Journal of
Mental Health and Psychiatric Disorders

JScholar
Fostering Scholarly Communication

Research Article Open Access

Housing First Promotes Mental Health Recovery in Specific Subsets of Homeless Individuals

Gabriel Mondry*

Saba University School of Medicine, Caribbean Netherlands

***Corresponding author:** Gabriel Mondry, Saba University School of Medicine, Caribbean Netherlands, Email: g.mondry@saba.edu

Received Date: May 14, 2023 **Accepted Date:** June 24, 2023 **Published Date:** June 27, 2023

Citation: Gabriel Mondry (2023) Housing First Promotes Mental Health Recovery in Specific Subsets of Homeless Individuals. J Men Hea Psy Dis 2: 1-18

Abstract

Background: Housing First (HF) is a social program that seeks to end homelessness by removing all barriers to housing for homeless individuals. HF does not enforce any treatment compliance or sobriety.

Hypothesis: Controlling for mental illness and substance abuse, clients in Housing First programs will have equal or higher rates of psychiatric treatment compliance compared to those in Treatment First programs, and to homeless clients receiving treatment-as-usual.

Methods: Five PubMed searches were performed using the keywords "scattered site housing first," "project-based housing first," "housing first substance reduction," "housing first methadone homelessness," and "housing first homelessness dual diagnosis."

Results: Seven peer-reviewed papers were selected with Housing First exposure outcomes including psychiatric medication compliance and reductions in substance abuse. All types of Housing First programs significantly reduced participants' alcohol usage. Scattered-site Housing First significantly increased both antipsychotic medication and methadone compliance, compared to Treatment-as-Usual (TAU). Housing First did not appear to reduce illicit substance abuse, compared to TAU. In no cases did Housing First participants have inferior mental health outcomes compared to Treatment First or TAU.

Conclusion: Patients enrolled in scattered-site Housing First had significantly higher rates of compliance with antipsychotic medication and methadone maintenance therapy. Patients in all Housing First programs had reduced average alcohol consumption, however, Housing First had no effect on illicit drug abuse. In no case did Housing First patients have inferior outcomes to those enrolled in Treatment First programs, or to homeless patients given treatment as usual. Longer experiments need to be performed to study Housing First's effectiveness after a period greater than two years.

Keywords: Mental Health Recovery, Housing First, Psychiatric Treatment

Background

There are an estimated 700,000 homeless people in the United States and Canada combined [1], Chronic homelessness in the United States and Canada is mostly due to untreated mental illness and/or substance abuse. It is estimated that there is a 37.9% prevalence of alcohol dependence among the homeless, and an 11% prevalence of schizophrenia [1,2]. Of the 22% of no-shows to New York City's direct-from-jail methadone treatment program, three-quarters are homeless with co-occuring psychiatric disorders [3]. The current Treatment-As-Usual (TAU) method of discharging homeless patients back to the streets and then hoping they attend follow-up appointments simply does not work. The question then becomes, is the lack of medical compliance due to the stresses of being homeless, or is this population homeless due to being noncompliant with severe mental health issues?

Most taxpayer-subsidized housing programs or privately-run shelters follow a Treatment First approach, which assumes that the patient is homeless because of their drug use or mental health noncompliance. Treatment First requires that a client perform specific tasks in order to qualify for housing. Such prerequisites may include undergoing psychiatric treatment, completely abstaining from their substance of addiction, attending mandatory meetings or prayer service, and keeping a clean criminal record before qualifying for housing. However, many people never see housing through these Treatment First programs, or end up leaving prematurely, due to the inability to meet these requirements while enduring the daily stress of being homeless, and having an untreated mental illness and/or substance abuse problem [4].

Housing First (HF) is a relatively new social policy that removes all of these prerequisite barriers, and aims solely to get homeless people into housing, with no strings attached. The core belief of this approach is in order for people with severe mental illness or substance abuse to seek treatment, they must first have an appropriate place to live. Once given a case manager and the most basic resources necessary for life, the client will then have the foundation to seek treatment. Housing First does not coerce its participants to abstain from substance use or to comply with any kind of treatment in order to retain housing. This radical new approach has gained in popularity in many states, and seeks to give homeless people more freedom, which in turn may allow them to become compliant with treatment.

Housing First, when implemented by government entities, is controversial because of the costs to the taxpayer, and like most government programs, has high potential for growth and creating a cycle of dependency on subsidized housing. Opponents also argue that unconditionally giving an apartment or house to a homeless person with severe psychiatric issues or substance abuse does not fix the underlying issue, and may even enable substance abuse [2]. Proponents of Housing First argue that the program is at least as cost-effective as current programs. This is because the much higher rates of client retention in Housing First result in higher housing stability, thus leading to fewer emergency room and less time spent in jail, which saves tax dollars [5]. However, most Housing First studies solely study housing retention rates or public costs, while few analyze whether or not Housing First clients become more medically compliant or reduce their drug use [1,6].

Housing First can be executed in multiple formats, such as scattered-site and congregate/project-based. Scattered-site Housing First (SHF), such as Assertive Community Treatment (ACT) and Intensive Case Management (ICM), involves subsidizing the use of private apartment rental units, however no more than 20% of the units in any housing complex contains Housing First clients [1]. Scattered-site housing is designed to integrate previously-homeless individuals back into their communities, with an on-call team of social workers to aid the process. ACT and ICM differ in that ACT utilizes more specially-trained social workers for clients with a higher level of needs. Congregate Housing First (referred to as CONG or CHF in various studies), on the other hand, consists of a single housing project, in which every unit inside one building is rented to a Housing First client, with a communal area, free on-site pharmacy, and on-site social workers.

While Housing First may succeed by definition, as free housing causes people to exit homelessness, this paper aims to investigate whether giving unconditional housing actually leads previously-homeless adults to seek treatment and abandon the maladaptive behaviors they had during homelessness. Thus, this paper will investigate the hypothesis that controlling for mental illness and substance abuse, clients in Housing First programs will have equal or higher rates of psychiatric treatment compliance compared to those in Treatment First programs, and to homeless clients receiving treatment-as-usual.

Methods

For studies to be included in this review, the study population had to include the chronically homeless, and/or participants who were homeless prior to being assigned to a Housing First program. For inclusion in this review, participants in studies must have had either a mental illness such as major depressive disorder, bipolar disorder, or schizophrenia, and/or a substance abuse problem. Participants also had to be adults age 18 or older. Research outcomes had to include either substance abuse reductions and/or measures of psychiatric treatment compliance.

Articles were excluded if they made no mention of Housing First, either by name, or no mention of similar unconditional scattered-site or congregate project-based housing programs for homeless individuals. Studies mentioning "Treatment First" or "Medication First" programs with no comparison to Housing First were also excluded. Articles were excluded if they were published before the year 2000, outside the US or Canada, or contained youth participants age 17 or younger. Studies were excluded if the research outcomes were based solely on subjective measures, such as self-reported quality of life assessments. Criminal justice outcomes, food security, cost-effectiveness, or housing retention/stability studies with no measurement of substance use reduction or psychiatric treatment adherence were also excluded from analysis.

The search for relevant articles began on PubMed. The keywords "scattered site housing first" were entered, and filtered for Randomized Controlled Trial which produced 8 results. Three studies were excluded due to a narrow focus on cost-effectiveness, housing stability, or criminal justice outcomes. Two studies were excluded due to a focus on subjective quality of life measurements. This search yielded two relevant articles, Kirst et al. 2014, and Rezensoff et al. 2016 [1,6].

A second search with the keywords "project-based housing first" was entered, and produced 7 results. One article was excluded from this review due to no mention of a Housing First program. One article was excluded due to its focus on qualitative interviews of housing providers, and another was excluded because of a sole focus on criminal justice outcomes. Four remaining studies mentioned alcohol use among Housing First clients; however, only one of them measured Housing First clients' alcohol use over time. This search resulted in one acceptable article: Collins et al. [2].

A third search was performed using the keywords "housing first substance reduction" with the filter set to Randomized Controlled Trial. This yielded 10 results. Six articles were excluded due to no mention of a Housing First program. One article was a duplicate that was previously selected in the first search. One article was excluded due to its focus on subjective quality of life measurements, and another was excluded due to its focus on housing retention rates with no measurements of psychiatric compliance or substance use reduction. This search produced one acceptable study: Somers et al. 2015 [5].

A fourth search was performed with the keywords "housing first methadone homelessness" and filtered for articles published after the year 2000. This produced 8 results. Five articles made no mention of a Housing First program and were thus excluded from this review. One article was excluded due to a focus on the Treatment First approach. The two remaining articles from this search [3,7], were found to be acceptable for this review.

A fifth search was performed with the keywords "housing first homelessness dual diagnosis" and filtered for studies published after the year 2000. This yielded 17 results. Four articles did not mention a Housing First program and were thus excluded. Three articles were duplicates that were screened in previous searches. Nine articles were excluded due to a focus on outcome measures other than psychiatric medication compliance or reductions in substance abuse. This search resulted in one acceptable study: Padgett et al. 2010 [4].

These five searches yielded a total of seven relevant papers. This search strategy is summarized in the PRISMA flow diagram below.

Results

Changes in Daily Substance Use Among People Experiencing Homelessness and Mental Illness: 24-month Outcomes Following Randomization to Housing First or Usual Care [5]." In this landmark study, the authors performed a randomized controlled trial in Vancouver, Canada, referred to as the Vancouver At Home (VAH) study. The purpose of the experiment was to compare daily substance use (DSU) among chronically homeless individuals who have been assigned to either treatment-as-usual (TAU) or to one of various Housing First (HF) programs. The authors hypothesized that Housing First, with its client-centered initiative and no-strings-attached housing, would facilitate a

larger decrease in substance use in this population over a period of 24 months, compared to TAU, which historically has low rates of compliance among the homeless [5].

Inclusion criteria for study subjects required that the applicant is at least 19 years old, meets the criteria for at least one mental illness, and is experiencing "absolute homelessness or housed precariously". 800 applicants were reviewed, with 300 being excluded either due to ineligibility or a loss of follow-up contact, and 3 declined to participate. This left 497 participants to be split into two arms: High Needs (HN) and Moderate Needs (MN). Clients were separated into each arm by the Multnomah Community Assessment Scale.

High Needs participants were determined by multiple criteria: Individuals scoring 62 or lower, and having current bipolar disorder or schizophrenia assessed by the Mini-International Neuropsychiatric Interview version 6.0, and either had one of three additional statuses: legal involvement in the past year, substance dependence in the past month, or had two or more hospitalizations for mental illness in the past five years. All other participants were labeled Moderate Needs. This resulted in 297 HN clients and 200 MN clients [5].

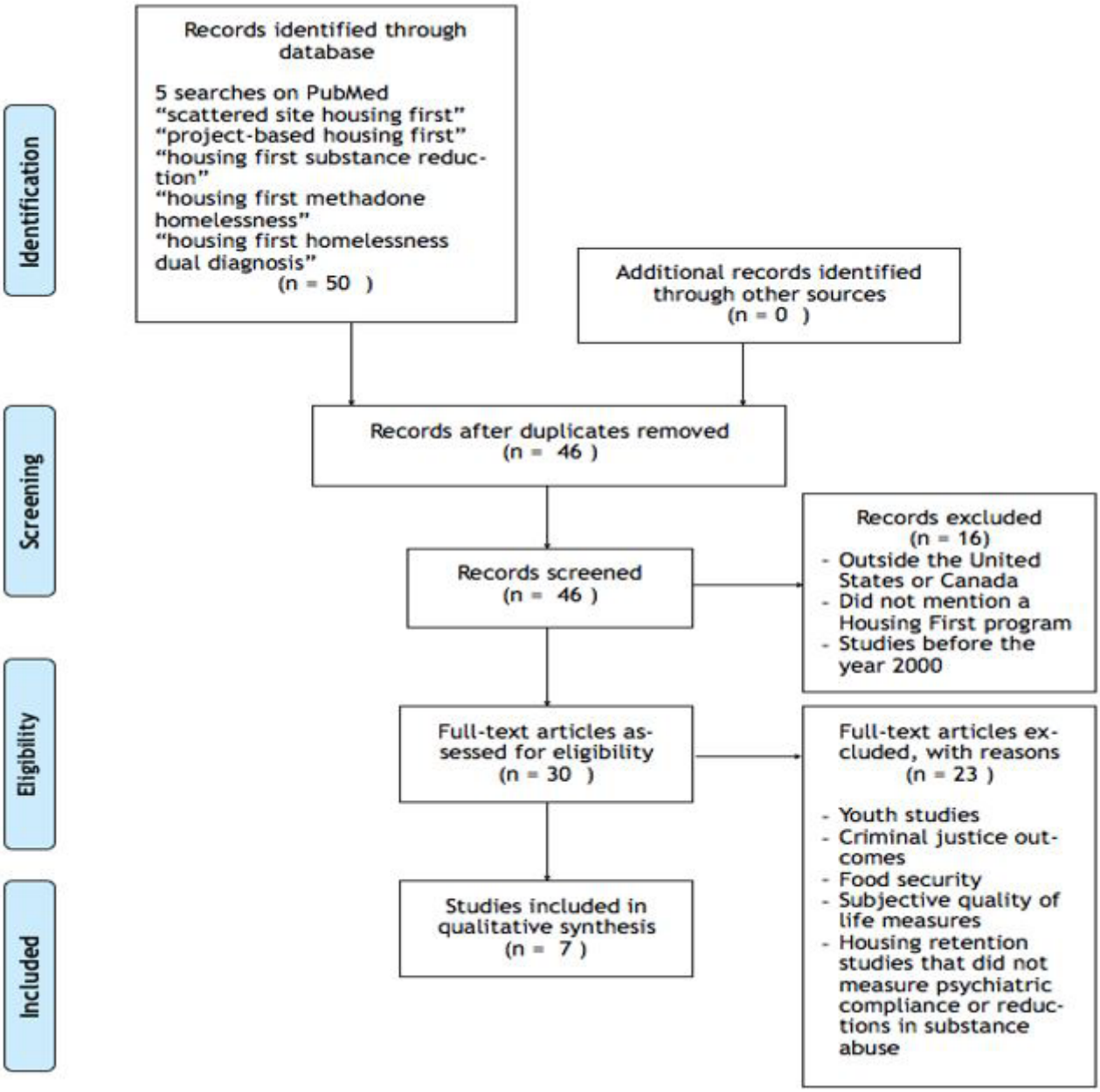

Figure 1: PRISMA flow diagram of search strategy for this review

The High Needs study arm was split into three groups with the 297 participants randomized to each treatment arm: a single congregate building with housing and on-site support services (CONG), assertive community treatment consisting of scattered-site subsidized housing for those with complex needs (ACT), and treatment-as-usual (TAU). Due to the ACT housing being limited to 90 rental units, the groups were randomly sorted into 107 in CONG, 90 in ACT, and 100 in TAU [5].

The 200 Moderate Needs participants were randomly assigned to two groups. 100 were assigned to intensive case management in various scattered-site subsidized housing for those with less complex needs (ICM), and 100 were assigned TAU. This resulted in 5 comparable treatment arms composed of the High Needs and Moderate Needs clients, with three arms consisting of various Housing First programs (CONG, ACT and ICM), and the other two arms as TAU. (Somers et al. 2015)

The goal of the experiment was to determine the prevalence of average daily substance use per treatment arm at baseline, at 12 months, and 24 months, as a percentage of the group who self-reported DSU using the Maudsley Addiction Profile. A treatment success was defined as a "point prevalence of less than daily substance use" after 24 months. The initial interview paid participants $35, and all 6 month follow-ups paid $30. Interviews lasted 90-180 minutes each, and were performed at any preferred location selected by the client. (Somers et al. 2015)

The prevalences were compared with intention-to-treat analysis as an odds ratio with a 95% confidence interval comparing the HN Housing First (CONG and ACT) clients to the HN TAU arm, and comparing the MN Housing First (ICM) clients to the MN TAU arm. Odds ratios were adjusted based on potential confounders such as race, gender, ethnicity, substance dependence, alcohol dependence, and lifetime duration of homelessness. (Somers et al. 2015)

For the duration of the 24 month study, a total of 103 participants dropped out due to death (n=31), failure to complete, declined responses, and/or withdrawal of consent, with the TAU groups reporting nearly double the loss of follow-up than the HF groups. (Somers et al. 2015)

At 12 months, using an intention-to-treat analysis, compared to the High Needs TAU arm, CONG participants had an adjusted odds ratio (AOR) for less-than-daily substance use of 1.01 (95% CI = 0.54-1.92), and ACT participants had an AOR of 0.82 (95% CI = 0.43-1.58). The ICM arm had an adjusted odds ratio of 0.74 (95% CI = .37-1.48) when compared against the MN TAU arm. (Somers et al. 2015)

At 24 months, compared to the High Needs TAU arm, CONG participants had an adjusted odds ratio for less-than-daily substance use of .73 (95% CI = 0.39-1.37), and ACT participants had an AOR of 0.78 (95% CI = 0.61- 2.45). The ICM arm had an adjusted odds ratio of 0.78 (95% CI = 0.37–1.63) when compared against the MN TAU arm. (Somers et al. 2015)

The authors concluded that after 12 and 24 months, there were no statistically significant differences in the daily substance use of any of the treatment arms, controlling for either High Needs or Moderate Needs participants. They also stated that while their study showed no difference in DSU in Housing First recipients compared to patients in the TAU arms, that other studies have found other non-substance-related outcomes that favor Housing First as a treatment option for the chronically homeless. (Somers et al. 2015)

Rezansoff, S. N., Moniruzzaman, A., Fazel, S., Mccandless, L., Procyshyn, R., & Somers, J. M., 2016. "Housing First Improves Adherence to Antipsychotic Medication Among Formerly Homeless Adults with Schizophrenia: Results of a Randomized Controlled Trial:" This study took place inside the Vancouver at Home experiment, using 165 of the previously labeled High Needs (HN) participants. The purpose of this study was to determine if Housing First clients suffering from schizophrenia were more likely to adhere to their antipsychotic medications than those assigned to TAU. Those in the HN arm of the Vancouver at Home parent study were selected based on a past diagnosis of schizophrenia from a physician under ICD-9 criteria within the last 10 years. The arms were renamed in this study to SHF (Scattered site Housing First, previously called the ACT group), CHF (congregate/project-based Housing First, previously called CONG) and TAU (treatment as usual). After setting inclusion criteria for schizophrenia, the HN group of 297 was reduced to 165 eligible participants, with 51 in SHF, 57 in CHF and 57 in TAU. These participants were followed for 2.6 years. (Rezensoff et al. 2016)

Treatment success was defined as a medication possession ratio (MPR) of 0.80 or greater. In the determination of MPR, the numerator was the number of days of medication supplied

within one refill interval, and the denominator was the number of days in which the prescription was refilled. With an alpha of 0.05, it was estimated that 45 participants per arm would yield an 80% power. (Rezensoff et al. 2016)

By the end of the study, 11 participants had been lost to follow-up, leaving 45 in SHF, 55 in CHF, and 54 in TAU. Using a one-way ANOVA, only the Scattered-Site Housing First arm (SHF) showed a statistically significant increase in adherence to medication, with an average MPR of .79, with a 95% confidence interval between .73 and .85 (P < .001). The differences between the average MPR of CHF (.58 with a 95% CI between .48 and .67) versus TAU (.54 with a 95% CI between .44 and .64) were not statistically significant (P = .643). (Rezensoff et al. 2016)

The authors conclude that scattered-site Housing First/ assertive community treatment (SHF/ACT) is indicated in the treatment of homeless patients with schizophrenia. (Rezensoff et al. 2016)

Kirst, M., Zerger, S., Misir, V., Hwang, S., & Stergiopoulos, V., 2014. "The impact of a Housing First randomized controlled trial on substance use problems among homeless individuals with mental illness:" This randomized controlled trial in Toronto, Canada was a part of the larger At Home Housing First study. The purpose of this experiment was to determine if scattered-site Housing First could improve substance use outcomes among mentally ill homeless individuals, compared to treatment as usual (TAU). (Kirst et al. 2014)

In this experiment, 97 participants with High Needs (using the same criteria as the Vancouver At Home study) were randomly assigned to Housing First with Assertive Community Treatment (ACT) and 204 with Moderate Needs were randomized to Housing First with Intensive Case Management (ICM), for a total of 301 in the Housing First arm. 274 participants were randomized to TAU. Illicit substance use and alcohol consumption were monitored over a period of two years. Follow-up interviews were performed with the 575 participants every three months. (Kirst et al. 2014)

Outcome variables were measured by two scales, the Global Assessment of Individual Need – Substance Dependence Scale Short Screener (GAIN-SS) and the Addiction Severity Index (ASI). Each answer would be given a score ranging on an ordinal scale. The GAIN-SS answers were used to determine social outcomes from substance use, such as fights caused by substance use, problems at work, and withdrawal symptoms. The ASI answers determined the frequency of substance use and amount of money spent on substances in the past month. (Kirst et al. 2014)

At baseline, 50% of participants used alcohol, 44% used at least one illicit substance, and 31% reported using more than one substance per day in the past 30 days. The authors noted a statistically significant difference in types of illicit drugs being abused between the two treatment arms, with double the amount of opiate users in the TAU arm (6% vs 12%, P = .016), and more than double the amount of cocaine users in the TAU arm (4% vs 9%, P = .011). (Kirst et al. 2014)

Using adjusted multivariate models for the substance use outcomes, GAIN-SS scores were lower in all treatment arms after 24 months (Incident Rate Ratio = 0.80; CI: 0.66, 0.97; P<0.05). Most notably, however, was that the Housing First arm had lower GAIN-SS scores (experienced fewer substance use problems) than the TAU arm at 12 months (IRR=0.74; CI: 0.58, 0.94; P<0.05), however the difference between intervention and control groups at 24 months was not statistically significant (P value not given). The Housing First participants also experienced fewer days of alcohol-related problems at 6 months (IRR=0.57; CI: 0.33, 0.99; P<0.05), 12 months (IRR=0.54; CI: 0.30, 0.98; P<0.05), and 24 months (IRR=0.46; CI: 0.23, 0.91; P<0.05) compared to the TAU participants. After 24 months, Housing First clients spent significantly less money on alcohol per month than those in the TAU arm (-73.36; CI: -136.58, -10.14; P<0.05). However, there was no statistically significant difference between the amount of money spent on illicit drugs between the two study arms (P value not reported). (Kirst et al. 2014)

The authors conclude that scattered-site Housing First leads to significant reductions in alcohol use in chronically homeless individuals. However, no differences in illicit substance use occurred between the Housing First and the TAU arm. The authors suggest that Housing First should be modified in order to better serve users of illicit substances; however, the modification is unspecified. (Kirst et al. 2014)

Appel, P. W., Tsemberis, S., Joseph, H., Stefancic, A., & Lambert-Wacey, D., 2012. "Housing First for Severely Mentally Ill Homeless Methadone Patients:" This randomized controlled trial took place in New York City from 2003-2008. The purpose was to determine if Housing First would increase the rates of methadone compliance among homeless patients suffering from

an opiate abuse disorder and a co-occuring severe mental illness. It was hypothesized that Housing First Assertive Community Treatment (referred to as the Keeping Home program during this experiment) would have equal or higher retention in methadone maintenance treatment (MMT) programs. (Appel et al. 2012)

In 2003, funding from HUD was granted and 25 scattered-site rental housing units were acquired for the project. Homeless methadone patients were then recruited for the Housing First group either from the local jail or from the hospital. "Homeless" was defined as living in a shelter or other indoor facility, or living in public areas such as the streets, park or subway. These patients also had to have a concurrent mental illness, defined by an Axis I diagnosis of major depressive disorder, bipolar disorder, or schizophrenia. The diagnosis was either taken from past medical records, or during an intake interview with a psychiatrist, and had to have been persistent for the past four years prior to enrollment. By 2005, 31 homeless MMT patients were placed in the apartments, and enrollment into Keeping Home (KH) was completed by 2006. Of these 31 KH participants, 21 were previously homeless and living on the street, five were previously living in a shelter, and five had come from a jail or inpatient mental institute prior to enrollment. The researchers had access to the methadone dosage information for 28 of these patients, but only 20 of them were receiving a dose "consistent with best practices". The average age of this group was 45.9 years old. (Appel et al. 2012)

The comparison group was selected out of 40,500 medical records of homeless individuals. 247 of these patients met four criteria required for inclusion: Patients had to have answered "YES" on a questionnaire if they have ever been treated for mental illness or entered into MMT with a co-occurring psychiatric condition. Secondly, they had to have entered into MMT between 2005-2006. Third, eligible participants had to have entered into MMT as homeless individuals. Lastly, participants had to have a current criminal justice status, such as probation, parole, or a recent arrest. 30 of the 247 eligible patients were randomly selected for the comparison group. Of these individuals, 21 came from homeless shelters, and the average age among the comparison group was 39.7 years old. The authors noted that given the difference in recruitment locations between the two groups, with the Keeping Home (Housing First) group being mostly from the streets, and having an older average age, that it was assumed the KH individuals likely had more severe mental illness. Both groups were assessed in March 2007, and again in June 2008. The MMT treatment center unexpectedly closed in December of 2008, causing the experiment to end prematurely. (Appel et al. 2012)

By the end of the experiment, seven Keeping Home patients had incomplete or missing data, which had to be inferred. The authors assumed that if a patient was transferred, whether to a jail or mental facility, that the patient had stopped undergoing MMT, as neither locations in New York provided methadone treatment. (Appel et al. 2012)

In March 2007, 64.5% of the KH patients (20 out of 31) were still enrolled in the methadone treatment, while the retention rate for the comparison group was only 33.3% (10 out of 30). Of the 31 KH patients, 25 of them managed to keep their housing status. (Appel et al. 2012)

In June 2008, Keeping Home had a 51.6% retention rate (16 out of 31) in the methadone treatment program, while the comparison group only had 20% (6 out of 30) of the original participants still enrolled in treatment. Using a test of independent proportions, Keeping Home (Housing First) had more than double the retention rate of the comparison group ($z = 2.57$, $P < .02$). (Appel et al. 2012)

The authors concluded that the Housing First arm of the study had more than double the retention rates in methadone programs compared to their homeless counterparts, and that assertive community treatment Housing First is "clearly indicated" for mentally ill homeless methadone patients. (Appel et al. 2012) Parpouchi, M., Moniruzzaman, A., Rezansoff, S. N., Russolillo, A., & Somers, J. M., 2018. "The effect of Housing First on adherence to methadone maintenance treatment." This randomized controlled trial was also conducted within the Vancouver At Home study, and sought to build off the success of the 2012 Appel et al. study in New York. The purpose of this experiment, similar to Appel et al.'s, was to determine if Housing First would increase rates of methadone compliance among homeless people with opiate abuse disorder. (Parpouchi et al. 2018)

In the original Vancouver at Home study, there were a total of 497 participants divided into High Needs and Moderate Needs. Each Needs group was randomized to either of 3 Housing First options, with congregate housing and assertive community treatment (CONG and ACT) for High Needs participants,

and intensive case management (ICM) for Moderate Needs participants. Those not assigned to Housing First were assigned to treatment-as-usual (TAU). This resulted in a total of 3 arms of Housing First clients, and 2 arms of TAU (one each for HN and MN clients). The authors of this study selected for methadone treatment among all 497 participants, which resulted in 97 being selected for the study, with 53 in the Housing First groups and 44 in the TAU groups. The type of Housing First or level of Needs among these participants was not labeled in this study. Of the 97 participants selected, only 78 had initiated methadone therapy prior to randomization. All medication possession ratio (MPR) calculations were performed on these 78 patients. (Parpouchi et al. 2018)

This experiment differed from the Appel et al. 2012 study in multiple ways. First, the mean daily dose of methadone for all patients was within the range of best therapeutic practices. Secondly, instead of using enrollment in the clinic and attendance at appointments as a measurement of retention success, the authors measured the Medication Possession Ratio of methadone, with the number of pills issued (or taken while witnessed) per refill period as the numerator, and the number of days between medication refills as the denominator. These participants were followed for 24 months, and access to methadone was completely free to everybody within the study. (Parpouchi et al. 2018)

After 24 months, using a Student T test, there was no statistically significant difference in the MPR of methadone among Housing First (0.52) versus TAU (0.57) participants (P = .559). Confidence intervals were not given. The authors concluded that Housing First alone does not increase methadone treatment adherence, and the program would have to be expanded in order to address this particular subset of homeless individuals. (Parpouchi et al. 2018)

Collins, S. E., Malone, D. K., Clifasefi, S. L., Ginzler, J. A., Garner, M. D., Burlingham, B., . . . Larimer, M. E., 2012. "Project-Based Housing First for Chronically Homeless Individuals with Alcohol Problems: Within-Subjects Analyses of 2-Year Alcohol Trajectories:" This longitudinal study set out to challenge the "enabling hypothesis" presented by critics of the Housing First program. The "enabling hypothesis" claims that homeless individuals with addictions and mental health problems who are given unconditional Housing First will not have any incentive to abstain from substance abuse or seek treatment. The authors created this experiment to observe the effects of the intervention of a congregate project-based Housing First (referred to as CONG in other studies) over a two year period on the use of alcohol among previously homeless individuals with a history of alcohol abuse. (Collins et al. 2012)

This experiment took place in Seattle, Washington. Chronically homeless participants with a history of alcohol abuse were selected by two avenues. The first method of selection relied on a rank-ordered list of homeless individuals who incurred the highest public expenses due to alcohol-related incidents, such as emergency room visits and the county jail in 2004. The second source of participants was a list of individuals suggested by local homeless outreach providers. Eligible individuals were paid $5 for an interview regardless of whether or not they agreed to participate in the study. (Collins et al. 2012)

95 ethnically diverse individuals were selected and given free housing in a congregate project house with onsite social resources that participants could choose to utilize. At no point were participants required to use any of those resources, or to undergo any sort of treatment, therapy or abstinence from alcohol. Participants were then followed for 24 months with interviews at 3, 6, 9, 12, 18, and 24 months. Each follow-up interview paid $20. (Collins et al. 2012)

Each interview was designed to assess level of alcohol consumption within the last 30 days, including the frequency of drinking, the amount consumed daily, peak quantity consumed in one day, days of sobriety, and severity of intoxication. Questionnaires included items from the Alcohol Use Quantity Form, Addiction Severity Index (ASI), and the 15-item Short Inventory of Problems (SIP-2R). The SIP-2R most notably measured the frequency of delirium tremens (DTs) in participants experiencing alcohol withdrawal. Scores were assigned to the participant's answers on ordinal scales, with a different numerical scale assigned to each particular questionnaire item. A successful outcome in this experiment meant lower scores on the alcohol indices over time spent in Housing First, which would disprove the "enabling hypothesis". Multilevel growth models were used to analyze each individual participant's alcohol use trajectory. (Collins et al. 2012)

Participant response rates started at 100% at baseline, then remained between 79-82% throughout the study, with a steep drop off to 61% at the 24 month final interview. After adjusting for illness burden and mortality, using a logistic growth

model, the only result that was not statistically significant was the odds of a participant reporting alcohol abstention for one day in the past month (p=.26). Every other result indicated statistically significant lower scores on the various alcohol indices as an effect of time spent in Housing First. Using a Poisson growth model, for every three months in Housing First, participants decreased daily alcohol use by 7% (P<.001), decreased peak alcohol use by 8% (P<.001), and a 30% decrease in the odds of experiencing delirium tremens (P<.001). The Poisson model, after adjusting for illness burden and mortality, showed a 4% decrease in alcohol dependence symptoms for every 3 months of exposure to Housing First. At the end of the study, the mean peak drinks per day of all participants decreased from 40 at baseline, to 26 after 24 months of intervention exposure (P<.033). Likewise, a linear growth model showed that scores from the SIP-2R questionnaire decreased by a mean of 10 points (P=.007). The authors concluded that a decrease in alcohol usage and decrease in alcohol dependence symptoms among participants contradicted the "enabling hypothesis" of Housing First opponents. (Collins et al. 2012)

Padgett, D. K., Stanhope, V., Henwood, B. F., & Stefancic, A., 2010. "Substance Use Outcomes Among Homeless Clients with Serious Mental Illness: Comparing Housing First with Treatment First Programs:" The purpose of this prospective cohort study was to measure the housing retention rates, substance use, and treatment utilization rates between clients in a Housing First program compared to those in a Treatment First program. This experiment took place in New York City, comparing enrollees in Pathways to Housing to those in three various Treatment First alternatives. (Padget et al. 2010)

Eligible participants must have had a DSM Axis-I diagnosis of schizophrenia, bipolar disorder, major depression or schizoaffective disorder with a comorbid history of substance abuse. 27 Pathways (Housing First) and 48 Treatment First participants were selected for the study, and tracked for a period of 12 months, with an interview at baseline, 6 months, and 12 months. Each interview paid $30, and each participant was also paid $10 monthly. The interviewers consisted of four graduate students with relevant clinical experience, and their interview script consisted of a psychosocial intake form, and Yes/No questions regarding substance use habits, and treatment utilization such as admission into a detox/rehab facility. Chi squared tests were conducted for bivariate analyses and multivariate logistic regression analysis were used for dichotomous (Yes/No) variables. (Padget et al. 2010)

At baseline, 70% of Housing First clients had a history of detox therapy prior to the study, compared to 81% in the Treatment First group, however the difference was not statistically significant (P value not reported). 30% of HF clients reported using substances during the study compared to 65% of TF clients (P = .004). Only 7% (2 of the 27) HF clients were admitted into a detox program compared to 46% of the TF clients (P = .001). Most notably however, was that only three HF participants (11%) prematurely left the program, compared to 54% of TF clients (P = .000). The three HF clients who left the Pathways program all reported moving in with family members, with none having experienced relapse. The 2 HF clients who did relapse and were admitted into detox stayed in HF for the completion of the study. Compared to the TF clients, of the 26 who exited the program, 14 of them had experienced a relapse into addiction. Treatment First clients had an odds ratio of being 3.4 times more likely to abuse substances during the 12 month duration of the study, with a 95% confidence interval of 1.12 - 10.35 (P = 0.03). Treatment First clients had an odds ratio of being 10.01 times more likely to be admitted to a detox or rehab program with a 95% confidence interval of 1.91 - 52.4 (P = 0.009). (Padget et al. 2010)

Housing First, which did not force its clients to undergo substance abuse treatment or maintain abstinence as a condition for receiving housing, had a much higher rate of housing stability after 12 months than Treatment First, and likely as a result of that residential stability, the participants in the Housing First arm had significantly less substance abuse. Although the Housing First clients utilized treatment much less often, as they were not coerced into attending rehab, they were also much less likely to abuse substances and had a much lower rate of relapse. The authors concluded that the "harm reduction tolerance rather than abstinence enforcement" of Housing First better facilitated clients in their mental health recovery. (Padget et al. 2010)

Discussion

Somers et al.'s landmark Vancouver at Home (2015) study found no significant differences in outcomes of participants in the Housing First (HF) arm versus the treatment-as-usual (TAU) arm of the trial. But there may be other benefits to HF clients that this study cannot account for, such as less criminal justice involvement or time spent in emergency rooms, or the potential cost savings of such programs. The study also identifies attributes specific to either the High Needs (HN) or the Moderate Needs (MN) clients, showing that there are various correlations

to the severity of homelessness that a client may have. For example, almost three-quarters of the HN group suffered from a psychotic disorder, while only one-quarter of the MN clients experienced a psychotic disorder. Likewise, half of the MN group suffered from depressive disorders, whereas only one-third of the HN group suffered from depressive disorders. This finding alone of the specific mental illnesses that correlate to the severity of one's homelessness is a massive step towards solving the housing crisis. (Somers et al. 2015)

The authors of this study also admit that their study cannot explain the different mechanisms of daily substance use (DSU) among clients. Because admittance into the HF program is not dependent on abstinence from illicit substances, self-reported DSU is likely to be reliable [5].

There were key limitations to this study, however. The Vancouver At Home study only compared the average prevalence of DSU among the study arms, with no individual data. Therefore, the way the data is recorded, we cannot know which patients crossed over into the less-than-daily substance use group while in the program, or how many patients who previously did not use substances ended up addicted. It is possible that a patient started the program using substances less-than-daily, but due to being housed among other addicts, particularly concerning the CONG clients, they could have obtained more access to drugs. Also, the type of substance of addiction is not recorded in this study. Alcohol, however, specifically is referenced; but we do not know how many alcoholics were in each arm. In each treatment arm, 6-8 clients died before completion of the study, and the cause of death is not labeled. The deaths could have been drug-induced, or due to other medical conditions, but the lack of data is concerning. Lastly, the authors state that Housing First was originally developed to promote recovery among the homeless. Despite that, they admit that HF did not reduce drug use in this study, and concluded that HF would work to reduce drug use if modified, without offering which modifications, to become a drug-use-reduction program. In essence, they commit the "no true Scotsman" fallacy [5].

Rezensoff et al.'s 2016 study was nested inside the Vancouver at Home study with very specific selection criteria and a large sample size. The results for scattered-site Housing First (SHF) were statistically significant by a wide margin. The authors also provide a reasonable explanation for why CHF/CONG may have failed to produce an improvement in MPR, that those participants were living among others that were mentally ill and previously homeless, and thus more likely to continue exhibiting the social norms associated with their previous environments. In contrast, the authors believe that SHF clients, who live in scattered-site housing units within the general community, where no more than 20% of the rental units are subsidized for homeless individuals, would have faced some sort of social consequences by continuing maladaptive behavior. The authors also rightly state that access to medication is not the only factor involved in increasing antipsychotic adherence, as the CONG/CHF clients lived in a building with a free onsite pharmacy, yet still had rates of compliance nearly equivalent to those who remained homeless [1].

However, this study does not account for poly-pharmacy versus mono-therapy. This means that some patients may have been prescribed multiple medications whereas others only had one antipsychotic prescribed. Since the arms of the experiment did not control for the number of drugs a patient was prescribed, only the number of pills in a prescription versus the number of days between refills, it is possible that one experimental arm may have had more poly pharmacy clients than others, or more mono pharmacy clients than others. Given that the SHF/ACT arm had the least number of participants, and the borderline amount of participants required for the study to not be underpowered, the results could be largely skewed due to a possibility of more mono-pharmacy patients within the smaller SHF group. To address this, a repeat experiment could separate the clients into 6 arms, with the SHF, CHF and TAU arms each having a mono-therapy and a poly-pharmacy arm. Given that 45 participants are needed per group for a satisfactory study power of 80%, and that the landmark Vancouver At Home Project was one of the largest experiments of its kind, it would be rather difficult to redo this experiment with six arms of 45 participants all meeting the criteria for homelessness and schizophrenia, and to assemble the required resources to redo the study over another 2.6 years. [1]
Kirst et al. (2014) tracked both alcohol and illicit substance use among the intervention and the TAU arms. They used multiple score measures to track substance use including social consequences, withdrawal symptoms, as well as frequency and cost of substance habits. This study had a large sample size of female participants (32%) and as such, is much more inclusive than most other studies [6].

The authors pointed out that a key limitation of this study is the fact that the amount of money spent on substances may not necessarily reflect actual substance use, since individuals could barter, trade for, or share substances, which would not accurately reflect the amount of drugs consumed [6].

In the Kirst et al. study, there were also double the number of opiate and cocaine users in the TAU arm compared to the HF arm. A future study would need to control for the number of illicit drug users per arm in order to get more reliable results. With only 6% of the participants in the HF arm using opiates and 4% using cocaine, versus the 12% of opiate users and 9% of cocaine users in the TAU arms, an opportunity for equal randomization into either arms was missed. It is also possible that having such a small sample size for cocaine users in the HF arm could have led to an underpowered treatment arm [6].

Appel et al.'s 2012 study showed methadone treatment compliance to be significantly higher among Housing First participants (referred to in their study as Keeping Home/KH) versus in the comparison group. Both groups were well-matched and selected with very specific criteria. However, the experiment prematurely ended when the methadone treatment center closed down. Thus, it is possible that the Housing First group and the comparison group could have both reached extremely low retention rates after more than 2 years, to the point that there might not be a statistically significant difference between them anymore. However, the drastic difference between retention rates in the first two years indicates that Housing First at least increases methadone compliance rates in the short term. Also, three Housing First patients died during the experiment while none in the comparison group died. The authors believe that it is possible that the most medically vulnerable were triaged into the Housing First group, thus leading to a selection bias making them more likely to prematurely die, but it is still concerning that the cause of death was not listed [3].

The authors also state that while the HF group had better retention rates, due to the nature of ACT, it may be possible that housing was only one factor that increased compliance, and the effects of the presence of social workers and community resources through ACT cannot be differentiated from the housing [3].

Another limitation of this study was that polysubstance abuse was not recorded in this experiment. MMT patients may have had other addictions that were not controlled for, such as addictions to alcohol or cocaine, which could have drastically affected their retention rates. Data on individuals' various substance usage in the experiment could have prevented this oversight, and allowed for a clearer picture among which clients were able to remain in methadone treatment over the course of two years [3].

Parpouchi et al. 2018, also nested within the landmark Vancouver at Home Study, attempted to build off of the success of the Appel et al. 2012 study, using a more effective means of outcome tracking and a much larger sample size. MPR can be a more effective means of monitoring methadone compliance because there is only one drug to track in the calculation of the score. Previous MPR studies among the homeless, such as Rezensoff et al's 2016 study, did not account for mono-therapy versus poly-pharmacy, whereas this study only tracked methadone dispensation, making the results harder to question [7].

The Parpouchi et al. 2018 study included scattered-site (ACT and ICM) as well as congregate/project-based (CONG) Housing First, unlike the Appel et al. 2012 study, which only focused on ACT Housing First. However, in Parpouchi et al. 2018, all three Housing First programs simply fell under the single heading of "Housing First" and were not differentiated in the results. It is quite possible that the ACT clients had a higher compliance with their medication, but the results may have been skewed by the CONG and ICM groups being counted in. This was a massive oversight, particularly since Appel et al 2012 specifically concluded the success of ACT Housing First with methadone patients. The HF treatment arms should have remained separate, since there were 3 different types of Housing First groups in the parent Vancouver At Home study [7].

The limitations listed by the authors are also less-than-satisfactory, as they did not make mention to the largest problem addressed earlier, that the type of Housing First program was not distinguished between the three HF arms. The authors listed that pharmacy errors could have affected average MPR, and the possibility of a recall or social desirability bias, however these do not pose a huge threat to the study, especially given that Housing First's zero-strings-attached approach removes incentives for dishonesty among self-reporters. The authors also complained of a limited sample size and study length, despite this being one of the largest studies of its kind, and the participants were monitored over two years [7].

Lastly, the authors addressed that the findings of this study may not hold true in areas without "universal health insurance," however, this does not explain why the Appel study in the United States—which lacks universal health insurance—yielded better results than this study in Canada. While it is not listed whether Appel's participants were given free access to methadone, since it took place in the United States, homeless participants either would not have had a health insurance plan, or would have been enrolled in Medicaid, which in many states will not pay for methadone. Removing the cost of drugs to the patient is important to control for when studying an underserved and vulnerable population such as the homeless; however, it appears that compliance to free medication is multifactorial, even with prices removed and with pharmacy locations guaranteed within short walking distance of the subsidized housing. Had the authors controlled for congregate versus scattered-site housing within the Vancouver at Home experiment, as the Rezensoff et al. 2016 study did, they may have observed that the patients who lived in a congregate-style building with an onsite pharmacy still had among the lowest rates of compliance, which is unexplained by universal health insurance or ease of access to methadone. [7] Collins et al.'s 2012 study tracked alcohol use over time among Housing First residents. Multiple alcohol questionnaires were given with different focuses using varying scales during each interview, which limits the possibility of a biased single questionnaire skewing results. The authors adjusted for illness burden, which might limit a participant's ability to consume alcohol, and for mortality, so the results are not skewed by premature death or pre-existing illness [2].

A key limitation of this study was a high loss-to-follow up rate. 39% of participant responses were not obtained at the end of the study. The reason for missing data is unexplained, but could have been due to any reasons such as death, imprisonment, eviction, or voluntarily leaving the Housing First program. Explanations for leaving the program would have given a larger overall picture on the effectiveness of project-based Housing First, such as if any alcohol-related incidents caused a participant to be evicted or escorted off the premises by police. Complete sobriety and abstention from alcohol also was not analyzed. It is also unclear how many participants completely beat their alcohol addiction, or if they remained dependent on alcohol, just using a lesser amount over time. With a mean peak drinks per day at 26 after two years of Housing First exposure (down from 40 per day), this possibility is concerning. Individual data was not provided, which means that the data could be largely positively skewed by a few with large peak consumption habits; however, this cannot be inferred due to a lack of data. The authors rightly concluded that exposure to Housing First reduced the number of drinks consumed by previously-homeless alcohol abusers, and the decreases were statistically significant. However, their findings suggest that even after 24 months of exposure, participants were still abusing alcohol, calling into question the clinical significance of this study. The "enabling hypothesis" is not necessarily disproven since extreme and unsafe amounts of alcohol were still consumed on a regular basis. A decrease in the mean does not distinguish whether individuals reached sobriety while others continued to abuse alcohol or if all participants simply lessened the amount of alcohol they drank but continued to use it to an unsafe degree [2].

This study can only imply correlation, and cannot prove causation due to a lack of a control group that was not exposed to a Housing First intervention. Likewise, the study can only speak to the results of a congregate project-based Housing First program that takes place within a single building with multiple apartment units and a communal area. Scattered-site Housing First, and Housing First with intensive case management were not studied. The correlation between time spent in a project-based Housing First program and a reduction in alcohol use is still quite positive, as any reduction in alcohol use is pleasant news in a vulnerable patient group with low rates of medical compliance [2].

Padgett et al.'s 2010 study showed participants in the Treatment First group to be significantly more likely to abuse substances during the 12-month duration of the study compared to participants in the Housing First group. The authors note that clients may have been likely to underreport their substance habits because their housing is completely conditional on their ability to abstain, leading to an information bias that could compromise study results. Conversely, this means that Housing First clients may have been more likely to report substance use because their answers would not affect the status of their housing. If TF clients' substance abuse was underreported, then the differences between HF and TF would be vastly increased, increasing the odds ratio of Housing First's protective effect against substance abuse. This study also highlights that coerced attendance in sobriety meetings and the abstinence requirement of transitional housing do not correlate to recovery from addiction, rather may even punish those who try anything less than quitting cold turkey. This likely explains the high dropout rate in the Treatment First arm compared to the 89% retention in the Housing First arm [4].

While the particular diagnosis of mental disorder, gender, age, and race was relatively well controlled for in each intervention arm, the type of substances being abused were not controlled in Padgett et al.'s study. It is possible that more hard substance abusers were present in the TF arm while more alcohol abusers were present in the HF arm; however this cannot be known because the authors referred to any and all drug/alcohol usage as "substance abuse". This could greatly skew the data as alcohol usage has been known to decrease among HF clients, however the effects of HF on illicit substance use such as opiates, cocaine, and amphetamines has not been made clear [4-6].

The Treatment First arm had nearly double the amount of participants as the Housing First arm, with the HF arm only containing 27 participants. It is possible that with just 27 participants ranging over 4 different mental illness diagnoses (with only 3 HF clients having Major Depression), that the sample size is too small to reach any particular conclusions regarding Housing First. Many of the calculated odds ratios in this study were not statistically significant which may have been solved with a larger sample size in the Housing First arm [4]

While it is possible that clients could have underreported substance abuse due to social desirability bias, or simply the perceived risk to the status of their housing (particularly in the TF arm), the authors' usage of a history of prior admission into detox treatment was a clever way to show more truthful rates of substance abuse among the participants. However despite this, the percent of clients "using substances at study baseline" in both arms was shockingly low, with just 7% (2 of 27) in the HF arm and 17% (8 of 48) in the TF arm. Likewise, if these numbers are accurate, it is concerning that only 7% of HF clients were "using substances at study baseline," but then increased to 30% of HF clients (8 of 27) showing "substance use during study", with even larger increases in the TF arms, from 17% at baseline to 65% during the length of the study. Perhaps the original interview during eligibility screening should have only filtered for individuals with an active substance addiction at intake rather than just having a past medical history significant for substance abuse [4].

In summary, among the seven articles reviewed, multiple conclusions were made about the effectiveness of Housing First. Three papers, Collins et al. 2012, Kirst et al. 2014, and Padgett et al. 2010, concluded that Housing First, in either scattered-site or congregate/project-based implementation, significantly reduced alcohol use within a two-year period among the previously-homeless. However the clinical significance of that reduction is unclear and Padgett et al.'s sample size is arguably too small to be considered generalizable and the study did not control for illicit drug users. Two papers, Appel et al. 2012 and Rezensoff et al. 2016, conclude that scattered-site Housing First significantly increases compliance to psychiatric medication such as antipsychotics and methadone, though the Rezensoff et al. study did not control for polypharmacy. Two papers, Kirst et al. 2014 and Somers et al. 2015, concluded that there were no reductions in drug use between HF and TAU participants, however Somers et al. did not control for the type of substance being abused and only asked about the prevalence of daily substance use, which leaves much information to be desired. Lastly, the Parpouchi et al. 2018 paper appeared to be a missed opportunity. The authors contradicted Appel et al.'s conclusion stating that Housing First did not increase methadone compliance among the Toronto At Home study population, however the more recent and much larger Parpouchi et al. study did not control for the type of Housing First, which calls its results into question. Scattered-site Housing First likely could have yielded better results, but such results were skewed by the inclusion of congregate Housing First or HF with intensive case management.

Congregate/project-based Housing First showed less treatment success than the scattered-site housing, possibly due to its resemblance to mental institutions that have been rendered largely obsolete today. Congregate housing provides every resource a participant could need, such as an onsite pharmacy at no cost to the patient and the ability to opt out of utilizing those resources, however it does not reintegrate previously-homeless individuals into the surrounding community, nor does it provide incentives for the patient to behave in more socially acceptable ways. Likewise, housing individuals with addictions together, with no punishment for continuing to use illicit substances, could result in peer pressure that would not have resulted had the patients been housed separately in their own private apartments. Often a congregate/project house simply redirects all the police calls to the one building, whereas in a scattered-site format, clients have more incentive to follow laws and social norms, considering scattered-site housing is usually restricted to no more than 20% HF program occupants [1]. Those who continue disruptive behaviors may face eviction or other negative social consequences from neighbors. The use of a congregate Housing First program also comes with a stigma. Employers may recognize the address on a patient's job application and thus refuse to hire someone who either was homeless or mentally ill [8].

Scattered-site Housing First had remarkable success for homeless individuals with medication needs such as antipsychotics and methadone. This could be attributed to the nature of the scattered-site format, in that every eligible rental unit must be within walking distance of a pharmacy, and that unlike the congregate format, each participant is independently housed and free of the influence of others who may also have mental illness or a substance problem. It is reasonable to speculate that those individuals with active prescriptions who are housed near a pharmacy are more likely to refill and be compliant with their medication than homeless individuals who have more important hierarchical needs to be met and nowhere safe to store their resources. However, housing someone with medication needs is different from housing someone who chooses not to comply with treatment. This was highlighted in every study, as illicit drug abusers did not reduce their drug use once given housing. In order for a program to qualify as Housing First, participants cannot be forced to take their medication or abstain from drugs in exchange for free housing, which results in a moral dilemma: what is to be done for those who refuse to take medication or continue to use illicit drugs?

Housing First was originally created to end homelessness, which is self-evident, as providing a free unconditional apartment rental by definition takes a person off the streets, and is supported by the extremely high retention rates in HF programs [3-5]. This makes it rather difficult to modify the program's toleration of substance abuse, as any modification to the design is likely to violate the fidelity of the Housing First principle of non-coercive, no-strings-attached housing. Perhaps the model itself is flawed and thus homeless drug abusers could be better investigated in other treatment options, and in their case, time spent in a Housing First program may yield a large opportunity cost where they could have been enrolled in a more effective treatment plan elsewhere. Despite the lack of illicit substance abuse reduction, there are other benefits to being stably housed such as fewer emergency room visits or criminal justice entanglements that were not analyzed in this study, thus drug abusers should not be excluded from the HF program simply because their drug use is being enabled [5]. Researchers and clinicians should continue their efforts in this regard, and further assess the needs of this specific population.

The best utilitarian suggestion to amend the Housing First program, without changing the non-coercive model, would be to implement a much more detailed screening of eligible participants. This new screening method would triage those who would have the highest chance of benefiting from housing. This is important because resources for Housing First will always be limited and subject to change, as is the nature of such a controversial and expensive public policy. The first step is to make the distinction between an active drug user and a recovering addict, such as those on methadone maintenance therapy, as the person in recovery has made an active choice to participate in their treatment. The studies analyzed in this paper show that housing the person in recovery will greatly increase the likelihood that they stay sober and compliant after a two-year period, however housing an active drug user will not reduce their substance use, and more importantly, takes away a scarce rental unit that could have gone to someone who would have become more medically compliant from that housing. In this new triage system, highest priority should be given to homeless people with life-threatening conditions, and based on the current evidence, high priority should also be given to those suffering from alcohol abuse, schizophrenics with active prescriptions to antipsychotic medication, or to people with opioid-dependence with a current methadone prescription. While this could create a malingering incentive for a homeless applicant to embellish or hide a mental health or substance use disorder in order to gain free housing, the guiding principle of Housing First is to first eliminate homelessness, and thus would still be fulfilled if a homeless applicant made it into the program under false pretenses.

Lastly, enrollment in scattered-site housing should be limited to no more than two years, unless longer studies are conducted. The purpose of scattered-site/assertive community treatment Housing First is to reintegrate homeless people back into their communities and create a sense of independence, which cannot be achieved by a lifetime cycle of dependency on free subsidized housing for those who abuse drugs or refuse to take medication. Enrollment up to 24 months in free housing will also allow greater access to the scarce rental units for more individuals, thus increasing opportunities for more people to exit homelessness and pursue a non-coercive, patient-oriented path that may lead to better mental health and independence.

Evidence Table

Author	Objective	Participants	Methods	Conclusion
Collins et al. (2012)	This longitudinal study measured alcohol usage over two years among Congregate Housing First residents	95 ethnically diverse homeless individuals with known alcohol use disorders in Seattle, WA were selected to live in a Congregate Housing First building.	Participants were followed for 24 months with interviews at 3, 6, 9, 12, 18, and 24 months using questionnaires from the Alcohol Use Quantity Form, Addiction Severity Index (ASI), and the 15-item Short Inventory of Problems (SIP-2R).	The mean peak drinks per day of all participants decreased from 40 at baseline, to 26 after 24 months of intervention exposure. For every 3 months in Housing First, participants decreased daily alcohol use by 7%
Kirst et al. (2014)	This study used a randomized control design to examine if scattered-site Housing First could improve substance use outcomes among mentally ill homeless individuals, compared to treatment as usual.	575 individuals experiencing homelessness and mental illness, with or without a co-occurring substance use problem, in the parent Toronto At Home study	Substance use outcomes were compared between a Housing First intervention and treatment as usual group. Generalized linear models were used to compare study arms with respect to change in substance use outcomes over time (baseline, 6, 12, 18 and 24 month).	Housing First can contribute to reductions in alcohol problems over time. However, the lack of effect of the intervention on illicit drug use suggests that homeless individuals with mental illness and drug problems may need additional support.
Rezansoff et al. (2016)	This study, nested in Somers et al. 2015, investigated whether Housing First in congregate and scattered-site configurations resulted in superior adherence to antipsychotic medication compared to treatment as usual.	165 adult participants met criteria for homelessness, schizophrenia, and initiation of antipsychotic pharmacotherapy prior to recruitment. Randomization arms were: congregate Housing First (CHF) with on-site supports (including physician and pharmacy services); scattered-site Housing First (SHF) with Assertive Community Treatment; or treatment as usual (TAU) consisting of existing services.	The mean Medication Possession Ratio was calculated for each study arm. An MPR of .80 was considered a treatment success. Participants were followed for an average of 2.6 years.	Compared to TAU, antipsychotic adherence was significantly higher in Scattered-site Housing First, at near therapeutic levels. However, Congregate Housing First clients had no statistically significant increase in medication adherence.

Padgett et al. (2010)	The purpose of this prospective cohort study was to measure the housing retention rates, substance use, and treatment utilization rates between clients in a Housing First program compared to those in a Treatment First program	27 clients in Housing First and 48 clients across three Treatment First programs in New York City. All participants had a dual diagnosis of mental illness and substance abuse disorder.	Participants were interviewed at baseline, 6 months, and 12 months using a psychosocial intake form, and Yes/No questions regarding substance use habits, and treatment utilization such as admission into a detox/rehab facility.	HF had a much higher rate of housing stability after 12 months than Treatment First, and likely as a result of that residential stability, the participants in the Housing First arm had significantly less substance abuse. Treatment First's coerced attendance in detox did not correlate to addiction recovery.
Parpouchi et al. (2018)	This study, nested within the Somers et al. 2015 study, investigated whether Housing First resulted in superior adherence to methadone compared to treatment as usual.	53 participants in Housing First and 44 in TAU, who had initiated methadone therapy during the parent study.	The mean Medication Possession Ratio was calculated for each study arm. Participants were followed for 24 months.	After 24 months, there was no statistically significant difference in the MPR of methadone among Housing First versus TAU participants.
Somers et al (2015)	This landmark unblinded, 5-arm randomized controlled trial in Vancouver, Canada, compared daily substance use between homeless people assigned to HF or given treatment as usual.	297 homeless participants with mental illness labeled as "high needs" (HN) and 200 labeled as "moderate needs" (MN).	Daily substance use over 24 and 12 months was measured in each study arm using the Maudsley Addiction Profile. Also measured were demographics, homelessness history, psychiatric diagnoses, symptom severity, comorbid illnesses and duration of stable housing. Participants were followed for an average of 2.6 years.	Housing First did not reduce daily substance use compared with treatment as usual after 12 or 24 months.

Conclusion

To answer the original hypothesis, given the seven papers studied in this analysis, and controlling for mental illness and substance abuse, homeless clients assigned to Housing First had either the same or higher rates of psychiatric treatment compliance compared to those in Treatment First programs or to homeless patients given treatment-as-usual. In no cases did Housing First provide inferior mental health outcomes. The current evidence suggests that scattered-site Housing First programs increase adherence to antipsychotic medication and methadone, and all types of Housing First programs reduce average alcohol consumption. Housing First has no effect on illicit substance abuse.

References

1. Rezansoff SN, Moniruzzaman A, Fazel S, Mccandless L, Procyshyn R, & Somers JM (2016) Housing First Improves Adherence to Antipsychotic Medication Among Formerly Homeless Adults with Schizophrenia: Results of a Randomized Controlled Trial. Schizophrenia Bulletin.

2. Collins SE, Malone DK, Clifasefi SL, Ginzler JA, Garner MD, Burlingham B, Larimer ME (2012) Project-Based Housing First for Chronically Homeless Individuals with Alcohol Problems: Within-Subjects Analyses of 2-Year Alcohol Trajectories. American Journal of Public Health 102: 511-519.

3. Appel PW, Tsemberis S, Joseph H, Stefancic A & Lambert-Wacey D (2012) Housing First for Severely Mentally Ill Homeless Methadone Patients. Journal of Addictive Diseases 31: 270-277.

4. Padgett DK, Stanhope V, Henwood BF & Stefancic A (2010) Substance Use Outcomes Among Homeless Clients with Serious Mental Illness: Comparing Housing First with Treatment First Programs. Community Mental Health Journal 47: 227-232.

5. Somers, J M, Moniruzzaman, A and Palepu A (2015) Changes in daily substance use among people experiencing homelessness and mental illness: 24-month outcomes following randomization to Housing First or usual care. Addiction 110: 1605-1614.

6. Kirst M, Zerger S, Misir V, Hwang S & Stergiopoulos V (2014) The impact of a Housing First randomized controlled trial on substance use problems among homeless individuals with mental illness Drug and Alcohol Dependence 146: 24-29.

7. Parpouchi M, Moniruzzaman A, Rezansoff SN, Russolillo A & Somers JM (2018) The effect of Housing First on adherence to methadone maintenance treatment. International Journal of Drug Policy 56: 73-80.

8. Zerger S, Bacon S, Corneau S, Skosireva A, Mckenzie K, Gapka S, Stergiopoulos V (2014) Differential experiences of discrimination among ethnoracially diverse persons experiencing mental illness and homelessness. BMC Psychiatry 14.