden, 2002; Morgenstern and Longabaugh, 2000).

Social learning theory proposes that people with alcohol dependence need to learn effective coping skills to replace maladaptive methods of handling stress and seeking pleasure (Abrams and Naiura, 1987; Monti et al., 2002). Cognitive-behavioral coping skills treatment and relapse prevention approaches have focused either on making general lifestyle changes designed to maintain sobriety or in developing situation-specific skills for coping with immediate temptations to use and other situations that pose a high risk for relapse (see Monti et al., 2002, for more details). Communication skills training (Monti et al., 1990, 2002) focuses largely on skills for improving one's general lifestyle so as to maintain sobriety by making the social environment more conducive to abstinence. Such sessions focus on conflict resolution, ways to increase positive communication with people close to the client, ways to build new sober social networks, and assertiveness training to reduce aggression and refuse drinks. The model for teaching general lifestyle skills is that a social network that provides more positive and fewer conflictual interactions will provide fewer relapse triggers and more support for abstinence.

Alternatively, some relapse prevention approaches teach situation-specific coping skills (e.g., Marlatt and Gordon, 1985; McCrady et al., 1985; Rohsenow et al., 2000), including cue exposure with urge-specific coping skills training (Monti et al., 1993, 2001, 2003; Rohsenow et al., 2001). These focus on developing skills for acutely coping with urges to drink and other situations that pose an immediate high risk for relapse. (While cognitive-behavioral mood management training usually involves situation-specific applications, it has been less effective for many people with alcohol dependence [see reviews by Monti et al., 2002; Rohsenow et al., in press] so it will not be discussed here.) In these approaches, each session focuses on a type of situation that could trigger relapse (e.g., being offered a drink; fight with ex-spouse; being at a party; feeling lonely; Friday after work). Therapists provide a menu of both anticipatory and immediate coping skills (cognitive or behavioral) which the client practices during role-plays or while imagining being in the situation. The model for teaching situation-specific skills is that practicing alternative ways to handle immediate risk will allow more rapid and effective responses when in real-world high-risk situations so as

to avert relapse. Thus, one approach focuses on lifestyle skills whether or not a relapse trigger is present, and the other focuses on relapse triggers per se (Rohsenow et al., 2005).

Similarly, studies of the relationship of use of coping skills to treatment outcome have focused on assessing either general lifestyle skills or on situation-specific coping methods used when tempted to drink. Although expert coding of behavior in role-play tests has been one method of assessing level of coping (e.g., Monti et al., 1990), self-report instruments provide a low cost and widely disseminable method for assessing frequency of use of various specific types of coping skills, so will be the focus of this investigation. Although self-report measures are not validated against role-play measures and so have uncertain construct validity in terms of actual behavior, to the extent that such measures are significantly associated with post-treatment drinking, they can be considered to have predictive validity and clinical utility. While some measures are designed to assess clusters of types of coping based on factor/component analysis, information about the value of various specific coping skills taught in treatment can also provide useful clinical guidance for improving coping skills training.

## 1.2 Existing evidence

The relationship of lifestyle coping skills taught in alcohol treatment programs to drinking outcomes has been examined in several studies. Lifestyle skills assessed with a measure of abstinence maintenance coping strategies found that improved drinking outcomes 6 months after treatment were associated with reporting more substitute activities and positive focus, and less use of wishful thinking or keeping to oneself (Wunschel et al, 1993). Using the Coping Behaviors Inventory (CBI; Litman et al., 1984), alcohol abstinence was found related to using more positive thinking and more use of distraction (Litman et al., 1979, 1984; Litman 1986; Miller et al., 1996; Maisto et al., 2000). A measure of General Strategies for Alcoholics (GSA; Monti et al., 2001) asked about frequency of use of seven cognitive (e.g., reframing, thinking of positive effects of sobriety) and eight behavioral strategies (e.g., healthy activities, prevent conflicts) used in general for maintaining sobriety, with frequency of use summed across all strategies. At 3, 6 and 12 months post-treatment, those who abstained or drank less had higher scores for use of these strategies during the same time period (Monti et al., 2001).

The relationship of urge-specific coping skills to alcohol use after treatment has been investigated in several studies. The first version of our measure assessed frequency of use of five coping skills taught in an early form of cue exposure (CET) with coping skills training (Monti et al., 1993), and asked how often patients used each when they had an urge to drink. In the first small study ( $n = 30$ ), frequency of drinking during the 4–6 month period after treatment was lower for those who more often said they coped by thinking about the positive consequences of staying sober or the negative consequences of returning to drinking (Monti et al., 1993). This urge-specific strategies (USS) measure was expanded to 11 items in a larger study, tapping frequency of use of eight skills taught in CET plus three taught in the larger treatment program or in the control condition (Rohsenow et al., 2001). At 6 and 12 months post-treatment, less drinking occurred for those who reported more use of thinking of positive or negative consequences of sobriety/drinking, escape/avoidance, delay (tell myself I can wait it out), alternative behaviors, and alternative consumption. Several other skills were found unrelated to outcome: messages of inner strength, imagery (such as imagining the urge as a wave to be ridden), distraction, relaxation, or meditation. The results allowed the next study of CET to be refined and improved (Monti et al., 2001). In this last study, the USS was expanded to 19 situation-specific strategies taught in CET, communication skills training, or the control condition, plus two known to be ineffective (willpower and self-punishment) that were dropped from analyses. In this last study, only the sum of all items was used, showing that these skills increased more after skills training

versus the control, differentiated abstainers from drinkers, and correlated with frequency of heavy drinking at 3, 6 and 12 months. However, analyses were not conducted by specific type of skill to determine which skills are most effective.

In parallel work with cocaine dependent people in treatment, analyses of cocaine versions of the whole set of USS and general coping strategies used for treating cocaine dependence identified the specific strategies that were associated with reduced or no cocaine use post-treatment, and identified other commonly used strategies that had no evidence of benefit (Rohsenow et al., 2005). With studies of treatment of alcohol-dependence, analyses of the relationship of each of the full set of general lifestyle and situation-specific skills have not been conducted. Such a study would allow clinicians to focus treatment on the strategies that are shown effective and to eliminate the ones that have no evidence of effectiveness, thus increasing efficacy while reducing time.

### 1.3 Purpose of this study

The goal of the present study was to examine the efficacy of each individual general lifestyle and situation-specific coping skill as predictors of treatment outcome in alcohol dependent patients so as to provide guidance for clinicians. A previously published study used only total scores for the USS and General Strategies for Alcohol (GSA; Monti et al., 2001) as predictors, presented the psychometric properties, and investigated effects of treatment type on total scores. On the other hand, the present study from the same dataset conducts the analyses at the item level as was done for cocaine strategies by Rohsenow et al. (2005) in order to provide clinical guidance as to which specific self-reported strategies have the best relationship with post-treatment drinking outcomes. The aims were to investigate the relationships of each of these strategies to drinking outcomes (abstinence versus use, and frequency of drinking) during the year after day treatment.

## 2. METHODS

### 2.1 Participants and Site

Alcohol-dependent patients from an urban substance abuse treatment program in a private psychiatric partial hospital (length of stay 7–27 days,  $M \pm SD = 13.0 \pm 4.8$  days) entered the larger study. All were part of a larger randomized, controlled clinical trial examining the effects of naltrexone versus placebo in the context of communication skills training combined with CET versus a psychosocial control treatment (see Monti et al., 2001, for additional details about the nature and schedule of the interventions). The 2-week partial hospital (intensive day treatment) program commonly prescribed disulfiram and provided 6 hr/day of group, individual and marital treatment based on learning principles and 12-Step philosophy, followed by 12 weeks of aftercare in the outpatient evening program. Everyone participated in the full parent treatment program, but with the study's psychosocial treatments (90 min/day) replacing that program's relapse prevention training groups. Randomization to the medication phase of the study did not start until the day that participants left the partial hospital program for outpatient care, so that the medication would not affect the skills training. Any detoxification was completed prior to admission.

### 2.2 Procedures

All procedures were approved by the Institutional Review Boards at Brown University, the Providence Veterans Affairs Medical Center, and Butler Hospital (clinical site). Informed consent was completed within three days of admission and assessments by the end of the first week during free time, as part of a 3-hour battery. Follow-up assessments were completed offsite at 3, 6, and 12 months following partial hospital discharge by university-employed, trained research staff blind to treatment condition.

After informed consent, several days of baseline assessment occurred during free time, followed by randomization to group treatment during the partial hospital phase (mean  $\pm$  SD length of stay  $13.0 \pm 4.8$  calendar days), then randomization to 84 days of medication occurred on day of transfer to the outpatient phase. Of 384 eligible patients approached, 188 (49%) were willing to participate in this study, 165 were actually randomized to the group treatments, and 128 were still eligible and randomized to medication. (Reasons for study refusal were preferring no medication [34%] or disulfiram [15%] or not interested in research [23%]; of the 37 not continuing into the medication phase, reasons included dropping out of all treatment [ $n = 20$ ] or medically ineligible [ $n = 17$ ]). The 165 randomized to group treatment were all sought for follow-up assessments of post-treatment drinking and coping skills.

## 2.3 Measures

**2.3.1 Alcohol use and diagnoses**—Timeline Follow back interviews (TLFB; Sobell et al., 1980) were conducted while creating an environment of confidentiality, even from clinical staff, ensuring a negative breath-alcohol level, and interviewing a significant other to create a “bogus pipeline” effect. TLFBs were administered at baseline for the 6 months prior to treatment entry and at 3-, 6- and 12-month follow-ups covering the 12 months following discharge from the intensive partial hospital. Data from the first 3 months are not used since they coincide with the medication period; medication effects dissipated after that time (Monti et al., 2001). Variables used in these analyses are percent days of alcohol use and whether any alcohol use (“lapse”) occurred during the window.

Current alcohol abuse and dependence were determined at baseline using the criteria of the Structured Clinical Interview for DSM-IV - Patient Version (SCID-P; First et al., 1995), conducted by a trained, university-employed research therapist. Physician examination ruled out people with active psychosis or brain impairment, as well as physical conditions contraindicated for the medication.

**2.3.2 Urge Specific Strategies (USS)**—Patients were first asked to describe every strategy they had used in the past \_\_\_ months to keep themselves from drinking alcohol when they had an urge to drink (urge was defined to them as “wish for, temptation, desire, want, craving, close call, etc.”). The time frame was 6 months at 12-month follow-up, 3 months at 6-month follow-up, to match the drinking periods in the analyses. Open-ended responses are not used in the present study but had the purpose of eliciting free recall before providing the closed-ended questions. Closed-ended questions listed 19 situation-specific coping strategies in plain language that were taught in the study’s coping skills treatments (see Table 1 for types of strategies), plus two commonly ineffective methods (willpower and self-punishment). For each, patients were asked “When you had an urge to drink alcohol in the last \_\_\_ months, and were trying to keep yourself from drinking, how often did you....” Patients rated their responses on 7-point Likert scales from 1 (never) to 7 (all the time). The single-factor structure, high reliability and validity of the total score was demonstrated by Monti et al. (2001).

**2.3.3 General Strategies for Alcohol (GSA)**—This measure has the same format as the USS. Participants were first asked to describe what they did in general to maintain their sobriety in the past \_\_\_ months (ratings of open-ended questions not used in this study). Next, closed-ended questions listed 21 strategies in plain language (see Table 2) and patients were asked “In general, as a way to maintain sobriety in the last \_\_\_ months, how often did you...”, using the same response ratings as for the USS. The single-factor structure, high reliability and validity of the total score was demonstrated by Monti et al. (2001).

## 2.4 Data Analysis Methods

Data were checked for distributional assumptions; percent drinking days at 12 months was skewed so it was log-transformed for analyses. Mean levels of the frequency of use of each coping skill from the USS and GSA were compared between the relapsers and abstainers using *t*-tests. The correlations between frequency of use of each strategy during a follow-up period with percent drinking days during that same follow-up period were investigated using partial correlations (*pr*) that controlled for variance due to pretreatment percent of alcohol use days. Type of study treatment was not modeled in analyses since treatment effects were studied for total number of strategies previously (Monti et al., 2001) and effects of treatment type on individual strategies was not the purpose of the present analyses. Therefore, analyses were collapsed across treatment types. Due to the number of analyses, only relationships with *p* < .01 were considered significant, since Bonferroni corrections are known to overcorrect. Since the relationship of total scores to outcome were previously reported (Monti et al., 2001), they are not reported again here.

## 3. RESULTS

### 3.1 Participant Characteristics

Participants' mean ( $\pm$ SD) age was  $39.2 \pm 9.3$ , mean education was  $13.5 \pm 2.3$  years, 24% were female, 98% were white, 1% black, 1% Hispanic, 46% were married or cohabiting, 84% were employed full- or part-time. Participants all met criteria for alcohol dependence (except one who met alcohol abuse criteria) and reported drinking for  $M = 19.4 \pm 8.5$  years. In the 180 days before treatment, participants drank  $66.1 \pm 28.3\%$  days. Other drug use in the past 90 days was reported by 51% (marijuana and cocaine being most commonly reported). Participants without follow-up data did not differ significantly in treatment assignment, demographic characteristics, or baseline drinking.

### 3.2 Follow-up rates

Of 165 patients randomized to the study's group treatment, we had drinking data on 131 (79%) at 6 months and on 136 (82%) at 12 months. At 6 months post-treatment, *n* = 59 reported abstinence (46%), and at 12 months post-treatment, *n* = 35 (27%) reported abstinence. Because the USS is not completed by people who said they never had any urge to drink during the reporting period, USS responses are missing for 13 people at 6 months, 19 people at 12 months.

### 3.3 Urge-specific strategies and alcohol use outcomes

Table 1 displays the relationships between individual coping skills utilized when a client has an urge to drink and drinking outcomes, both the partial correlations and means for the categorical abstinence outcomes. Thirteen of the individual urge-specific coping skills were significantly related to frequency of drinking and/or differentiated between lapsed and abstinent clients at both time points, including thinking of the positive consequences of staying sober, thinking of the negative consequences of drinking, escaping the high-risk situation, engaging in an alternative activity, using drink refusal skills, leaning on a sober social support person, telling oneself mastery messages, thinking of something else for distraction, challenging the thoughts about drinking, utilizing problem-solving skills, utilizing spiritual coping, thinking through a behavior chain, and telling oneself one could wait it out. Another four strategies were significantly associated with drinking outcomes at 6 months or only at 12 months. Skills that were not significantly related to outcomes included using a substitute food/drink, and calling a sponsor or going to a meeting, along with the two known ineffective tactics people often use, willpower alone and self-punishment. In general, significant relationships with outcome were in the range of *pr* = .25–.47, accounting for 6 to 22% more variance than baseline drinking rates did. Significant *t* values ranged from *t*(116)

= 2.76–4.94 at 6 months (effect sizes  $d$  from 0.52 to 0.96, medium to large effects),  $t(115) = 2.60$ –5.01 at 12 months (effects sizes from  $d = 0.56$ –0.92, medium to large effects).

### 3.4 General lifestyle change strategies and alcohol use outcomes

Table 2 displays the relationships between individual general lifestyle change coping skills employed and drinking outcomes, both for partial correlations and for the categorical abstinence outcomes. Eighteen of the 21 individual skills assessed were significantly associated with abstinence and/or less frequent drinking, all but two at both 6 and 12 months. Significant relationships with outcome ranged from  $pr = .25$ –.49, accounting for 6 to 24% more variance than baseline drinking rates did. Significant  $t$  values ranged from  $t(129) = 2.75$ –4.99 at 6 months (effect sizes  $d$  from 0.48 to 0.88, nearly medium to large effects),  $t(134) = 2.73$ –6.63 at 12 months (effect sizes  $d$  from 0.49 to 1.15, nearly medium to large effects). Ineffective skills included exercising regularly, living with sober people, and never keeping much money on hand.

## 4. DISCUSSION

### 4.1 The value of urge-specific coping methods

Drinking outcomes were significantly associated at both 6 and 12 months after treatment started with 13 of the urge-specific coping strategies assessed, strategies taught during the program as ways to cope with acute urges. Data from the 3 months of randomization to naltrexone or placebo were excluded, so these results do not reflect how coping skills would be used while receiving naltrexone. Rather, these results show the value of these coping skills from 3 to 12 months after completing intensive day treatment. These most effective strategies include five considered behavioral (alternative activity, escape, solve the problem, refuse the drink, contact social support person), seven considered cognitive (think of positive consequences of staying sober and negative consequences of returning to drinking, tell self mastery/strength messages, distracting thoughts, challenge the thoughts, think through a behavior chain, tell yourself you can wait it out), and spiritual coping. Most of these skills are simple to learn and easy to teach, and all were still helpful from 7–12 months after the 3-week intensive day treatment. Two strategies were only helpful in the short run in this population: relaxation/meditation or smoking a cigarette. The smoking strategy is consistent with a past study where we found that the subset of patients who said they use smoking to cope with urges to drink were more likely to be sober a month later (Monti et al., 1995). For this subset, it may be useful to delay attempts to get them to quit smoking until after sobriety is well established. By 12 months, people in this population were either not using these two strategies any more or not finding them particularly helpful. Another two strategies, resolving a conflict and thinking about what the therapist would say, were helpful in the long run but not in the short run, possibly because these involve more complex skills or complex cognitive processing so that skills that are easier to do immediately might be more helpful at first.

Once again, self-punishment (e.g., getting angry at oneself) and willpower alone have been confirmed as not helpful for sobriety despite commonly being reported by patients, as shown in other studies (e.g., Rohsenow et al., 2005; Shiffman, 1984). Patients need to be taught that these methods are not beneficial, and that will power must be supplemented with other methods of coping. It was unexpected that one type of alternative activity, substituting food or a non-alcoholic drink, was not related to success in this study. While this lack of relationship was also found for cocaine dependence, it had seemed likely that it would work for alcohol dependence given that this urge-coping strategy competes with the oral route of administration of alcohol. Surprisingly, relying on going to a meeting or talking to a sponsor or counselor when experiencing an urge was not correlated with improved drinking

outcomes. It is possible that while this approach is useful as a general strategy for staying sober, at the moment of experiencing an urge a meeting might take too long to find (or might not meet at that moment), and a sponsor or counselor is probably not readily available at each of these moments. All of these other strategies that we assessed showed utility in promoting reduced drinking or abstinence.

Some of the contrasts between the useful skills in this study and with cocaine dependent patients (Rohsenow et al., 2005) are of interest in terms of the specificity that might be needed in skills training based on the primary substance addressed. Most of the types of coping were effective for both populations. For the cocaine dependent, using a meeting, sponsor or counselor to cope with an urge was also associated with improved outcomes. However, for the cocaine dependent, delay tactics, challenging one's thoughts, resolving the conflict, and thinking what the therapist would say were all ineffective. While we had speculated that this might be because these skills require cognitive complexity, it may instead be that they cannot be implemented rapidly enough to counter an urge to use cocaine; urges to use cocaine might require coping skills that are quite rapid to use and to have effects.

#### 4.2 The value of general lifestyle coping methods

All but three of the general lifestyle strategy skills assessed were associated with improved drinking outcomes at 6 and/or 12 months after intensive day treatment ended. Five of these effective strategies were cognitive (thinking about the negative consequences of returning to drinking and the positive consequences of staying sober, reminding yourself that you are a sober person, recognizing and challenging negative thinking, and thinking about what was learned in treatment) while the rest were behavioral or spiritual. One other behavioral strategy, going to meetings, aftercare or a counselor, was associated with higher probability of abstinence only in the 3 to 6 month window, not later. This might be because most involvement with aftercare and counselors is often completed after that time. The lifestyle skill of having a job where alcohol is not used was effective only in the 3 to 6 month window; once this change was made it may have no longer been an issue for them at 12 months. The results suggest that probably all of these 18 lifestyle coping strategies that are taught to alcohol dependent people in communication skills training may have utility and should be retained. Despite the cognitive complexity that might be involved in talking over feelings with others, working on problems regularly, challenging thoughts that could lead to relapse, and thinking through what was learned in treatment, these lifestyle coping skills were reported as still being used 7–12 months out and were associated with improved outcomes by those who said they used these approaches more. This might be limited to private programs with insurance payers or those with more cognitive complexity (see Rohsenow et al., 1991); future research would need to indicate limitations on these findings and applicability in other programs.

Ineffective skills in this population included exercising regularly, and never keeping much money on hand. Our experience is that it is very difficult to get substance dependent patients to engage in any regular exercise, even when it was a mandated part of a program. These results indicate that either patients are not engaging in regular exercise or they are not finding it helpful for their sobriety, suggesting that focusing on other health behaviors (healthy food and sleep) will have more lasting benefit on sobriety. Most might have already been living with sober family members so that this strategy might not have been needed, or moving was not feasible so it was not used. The strategy of not keeping money on oneself, while reported as important for cocaine dependent patients (Rohsenow et al., 2005), seems not to be an issue for the alcohol dependent.



### 4.3 Treatment implications

Coping skills treatments should be tailored to focus on coping skills that have the most empirical support for success. While some approaches focus more on general lifestyle skills and others more on skills to use in situations that pose a high-risk for relapse (Monti et al., 2002), this study demonstrates that both urge-specific and general lifestyle coping skills are important for successful abstinence and decreased drinking, just as we found for cocaine dependence (Rohsenow et al., 2005). Thus, teaching both kinds of skills could increase rates of treatment success. However, some specific skills within these approaches are more effective than others, and ones that do not demonstrate effectiveness can be eliminated. Concentrating on strategies found to be significantly related to reduced drinking could more efficiently improve treatment outcomes, important given the short lengths of stay allowed.

The USS and GSC measures for alcohol dependence both have demonstrated reliability and validity, and the total scores account for similar variance in drinking outcomes (Monti et al., 2001). Thus, while it was established that the total scores can validly be used for research or clinical purposes, we now demonstrate that this measure can validly assess the frequency of use of each coping skill. Although reliance on self-report of coping skills can be considered a limitation, the fact that self-reports of certain skills but not other skills are positively associated with less drinking supports the predictive validity and clinical utility of this measure. This suggests that the measure could be used by clinicians as a yardstick of progress in applying coping skills training in the home environment after initial treatment.

### 4.4 Methodological issues and limitations

The participants were limited to alcohol dependent patients willing to use medication from an urban partial hospital program, with insurance, in the United States. Half of eligible patients were unwilling to participate in a study involving naltrexone. Thus, the results on the relationship of skills to outcome may be biased by being limited to patients willing to take naltrexone and participate in a study, patients who were possibly more highly motivated for change than were study refusers. Most were Caucasian and employed at least part-time. It may be that general outpatients, persons from rural settings, more ethnically diverse groups, patients who will not use medications for treating alcohol dependence, and patients from richer or poorer populations would find different skills more efficacious, as would patients with greater comorbidities. Future research on this topic is needed with more diverse populations. Just as it can be advantageous to culturally adapt treatment approaches to cultural sub-populations (e.g., Lee et al., 2011), it is possible that persons of Hispanic, Asian or Native American cultures would find different sets of skills more helpful in supporting abstinence and reduced drinking. The study is limited in assessing the skills we believed might be most relevant, by using only self-report of skills, and by lack of any way to assess how skillful the people were in executing the coping strategies. Finally, given the correlational nature of the study, it is not possible to rule out the possibility that patients who are more motivated to stop drinking are also more motivated to acquire various skills, so that motivation is the key variable accounting for both variables we studied. However, the differential relationship of some skills but not others to drinking outcomes is not easily addressed by this third-variable explanation.

### 4.5 Future directions

This research should be replicated in more diverse populations of patients with alcohol dependence. Future research can utilize these results to tailor and then test treatments that focus on skills with the most empirical support for promoting abstinence. Future research could investigate other coping strategies, and coping measures tailored to various cultural populations in the United States.

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**Table 1**  
Relationship of urge-specific coping strategies during follow-up to alcohol outcomes

Urge-specific coping strategy	Months 4-6				Months 7-12				Partial correlation of strategy frequency with alcohol use days			
	Abstinent		Lapsed		Abstinent		Lapsed		Months 0-6		Months 7-12	
	<u>M</u>	<u>Pr</u>	<u>M</u>	<u>Pr</u>	<u>M</u>	<u>Pr</u>	<u>M</u>	<u>Pr</u>	<u>Pr</u>	<u>Pr</u>		
<u>Significantly related</u>												
Negative consequence thoughts	6.1	4.9**	6.4	4.9**	6.4	4.9**	6.4	4.9**	-.31*			-.15
Positive consequence thoughts	6.2	4.6**	6.2	4.6**	6.2	4.6**	6.2	4.6**	-.47**			-.30*
Alternative activity	5.6	4.3**	6.0	4.3**	6.0	4.3**	6.0	4.3**	-.33**			-.33**
Mastery/strength messages	5.2	3.8*	5.1	3.8*	5.1	3.8*	5.1	3.8*	-.42**			-.27*
Distracting thoughts	5.2	4.4†	5.6	4.0**	5.6	4.0**	5.6	4.0**	-.26*			-.37**
Escape the situation	4.5	3.6†	5.2	3.8*	5.2	3.8*	5.2	3.8*	-.25*			-.32*
Solve the problem	4.8	3.7*	5.2	3.6**	5.2	3.6**	5.2	3.6**	-.30*			-.34**
Spiritual coping	4.3	2.9*	4.6	3.2*	4.6	3.2*	4.6	3.2*	-.21†			-.15
Spend time with sober supports	4.4	2.8**	4.3	3.1*	4.3	3.1*	4.3	3.1*	-.20†			-.31*
Refuse the drink	5.1	3.0**	5.1	3.8*	5.1	3.8*	5.1	3.8*	-.21†			-.30*
Challenge the thoughts	5.0	3.8*	5.1	4.0*	5.1	4.0*	5.1	4.0*	-.24*			-.32**
Think through a behavior chain	4.3	2.8**	4.7	2.8**	4.7	2.8**	4.7	2.8**	-.22†			-.37**
Delay, wait it out	4.8	4.1	5.0	3.8*	5.0	3.8*	5.0	3.8*	-.25*			-.23†
Substitute a cigarette	4.0	2.4*	3.3	2.9	3.3	2.9	3.3	2.9	-.18			-.23†
Relax or meditate	3.0	2.0*	3.3	2.2*	3.3	2.2*	3.3	2.2*	-.18			-.15
Resolve conflict with person	4.2	3.1†	4.0	2.8*	4.0	2.8*	4.0	2.8*	-.11			-.19†
Think what therapist would say	3.8	2.9†	4.3	2.9*	4.3	2.9*	4.3	2.9*	-.13			-.28*
<u>Not significantly related</u>												
Substitute food or drink	4.7	4.5	4.8	4.0	4.8	4.0	4.8	4.0	-.14			-.15
Meeting, sponsor or counselor	3.8	2.9	3.9	2.9†	3.9	2.9†	3.9	2.9†	-.20†			-.21†
Self-punishment	2.5	2.4	2.7	2.6	2.7	2.6	2.7	2.6	-.05			-.05
Willpower alone	3.9	3.3	3.4	3.6	3.4	3.6	3.4	3.6	-.15			-.02

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Strategy frequency was rated from 1 (never) to 7 (all the time).

\*  $p < .05$ ;

\*  $p < .01$ ;

\*\*  $p < .001$ .

Partial correlations covaried pretreatment number of alcohol use days.

Table 2

Relationship of general lifestyle strategies during follow-up to alcohol outcomes

General lifestyle change strategy	Months 4–6			Months 7–12			Partial correlation of strategy frequency with alcohol use days		
	Abstinent	Lapsed	Months 7–12	Abstinent	Lapsed	Months 7–12	Months 0–6	Months 7–12	Months 7–12
	$\bar{M}$	$\bar{M}$	$\bar{M}$	$\bar{M}$	$\bar{M}$	$\bar{M}$	$r$	$r$	$r$
<u>Significantly related</u>									
Negative consequence thoughts	5.7	4.7*	5.0	5.6	5.0	5.0	-.29*	-.24*	-.24*
Positive consequence thoughts	6.0	4.6**	4.7**	6.2	4.7**	4.7**	-.50**	-.46**	-.46**
Sober ways for a good time	5.6	4.0**	4.4**	5.7	4.4**	4.4**	-.47**	-.49**	-.49**
Keep self busy	5.7	4.9†	4.8*	5.7	4.8*	4.8*	-.40**	-.39**	-.39**
Relax or meditate regularly	3.0	2.0*	2.3†	3.2	2.3†	2.3†	-.16	-.26**	-.26**
Healthy food, sleep, etc.	5.8	4.6**	4.7*	5.7	4.7*	4.7*	-.39**	-.30*	-.30*
Avoid tempting situations	4.8	4.0	3.9†	4.7	3.9†	3.9†	-.27*	-.32**	-.32**
Work toward future goals	5.5	4.2**	4.2**	6.0	4.2**	4.2**	-.40**	-.45**	-.45**
Remind self you're sober person	5.6	3.4**	3.6**	5.9	3.6**	3.6**	-.43**	-.49**	-.49**
Connect with spiritual side	4.6	3.3*	3.4*	4.8	3.4*	3.4*	-.25*	-.22†	-.22†
Other social support people	5.4	3.6**	4.1*	5.4	4.1*	4.1*	-.36**	-.27*	-.27*
Tell others you're not drinking	4.6	3.0**	3.4*	4.6	3.4*	3.4*	-.29*	-.17	-.17
Talk over feelings with others	4.8	3.5*	4.3	4.8	4.3	4.3	-.31**	-.25*	-.25*
Work on problems regularly	5.1	4.0*	4.2*	5.2	4.2*	4.2*	-.30*	-.18†	-.18†
Recognize, challenge negative thoughts	5.0	4.0*	3.9**	5.7	3.9**	3.9**	-.34**	-.41**	-.41**
Think what learned in treatment	5.0	3.8*	3.7**	5.1	3.7**	3.7**	-.25*	-.30**	-.30**
Meetings, aftercare or counselor	4.3	3.2*	3.5†	4.5	3.5†	3.5†	-.20†	-.16	-.16
Job where alcohol isn't used	5.0	3.8*	4.8	5.2	4.8	4.8	-.22†	-.13	-.13
<u>Not significantly related</u>									
Exercise regularly	3.4	2.9	2.7	3.5	2.7	2.7	-.12	-.12	-.12
Live with clean/sober people	5.3	4.5	4.7	5.5	4.7	4.7	-.08	.07	.07
Never keep much money	2.7	2.7	2.6	2.3	2.6	2.6	-.22†	.01	.01

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Strategy frequency was rated from 1 (never) to 7 (all the time).

\*  $p < .05$ ;

\*  $p < .01$ ;

\*\*  $p < .001$ .

Partial correlations covaried pretreatment number of alcohol use days.