

# Effectiveness of the Housing First model among substance users: a scoping review

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## Abstract

**Purpose** – *Housing First (HF) is an evidence-based practice effective in reducing homelessness among those who experience chronic homelessness. However, a strong synthesis evaluating the effectiveness of this intervention is lacking for people who use drugs. The purpose of this study is to explore international literature databases to identify the effectiveness of the HF programme among people who use drugs.*

**Design/methodology/approach** – *A modified framework from Arksey and O'Malley (2005) was used, namely: identifying the research question; developing inclusion and exclusion criteria; identifying relevant studies for study selection; charting the data; and collating, summarising and reporting the results.*

**Findings** – *Three main themes were identified: substance use related outcomes, housing-related outcomes and social outcomes. There is strong evidence that HF increases housing retention and reduces homelessness among chronically homeless people who use drugs. However, literature relating to substance use and social outcomes for this population report mixed and inconclusive findings.*

**Research limitations/implications** – *This scoping review concludes that additional research is required to conclusively determine whether HF is an effective intervention for homeless substance users. Future researchers must use formal assessments of substance use and ensure clear reporting of the HF intervention is accomplished. It is recommended for researchers and policymakers to consider the specific needs of the people who use drugs before implementation of HF for this population.*

**Practical implications** – *Differential effectiveness of HF through diagnostic subgroups such as alcohol use and drug use is varied with alcohol use being found to decrease due to the HF programme, but findings relating to other drug use outcomes are varied. As most previous studies used the Addiction Severity Index (ASI) to measure substance use among participants, however, the ASI, a self-reporting measure has unstable criterion validity and can cause under or over reporting of substance use. Structured toxicology or diagnostic assessments of substance use must be used for research instead to assist researchers in making firm conclusions about the reported rates.*

**Social implications** – *The slightly poorer housing outcomes among people who use substances indicate that this group may need more intensive approaches to finding and maintaining housing. Additional services for the group that address comorbid problems and consequences relating to substance use are required. It is suggested that housing should be provided within an integrated model that offers additional support services such as case management as when well matched to clients, case management appears to be an effective intervention among homeless sub-populations, as it reduces substance use, improves quality of life and health outcomes, improves social connectedness and increases housing tenure and satisfaction.*

**Originality/value** – *This scoping review concludes that additional research is required to conclusively determine whether HF is an effective intervention for homeless substance users. Future researchers must use formal assessments of substance use and ensure clear reporting of the HF intervention is accomplished. It is recommended for researchers and policymakers to consider the specific needs of the people who use drugs before HF implementation for this population.*

**Keywords** *Housing First, Substance use, Homelessness, Housing stability, Social outcomes*

**Paper type** *General review*

## Introduction

Substance use is a cause and consequence of chronic homelessness (Palepu *et al.*, 2010). According to the World Health Organization (2020), substance (ab)use refers to an extreme

use of psychoactive substances, including alcohol and illicit drugs whereas chronic homelessness is defined as being homeless for one year or longer or having at least four episodes of homelessness in the past three years (US-DH&UD, 2014). Homelessness and substance use are risk factors that interact and exacerbate other issues at different stages in an individual's life (Paquette and Pannella Winn, 2016). Problematic drug use has been found to negatively affect housing stability among people who use drugs (National Coalition for the Homeless, 2009). Housing stability is fundamental for people who use drugs, and evidence suggests that it provides a foundation for improved health and well-being, stable employment, fewer hospitalisations and reduced criminal justice involvement (Paquette and Pannella Winn, 2016). To achieve housing stability, people who concurrently use drugs and experience chronic homelessness may require specialised housing interventions and services.

## Housing First

Housing First (HF) has emerged as a leading intervention addressing chronic homelessness among populations that are typically hard to house such as individuals with mental health conditions and drug dependency (Woodhall-Melnik and Dunn, 2016). HF is a low-demand supportive housing model that considers housing an immediate need for homeless individuals (Tsemberis *et al.*, 2004) and provides housing to individuals without the requirement of abstinence, mental health treatment or drug treatment (Hall *et al.*, 2020). The core tenets of HF include immediate access to housing, a focus on consumer choice, are recovery-oriented, provide individualised support services and focus on social and community connections (Gaetz *et al.*, 2013). HF is often contrasted with the Treatment First (TF) model, with principles embedded in the continuum of care approach and linear housing (Gulcur *et al.*, 2003). Participants in TF are made "housing ready" by receiving drug treatment before entering transitional housing and housing within TF is contingent on drug abstinence and treatment compliance (Gulcur *et al.*, 2003). When compared to TF, evidence demonstrates that HF has been successful in reducing homelessness among those who experience chronic homelessness (Aubry *et al.*, 2015).

The effectiveness of HF for people who use drugs has been questioned; however, there is evidence that HF can increase housing retention within this population (Kertesz *et al.*, 2009). The current evaluations of HF programmes present insufficient evidence to suggest that HF is an optimal housing intervention for people who use drugs. As such, researchers and policymakers have been cautioned against generalising research findings of available HF studies to people who actively use drugs. However, over the past decade, HF is gaining popularity as an effective intervention across the world, and further studies have been published evaluating HF and its impact on housing and substance use outcomes. Furthermore, HF can be effectively implemented and adapted to different contexts and populations without losing its fidelity (Aubry *et al.*, 2015). The purpose of this review is to explore new evidence published since Kertesz *et al.* (2009) on the effectiveness of HF for individuals using drugs. This review will seek to summarise findings for this sub-population across important outcomes of housing, substance use and social outcomes.

## Purpose/aims

The overall purpose of this scoping review is to evaluate the effectiveness of the HF model within the population of substance users. The precise aims of this scoping review are:

- understand the housing, substance use and social outcomes of the HF model for this population;
- evaluate the reasons for effectiveness or lack thereof across these identified outcomes; and
- provide recommendations for future research and practice.

## Method

A scoping review framework modified from [Arksey and O'Malley \(2005\)](#) was used to map the research area using a predetermined process of:

- identifying the research question;
- developing inclusion and exclusion criteria;
- identifying relevant studies for study selection;
- charting the data; and
- collating, summarising and reporting the results (p. 22).

The key question for this research report was: What is the effectiveness of the HF model among substance users who experience chronic homelessness? The population, intervention, comparison and outcome technique (PICO; [Fineout-Overholt and Johnston, 2005](#)) was used for the initial search strategy (refer to [Table 1](#)).

This scoping review was limited to international studies in English from 1 January 2010 to 10 September 2020. Articles were only included if there was an evaluation of the HF intervention and studies were included regardless of the use of a comparison intervention. The inclusion criteria for participants were: all age groups, primary or co-occurring diagnosis of substance use, use of illicit drugs or combination of alcohol and illicit drugs. Studies that evaluated substance use as a secondary outcome or diagnosis focused on alcohol as the primary drug or evaluated abstinence-contingent housing were excluded. Studies were not excluded based on the reported outcomes. Articles describing study protocol or describing experiences of case managers within the programme were excluded from this review.

The PICO strategy was subsequently used to identify specific search elements, synonyms and key database search terms to identify relevant literature (refer to [Table 2](#)). Two population search elements were used to identify the sub-population of people using drugs among homeless individuals. A comparison element was not included to capture all study designs and comparison interventions. Databases used for this search included Medline, CINAHL, PsychINFO and Scopus.

The search yielded a total of 221 articles and citation information was compiled into the Mendeley Referencing Software. All articles were screened for duplicates and relevance to the research question, of which 79 were assessed for eligibility. Following full-text screening, 22 eligible articles were identified for inclusion in the scoping review. The reference lists of included articles were hand searched for relevant articles and five additional articles were included in this study. [Figure 2](#) provides a diagrammatic representation of the study selection process for this scoping review.

## Results

### *Key themes*

The main themes identified across the literature were:

- drug-use-related outcomes;
- housing-related outcomes; and
- social outcomes.

**Table 1** PICO research question development ([Saldanha, 2023](#))

<i>Population</i>	<i>Population</i>	<i>Intervention</i>	<i>Outcome</i>
Homeless people/ persons	Individuals who use substances	Housing First model	Preventing homelessness/effectiveness

Source: Authors' own creation

**Table 2** PICO elements, related synonyms and database search terms (Saldanha, 2023)

<i>Population</i>	<i>Population</i>	<i>Intervention</i>	<i>Outcome</i>
Homeless people	Substance users	Housing First model	Preventing homelessness/effectiveness
<i>Synonyms</i>			
Homeless people	People who use drugs	Housing First	Prevents/preventing/prevented homelessness
Homeless individual/s	People who inject drugs	Pathways to housing	Reduce/reducing homelessness
Homeless person/s	Injection/injecting drug users	At home/Chez Soi	Effective/effectiveness
Unhoused	Substance abuse	j2si	Housing stability
Displaced	Substance use	Braços Abertos	Stable housing
Houseless people	Substance addiction	Common ground	
Houseless individual/s	Drug abuse	Un chez-Soi d'abord	
Houseless person/s	Drug use	Four wise men	
	Drug dependence	Houselink	
	Drug addiction	Permanent housing	
		Permanent supportive housing	
		Social housing	
<i>Search terms</i>			
homeless*	"people who use drugs"	"Housing First"	"prevent* homelessness"
OR	OR	OR	OR
unhoused	"people who inject drugs"	"Pathways to Housing"	"reduc* homelessness"
OR	OR	OR	OR
displaced	"injection drug users"	"At home/Chez Soi"	effective*
OR	OR	OR	OR
houseless*	"injecting drug users"	j2si	"housing stability"
	OR	OR	OR
	"substance abuse"	"Braços Abertos"	"stable housing"
	OR	OR	
	"substance use"	"Common Ground"	
	OR	OR	
	"substance addiction"	"Un chez-soi d'abord"	
	OR	OR	
	"drug abuse"	"four wise men"	
	OR	OR	
	"drug use"	Houselink	
	OR	OR	
	"drug dependence"	"permanent housing"	
	OR	OR	
	"drug addiction"	"permanent supportive housing"	
		OR	
		"social housing"	

Source: Authors' own creation

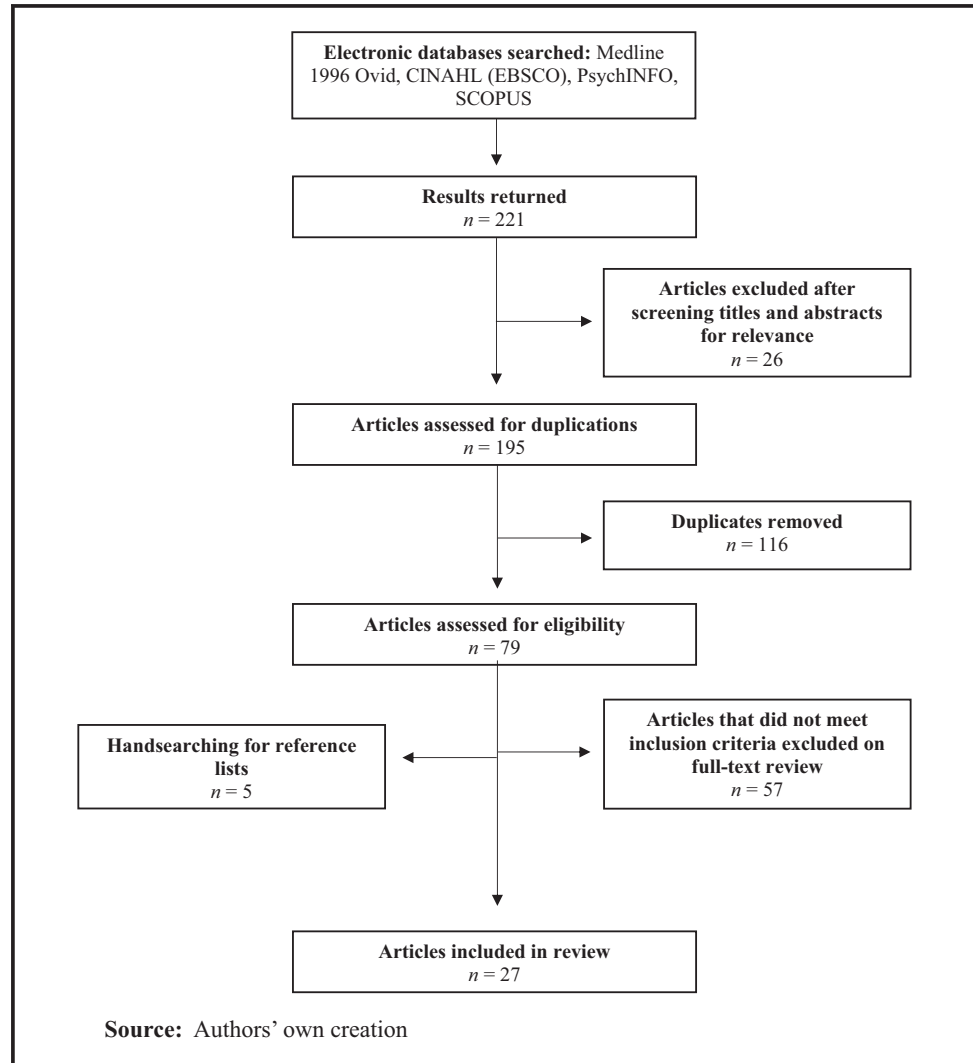
Figure 1 shows the three overarching themes and the related subthemes that emerged from the scoping review.

Table 3 lists the research authors and highlights the key themes associated with each article and the allocated thematic coding.

### Summary of themes

*Theme 1: Drug use-related outcomes.* Most of the published literature found for this topic related to drug use outcomes such as changes in patterns of drug use, discharge from HF, service utilisation and costs and overall health.

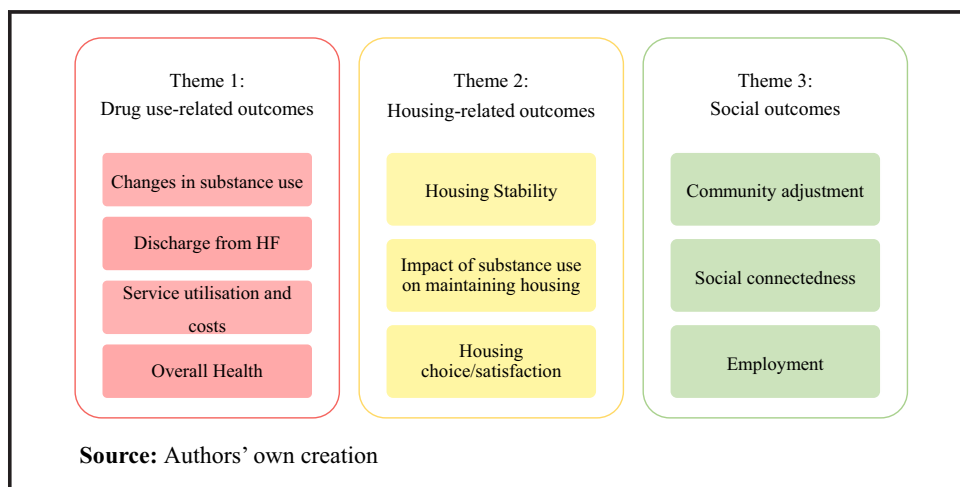
Changes in drug use. Nineteen studies within this review described the effect of HF on changes in drug use; however, findings were contradictory across all studies. Three articles reported that the provision of stable housing through the HF model had no subsequent

**Figure 1** Scoping review study selection

impact on substance use patterns (Ayvaci *et al.*, 2018; Hwang *et al.*, 2011; Smelson *et al.*, 2016). Five articles reported no significant differences in substance use between the HF group and the control group (Kirst *et al.*, 2015; Padgett *et al.*, 2010; Peng *et al.*, 2020; Somers *et al.*, 2015; Tsai *et al.*, 2010). In contrast, several articles found a decrease in drug use among participants within the HF group (Davidson *et al.*, 2014; Edens *et al.*, 2011; O'Connell *et al.*, 2012; O'Connell and Rosenheck, 2018; Padgett *et al.*, 2011). However, Rog *et al.* (2014) state that the effects of permanent supportive housing on participants with primary or co-occurring "substance use disorders" have not been studied thoroughly to make a definitive conclusion.

A rapid systematic review conducted by Fitzpatrick-Lewis *et al.* (2011) found that the provision of housing is effective in reducing drug use among people with dual diagnosis. Baxter *et al.* (2019) found a reduction in "problematic substance use" within both the groups, but no significant difference between the groups at 24 months. However, Groton (2013) concluded that majority of the studies found neither the HF nor the continuum of care groups decreased their use of drugs. Contradictory findings emerged from systematic reviews by Paquette and Pannella Winn (2016), Polcin (2016) and Woodhall-Melnik and Dunn (2016), indicating that the outcomes relating to changes in substance use are mixed and not well studied.

**Figure 2** Themes and subthemes (Saldanha, 2023)



**Table 3** Themes identified within the literature (Saldanha, 2023)

Author/s (year)	1	2	3
Ayvaci <i>et al.</i> (2018)	✓	✓	
Bassi <i>et al.</i> (2020)			✓
Baxter <i>et al.</i> (2019)	✓	✓	
Chabra <i>et al.</i> (2020)	✓	✓	✓
Chinchilla <i>et al.</i> (2019)			✓
Davidson <i>et al.</i> (2014)	✓	✓	
Edens <i>et al.</i> (2011)	✓	✓	✓
Fitzpatrick-Lewis <i>et al.</i> (2011)	✓	✓	
Groton (2013)	✓		
Hall <i>et al.</i> (2020)	✓	✓	
Hwang <i>et al.</i> (2011)	✓	✓	
Kirst <i>et al.</i> (2015)	✓	✓	
Montgomery <i>et al.</i> (2017)	✓		
O'Connell <i>et al.</i> (2012)	✓	✓	
O'Connell and Rosenheck (2018)	✓	✓	✓
Padgett <i>et al.</i> (2010)	✓	✓	
Padgett <i>et al.</i> (2011)	✓		
Palepu <i>et al.</i> (2013)		✓	
Paquette and Pannella Winn (2016)	✓	✓	
Peng <i>et al.</i> (2020)	✓	✓	
Polcin (2016)	✓	✓	
Rog <i>et al.</i> (2014)	✓	✓	
Smelson <i>et al.</i> (2016)	✓	✓	
Somers <i>et al.</i> (2015)	✓		
Tsai <i>et al.</i> (2010)	✓	✓	✓
Urbanoski <i>et al.</i> (2018)	✓	✓	✓
Woodhall-Melnik and Dunn (2016)	✓	✓	✓
Total:	24	21	8

**Note:** Themes are drug use-related outcomes, housing-related outcomes and social outcomes

**Source:** Authors' own creation

Discharge from Housing First. Active substance use was reported as the strongest reason for terminating HF enrolment and increased the odds of eviction from the programme by 150% (O'Connell and Rosenheck, 2018). Individuals who used substances on a higher frequency during the HF programme were also more likely to drop out of the programme

prematurely or fail to follow up rather than exit from the programme after accomplishing their goals (Montgomery *et al.*, 2017; Padgett *et al.*, 2011). Involuntary discharge from the HF programme was more likely among participants who were not in drug use treatment compared to the treatment group (Hall *et al.*, 2020). Moreover, it was found that participants who received treatment before entering housing were less likely to be incarcerated during the programme (Hall *et al.*, 2020) and that high-frequency users spent more days in prison than housed at their own place (Edens *et al.*, 2011). The likelihood of these outcomes for people who were active drug users points to the negative consequences of substance use during the HF programme. However, Tsai *et al.* (2010) reported a contradictory finding that participants within the HF group were significantly incarcerated fewer days than the residential/transitional group over time.

Service utilisation and costs. In several papers reviewed, the results showed a large decrease in service utilisation (e.g. drug treatment visits, non-routine health service use, emergency health services, hospitalisations and contact with the criminal justice system) among people who were active drug users in HF programmes (Baxter *et al.*, 2019; Chabra *et al.*, 2020; Edens *et al.*, 2011; Fitzpatrick-Lewis *et al.*, 2011; Padgett *et al.*, 2011; Smelson *et al.*, 2016; Woodhall-Melnik and Dunn, 2016). High-frequency or active drug use has been self-reported and measured differently across these studies, resulting in an ineffective and inaccurate method of comparing drug use across studies. In contrast, the group undergoing treatment for substance use was reported to have higher rates of service utilisation when compared to the HF group (Padgett *et al.*, 2011). With regard to service costs in relation to substance use, Tsai *et al.* (2010) found that the treatment group incurred higher service costs than the HF group and in general, higher healthcare costs for those who were actively using while in the programme. Similarly, Edens *et al.* (2011) found that high-frequency users had lower total costs over the follow-up period, however no significant group differences.

Overall health. The quality of life, physical health, clinical health and mental health outcomes of active or high-frequency substance users within the HF programme were also evaluated in several articles. Most articles reported no significant differences across health outcomes between the HF group and the comparison group, indicating that HF provided no additional health benefit to people using drugs (Baxter *et al.*, 2019; Hwang *et al.*, 2011; Peng *et al.*, 2020; Tsai *et al.*, 2010; Urbanoski *et al.*, 2018). Moreover, Edens *et al.*, 2011 reported poorer overall group mean scores on mental health measures and the subjective quality of life measures within the HF group. In contrast, O'Connell and Rosenheck (2018) state that the rent subsidy vouchers provided through the U.S. Department of Housing and Urban Development – Veterans Affairs Supported Housing (HUD-VASH) programme were a key contributor to enhanced quality of life for its participants. This rental voucher covers the portion of the fair rental price that exceeds 30% of the individual's income and is renegotiated every 12 months (Kasprow *et al.*, 2000). Similarly, Chabra *et al.* (2020) described improved outlook and well-being among participants that led to increased ability and willingness to engage in drug treatment. Case management has been cited as an important intervention to improve the quality of life among HF participants (Fitzpatrick-Lewis *et al.*, 2011).

*Theme 2: Housing-related outcomes.* The second most common theme found within the literature related to housing outcomes through the HF model such as housing stability and the impact of substance use on maintaining housing and housing choice/satisfaction.

Housing stability. Housing stability refers to the total number of days individuals were housed within their own place during the intervention period (Davidson *et al.*, 2014; Woodhall-Melnik and Dunn, 2016). Housing permanence or housing stability for homeless individuals has been evaluated within the HF model through measures of housing retention, the number of days housed, housing tenure or successful housing placement. For the purpose of this scoping review, all the above measures will be used synonymously with the

term “housing stability”. Being stably housed for a longer period of time indicates a positive housing outcome for housing interventions.

HF participants experienced greater housing stability and higher retention rates when compared to participants within a control intervention such as residential/transitional housing (Tsai *et al.*, 2010), treatment first (Hall *et al.*, 2020; Padgett *et al.*, 2010), or treatment as usual (TAU) (Baxter *et al.*; Hwang *et al.*, 2011; O’Connell and Rosenheck, 2018; O’Connell and Rosenheck, 2018). Studies that did not evaluate HF in comparison with a control group also found successful housing retention rates (Ayvaci *et al.*, 2018; Chhabra *et al.*, 2020). Similarly, previous reviews also reported that HF promoted a strong, positive effect on housing stability and reduced homelessness within the homeless population of substance users (Fitzpatrick-Lewis *et al.*, 2011; Paquette and Pannella Winn, 2016; Peng *et al.*, 2020; Polcin, 2016; Rog *et al.*, 2014; Woodhall-Melnik and Dunn, 2016).

Impact of substance use on maintaining stable housing. Even though housing in HF is not contingent on abstinence or drug treatment, people who use drugs were successful in achieving long-term housing stability despite maintaining their drug use when entering housing and throughout programme duration (Edens *et al.*, 2011; Hall *et al.*, 2020; Hwang *et al.*, 2011; O’Connell and Rosenheck, 2018; Padgett *et al.*, 2010; Palepu *et al.*, 2013; Smelson *et al.*, 2016; Urbanoski *et al.*, 2018). The study findings of Davidson *et al.* (2014) support the notion that the principles unique to HF are associated with positive housing outcomes among a traditionally hard to house populations.

However, Kirst *et al.* (2015), in their randomised controlled trial found that if substance use was unaddressed during the HF programme, it could negatively impact housing tenure. Similarly, Ayvaci *et al.* (2018) found that participant use of cocaine in the first year of housing was negatively associated with stable housing in the second year. Cocaine use was also found to hinder the ability of participants to acquire stable housing in the future and thus abstaining from cocaine was recommended before obtaining housing (Ayvaci *et al.*, 2018). Urbanoski *et al.* (2018) further mention that HF is effective in people with or without substance use disorders but people with substance use disorders spend less time in stable housing in both HF and TAU compared to those without. Similarly, Edens *et al.* (2011) found that a high-frequency of drug use meant that participants spent more time incarcerated than housed in their own place.

Housing choice/satisfaction. Similarly, another housing-related outcome that was reported was consumer choice and satisfaction after participating in the HF programme. Fitzpatrick-Lewis *et al.* (2011), Hwang *et al.* (2011) and O’Connell and Rosenheck (2018) all report that participants enrolled into the HF programme experienced improved satisfaction with their living situation. Tsai *et al.* (2010) further state that participants within the HF group reported more choice about treatment services over time. This finding is corroborated by Rog *et al.* (2014), wherein low-demand permanent supportive housing models such as HF received higher ratings of consumer preference and satisfaction compared to other housing models where service participation was compulsory or not offered. On the contrary, Tsai *et al.* (2010) also found that participants in the group that received residential treatment for more than two weeks in the three months before HF reported more housing satisfaction than the participants within the HF group. The authors proposed that the additional treatment-related activities and services provided as a possible reason for this finding.

*Theme 3: Social outcomes.* Community adjustment. Engagement in integrated community activities such as attending community events, visiting shops, gyms and restaurants was evaluated through the measure of community adjustment (Chabra *et al.*, 2020; Tsai *et al.*, 2010). Similar to the outcome of drug use patterns, the outcome variable of community adjustment for people using drugs is mixed. Chinchilla *et al.* (2019) found a positive association between community adjustment and combined medical and substance use disorder diagnoses at baseline. However, the benefit of HF over TAU in terms of community functioning did not vary between people with or without diagnosed substance use disorders

(Urbanoski *et al.*, 2018). Tsai *et al.* (2010) found no significant differences between the two groups across the community adjustment variable. In addition, in their qualitative review. Chabra *et al.* (2020) reported that participants did not participate in community events due to feelings of exclusion and stigmatisation. Woodhall-Melnik and Dunn (2016) suggest that there is a lack of research to determine how HF contributes to increased community adjustment.

**Social connectedness.** Participants' interaction with their social support networks like family, friends and neighbours has been evaluated through the measure of social connectedness in the HF programme. Although Chabra *et al.* (2020) reported no improvement in social integration, they found that housing stability increased social connectedness. This stability was also important for people who were able to re-establish relationships with family and friends whom they had lost contact with when actively using (Chabra *et al.*, 2020). In contrast, Bassi *et al.* (2020) explored the experiences of formerly homeless women with problematic substance use in HF and found that socialisation was limited due to a lack of belonging and community judgment. Participants' history of drug use was also fundamental to how each individual explored their neighbourhood as they tried to avoid places and people that may trigger relapse.

**Employment.** In their study of 560 American veterans, Chinchilla *et al.* (2019) found a positive association between employment and housing stability at baseline as well as after one year in housing. Employment outcomes for participants increased if they held full-time or part-time employment at baseline and attended drug treatment visits during the year. The authors state that the positive effect of drug treatment visits on employment outcomes outlines the importance of providing some stability to participants beyond just housing (Chinchilla *et al.*, 2019). However, Edens *et al.* (2011) found no changes in employment status and employment outcomes for participants ( $N = 756$ ) across 11 sites in the USA. O'Connell and Rosenheck (2018) mentioned that the HUD-VASH programme based on the HF principles provides a housing subsidy to participants and argues this may reduce the incentive for acquiring and keeping employment.

## Discussion

This scoping review has found strong evidence that the HF model is effective in improving the housing outcomes of people who use drugs and who experience chronic homelessness. However, the evidence for the programme's effectiveness in terms of on-going drug use and social outcomes is weak and inconclusive. This study identifies certain areas that require further investigation and evidence. Drawing on the previous evidence this section discusses the reasons for the effectiveness of HF or lack thereof among people using drugs and suggests avenues for future research and practice.

The findings of this study reinforce the arguments made by previous reviews on the topic including Kertesz *et al.* (2009), Rog *et al.* (2014) and Woodhall-Melnik and Dunn (2016). HF increases housing retention rates and in turn reduces homelessness among people who use drugs (Kertesz *et al.*, 2009; Rog *et al.*, 2014; Woodhall-Melnik and Dunn, 2016). Similar to the findings of this review, Woodhall-Melnik and Dunn (2016) reported variability in their findings relating to the impact of HF on patterns of substance use. In addition, research is yet to determine if HF programmes contribute to increased community adjustment, social functioning and employment (Woodhall-Melnik and Dunn, 2016). These variations in findings illustrate the importance of understanding the actual needs of the population before implementing the HF programmes.

### *Drug use-related outcomes*

While there was a decrease in drug use within the HF group conducted follow-up at 12 months (Davidson *et al.*, 2014; Padgett *et al.*, 2011; Fitzpatrick-Lewis *et al.*, 2011), these

differences were not sustained at 24 months. Other studies also found no significant changes between the two participant groups at 24 months follow-up (Baxter *et al.*, 2019; Kirst *et al.*, 2015; Padgett *et al.*, 2010; Peng *et al.*, 2020; Somers *et al.*, 2015; Tsai *et al.*, 2010). This may indicate that HF influences decreases in drug use patterns for a short period after housing placement, but these are not sustained in the long term. Current research does not provide a clear explanation for the differences (Kirst *et al.*, 2015) or whether on-going drug use impacts on housing in the longer term, and therefore further research examining this is required.

It is important to note that the original purpose of the HF programme does not focus on reducing drug use among those who are chronically homeless; however, it has been found as an unintended outcome in several articles. The lack of effect of the HF intervention on decreases in drug use may also be attributed to the fact that individuals living in HF need additional supports if they are to reduce their use (Kirst *et al.*, 2015). Research is required to identify what additional support services can best be integrated with HF to specifically improve drug use outcomes and whether reductions in use are a priority or necessary. Linear housing approaches that provide housing contingent on abstinence have found a reduction in drug use (Kertesz *et al.*, 2009); however, this model yields lower rates of housing stability as consumer choice is eliminated.

HF provides ongoing support to participants through the optional intensive case management (ICM) approach (Baxter *et al.*, 2019) and it is effective in decreasing substance use (Fitzpatrick-Lewis *et al.*, 2011) and increasing participant ability to manage other health conditions (Chabra *et al.*, 2020). Case management also encourages individuals to engage with the programme and results in a more positive exit from HF programmes (Montgomery *et al.*, 2017). However, engagement with ICM varies across settings and the extent to which substance use is addressed varies across HF providers (Urbanoski *et al.*, 2018). ICM was developed originally for individuals with mental health conditions, and there is a need for improved capacity and expertise of ICM to understand and work with drug use (including the importance of a harm reduction framework) as core competencies of housing providers.

Increased use of drug use treatment services and the potential higher costs for people in the treatment group must be considered in the context that access to housing is linked to service use and participation (Padgett *et al.*, 2010). Lower rates of drug use treatment found within HF may be attributed to both a lower need and also the harm reduction approach where abstinence or treatment or not mandatory (Padgett *et al.*, 2011). Despite lower treatment service utilisation within the HF group and no programme restraints to drug use, the finding of “no significant differences” in substance use between the groups provides clinical significance to the HF model (Baxter *et al.*, 2019; Padgett *et al.*, 2010).

### *Housing-related outcomes*

Improvements in housing stability were found to occur in both HF and TAU and regardless of the assignment to study group, a majority of participants achieved stable housing over the follow-up period (Hwang *et al.*, 2011). This indicates that the provision of housing itself regardless of the housing model yields positive housing outcomes for individuals (Rog *et al.*, 2014). The higher increases in housing stability through HF over TAU can be attributed to the tenets of consumer participation inherent to the HF model (Davidson *et al.*, 2014). This suggests that housing that is not contingent on abstinence or service participation and instead focuses on consumer choice is positively associated with housing tenure (Fitzpatrick-Lewis *et al.*, 2011).

Clearly, even if individuals do not receive substance use disorder treatment, they can achieve successful housing through HF (Hall *et al.*, 2020). However, the negative impact of on-going drug use on stable housing (Ayvaci *et al.*, 2018; Kirst *et al.*, 2015) indicates that

substance use cannot be left unaddressed during HF. Furthermore, people who use drugs appear to achieve less housing stability than those who are not using (Urbanoski *et al.*, 2018). Therefore, successfully decreasing substance use in addition to the provision of housing is required to address the important role of substance use in the perpetuation of homelessness (Ayvaci *et al.*, 2018). The importance of consumer choice and preference within housing interventions must also not be underestimated for people who use drugs on their journey to affordable, stable housing. Choice motivates individuals to make changes to their lifestyle and is fundamental for people who use drugs (O'Connell *et al.*, 2006) and evidence suggest that people are more likely to embrace interventions tailored to their preferences (Rog *et al.*, 2014). HF with its core principle of consumer choice is preferred over other restrictive housing models.

### *Social outcomes*

Although HF is known to promote increased housing stability, its impact on social outcomes has yielded mixed findings in this review. Improvements in community adjustment within the HF programme can be attributed to better access to health and substance use services (Chinchilla *et al.*, 2019). However, evidence suggests people who use drugs have poorer community functioning than those without and this persists over time (Urbanoski *et al.*, 2018). Neighbourhoods are integral to social integration within formerly homeless individuals in HF; however, those with histories of drug use report being reluctant to become integrated within their communities due to safety, fear of being stigmatised and concerns of drug relapse (Chabra *et al.*, 2020). Housing is insufficient as a foundation for community participation within this population and addressing broader societal structures that inhibit social connectedness and community adjustment is required.

The positive association between employment and housing stability as well as employment and drug treatment points to the importance of integrating employment as a service that participants can choose within the HF programme. In addition, the support provided through ICM in the HF programme has also been found to positively contribute to community adjustment and social connectedness among participants (Bassi *et al.*, 2020). Feelings of isolation were mitigated through interaction with case managers whom many participants reported as dependable sources of contact (Chabra *et al.*, 2020).

### *Implications for research and practice*

The findings for improved housing stability within the HF model must be cautiously used in research and practice due to various methodological weaknesses rampant across studies that evaluate HF. Groton (2013) outlines that variations in HF implementation across contexts and lack of consistent fidelity measures weaken the current evidence base. Several studies in this review provide little information regarding the comparison intervention, including services offered or received by participants (Kertesz *et al.*, 2009; Polcin, 2016). Inconsistencies in the definitions of substance use and dual diagnosis; the outcomes measured, methodological rigour and small sample sizes result in weak reliability and generalisability that limit the ability to draw strong conclusions regarding HF effectiveness (Rog *et al.*, 2014). Future researchers must ensure that clear reporting across all these variables is conducted in order for HF to be identifiable and replicable in other studies (Baxter *et al.*, 2019).

Differential effectiveness of HF through diagnostic subgroups such as alcohol use and other drug use is varied (Urbanoski *et al.*, 2018). Alcohol use has been found to decrease due to the HF programme (Collins *et al.*, 2012) but findings relating to other drug use outcomes are varied. Therefore, further research is needed regarding HF effectiveness with finer distinctions and categorisations of substance use including prescribed drugs used illicitly, and other drugs like heroin, cocaine or amphetamine (Urbanoski *et al.*, 2018). Finally, most

studies used the Addiction Severity Index (ASI) to measure substance use among participants, however, as a self-reporting measure, the ASI has unstable criterion validity and can cause under or over-reporting of drug use (Kirst *et al.*, 2015; O'Connell and Rosenheck, 2018; Padgett *et al.*, 2011). Structured toxicology or diagnostic assessments of drug use may better (Davidson *et al.*, 2014; Edens *et al.*, 2011) assist researchers in making firm conclusions about patterns of use (Padgett *et al.*, 2010; Urbanoski *et al.*, 2018).

The slightly poorer housing outcomes among people who use drugs indicate a need for more intensive approaches to finding and maintaining housing (Tsai *et al.*, 2010). Additional services for the group that address comorbid problems and consequences relating to substance use are required (Ayvaci *et al.*, 2018; Urbanoski *et al.*, 2018). Housing should be provided within an integrated model that offers additional support services such as case management (Fitzpatrick-Lewis *et al.*, 2011). When well matched to clients, case management appears to be an effective intervention among homeless sub-populations, as it reduces substance use, improves quality of life and health outcomes, improves social connectedness, increases housing tenure and satisfaction (Fitzpatrick-Lewis *et al.*, 2011).

### ***Study limitations***

This scoping review has several limitations. Grey literature searching was not conducted and therefore several relevant websites and unpublished articles may not have been included review. The search strategy might have also overlooked studies that did not clearly specify that the population was using drugs. In addition, some studies made use of stringent inclusion criteria and this increased the likelihood for selection bias.

Although this review was limited to international studies, all articles included in this review were published in North America, specifically across the USA and Canada. Variations in social welfare and health care provision between countries may lead to different HF outcomes across countries (Woodhall-Melnik and Dunn, 2016). This points to the need for exercising caution when using this research as a rationale for HF implementation in other countries such as Australia.

### **Conclusions and recommendations**

There are a number of recommendations for future research and practice that can be derived from the various literature identified by this scoping review.

#### ***Key recommendations for research***

- Future research must investigate the long-term impact (beyond 24 months) of HF across all three outcomes of drug use, housing and social outcomes among individuals who use substances.
- Clear reporting of inclusion criteria, HF characteristics, comparator characteristics, programme fidelity and outcome measures must be outlined in research so that the HF model is identifiable and replicable.
- Evaluation of the HF intervention across alcohol and other drug use must be conducted separately to understand the differential impact of HF.
- Diagnostic assessments of drug use (e.g. urine tests, hair follicle drug tests) together with participant self-report may help more accurate measures of drug use.

#### ***Key recommendations for practice***

Case management within the HF programme must be encouraged among people using drugs problematically and priority must be given to the harm reduction focused case management:

- The specific types and patterns of drug use among this population must be considered in the delivery of HF interventions.
- Provision of employment as an important service through the HF programme would provide incentive to individuals to integrate within society and achieve social connectedness.

### Conclusion

In conclusion, the evidence from this review suggests that HF works for the homeless population of people using drugs if the primary goal is to rehouse individuals and achieve housing stability (Woodhall-Melnik and Dunn, 2016). However, it cannot be conclusively determined that HF is successful in reducing drug use or improving social outcomes. For the housed individuals, the evidence base is still insufficient to argue for the unilateral implementation of HF as an intervention for combatting long-term chronic homelessness among people using drugs (Woodhall-Melnik and Dunn, 2016). Variation in findings also illustrate the importance of understanding the needs of a specific group before HF programme implementation. This review advocates for additional research that evaluates other important outcomes (e.g. drug use and social outcomes) associated with HF.

Future studies on this topic must focus on improving methodological rigour and ensuring clear reporting of the characteristics of the study is accomplished. Standard measures of drug use must be used for participants on entry into the HF programme to enable formal comparisons between changes in patterns of drug use. The criteria for classifying people using drugs must also be clearly reported so that an identifiable and replicable method of classification can be used for future research and practice (Baxter *et al.*, 2019). For individuals with various co-morbidities, multiple services would be required, and additional outcomes would need to be examined (Ayvaci *et al.*, 2018). The use of case management as a service within HF has been positively associated with substance use and social outcomes, however, the quality of case management and appropriate matching to individuals must be prioritised by HF providers during implementation.

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### Further reading

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