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RESEARCH ARTICLE

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Characterizing components of and attendance at resident-driven Housing First programming in the context of community-based participatory research

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Abstract

Aims: This secondary study characterized components of and engagement in the life-enhancing alcohol-management program (LEAP), which is resident-driven housing first programming.

Methods: We used a process akin to conventional content analysis to operationalize the LEAP according to its component activities. We used generalized linear modeling to identify predictors of LEAP activity participation and to predict alcohol and quality-of-life outcomes from participation in specific LEAP activities categories.

Results: Overall, 86% of participants attended at least one LEAP activity, which comprised three categories: administrative leadership opportunities, meaningful activities, and pathways to recovery. Employment status alone predicted LEAP activity attendance: Employed residents attended 88% fewer LEAP activities than unemployed residents. Participants who sought out more pathways to recovery activities were more likely daily drinkers and more impacted by alcohol-related harm. Those engaging in administrative leadership opportunities were overall less impacted by alcohol use and had a higher quality of life generally, and their alcohol outcomes further improved over time.

Conclusions: Programming developed with Housing First residents was well-attended but could be made more inclusive by including evening programming to accommodate residents employed full time and engaging more severely impacted participants in administrative leadership activities, where the greatest benefits of programming were seen.

KEYWORDS

alcohol use disorder, alcohol-related harm, homelessness, Housing First, meaningful activities, pathways to recovery, quality of life

Based on the 2018 point-in-time count, there are 552,830 people experiencing homelessness on a given night in the United States, of whom 16% are chronically homeless (i.e., having been homeless for at least a year or having had four or more episodes of homelessness in the last 3 years; US Department of Housing and Urban Development, 2018). Although they comprise a relatively small subset of the overall homeless population, people experiencing chronic homelessness use a disproportionate amount of publicly funded services (e.g., psychiatric and jail services; Kuhn & Culhane, 1998; Kushel et al., 2002; National Alliance to End Homelessness, 2010). One study found that 20% of people experiencing chronic homelessness in a large United States city were responsible for 60% of the city's service utilization, costing approximately $12 million (Poulin et al., 2010).

Among people experiencing homelessness, the prevalence of alcohol use has been estimated at 80% (Velasquez et al., 2000), with over third reporting symptoms congruent with alcohol use disorder (AUD; Fazel et al., 2008; Krausz et al., 2013) This group is at increased risk for alcohol-related harm (WHO, 2004; World Health Organization, 2014), including alcohol-related mortality (Hawke et al., 2007; O'Connell, 2005). In fact, studies have shown that people experiencing homelessness are 6–10 times more likely to die of alcohol-attributable causes than the general population (Baggett et al., 2015; Hwang et al., 2009).

Unfortunately, people experiencing chronic homelessness and AUD are not optimally engaged by the abstinence-based treatment, programming, and housing options that are widely available (Clifasefi et al., 2016; Collins et al., 2016; Tsemberis et al., 2004). Thus, more flexible, client-centered approaches have been created for this population that focus on reducing alcohol-related harm and improving quality of life instead of requiring alcohol abstinence. Recent studies have shown promising findings for such harm-reduction approaches for people experiencing chronic homelessness and alcohol use disorder (Clifasefi et al., 2020; Collins et al., 2015; Collins et al., 2019; Collins et al., 2012; Larimer et al., 2009; Pauly et al., 2016; Podymow et al., 2006).

Housing First, also referred to as harm-reduction housing, is one such approach (Tsemberis et al., 2004). Housing First entails the provision of immediate, permanent, low-barrier, nonabstinence-based supportive housing to people experiencing chronic homelessness (Malone et al., 2015; Tsemberis, 2010). Studies have shown that Housing First is associated with greater housing stability (Collins et al., 2013; Patterson et al., 2013), reduced psychiatric and substance-use problems (Collins et al., 2012; Larimer et al., 2009; Stergiopoulos et al., 2015; Tsemberis et al., 2004), improved quality of life (G. Nelson et al., 2007), and decreased use of publicly funded services (Clifasefi et al., 2013; Larimer et al., 2009; Mackelprang et al., 2014).

Beyond the provision of housing, low-barrier, client-centered supportive services are essential to the Housing First approach and include case management; psychiatric, medical and nursing care; and programming that promotes social integration, education, and vocational opportunities (Gilmer et al., 2013; Malone et al., 2010; Tsemberis, 2010; Watson et al., 2013). Regarding the latter, it is recommended that Housing First settings offer opportunities for residents to participate in meaningful, client-driven programming, such as individual/group

outings, creative activities, cooking, and regular tenant-input meetings (Gaetz et al., 2013; Tainio & Fredriksson, 2009). This recommendation was echoed by our team's prior qualitative study documenting Housing First residents' expressed interest in programming that incorporates their input, improves their health and well-being, helps them reconnect to their own values and goals, and contributes to the community (Clifasefi et al., 2016). Studies conducted in other social services and clinical settings have shown an association between programming participation (e.g., art therapy, gardening-based interventions, music therapy) and improved housing, psychiatric and substance-use outcomes (Clatworthy et al., 2013; Dingle et al., 2008; Slayton et al., 2010). However, only one empirical study to date has explored the implementation of resident-driven programming in a Housing First setting: the life-enhancing alcohol-management program (LEAP; Clifasefi et al., 2020).

The LEAP was codeveloped and evaluated together with residents, staff, and management in a Housing First setting in the context of a three-phase community based participatory research project. In phase 1 of the study, our team conducted and qualitatively analyzed interviews and focus groups with Housing First residents and staff to understand what programming was considered desirable by residents and feasible by staff. Residents expressed an interest in collaboratively developing programming, prioritizing a harm-reduction approach, engaging in meaningful activities, and having support for their self-defined pathways to recovery (Clifasefi et al., 2016).

In phase 2, we assembled a community advisory board comprised of academic researchers as well as Housing First residents, staff, and management. The researchers brought to the community advisory board the findings from phase 1 to inform the programming planning. As a team, we met monthly, and over the course of a year, we collaboratively developed the LEAP (Collins et al., 2018).

In phase 3, we implemented and evaluated the LEAP programming using a nonrandomized controlled design in which one Housing First program received the LEAP and two further Housing First programs received services as usual. Participants in both conditions were regularly assessed up to 6 months after the programming was implemented. Findings showed that LEAP participants engaged in significantly more meaningful activities than participants who received services as usual in their Housing First settings during this time frame. Within-subjects analyses showed significant decreases in alcohol quantity and alcohol-related harm among LEAP participants (Clifasefi et al., 2020). Further, participants who attended a "high" level of LEAP activities (≥2 activities a month), reported drinking 16% less and experiencing 10% less alcohol-related harm for each month that passed compared to people who did not (0–2 activities throughout the entire program).

The aims of the present, secondary study were to characterize LEAP activities, to describe residents' attendance at LEAP activities, and to detect whether engagement in specific categories of LEAP activities was associated with alcohol and quality of life (QoL) outcomes.

1 | METHOD

1.1 | Participants

This study is secondary to a larger parent study ($N = 116$) testing the effects of resident-driven programming in a Housing First setting on alcohol and quality-of-life outcomes (Clifasefi et al., 2020). Participants in this secondary study were 66 residents ($n = 7$; 10.6% female) of a Housing First program serving people experiencing chronic homelessness and AUD. See Table 1 for baseline values on sociodemographic and alcohol-related variables.

1.2 | Measures

Demographic information (e.g. sex assigned at birth, age, race, ethnicity, education level, employment, homelessness in the past year, Veterans status), as well as current substance-use treatment attendance and mutual-help

TABLE 1 Baseline sample characteristics by group

Variables	Mean(*SD*)/%(*n*)
Age	53.67 (7.50)
Sex assigned at birth	11% (7) female
Ethnicity	8% (5) Hispanic/Latinx
Race	
American Indian/Alaska Native	17% (11)
Black/African American	15% (10)
White/European American	59% (39)
More than one race	9% (6)
Education level	
Less than high school	27% (18)
High school	36% (24)
Vocational school	11% (7)
Some college	18% (12)
4-year college or more	8% (5)
Military service	22% (14) veterans
Homelessness in past year	32% (21)
Employment (full or parttime)	7.58% (5)
Attending substance use treatment	5% (3)
Attending 12-step meetings	23% (15)
Frequency of alcohol use in past month	21.56 (11.22)
Drug use in past month	64% (42)
Short Inventory of problems	19.79 (14.47)
Civic engagement scale (attitudes)	41.26 (13.04)
Civic engagement scale (behaviors)	23.82 (10.56)

group attendance, were assessed using single items. These data served to describe the study sample and were predictors in the primary quantitative analysis predicting LEAP activity attendance.

The addiction severity index (5th edition) (McLellan et al., 1992) was used to measure the frequency of alcohol use as well as any drug use in the past month, which were used as predictors in the quantitative analysis predicting LEAP activity attendance. This measure also provided one of the parent study's primary outcomes, presence of any nondrinking days in the past month, which likewise served as an outcome in this secondary analysis.

The alcohol quantity and use assessment (AQUA), an open-ended, self-report measure of alcohol quantity used to record the number of standard drinks consumed on typical drinking days in the past 30 days (Collins et al., 2014; Collins et al., 2015; Collins et al., 2012; Larimer et al., 2009), which served as a primary outcome in the parent paper and in this secondary analysis.

The short inventory of problems (SIP-2R; Blanchard et al., 2003) is a psychometrically sound, 15-item, 4-point Likert-type measure that was used to assess the frequency of experience of various aspects of alcohol-related harm in the past month. The SIP mean score was used as a predictor in the quantitative analysis predicting LEAP activity attendance and as an outcome.

The civic engagement scale is a reliable and valid, 14-item, 7-point, Likert-type measure used to assess participants' attitudes toward and behaviors reflecting community engagement (Doolittle & Faul, 2013). The summary scores for the attitudes and behaviors subscales were used as predictors in the primary quantitative analysis predicting LEAP activity attendance.

The meaningful activity participation assessment (Eakman et al., 2010) is a 28-item tool that yields a summary score measuring the level of engagement in general activities that bring meaning to people's lives (e.g., socializing, writing, physical exercise, reading, prayer/meditation, community organization, computer use, etc.). This summary score was used as an outcome in the parent paper and in this secondary quantitative analysis.

The quality of life scale (Burckhardt & Anderson, 2003) is a 7-point Likert-type measure that yields a summary score reflecting general QoL across various domains, including material and physical well-being; relationships; social, community, and civic activities; personal development and fulfillment; and recreation. This summary score was used as an outcome in the parent paper and in this secondary quantitative analysis.

LEAP activity attendance was the primary outcome variable and was defined as the number of LEAP activities that each participant attended from the start of the project through the 6-month follow-up. Sign-in sheets were used to track attendance at each LEAP activity. This count served as an outcome in one set of quantitative analyses and then was grouped according to the activity category to serve as a predictor in the second set of quantitative analyses.

1.3 | Procedure

The parent study was a 6-month, nonrandomized control trial of the effectiveness of resident-driven programming in a Housing First setting in reducing alcohol-related harm and improving quality of life (Clifasefi et al., 2020). Because the present secondary study describes participants' attendance at LEAP activities, we used data collected only from participants at the site where the LEAP was implemented. All study procedures were approved by the Institutional Review Board at the University of Washington.

After providing written informed consent, participants attended baseline interviews where they answered items on the measures listed above. During the study, participants had access to resident-driven LEAP programming codeveloped with a community advisory board comprised of residents, researchers, and agency staff and management. All participation in LEAP activities was optional. Participants completed assessments involving the above measures at 1-, 3- and 6-month follow-ups. Participants were paid $20 for each assessment.

1.4 | Data analysis plan

A procedure akin to conventional content analysis, a systematic classification process involving coding and identifying themes (Hsieh & Shannon, 2005; Krippendorff, 2004), was used to operationalize the LEAP subsequent to the development of its community-driven components. Specifically, LEAP activities were considered by the authors and grouped according to shared characteristics in team consensus meetings.

Descriptive analyses were conducted in SPSS 19 and were used to describe the participant sample and frequency of LEAP activity attendance. Because exploratory data analyses indicated that the primary outcome for inferential analyses, LEAP activity attendance, was positively skewed and overdispersed, we used a negative binomial regression to test the associations between LEAP activity attendance (number of activities attended through the 6-month follow-up) and participant characteristics assessed at baseline (i.e., sex assigned at birth, age, race, ethnicity, education level, employment, homelessness in past year, Veteran status, substance-use treatment attendance, current substance-use treatment attendance, mutual-help group attendance, frequency of alcohol use, any drug use, experience of alcohol-related harm, attitudes and behaviors around civic engagement).

Additional analyses tested whether, while controlling for time living in the housing program, level of engagement in specific LEAP activity categories (i.e., number of activities attended in each category) predicted primary outcomes from the parent study, including alcohol (i.e., presence of any nondrinking days in the past month, quantity consumed on a typical drinking day in the past month, alcohol-related harm), and QoL (i.e., general engagement in activities that have meaning for people, overall QoL) outcomes. These analyses entailed a series of nested population-averaged generalized estimating equation (GEE) models conducted in STATA 13 (Zeger & Liang, 1986). The reduced model tested main effects (i.e., whether level of LEAP activity attendance per category predicted alcohol and QoL outcomes averaged over the entire study). The full model tested interaction effects (i.e., whether level of LEAP activity attendance per category predicted changes in alcohol and QoL outcomes across the study). The relative fit of the models was determined using quasilikelihood under the independence model information criterion (QICu) score (i.e., a lower score indicates a better-fitting model; Hardin & Hilbe, 2003) and the Wald test, which tests whether the joint contributions of specified variables are significantly different from zero.

GEEs were used because they can accommodate propensity score weighting, alternative distributions (e.g., negative binomial, logistic), and correlated data (e.g., repeated measures). We assumed unstructured correlations to accommodate uneven, repeated measures on individuals, the latter which served as the sole clustering variable (Hardin & Hilbe, 2003). To enhance the interpretability of negative binomial model parameters, resulting effect sizes were exponentiated and reported as incident rate ratios (IRRs), where IRRs < 1 indicate an inverse association, IRRs = 1 indicate no association and IRRs > 1 indicate a positive association. Alphas were set to $p = .05$. Confidence intervals were set to 95%.

2 | RESULTS

2.1 | LEAP attendance

The vast majority of participants (86%; $n = 57/66$) attended at least one LEAP activity through the 6-month follow-up. Of this subset, participants engaged in a mean of 19.70 activities ($SD = 24.48$) throughout the duration of the study. The number of activities participants attended ranged from 1 to 119. Some activities were offered only once (e.g., trainings for staff, management, and residents); however, the majority of activities were offered on an ongoing basis.

2.2 | Categories of LEAP activities

As shown in Table 2, the LEAP comprised three primary categories of activities: administrative leadership opportunities, meaningful activities, and pathways to recovery.

2.2.1 | Administrative leadership opportunities

This category of activities comprised membership and participation in groups and meetings in which LEAP was collaboratively designed, implemented, and evaluated. The LEAP Advisory Board was the community site's primary administrative and oversight arm. Initial members of the LEAP Advisory Board were appointed or voted onto the board and comprised academic researchers as well as Housing First residents, staff, and management. The LEAP Advisory Board met for monthly closed lunch meetings a total of 24 times to codevelop, implement, and evaluate the LEAP for this study. Board members made a yearlong commitment, and resident members were paid $20 for each meeting attended. Opportunities to engage in further capacity building activities, including speaking opportunities, trainings and committee membership, were primarily available to LEAP Advisory Board members (Table 2).

TABLE 2 Types of LEAP Activities and participants' frequency of attendance

Category	Descriptions	Times activity offered	Participants attending % (*n*)
Administrative leadership			
LEAP researchers meeting	Meeting between research staff and residents to discuss programming	30	57.6 (38)
LEAP advisory board	Primary governing board for project design and implementation and its committees	24	13.6 (9)
Speaking engagements	Co-presented research and project experience at conferences and seminars	13	7.6 (5)
Cultural humility training	Experiential training on intersectional identities and racial equity and how they influenced people's experience of the world	3	4.5 (3)
Orion center meeting	Meeting with a neighboring agency serving homeless youth to build community relationships	1	1.5 (1)
Meaningful activities			
Art hours	Resident-driven artistic projects (fine arts, Native arts, crafting, writing, music)	103	66.7 (44)
Speaker series	Members from larger community presented on resident-inspired topics	9	42.4 (28)
Poetry	Creative writing sessions facilitated by local non-profit	18	36.4 (24)
Talent show	Evening event for residents to showcase talents	3	33.3 (22)
Zine release party	Celebratory event for the new magazine issues	2	33.3 (22)
Bingo	Staff hosted bingo game night for residents	3	25.8 (17)
Gardening	Residents created and maintained community garden	3	4.5 (3)
Pathways to recovery			
Harm reduction group	Psychologist-led bimonthly harm-reduction group therapy	23	36.4 (24)
Harm-reduction talking circles	Harm-reduction groups led in the Native tradition by an AI/AN psychologist	8	24.2 (16)
HaRT-A	Psychologist-led one-on-one individual harm-reduction treatment sessions	19[a]	28.7 (19)

Abbreviations: HaRT-A, harm-reduction treatment for alcohol; LEAP, life-enhancing alcohol-management program.
[a]HaRT-A was offered to participants who were interested over a period of 3 months, during which 19 residents participated in three individual sessions each.

Led by research staff at the request of founding LEAP Advisory Board members, the LEAP Researchers' Meeting was a monthly open meeting for all residents where researchers gathered input and feedback about ongoing programming and sought to generate interest in LEAP activities, including LEAP Advisory Board membership. New LEAP Advisory Board members were often nominated and voted on at the LEAP Researchers' Meeting. As shown in Table 2, this was the most consistently offered and attended Administrative Leadership opportunity.

2.2.2 | Meaningful activities

Based on resident participants' requests during this project's phase 1 qualitative data collection and fleshed out in LEAP Advisory Board meetings, meaningful activities consisted of non-drinking, resident-driven programming that

was geared toward increasing autonomy, improving health and well-being, and building community (Table 2). Meaningful activities included art hours in a project-dedicated art space located in the Housing First program, a monthly speaker series wherein LEAP Advisory Board members suggested and invited speakers from the larger community, a poetry-writing workshop with house-wide readings, house-wide talent shows, a 'Zine (a locally produced quarterly magazine featuring residents' art, creative writing, and events calendars) and its associated release party, house-wide game nights (e.g. bingo), and a community garden. Some of these activities took on a life of their own resulting in art galleries and shows and collaborations with external nonprofit agencies, all of which supported the sustainability of the effort. Taken together, this category of LEAP activities was the most widely offered and attended by residents, and of this category, art hours represented both the most frequently offered and attended activity (Table 2).

2.2.3 | Pathways to recovery

Pathways to recovery were suggested by resident participants in phase 1 qualitative data collection. This LEAP component initially comprised three different harm-reduction alcohol treatment modalities, including harm reduction group therapy (renamed by participants the "Come-As-You-Are Group"), individual harm reduction treatment for alcohol (HaRT-A), and harm reduction Talking Circles (HaRTC).

The Come-As-You-Are Group was an open, twice-monthly harm-reduction group therapy session wherein participants generated and worked to uphold agreed-upon community values (e.g., building peaceful, compassionate, nonviolent community; nonabstinence-based setting), discussed what group members wanted to see happen for themselves, and shared strategies for staying healthier and safer while drinking. As shown in Table 2, this group was attended by over a third of LEAP residents during the study time frame and was thus the most highly attended Pathway to Recovery program.

While some residents preferred the community-building aspect of the come-as-you-are group, other residents stated a preference for one-on-one counseling opportunities, particularly given anxiety disorders or concerns about privacy and confidentiality with other residents. Consequently, the LEAP Advisory Board developed and piloted the HaRT-A, which initially started as a weekly, three-session, individual counseling protocol built on harm-reduction principles and three components: (1) collaborative tracking of participant-preferred alcohol metrics, (2) elicitation of harm-reduction and QoL goals, and (3) discussion of safer-drinking strategies. Offered to 19 residents over a 3-month period, 28% of residents opted to participate in HaRT-A, with all but one resident attending all three individual sessions of harm reduction counseling (Table 2).

During Phase 1 data collection, Native residents, who at the time comprised over a third of the housing population, requested greater representation of Native providers and culturally appropriate program offerings. The most commonly requested cultural practice was the native tradition of the Talking Circle, a gathering of people with a common concern who respectfully share their perspectives and "listen with their heart" while each individual speaks; however, residents likewise acknowledged the need for such a practice to be more accessible (i.e., offered at their housing program, not requiring abstinence from alcohol) to be engaging to residents. While HaRTC was only offered eight times over the study timeline, nearly a quarter of participants engaged in this pathway to recovery (Table 2).

2.3 | PREDICTORS OF LEAP ATTENDANCE

The omnibus model predicting attendance at LEAP activities was significant, $\chi^2(18, N = 66) = 33.91$, $p = .01$, pseudo $R^2 = 0.07$. Findings showed employment was the only significant predictor of LEAP activity attendance (IRR = .12, $SE = .07$, $p = .001$). Specifically, employed participants attended 88% fewer activities than those who were unemployed.

2.4 | Attendance at specific LEAP activity categories as predictors of alcohol and QoL outcomes

2.4.1 | Presence of at least one nondrinking day

The main effects model was significant, Wald χ^2 (5, N = 60) = 17.17, p = .004, QICu = 281. Averaged over the course of the study, each additional Administrative Leadership activity participants had engaged in was associated with 12% higher odds of a nondrinking day in the past month (Table 3). The interactions model was likewise significant, Wald χ^2 (8, N = 60) = 25.58, p = .001, QICu = 281. A Wald test indicated the joint addition of the interactions was statistically significant, $\chi^2(3)$ = 8.59, p = .04, and the QICu test indicated similar model fit. Thus, we interpreted the interactions: engagement in Pathways to Recovery and Administrative Leadership activities was associated with a 7% decrease and 6% increase in odds of no drinking days for each passing month, respectively (see Table 3).

2.4.2 | Alcohol quantity

The main effects model was significant, Wald χ^2 (5, N = 60) = 30.76, p < .001, QICu = 240. Averaged over the course of the study, each additional Administrative Leadership activity participants had engaged in was associated with 4% lower alcohol quantity consumed on a typical drinking day in the past month. The interactions model was likewise significant, Wald χ^2 (8, N = 60) = 28.08, p = .001, QICu = 233. A Wald test indicated the joint addition of the interactions was statistically significant, $\chi^2(3)$ = 15.82, p = .001, and the QICu test indicated a better model fit for the interactions model. Thus, we interpreted the interactions: engagement in Administrative Leadership activities was associated with a 2% decrease in alcohol quantity for each passing month (Table 3).

2.4.3 | Alcohol-related harm

The main effects model was significant, Wald χ^2 (5, N = 60) = 21.75, p = .001, QICu = 313. Averaged over the course of the study, each additional Pathways to Recovery activity and each Administrative Leadership activity was associated with 9% higher and 3% lower alcohol-related harm in the past month respectively. The interactions model was likewise significant, Wald χ^2 (8, N = 60) = 40.21, p < .001, QICu = 299. A Wald test indicated the joint addition of the interactions was statistically significant, $\chi^2(3)$ = 19.73, p < .001, and the QICu test indicated a better model fit for the interactions model. Thus, we interpreted the interactions: engagement in Administrative Leadership activities was associated with a 2% decrease in alcohol-related harm score for each passing month (Table 3).

2.4.4 | Quality of life

While the main effects and interactions models for engagement in meaningful activities were statistically significant, Wald χ^2 (5, N = 60) = 36.50, p < .001, QICu = 2598, there were no statistically significant main effects for the LEAP activity categories (ps > .10). The interactions model was likewise significant, Wald χ^2 (8, N = 60) = 44.19, p < .001, QICu = 2597. However, the lack of significant interaction effects (ps > .34), comparable QICu value, and non-significant Wald test, $\chi^2(3)$ = 2.14, p = .54, indicated no model improvement with inclusion of the interaction effects.

TABLE 3 GEE model parameters of the prediction of outcomes by engagement in differing categories of LEAP activities

Predictors	Reduced model IRR/OR(SE)	Full model IRR/OR(SE)
Typical quantity (number of drinks consumed on typical day in last 30 days)†		
Months in housing	1.00 (.02)	1.00 (.03)
Time	0.94 (.02)*	0.93 (.03)*
Pathways to recovery	1.05 (.03)	1.06 (.03)
Administrative leadership	0.96 (.01)**	0.94 (.01)**
Meaningful activities	0.99 (.01)	0.99 (.01)
Time x Pathways to recovery		1.01 (.01)
Time x Administrative leadership		0.98 (.01)**
Time x Meaningful activities		1.00 (.002)
Presence of at least 1 nondrinking day‡		
Months in housing	0.96 (.10)	0.98 (.10)
Time	1.08 (.05)	1.17 (.06)**
Pathways to recovery	0.89 (.07)	0.83 (.08)
Administrative leadership	1.12 (.04)**	1.23 (.06)**
Meaningful activities	0.97 (.02)	0.98 (.03)
Time × pathways to recovery		0.93 (.02)**
Time × administrative leadership		1.06 (.02)**
Time × meaningful activities		1.01 (.01)
Alcohol-related harm†		
Months in housing	0.94 (.03)	0.95 (.03)
Time	.98 (.02)	.96 (.02)
Pathways to recovery	1.09 (.03)	1.10 (.03)**
Administrative leadership	0.97 (.01)**	.94 (.01)**
Meaningful activities	0.99 (.01)	1.00 (.01)
Time × pathways to recovery		1.01 (.01)
Time × administrative leadership		0.98 (.01)**
Time × meaningful activities		1.00 (.002)

Note: Model 1 was the reduced model including the main effects for months spent in housing, centered time, and centered LEAP activity categories. Model 2 additionally included the three time × activity category interactions. Models for the general meaningful activities participation assessment and QoLS models did not include interpretable interactions; thus, these model statistics and relevant parameters are included in-text and not in this table.

†Denotes a negative binomial generalized estimating equations model, and associated exponentiated coefficients represent incident rate ratios (IRRs).

‡Denotes a logistic model and associated exponentiated coefficients represent odds ratios (ORs).

*$p < .05$.

**$p < .01$. *SE* = Robust standard errors.

The main effects and interactions models were statistically significant for general QoL, Wald χ^2 (5, $N = 60$) = 13.63, $p = .02$, QICu = 332. Averaged over the course of the study, Administrative Leadership activities were associated with higher overall QoL ($B = .03$, $SE = .01$, $p = .01$). The interactions model was likewise significant, Wald χ^2 (8, $N = 60$) = 23.36, $p = .003$, QICu = 338. However, the lack of significant interaction effects ($ps > .05$), higher QICu value, and nonsignificant Wald test, χ^2 (3) = 5.80, $p = .12$, indicated no model improvement with inclusion of the interaction effects.

3 | DISCUSSION

The parent study indicated that, over a 6-month period, LEAP participants were increasingly engaged with meaningful activities compared to control participants. Further, greater LEAP activity attendance was associated with decreased, within-subjects alcohol use and alcohol-related harm (Clifasefi et al., 2020). This secondary, exploratory study further characterized the components of and attendance at LEAP activities and tested whether engagement in specific categories of LEAP activities was associated with improvements in alcohol and QoL outcomes.

3.1 | What is the LEAP?

The LEAP comprised three primary categories of activities—administrative leadership opportunities, meaningful activities, and pathways to recovery. Findings indicated that these activities were generally well-attended: 86% of the Housing First residents where the LEAP study was implemented attended at least one activity.

3.1.1 | Administrative leadership opportunities

This category of LEAP activities was initially conceptualized as the community-site administrative arm of the LEAP; however, membership on the LEAP Advisory Board and attendance at the LEAP Researchers' Meetings came to be viewed by participants as a means of community capacity building, advocacy, relationship building, and social capital. These points likely contributed to LEAP activity popularity: members of these groups were sharing informal information about LEAP activities through their social network with other residents in the Housing First program. The strength of the LEAP Advisory Board and its development of so many popular programs over the course of this project echoes prior research demonstrating the importance of engaging community members in the development of programming because of their unique vantage point and crucial insights (Clifasefi et al., 2016; Greysen et al., 2012), as well as the more community-acceptable, transformative, sustainable, and efficacious nature of the resulting programming (Clifasefi et al., 2020; Collins et al., 2018; Collins et al., 2019; Pruitt et al., 2018).

3.1.2 | Meaningful activities

Residents' participation in Administrative Leadership activities provided essential initial input into and ongoing monitoring and evaluation of meaningful activities offered in the Housing First setting. These resident-driven, non-drinking activities were geared toward increasing autonomy, improving health and well-being, supporting re-connection to self, and contributing to the community (Clifasefi et al., 2016). They included art hours in a dedicated art space, a resident-inspired speakers' series, poetry-writing workshops, talent shows, a house-wide 'Zine, house-wide game nights, and a community garden. The finding that meaningful activities comprised the most widely offered and well-attended category of programming echoes those of other studies, which have highlighted the importance of including meaningful, client-driven activities in Housing First settings (Gaetz et al., 2013; Tainio & Fredriksson, 2009; Watson & Rollins, 2015). The importance of meaningful activities is also supported in the larger literature on resilience (i.e., the dynamic process between environment and individual that allows for positive outcomes despite threats to adaptation or well-being; Masten & Wright, 2010), which collectively suggest that participation in meaningful activities contributes to the well-being of individuals who have been exposed to stressful and traumatic events (Hamby et al., 2018; Lal et al., 2013; Ungar et al., 2013). Engagement in meaningful activities has been shown to enhance well-being through meaning-making, expression of thoughts and emotions,

connection, and belonging, ability to make a contribution, and changes in physical and emotional states (Hayman et al., 2017; Lal et al., 2013). In future studies of LEAP, we plan to test such aspects of resilience as a potential mediator of its effects.

3.1.3 | Pathways to recovery

Prior research, including the qualitative research conducted to inform the current project, has indicated that traditional abstinence-based treatment is not the preferred pathway to recovery for this population (Clifasefi et al., 2016; Collins et al., 2012; Collins et al., 2016; Watson & Rollins, 2015). Thus, this arm of the LEAP offered three, low-barrier, harm-reduction treatment modalities based on residents' requests in Phase 1 of this project: harm-reduction group therapy, individual harm reduction treatment for AUD, and consistent with prior research showing the efficacy of culturally appropriate treatments for AUD (Lowe et al., 2012), harm reduction Talking Circles. As these activities required more staff training and supervision, they were implemented less widely than the meaningful activities; however, they were well-attended when offered, and went on to be evaluated in subsequent research studies (Collins et al., 2019; Nelson et al., 2019).

3.2 | Who attends LEAP activities?

Many sociodemographic, substance-related, and community-oriented variables were explored as potential predictors of LEAP engagement; however, only employment predicted lower LEAP activity attendance. One potential explanation for this finding is that the vast majority of resident-generated programming was offered during the traditional workweek (i.e., weekdays between 9 am and 5 pm). Therefore, working residents may not have had ample opportunity to attend LEAP sponsored activities. Another explanation may have to do with the locus of meaningful activity, a construct described by Yanos et al. (2007) that "people's relationships to their living environments are conditioned by an understanding of the primary location of their meaningful activities." In a qualitative analysis of loci of meaningful activity across different Housing First settings, findings indicated that individuals residing in single-site HF settings as opposed to scattered-site settings were most likely to report their locus of meaningful activity within their own building. However, it is possible that employed participants in this study had a locus of meaningful activity that is more focused at work and thus outside of their housing program. That said, future studies should include programming offered at different times of day, including evening programming, to ensure that people's varying schedules are accommodated and all have access to programming.

3.3 | ASSOCIATIONS OF LEAP ACTIVITY CATEGORIES AND ALCOHOL AND QOL OUTCOMES

The greater seeking of Pathways to Recovery activities was found among participants who generally had higher setpoints for indices of AUD: They were more likely to be daily drinkers and have higher overall rates of alcohol-related harm. This finding corresponds with those from a prior study, in which Housing First residents who experienced greater alcohol-related harm were also more likely to seek out AUD treatment (Collins et al., 2012). Unfortunately, findings from interaction models indicated that engagement in Pathways to Recovery and Meaningful Activities categories was generally not significantly associated with changes in alcohol and QoL outcomes over time. There was one exception: participants in Pathways to Recovery were less likely to have nondrinking days over time. Although it first seems counterintuitive, the fact that Pathways to Recovery were focused explicitly on harm-reduction education might provide an explanation for this finding. For more severely physiologically

dependent participants in this study—that is the daily drinkers who were more likely to seek out pathways to recovery activities—drinking some alcohol every day and thereby avoiding withdrawal and its kindling effect is safer than continually swinging from heavy, daily drinking to "cold turkey" abstinence (Anderson, 2010).

Findings indicated that those engaged in Administrative Leadership activities generally had higher overall QoL and lower alcohol use frequency and alcohol-related harm. This finding is unsurprising: residents who were less physiologically dependent (i.e., overall lower frequency of use) and higher functioning (i.e., overall higher QoL) had higher health status and were potentially better resourced, which would render those participants more likely to be nominated for, attend and contribute to regular Administrative Leadership activities. However, it does highlight the fact that privilege does play a role in the accessibility of activities—even in the context of a community-based participatory research project in which all participants have lived experience of chronic homelessness and severe AUD. Future work is needed to find how we can increase the accessibility of Administrative Leadership activities because participation in these activities was not only associated with higher baseline functioning and quality of life; it was shown to further improve alcohol outcomes over time.

3.4 | LIMITATIONS

The study sample represented a specific segment of the homeless population in a specialized setting and its larger social context (i.e., a progressive midsized city in the Pacific Northwest). The sample was more ethnically and racially diverse than the surrounding region, and various socioeconomic factors may differ in homeless populations in other areas of the United States. These findings may, therefore, not be generalizable to other types of housing programs (e.g., scattered-site Housing First, transitional housing, traditional continuum-of-care housing), other segments of the homeless population, or settings with a different population base. Care should be taken when interpreting these findings and applying them to other populations, settings, and approaches. That said, this study provides an example of how such programming could look and how simple attendance data may be used to understand programming engagement and health outcomes in a systematic way.

3.5 | CONCLUSIONS AND FUTURE DIRECTIONS

This secondary study sought to characterize components of and engagement in resident-driven Housing First programming in the context of community-based participatory research. Findings indicated that programming developed with the initial and ongoing input of Housing First residents who have lived experience of chronic homelessness and AUD generates well-attended programming. The LEAP comprised three primary components: administrative leadership opportunities, meaningful activities, and pathways to recovery. Meaningful activities became the most widely expanded component, although all three were widely attended. Since this study ended, programming has remained sustainable and has even been expanded through fundraising, volunteer and trainee positions, and collaborations with other nonprofits. The parent study showed that overall engagement in LEAP activities was associated with decreased alcohol use and related harm. This study added to those initial findings, suggesting that engagement in Administrative Leadership activities more specifically may drive positive LEAP effects, but appears to be less accessible to people with more severely impacted by alcohol-related harm and associated conditions. Future, larger-scale studies are needed to further explore and strengthen the relationship between engagement in categories of LEAP activities and outcomes of interest. A cluster-randomized trial is currently underway to expand the implementation of the LEAP and provide a more rigorous test of its effectiveness in reducing alcohol-related harm and improving quality of life for Housing First residents.

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DATA AVAILABILITY STATEMENT

The parent study involved the collection of highly sensitive data, including data on illegal behaviors, from people who were severely impacted by chronic homelessness and multiply affected by psychiatric, medical, and substance use disorders. Participants were engaged and often well-known in community-based and criminal justice settings within a tight-knit urban community. Participating agencies are likewise well-known for their approaches and are regularly part of the national conversation about interventions for chronic homelessness. Thus, even with the removal of all identifiers, we believe that it could become difficult to fully protect the identities of participants, their data, and the involved agencies. Further, this study's planning and commencement predated the regular inclusion of data sharing plans in NIH-funded studies, and thus agreements with the participating agencies and consent with study participants did not include discussion of data sharing. For these reasons, we do not plan to widely share these study data.

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