

Housing Retention in Single-Site Housing First for Chronically Homeless Individuals With Severe Alcohol Problems

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Housing First entails the provision of immediate, permanent, low-barrier, supportive housing to chronically homeless people, many of whom have co-occurring psychiatric, medical and substance-use disorders. The low-barrier aspect of the Housing First model has been somewhat controversial¹ because unlike the continuum-of-care or linear residential model of housing, Housing First does not require residents to achieve certain milestones (e.g., abstinence from substances, treatment attendance, clinical stability) to acquire or maintain housing.²

The Housing First model has been implemented in 2 main ways, both of which have been supported in the research literature and policy implementation.² Scattered-site Housing First programs were originally developed in the early 1990s by Tsemberis et al.^{3–5} in New York City and are now being implemented in cities throughout the United States and Canada.^{6,7} In the scattered-site Housing First model, residents are offered a choice of individual housing units located throughout a community. Additionally, residents can choose to access a variety of supportive services that are delivered using an assertive community treatment model. In single-site or project-based Housing First programs, residents are offered units within a single housing project, where they can elect to receive centrally delivered case-management and supportive services. Perhaps the most well-researched and widely cited single-site Housing First model is the one established in the 1990s by the Downtown Emergency Service Center (DESC) in Seattle, Washington.^{2,8–12}

HOUSING FIRST AND HOUSING RETENTION

Because the primary aim of Housing First is to help chronically homeless individuals

Objectives. We studied housing retention and its predictors in the single-site Housing First model.

Methods. Participants (n = 111) were chronically homeless people with severe alcohol problems who lived in a single-site Housing First program and participated in a larger nonrandomized controlled trial (2005–2008) conducted in Seattle, Washington. At baseline, participants responded to self-report questionnaires assessing demographic, illness burden, alcohol and other drug use, and psychiatric variables. Housing status was recorded over 2 years.

Results. Participants were interested in housing, although a sizable minority did not believe they would be able to maintain abstinence-based housing. Only 23% of participants returned to homelessness during the 2-year follow-up. Commonly cited risk factors—alcohol and other drug use, illness burden, psychiatric symptoms, and homelessness history—did not predict resumed homelessness. Active drinkers were more likely to stay in this housing project than nondrinkers.

Conclusions. We found that single-site Housing First programming fills a gap in housing options for chronically homeless people with severe alcohol problems. (*Am J Public Health.* 2013;103:S269–S274. doi:10.2105/AJPH.2013.301312)

obtain and maintain housing, it is important to examine and document housing retention associated with this new and innovative model. To date, studies have been conducted on scattered-site Housing First programs and have shown high rates of housing retention, particularly compared with continuum-of-care or linear residential housing.^{3,5,6,13} Studies have also examined housing retention in permanent supportive housing programs,^{14–17} of which Housing First is considered a certain type with a more specific operational philosophy.^{2,18} Finally, 2 studies have examined factors associated with housing retention in both single- and scattered-site Housing First combined.^{9,19} There are, however, no existing studies examining housing retention in single-site Housing First exclusively. Although both scattered- and single-site models share the overarching Housing First philosophy, the nature of the housing (i.e., scattered throughout a community vs within a single housing project) does lead to differences in, for example, service

provision, geographic location, and community structure. These differences could translate into differences in retention rates. Thus, further research is needed to establish housing retention in single-site Housing First programs and to address related questions regarding housing and homelessness among chronically homeless people with severe alcohol problems.

STUDY AIMS AND HYPOTHESES

We explored housing retention and related factors in the context of a single-site Housing First approach for chronically homeless people with severe alcohol problems. The first goal was to test the widely held assumption that people who are chronically homeless simply do not want housing.²⁰ Based on the findings from a previous study in this population,⁸ we hypothesized that the majority of participants would show an interest in obtaining housing. The second goal was to

test the theory that people who actively use alcohol and other drugs, have more severe psychiatric problems, experience a greater illness burden, and have longer histories of chronic homelessness are less likely to maintain housing.^{1,21} We hypothesized that these conditions would not prevent housing retention because single-site Housing First utilizes a low-barrier approach with strong supportive service elements to adequately address the needs of this population. Furthermore, previous research on DESC's Housing First programs¹⁹ and other types of supportive housing programs¹⁴ showed strong retention among people with substance-use problems. The third goal was to ascertain the percentage of individuals who returned to homelessness after leaving the housing project and to test predictors of this return to homelessness. Extrapolating from studies that showed a low return to homelessness among residents in scattered-site Housing First programs,³⁻⁶ we hypothesized that a majority of participants in single-site Housing First would not return to homelessness. Hypothesized risk variables, including demographic characteristics, alcohol or other drug use, history of homelessness, illness burden, and psychiatric symptoms, were tested as predictors of a return to homelessness.

METHODS

We collected some data for these secondary analyses in the context of a nonrandomized controlled trial that compared the effects of a single-site Housing First intervention and wait-list control condition on public service utilization and associated costs (see the parent study for more detailed information on design, methods, and findings).⁸

Participants were chronically homeless individuals with severe alcohol problems ($n = 111$) who moved into a Housing First program in Seattle between December 2005 and August 2008. Participants were recruited for the larger parent study from 2 primary sources: (1) a rank-ordered list of individuals who had incurred the highest public costs for alcohol-related use of emergency services, hospital, sobering center (i.e., "sleep-off" facility), and county jail in 2004 and (2) a list of eligible individuals suggested by community providers familiar with the target population.⁸

Measures

Demographic characteristic variables, including age, gender, racial/ethnic background, and history of homelessness, were assessed using single items during participants' baseline interviews. Demographic characteristic variables were used for sample description and as predictors in inferential statistical models.

Single items were used to ascertain participants' attitudes toward abstinence-based housing at baseline, including "If (this housing project) had tried to prevent you from drinking alcohol, would you still have been willing to move in?" and "If you did move in and a housing project's policy was to kick people out on a third time for being caught drinking alcohol, do you think realistically you'd be able to live there a year or more?" These items were used in descriptive analyses.

Alcohol and other drug use over the past 30 days was assessed using the substance-use frequency portion of the Addiction Severity Index, which is a reliable and valid measure of various substance-use outcomes.²² Alcohol and other drug use was then dichotomized to represent baseline use within the past 30 days, and these data were used as predictors in inferential statistical models.

Six scales of the well-validated, 53-item Brief Symptom Inventory were used to assess participants' experience of psychiatric symptoms: interpersonal sensitivity (i.e., feelings of inadequacy or discomfort during interpersonal interactions), depression, anxiety, hostility, paranoid ideation, and psychoticism.²³ Means of the six 5-point subscales at baseline were used as predictors in inferential statistical models.

The Physical Health Form⁸ comprises 20 dichotomous items assessing participants' illness burden, reflecting self-reported, 30-day history of health problems common to this population (e.g., chronic obstructive pulmonary disease, hepatitis, frostbite, broken bones). The baseline number of positive responses for each of the 20 symptoms or illnesses was summed to create the illness burden predictor for inferential statistical analyses.

Housing data for each participant were obtained from housing agency records. Number of days continuously housed was calculated for each individual for the 2 years after they moved into this specific housing project, and this variable served as an outcome in

descriptive analyses and as the censoring variable in survival analyses. In generalized estimating equation (GEE) analyses, retention in this housing project over the 2-year follow-up served as an outcome variable. Finally, return to homelessness served as an outcome variable in logistic regression analyses.

Single-Site Housing First Intervention

Single-site Housing First entails the provision of immediate, permanent, low-barrier, nonabstinence-based supportive housing units within a single housing project. Participants in this study were assigned to either receive a private studio apartment, or in the case of greater medical needs, a semiprivate cubicle unit.

On-site supportive services were tailored to the needs of individual residents and included 24-hour housing project staffing, intensive case management, nursing or medical care, access to external service providers, and assistance with basic needs. There were no requirements that milestones had to be met (e.g., clinical stability, abstinence from substances, treatment attendance, service participation) for housing attainment or maintenance.

Procedures

In the parent study,⁸ program staff offered single-site Housing First units to people on the target list as they were located in the community. Once the Housing First project was filled, additional participants were added to a waitlist. Verbal consent for the parent study was collected by housing program staff. Interested individuals then met with research staff for an informational session for which they were paid \$5, regardless of study participation.

Written, informed consent was obtained, and participants either completed the baseline assessment immediately or were scheduled for subsequent appointments. Participants were administered self-report data collection interviews, which occurred at baseline, and at 3-, 6-, 9-, 12-, 18-, and 24-month follow-ups, and were paid \$20 for their participation in each interview. Only baseline self-report data were used for sample description and as predictors in primary outcome analyses in this study. Analyses included participants ($n = 111$) who moved into the Housing First

project during the study; participants' individual move-in dates determined the start of their 2-year study period.

Data Analysis Plan

Descriptive statistics were calculated using SPSS version 19 (IBM, Somers, NY). Preliminary descriptive analyses were conducted to (1) determine the shapes of the outcome variable distributions and the presence of outliers and (2) provide descriptive statistics on the sample demographic variables, attitudes about housing, housing retention outcomes, and reasons for leaving housing.

Inferential analyses were conducted using STATA version 11.2 (StataCorp, College Station, TX). The α value was set to .05, and 95% confidence intervals (CIs) were used. An exponential survival model was used to test demographic variables (i.e., age, gender, race/ethnicity, history of homelessness), illness burden, alcohol and other drug use, and psychiatric symptoms as predictors of survival in this particular Housing First project with time until initial move-out as the censoring or offset variable. By contrast, a special feature of single-site Housing First was that individuals could return to housing after a discontinuity. Therefore, it was deemed important to test whether risk factors not only predicted "survival" but overall time in housing despite discontinuities. Thus, a logistic GEE model was used to test the same set of explanatory variables as predictors of presence in the Housing First project over the 2-year study period. Finally, a logistic regression was used to test this same set of explanatory variables as predictors of whether housing discontinuity represented a return to homelessness.

RESULTS

The sample ($n = 111$) was predominantly male (7 of 111, or 6.31%, were female) and was racially/ethnically diverse. Table 1 provides all of the baseline descriptive statistics for the sample.

Participants' Interest in Housing

Drawing on data from the parent study, of the 166 individuals originally approached for recruitment into the Housing First project, only 5 individuals (3%) refused.⁸ Of the 134

TABLE 1—Baseline Descriptive Statistics for the Study Sample ($n = 111$): Seattle, WA, December 2005–August 2008

Variable	Mean \pm SD or %
Age, y ($n = 111$)	48.43 \pm 9.51
Race/ethnicity ($n = 111$)	
American Indian/Alaska Native	29.73
Asian	0.90
Black/African American	7.21
Hispanic/Latino/Latina	6.31
Native Hawaiian/Pacific Islander	2.70
White/Caucasian	40.54
> 1 race/ethnicity	9.91
"Other" race/ethnicity	2.70
History of homelessness in past 3 y ($n = 109$)	
About a month or less per y	3.67
> 1 mo/y but less than half the time	10.09
Half of the time or more but had some housing some of the time	15.60
Most of the time but may have had housing \leq 1 mo/y	70.64
Substance-use variables	
Any alcohol use in past 30 d ($n = 100$)	92.00
Any drug use in past 30 d ($n = 110$)	46.36
Illness burden ($n = 111$) in past 3 mo	3.04 \pm 2.47
Extent of psychiatric symptoms in past 2 wk ^a	
Interpersonal sensitivity ($n = 106$)	1.02 \pm 0.92
Depression ($n = 107$)	1.31 \pm 1.00
Anxiety ($n = 107$)	1.34 \pm 1.08
Hostility ($n = 107$)	0.82 \pm 0.85
Paranoid ideation ($n = 107$)	1.11 \pm 0.93
Psychoticism ($n = 107$)	1.06 \pm 0.89

^aExtent of psychiatric symptoms are mean Brief Symptom Inventory scores for each of the named 6 subscales, where 0 = participants report having been bothered by these symptoms "not at all," and 4 = participants have been "extremely" bothered by these symptoms in the past 2 weeks.

individuals involved in the parent study, 83% (111 of 134) moved into the Housing First project during the study period and were followed for 2 years after their move-in date for the present secondary analyses. Altogether, these participants stayed a median of 675 days (range = 19–730), with 46% staying the entire 2-year period.

When asked at baseline about their interest in abstinence-based housing, 67.3% (70 of 104) of participants reported they would have accepted housing even if it had been abstinence-based. That said, only 53.5% (54 of 101) of participants said they would have realistically been able to stay in abstinence-based housing for a year or more.

Housing Retention and Its Predictors

After testing the relative fit of nested survival models, including gamma and Weibull, an exponential survival model provided the best fit to the data (χ^2 [13, $n = 94$] = 33.79; $P = .001$). Findings indicated that age, alcohol use, interpersonal sensitivity, and hostility predicted retention in this particular Housing First project. Specifically, for each 1-year increase in age, participants had 4% lower hazard of leaving the Housing First project ($h[h] = 0.96$; $SE = 0.02$; $P = .03$). Participants who used alcohol in the past month had a 74% lower hazard of leaving the Housing First project ($h[h] = 0.26$; $SE = 0.13$; $P = .01$). For each 1-point increase on the interpersonal sensitivity scale, participants had a 54% lower

hazard of leaving the Housing First project ($h[d] = 0.46$; $SE = 0.14$; $P = .01$). Finally, for each 1-point increase on the hostility scale, participants had a 75% higher hazard of leaving the Housing First project ($h[d] = 1.75$; $SE = 0.45$; $P = .03$). Gender, race/ethnicity, history of homelessness, illness burden, drug use, and other psychiatric symptoms were not significant predictors ($P > 0.07$).

Because single-site Housing First allows for return to housing after discontinuities, it was deemed important to test whether risk factors not only predicted “survival” but overall time in housing. The logistic GEE model testing the prediction of overall presence in the Housing First project was significant ($\chi^2[14, n = 109] = 35.91$; $P = .001$). Findings indicated that time and alcohol use positively predicted housing status, whereas other drug use and experience of psychotic symptoms inversely predicted housing status averaged over the 2-year period (Table 2).

Return to Homelessness and Its Predictors

Perhaps more important for this population was not whether they stayed in this specific housing project but whether they returned to homelessness. Descriptive analyses indicated that only 23% (26 of 111) of participants returned to homelessness during the 2-year period, and afterward, 24% (7 of 26) of these individuals returned to the same housing project. A logistic regression indicated that none of the hypothesized predictors—age, gender, race/ethnicity, history of homelessness, alcohol or other drug use, illness burden, or psychiatric symptoms—were significantly associated with a return to homelessness ($\chi^2[13, n = 94] = 17.82$; $P = .16$).

DISCUSSION

The first goal of this study was to test the widely held assumption that people who are chronically homeless simply do not want housing. This assumption was challenged by the parent study,⁸ which indicated a 3% housing refusal rate among chronically homeless individuals with severe alcohol problems. We extended these initial findings by showing that 83% of all participants approached ended up moving into the

TABLE 2—General Estimating Equation Model Parameters Predicting Overall Presence in the Housing First Project 2 Years After Move-in: Seattle, WA, December 2005–August 2008

Predictors	OR (95% CI)	SE	z	P
Time	1.10 (1.04, 1.17)	0.03	3.16	.002
Gender	0.89 (0.31, 2.57)	0.48	-0.21	.83
Age	1.03 (0.99, 1.06)	0.02	1.59	.11
Race/ethnicity	0.74 (0.36, 1.49)	0.27	-0.85	.4
History of homelessness	1.16 (0.74, 1.82)	0.27	0.64	.52
Alcohol use in past 30 d	2.29 (1.04, 5.08)	0.93	2.05	.04
Drug use in past 30 d	0.55 (0.36, 0.83)	0.12	-2.85	.004
Illness burden	0.94 (0.86, 1.04)	0.05	-1.20	.23
Interpersonal sensitivity	0.85 (0.62, 1.17)	0.14	-0.98	.33
Depression	1.06 (0.72, 1.55)	0.21	0.30	.76
Anxiety	1.14 (0.81, 1.59)	0.20	0.74	.46
Hostility	1.40 (0.98, 1.99)	0.25	1.84	.07
Paranoid ideation	1.11 (0.88, 1.41)	0.14	0.88	.38
Psychoticism	0.70 (0.53, 0.93)	0.10	-2.47	.01

Note. CI = confidence intervals; OR = odds ratio.

housing project. Further, 67% of our sample would have accepted housing even if it required alcohol abstinence; however, 46.5% did not feel they would be able to maintain abstinence-based housing had they accepted it.

These findings correspond to those of another study on the larger homeless population, in which individuals identified substance use as a key reason for their loss of housing and continued homelessness.²⁴ A previous study involving the present population also indicated that residents were grateful that single-site Housing First provided them with the stability they needed to begin making positive behavior changes—even if that did not involve abstinence from alcohol use.¹¹ Taken together, the present study and existing literature indicate many homeless individuals are both interested in obtaining housing and aware that their substance use poses a barrier to this goal. Single-site Housing First is therefore poised to fill a gap in housing needs for a key segment of the homeless population.

Predictors of Housing Project Retention

Alcohol use, illness burden, history of homelessness, and most of the psychiatric predictors were not significant risk factors for leaving this specific housing project. Conversely, alcohol use and greater

interpersonal sensitivity at baseline were associated with increased retention in single-site Housing First over the 2-year study. These findings suggest that this particular Housing First project retained its target population by responding to its residents' needs.

By contrast, those who reported using drugs at baseline were half as likely to stay over the entire 2-year period as those who did not use drugs. This finding makes sense considering the focus of this particular housing project is on chronically homeless people with severe alcohol problems who are not ready, willing, or able to stop using alcohol. The sense of community in the housing project was often connected to residents' similar experiences with and backgrounds of chronic homelessness and alcohol use.¹¹ Thus, individuals with corresponding backgrounds likely experienced the strongest sense of belongingness in this particular housing setting. Fortunately, case management staff could and did help residents who were looking for another housing environment or were interested in attaining abstinence from substances to find placement in abstinence-based treatment or housing. Because neither drug use nor alcohol use predicted a return to homelessness, it was likely that these residents

instead found other housing that was better suited to their own goals and needs.

One of the psychiatric symptoms, hostility, was a significant predictor of an initial housing discontinuity but not of a decreased overall length of stay in the housing project. This finding may be a result of the open-door policy that is inherent in Housing First programs: people who experience a period of discontinuity following, for example, an episode of violence or jail time may return to housing at a later date. According to this study, they did return. These findings suggest it is important to help avoid an initial discontinuity by supporting these individuals in adjusting to apartment building living, providing adequate means for individuals to retreat to privacy, and deciding whether a single-site Housing First model provides the best fit to individuals' needs. By contrast, the fact that psychotic symptom severity predicted leaving this particular project, but not a return to homelessness, suggested that these individuals, much like those actively using other drugs, moved to other treatment or housing accommodations that better fit their needs. Thus, certain individual factors (e.g., hostility, psychotic symptom experience) may moderate retention in single-site Housing First programs. For example, individuals with greater baseline hostility or psychoticism might benefit from housing that exposes them to fewer peer contacts. Future multisite randomized controlled trials testing these individual factors as moderators of housing-type effects (e.g., single- vs scattered-site Housing First) are necessary to answer these important research questions.

Return to Homelessness and Its Predictors

We found that 23% of participants returned to homelessness during the 2-year follow-up. None of the hypothesized risk factors, including demographic characteristics, alcohol or other drug use, history of homelessness, illness burden, or psychiatric symptoms, were significant predictors of a return to homelessness. Additionally, given the flexibility of the single-site Housing First program and the staff's encouragement for people to return to housing following a move-out, one quarter of these individuals moved

back into the same housing project at a later time.

Other studies have suggested that active substance users are at greater risk for resumed homelessness.^{1,25} By contrast, this finding corresponded to accumulating evidence in the scattered-site Housing First literature,³⁻⁶ which has suggested this risk might depend less on the affected individuals' behavior and more on the fit between individuals' needs and available models of housing. In other words, active drinkers who are placed in abstinence-based housing are at risk for resumed homelessness, whereas active drinkers who are placed in nonabstinence-based Housing First units are not. Thus, if they are given housing options that were tailored to their own goals and needs, chronically homeless people with severe alcohol problems are able to maintain housing and avoid a return to homelessness.

Limitations

The study sample comprised a smaller, more severely affected subset of the larger homeless population. Additionally, participants were housed in a single-site Housing First program where they received wraparound supportive services. Considering the specificity and uniqueness of the sample and setting, these findings might not be generalizable to other populations and housing environments. Because the single-site Housing First model is gaining the acceptance of providers and policymakers, however, it is increasingly important to understand factors at play in this context. The present study provided an important addition to the literature by shedding light on such risk and protective factors for housing retention in single-site Housing First programs for chronically homeless people with severe alcohol problems.

Study data were limited in their scope. Housing data were examined only for this specific Housing First project and did not include housing episodes within other living arrangements. Despite this limitation, these data facilitated the first longitudinal study of housing retention in single-site Housing First units, thereby making a unique and important contribution to the literature on homelessness and housing.

Finally, because of data collection limitations and ethical concerns stemming from the parent

study,⁸ the present study did not include a randomized design or control group. The within-subjects correlational design of this secondary study therefore precluded causal interpretations regarding associations between single-site Housing First and housing status. Thus, it is possible other factors besides the housing intervention might have accounted for the low rates of return to homelessness. Future studies should involve a randomized design or appropriate control conditions to replicate these effects and establish a causal role for single-site Housing First programs.

Conclusions and Future Directions

Our study represented the first exploration of housing retention and its predictors in the single-site Housing First model. The study indicated that, contrary to popular belief, chronically homeless people with severe alcohol problems are interested in housing, although a sizable minority admit they are unlikely to succeed in housing that requires alcohol abstinence. Further, common risk factors (e.g., active substance use, illness burden, psychiatric symptoms, history of homelessness) were not predictors of a return to homelessness for these individuals. Participants who currently used alcohol at baseline were more likely to stay in this particular housing project than those who did not. Taken together, these findings suggest the single-site Housing First model fills a gap in housing options for chronically homeless people with severe alcohol problems.

Future studies are necessary to establish whether single-site Housing First retention is as high in other types of populations, such as those primarily engaging in illicit drug use (e.g., heroin, methamphetamine, crack cocaine). More research is also needed to establish further individual- and site-level protective factors for housing retention and risk factors for return to homelessness, including staff-to-tenant ratio, geographic location, level of peer involvement, and use of various supportive services (e.g., money management, managed alcohol programming, drug and alcohol counseling services). These questions may be answered in the context of a multisite randomized controlled trial to establish the effectiveness of single-site Housing First programming across sites and compared with

other housing model types (e.g., scattered-site Housing First programming and continuum-of-care housing). ■

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Contributors

S. E. Collins codeveloped the study idea, crafted the research design, selected the methods, conducted the primary statistical analyses, was the primary author of the article, and approved the final version. D. K. Malone codeveloped the study idea, obtained the housing data, shaped the research question, contributed to the interpretation of the findings, provided summaries of relevant literature, contributed to the writing of the Introduction and Discussion, critically reviewed and provided feedback on multiple drafts, and approved the final article. S. L. Clifasefi helped obtain and organize the study data, assisted in shaping the research question, edited and provided rewrite suggestions on multiple drafts of this article, and approved the final article.

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Human Participant Protection

Institutional review board approval for the study procedures was obtained from the University of Washington and King County Mental Health, Chemical Abuse and Dependency Services Division.

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