



Qualitatively and quantitatively evaluating harm-reduction goal setting among chronically homeless individuals with alcohol dependence



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HIGHLIGHTS

- Abstinence-based goals are not always considered desirable or attainable.
- We evaluated participant-generated treatment goals.
- Participants named clinically meaningful goals related to drinking, quality of life and health.
- Drinking and problem reduction—not abstinence—were the most common drinking goals.
- Participants generated increasing numbers of goals over the course of the study.

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ABSTRACT

Introduction: Most treatment programs for alcohol dependence have prioritized alcohol abstinence as the primary treatment goal. However, abstinence-based goals are not always considered desirable or attainable by more severely affected populations, such as chronically homeless people with alcohol dependence. Because these individuals comprise a multimorbid and high-utilizing population, they are in need of more focused research attention that elucidates their preferred treatment goals. The aim of this secondary study was therefore to qualitatively and quantitatively document participant-generated treatment goals

Methods: Participants were currently or formerly chronically homeless individuals ($N = 31$) with alcohol dependence who participated in a pilot of extended-release naltrexone and harm-reduction counseling. Throughout the treatment period, study interventionists elicited participants' goals and recorded them on an open-ended grid. In subsequent weeks, progress towards and achievement of goals was obtained via self-report and recorded by study interventionists. Conventional content analysis was performed to classify participant-generated treatment goals

Results: Representation of the three top categories remained stable over the course of treatment. In the order of their frequency, they included drinking-related goals, quality-of-life goals and health-related goals. Within the category of drinking-related goals, participants consistently endorsed reducing drinking and alcohol-related consequences ahead of abstinence-based goals. Quantitative analyses indicated participants generated an increasing number of goals over the course of treatment. Proportions of goals achieved and progressed towards kept pace with this increase

Conclusions: Findings confirmed hypotheses that chronically homeless people with alcohol dependence can independently generate and achieve treatment goals towards alcohol harm reduction and quality-of-life improvement.

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1. Introduction

1.1. Goals and the alcohol treatment literature

Goal setting has long been considered a key aspect of alcohol treatment. To date, most available alcohol treatment programs and providers have prioritized abstinence as the primary treatment goal. The

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prioritization of abstinence-based goals is likely connected to the conceptualization of substance dependence more generally as a “chronic, relapsing brain disease” (Leshner, 1997; National Institute on Drug Abuse, 2008). Proponents of this medical or disease model posit that substance dependence should be treated using interventions designed to help people achieve and maintain abstinence (National Institute on Drug Abuse, 2008). The corollary is that, were they not to insist upon abstinence-based goals, providers might “enable” or facilitate continued alcohol dependence and related harm (Denning & Little, 2011).

Echoing providers' preferences, surveys have indicated that abstinence is considered a desirable goal by a large minority to a majority of alcohol-dependent, treatment-seeking individuals (46%–84%) (Al-Otaiba, Worden, McCrady, & Epstein, 2008; Heather, Adamson, Raistrick, & Slegg, 2010; Hodgins, Leigh, Milne, & Gerrish, 1997; McKegane, Morris, Neale, & Robertson, 2004; Öjehagen & Berglund, 1989). Moreover, there is some evidence that individuals in treatment tend to conform to treatment-providers' goals over time (Joosten, De Weert-Van Oene, Sensky, Van Der Staak, & De Jong, 2011) and increasingly endorse abstinence-based goals (Hodgins et al., 1997). Finally, studies have indicated that participants with abstinence-based goals at baseline evince improved treatment outcomes as measured by, for example, abstinent days, time to first drink and relapse to heavy drinking (Adamson, Heather, Morton, & Raistrick, 2010; Bujarski, O'Malley, Lunny, & Ray, 2013; Hodgins et al., 1997; Mowbray et al., 2013).

This nearly exclusive focus on provider-driven treatment goals, however, leads to a falsely dichotomous conceptualization of recovery. Under this model, alcohol dependent individuals either achieve success by conforming to provider-driven, use-reduction or abstinence-based goals, or they experience treatment failure by not adhering to these goals. Both theory and empirical data suggest that repeated failed treatment attempts erode self-efficacy and self-control for later behavior change (Marlatt & Donovan, 2005; Muraven & Baumeister, 2000). Given the chance, however, alcohol dependent individuals are capable of generating their own treatment goals, which may be connected to but may extend beyond their alcohol use (e.g., improving relationships, engaging in meaningful activities, achieving health-related goals). Such user-driven goals, which may help reduce alcohol-related harm and improve quality of life (Collins et al., 2014), may be more relevant to and realistic for alcohol-dependent individuals who are not yet ready, willing or able to cut down or stop.

The literature to date is also limited by its inclusion of primarily treatment-seeking individuals. Treatment enrollment, which involves time and financial commitment and may be attached to other salient incentives (e.g., maintaining child custody, diversion from criminal justice system), is likely associated with a higher level of either internal or external motivation for provider-driven abstinence-based goals (Wolfe, Kay-Lambkin, Bowman, & Childs, 2013). Further, treatment-related variables, such as treatment attendance, may be subject to social desirability bias (Zemore, 2012). Thus, those who engage in abstinence-based treatment are more likely aligned with providers and their abstinence-based treatment goals than those who do not.

Recent research, however, has indicated that the vast majority of individuals with alcohol problems do not seek treatment. The 2012 National Household Survey on Drug Use and Health indicated that an estimated 20.6 million people in the US needed but did not receive alcohol or drug treatment, and over a quarter of these respondents reported the primary reason was their lack of interest in abstinence (SAMHSA, 2014). These findings are even less promising among marginalized and more severely affected populations, including chronically homeless people with alcohol dependence. Studies show that few homeless people with alcohol dependence voluntarily start treatment (15–28%) (Rosenheck et al., 1998; Wenzel et al., 2001), and even fewer complete it (2.5–33%) (Orwin, Garrison-Mogren, Jacobs, & Sonnefeld, 1999). An NIAAA review showed that treatment engagement in this population decreased as program demands—particularly abstinence—increased (Orwin et al., 1999). Considering that homeless individuals are

disproportionately affected by alcohol dependence (Fazel, Khosla, Doll, & Geddes, 2008), which can lead to disproportionate use of publicly funded services (Larimer et al., 2009), this population is in need of more focused research attention.

1.2. Study aims and hypotheses

The above findings point to a few gaps in the literature. To date, there has been little consideration of the goals of alcohol dependent individuals who are not actively seeking abstinence-based treatment. Because they make up a majority among those with alcohol dependence, however, it is important to understand the needs of individuals who are not optimally served by existing abstinence-based treatments and are not interested in abstinence or use-reduction goal setting. From a public health perspective, it is also important to focus on individuals with multimorbidities and resulting high utilization of publicly funded services to begin to address their problems with more patient-centered approaches tailored to fit their needs.

A recent pharmacobehavioral study aimed to address this research gap (Collins et al., 2014). This single-arm, 12-week pilot ($N = 31$) combined harm-reduction counseling and an opioid receptor antagonist, extended-release naltrexone (XR-NTX; market name VIVITROL), to elicit goals from chronically homeless, alcohol-dependent individuals and help them work towards their goals. The ultimate aim of harm-reduction interventions is to help substance users reduce alcohol-related harm and improve quality of life without requiring abstinence or use reduction (Collins et al., 2011). This study indicated that the treatment was feasible and acceptable to participants. A steady decline in alcohol craving, use and problems was also observed (Collins et al., 2014).

The aim of the present, secondary study was therefore to qualitatively and quantitatively document goals elicited from chronically homeless people with alcohol dependence who participated in the above-cited parent study. We first used conventional content analysis to classify and assess the frequency of participants' goals. Second, we used inferential statistics to determine whether participants' volume of goal generation and achievement or progress made towards these goals changed over the course of the study. Regarding the content analysis, it was hypothesized that participants would be able to generate their own goals and that these goals would encompass more than abstinence and drinking reduction. It was further hypothesized that participants would generate a significantly greater number of goals and would show significantly greater goal achievement and progress over the course of the parent study.

2. Materials and methods

2.1. Design

The data in this secondary analysis were collected during a single-arm pilot study assessing initial feasibility, acceptability, and alcohol outcomes following a combined pharmacobehavioral intervention involving extended-release naltrexone and harm-reduction counseling (Collins et al., 2014).

2.2. 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 (according to the DSM-IV-TR) who had participated in the parent study (see Table 1 for baseline demographic data), which was a single-arm study assessing initial feasibility and alcohol outcomes following receipt of extended-release naltrexone and harm-reduction counseling (Collins et al., 2014). All participants in the parent study were included in the present analysis.

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
	57.1% sleep-off shelter
	14.3% emergency shelter
	7.1% outside
	7.1% friend's house
	14.2% 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.

2.3. Measures

2.3.1. Demographic variables

The *Personal Information Form* assessed age, gender, race, ethnicity, education level and employment status (Collins et al., 2014). The *Housing Timeline Followback* is a set of monthly calendars recording where participants resided/spent the night each day over the past 30 days (Sobell & Sobell, 1992; Tsemberis, McHugo, Williams, Hanrahan, & Stefancic, 2007). Demographic variables were used in the sample description.

2.3.2. Alcohol variables

All alcohol-related variables were used to describe the sample at baseline. The *Alcohol and Substance-use Frequency Assessment* questions were adapted from the Addiction Severity Index (ASI) (McLellan, Kushner, Metzger, & Peters, 1992) and were used to assess frequency of alcohol use in the past 30 days. The *Alcohol Quantity of Use Assessment (AQUA)* assessed participants' peak and typical alcohol quantity in the past 30 days. 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 ($\alpha = .91$). The *Short Inventory of Problems (SIP-2R)* is a 15-item, Likert-scale questionnaire that measures social, occupational and psychological

alcohol problems (Miller, Tonigan, & Longabaugh, 1995). Internal consistency was adequate ($\alpha = .91$).

2.3.3. Harm-reduction goals

The Safer-drinking and Harm Reduction Efforts (SHaRE) form is an open-ended grid created for use in the harm reduction treatment delivered in the parent study (Collins et al., 2014). It was administered at intervention sessions at weeks 0, 1, 4, 8 and 12 to elicit and record participant-generated harm-reduction goals. To introduce the elicitation of goals, study interventionists said, "We will be spending time together in these sessions over the next three months. What would you like to see happen for yourself during this time?" Participants' open-ended responses to these prompts were recorded. Goals were entirely participant-driven, and study interventionists neither required nor suggested any specific drinking-related goals. Participants were informed that study interventionists would check in with them during subsequent sessions to assess together with the participant whether they achieved (yes/no) or made measurable progress (yes/no) towards the harm-reduction goals set during the prior sessions. Goals set by participants at weeks 0 and 8 and their corresponding progress and achievement ratings assessed at weeks 1 and 12, respectively, were used in the current analyses.

2.4. Procedure

Study procedures were approved by the institutional review board at the home institution and followed the ethical guidelines outlined in the Declaration of Helsinki. After providing written, informed consent, participants were administered the demographic and alcohol measures at baseline. The next week at the week 0 appointment, participants were provided with harm-reduction counseling, which included a) personalized feedback about baseline alcohol assessment/lab testing), b) elicitation of their own harm-reduction goals (i.e., goals were determined by the participant and did not need to be related to alcohol use), c) discussion of safer-drinking tips, and d) receipt of the study medication (i.e., 380 mg of extended-release naltrexone). Participants attended a check-in assessment of their goals and health one week later. At weeks 4 and 8, participants attended additional follow-up appointments for assessment of goals achievement, medication management, and additional medication administration. Week 12 constituted the final assessment of goals achievement. Please see Collins et al. (2014) for more information about parent study procedures.

2.5. Data preparation and analysis plan

2.5.1. Qualitative data analysis

Participant-generated goals were transcribed from the SHaRE form into a spreadsheet program. Conventional content analysis, a methodology that facilitates description of qualitative data through a systematic process of coding and classification, was conducted (Hsieh & Shannon, 2005). Participants' responses were reviewed by a team of raters (i.e., bachelor-, post-baccalaureate and master's-level psychology students, a postdoctoral trainee and a clinical psychologist) to identify recurring categories of participant-generated goals (Hsieh & Shannon, 2005; Shek, Tang, & Han, 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 until interrater reliability for these items reached acceptable standards (i.e., 80%) (Shek et al., 2005). Frequency analysis was conducted in SPSS 19 to indicate the representation of different goal categories.

2.5.2. Quantitative data analysis

Quantitative analyses were conducted using SPSS 19. Exploratory data analyses were conducted to describe the sample, determine distribution shapes of the outcome variables, and detect the presence of outliers. Findings indicated the number of goals generated at weeks 0 and 8 were normally distributed; thus, paired-samples *t*-tests were performed for the analyses involving those outcomes, and effect sizes were represented as Cohen's *d*. Percentage of goals achieved and made progress towards was nonnormally distributed, and thus, a non-parametric test (i.e., Wilcoxon signed-rank test) was performed. Effect sizes for the nonparametric tests were calculated, $r = z/\sqrt{N}$, where .1 = small effect, .3 = medium effect, and .5 = large effect. No outliers were detected. Alpha was set to $p = .05$, and confidence intervals (CI) were set to 95%.

3. Results

3.1. Qualitative findings

Interrater reliability for the content analysis categories reached 91% for weeks 0 and 8. Overall, week 0 represented 45% ($n = 85$) of responses, whereas week 8 represented 55% ($n = 103$) of responses. Tables 2 and 3 show frequencies of responses within each of the overall categories, their relative rankings and percent goals achieved and made progress towards. The top three categories and their most endorsed subcategories are described below.

3.1.1. Drinking-related goals

Across both time points, one of the two most commonly reported subcategories was reducing drinking. Some participants reported goals about reducing their drinking frequency, such as having “less heavy drinking days.” Others reported goals about reducing their drinking quantity, such as wanting to drink “four beers or less daily.” The other top drinking-related goal was the desire to avoid the negative consequences of drinking. Many participants made goals to avoid the effects of physical withdrawal (e.g., “avoid feeling sick in am”). Other participants expressed a desire to avoid negative, acute effects of intoxication (e.g., “avoid blackouts, falling down”).

Table 2

Harm reduction goals at week 0.

Rank	Category	Frequency	%	Progress (%)	Achieved (%)
1	Drinking-related goals	45	52.9	76.7	44.2
	Reducing drinking	16	18.8	81.3	50.0
	Avoiding negative consequences	12	14.1	63.6	54.6
	Attaining abstinence	9	10.6	100	33.3
	Avoiding high-risk situations	4	4.7	66.7	33.3
	Engaging in recovery activities	3	3.5	33.3	33.3
2	Reducing craving	1	1.2	100	0
	Health-related goals	14	16.5	30.8	15.4
	Improving physical health	8	9.4	28.6	14.3
	Maintaining or improving cognitive function	3	3.5	66.7	33.3
3	Maintaining or improving mental health	3	3.5	0	0
	Quality-of-life goals	14	16.5	57.1	28.6
	Engaging in meaningful activities	8	9.4	75.0	37.5
4	Connecting with family and friends	6	7.1	33.3	16.7
	Basic needs goals	10	11.8	70.0	50.0
	Obtaining adequate housing	5	5.9	80.0	80.0
	Obtaining tangible goods	3	3.5	100	33.3
5	Accessing clinical or other services	2	2.4	0	0
	Money-related goals	2	2.4	50.0	50.0
Total		85	100	64.6	37.8

Table 3

Harm reduction goals at week 8.

Rank	Category	Frequency	%	Progress (%)	Achieved (%)
1	Drinking-related Goals	47	45.6	82.6	55.6
	Avoiding negative consequences	14	13.6	92.9	78.6
	Reducing drinking	12	11.7	83.3	27.3
	Avoiding high-risk situations	7	6.8	100	83.3
	Attaining abstinence	5	4.9	60.0	40.0
	Gaining/maintaining control over drinking	5	4.9	80.0	60.0
2	Reducing craving	2	1.9	0	0
	Engaging in recovery activities	2	1.9	100	50.0
	Quality-of-life goals	21	20.4	72.2	50.0
	Engaging in meaningful activities	16	15.5	71.4	50.0
3	Connecting with family and friends	5	4.9	75.0	50.0
	Health-related goals	20	19.4	85.0	55.0
	Improving physical health	12	11.7	91.7	66.7
4	Maintaining or improving mental health	5	4.9	60.0	20.0
	Maintaining or improving cognitive function	3	2.9	100	66.7
	Basic needs goals	8	7.8	87.5	37.5
	Obtaining adequate housing	5	4.9	100	40.0
5	Accessing clinical or other services	2	1.9	50.0	0
	Obtaining tangible goods	1	1.0	100	100
6	Activities-of-daily-living goals	3	2.9	100	100
7	Money-related goals	2	1.9	100	0
	Other substance-use goals	2	1.9	0	0
Total		103	100	80.8	52.0

Attaining abstinence represented the third most common goal at week 0 and the fourth most common goal at week 8. At week 0, 100% of the abstinence-based goals reflected a desire to stop drinking altogether (e.g., “not drink at all,” “cut down on drinking to abstinence”). At week 8, however, 60% of responses reflected a desire for total abstinence, whereas 40% reflected the goal of abstaining under certain, discrete circumstances (e.g., “attend activities sober”).

Avoiding high-risk situations was the fourth most commonly cited goal at week 0 and moved to third place at week 8. This goal reflected participants' desire to avoid people, places and things that they felt triggered their alcohol craving. Some participants wanted to “stay away from people who are drinking.” Others wanted to move towards new people, places and things that would be more conducive to positive behavior change (e.g., “attend[ing] nondrinking activities,” “find[ing] friends outside of [the housing project they live in]”).

Engaging in recovery activities was the fifth most common drinking-related goal at week 0 but fell to last place at week 8. When endorsing this goal, participants reported wanting to attend abstinence-based support groups (e.g., “attend AA meetings”) or other abstinence-based recovery services (e.g., “go to the Recovery Café [a local abstinence-based drop-in center for recovery activities]”). Wanting to attain or maintain control over one's drinking was not mentioned at week 0, but was the fifth most frequent drinking-related goal at week 8. Finally, reducing craving was ranked sixth at both weeks 0 and 8.

3.1.2. Quality-of-life goals

Quality-of-life goals made up the second most frequently cited category at week 0 (see Table 2) and the third most frequently cited category at week 8 (see Table 3). Two subcategories—engaging in meaningful activities and connecting with family and friends—were evident in participants' responses. Meaningful activities included hobbies (e.g., “doing more artwork,” “getting a fishing license”), travel (e.g., “trip to Glacier National Park sober”), and job-seeking (e.g., “want to find a job landscaping”). The second subcategory, connecting with family and friends, included spending more time with family and friends (e.g., “visit friends more”), reconnecting or rebuilding after a time of

separation (e.g., “reconnect with daughter and nieces”), and maintaining relationships (e.g., “stay connected with family”).

3.1.3. Health-related goals

Rounding out the top three categories were health-related goals, which were broken down into three subcategories. The most frequently reported subcategory was the desire to improve general physical health. Some participants expressed the desire for a more active lifestyle (e.g., “exercise more”), while others said they wanted to supplement their diet (e.g., “take vitamins,” “drinking more Ensure”). The second and third subcategories of health-related goals included maintaining or improving mental health (e.g., “reduce depression”) and cognitive functioning (e.g., “improve memory,” “keep ‘brains’ alert”).

3.2. Quantitative findings

Analyses indicated the number of goals generated by participants increased significantly over time from week 0 ($M = 2.63, SD = 1.14$) to week 8 ($M = 3.92, SD = 1.14$), $t(23) = -5.85, p = .006, d = 1.13$. Although descriptive statistics indicated proportion of goals achieved increased from week 0 ($Mdn = .29, IQR = .75$) to week 8 ($Mdn = .67, IQR = .67$), a Wilcoxon signed-rank test indicated this change did not reach significance, $z = -1.20, p = .23, r = .24$. The proportion of goals on which any progress was made (i.e., partial or full achievement) did not increase significantly over time from week 0 ($Mdn = 1.00, IQR = .5$) to week 8 ($Mdn = 1.00, IQR = .45$), $z = -.74, p = .46, r = .15$.

4. Discussion

This study aimed to a) document goals generated by chronically homeless individuals with alcohol dependence who were engaging in harm-reduction treatment and b) test longitudinal changes in the number of goals generated over time as well as progress towards and achievement of these goals.

4.1. Qualitative findings

Drinking goals were the most frequently represented goal category across time points. The top three subcategories at week 0 included reducing drinking, avoiding negative consequences of drinking, and achieving abstinence. Achieving abstinence, however, fell to fourth place at week 8, and avoiding high-risk situations rose to third place.

The fact that drinking reduction and avoidance of negative consequences were consistently the most frequently reported subcategories ahead of abstinence stands in contrast to prior studies, which had shown participants' initial or increasing preference for abstinence-based goals over use-reduction goals (Adamson et al., 2010; Heather et al., 2010; Hodgins et al., 1997; Öjehagen & Berglund, 1989). That said, participants in the previously cited studies were either seeking or were involved in abstinence-based treatment, which was not the case with participants in the current study. Previous research has shown that homeless individuals are less interested in abstinence-based goals and treatment (Rosenheck et al., 1998), which may explain participants' preference for drinking reduction goals over abstinence-based goals. That said, this finding may not be exclusive to this particular population. Recent research has shown that the vast majority of US adults in need of alcohol treatment do not seek it out, and over a quarter of these individuals cite lack of interest in abstinence-based goals as the reason (SAMHSA, 2012).

The additional, related finding of a decreasing frequency of participant-generated abstinence-based goals could have various explanations. On the one hand, participants may have experienced eroded self-efficacy and/or self-control after not having attained abstinence-based goals earlier in the treatment course. On the other hand, participants may also have felt increasingly comfortable sharing their own goals over the course of the study as the harm-reduction treatment

focus became more familiar and trust was fostered. Thus, the present study's approach may have, over time, elicited a more accurate and realistic picture of participants' goals. This approach is increasingly relevant considering the current interest in intervention reach and patient-centered approaches (Glasgow, Klesges, Dzewaltowski, Estabrooks, & Vogt, 2006; IOM, 2001).

Besides drinking-related goals, the two most highly endorsed categories were quality-of-life and health-related goals. This first finding is congruent with those from recent qualitative studies involving slightly different populations (e.g., homeless individuals with serious mental illness; other substance-using populations), which have highlighted patients' perceived importance of broader quality-of-life goals (Kirst, Zerger, Harris, Plenert, & Stergiopoulos, 2014; Neale, Nettleton, & Pickering, 2011). Further, the high frequency of health-related goals in this study fits with prior research, which has shown that homeless individuals are concerned about and invested in their health (Forchuk, Brown, Schofield, & Jensen, 2008). Taken together, these findings indicate that participants value and set various types of goals that are not exclusively drinking related. This point highlights a key tenet of the harm-reduction approach: the importance of viewing participants from a holistic perspective that takes into account various aspects of their life experience beyond their substance use (Collins et al., 2011).

4.2. Quantitative findings

The number of goals elicited from participants significantly increased over the course of treatment. This finding is in line with those of recent qualitative studies, which have indicated that harm-reduction interventions (e.g., Housing First) can create a platform for goal setting and achievement (Collins et al., 2012; Kirst et al., 2014). One possible explanation for this result is that participants gained practice with goal generation and experienced affirmation with goal achievement, which could have enhanced their self-efficacy for developing and committing to goals. In addition to enhancing self-efficacy, regular goal setting may also have helped individuals develop greater future-time orientation, which has been associated with greater goal striving among homeless individuals (Epel, Bandura, & Zimbardo, 1999).

On the other hand, the proportion of goals achieved and made progress towards did not significantly increase across the course of treatment but instead kept an even pace with goal setting. This finding corresponds to another study's finding of no significant during-treatment increases in goal achievement among alcohol dependent individuals (Al-Otaiba et al., 2008). It may be that participants' goals became increasingly challenging as they became more experienced with regular goal setting. They may also have been satisfied with a certain level of goal achievement. In the case of progress made towards goals, examinations of the median proportions indicated that participants were making at least some progress towards all of their goals at both weeks 0 and 8; thus, a ceiling effect may have limited participants' ability to increase progress made towards their goals. Future, larger-scale studies are needed to better understand the mechanisms underlying goal setting and achievement as well as their association with key outcomes.

4.3. Limitations

Limitations of this study deserve mention. First, the current sample is small and represents a specific subcategory of individuals with alcohol dependence. These points limit the generalizability of the findings as well as statistical power to find significant differences where they exist. On the other hand, this study represents the first to explore harm-reduction goal setting with alcohol dependent individuals and thereby provides the initial foundation for future, larger-scale studies to explore open-ended goal setting in greater detail and potentially with greater generalizability.

Second, social desirability can play a role in studies involving sensitive behaviors, such as alcohol use (Davis, Thake, & Vilhena, 2010; van de Mortel, 2008). Thus, participants may have provided more goals and reported more positively on their achievement or progress than in reality so as to present themselves in a positive light to study interventionists. Future studies should include measures of social desirability to address and potentially statistically control for this issue.

4.4. Conclusions and future directions

Study findings indicated that, when goal setting is patient- versus provider-driven, individuals are able to generate a wide variety of clinically appropriate goals ranging from drinking-related goals to quality-of-life goals to health-related goals. Individuals also generate an increasing number of goals over time as they become more accustomed to goal setting. Despite this small pilot study's limitations, findings highlight the importance of considering treatment goals more holistically to pave the way for more patient-centered interventions that are better positioned to engage and treat traditionally hard-to-reach populations. Future studies may involve larger sample sizes to more comprehensively capture the range of participant-generated goals and to allow greater understanding of the associations between goal generation, goal achievement and alcohol treatment outcomes.

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DAI, CHAMMP and NIAAA had no further role in study design; in the collection, analysis, and interpretation of the data; in the writing of the article; or in the decision to submit the article for publication.

Contributors

S.E. Collins developed the study idea, design, methodology and analysis plan. She authored the introduction, coauthored the discussion, and edited the methods and results sections. C. Jones and V.S. Grazioli wrote an initial draft of the methods section. Under the first author's supervision, the other coauthors contributed to literature searches, conducted data analysis and quality control, coded qualitative data for the content analysis, conducted qualitative analyses and/or contributed to writing the analysis and discussion sections. All authors reviewed and approved the final manuscript.

Conflict of interest

All authors declare they have no conflicts of interest.

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