Co-occurring substance abuse and mental health problems among homeless persons: Suggestions for research and practice

Douglas L. Polcin

Alcohol Research Group, Public Health Institute, USA

Correspondence to:

Douglas L. Polcin
Alcohol Research Group
Public Health Institute
6475 Christie Avenue
Suite 400, Emeryville, CA
94608-1010, USA
DPolcin@arg.org

Abstract

Communities throughout the U.S. are struggling to find solutions for serious and persistent homelessness. Alcohol and drug problems can be causes and consequences of homelessness, as well as co-occurring problems that complicate efforts to succeed in finding stable housing. Two prominent service models exist, one known as "Housing First" takes a harm reduction approach and the other known as the "linear" model typically supports a goal of abstinence from alcohol and drugs. Despite their popularity, the research supporting these models suffers from methodological problems and inconsistent findings. One purpose of this paper is to describe systematic reviews of the homelessness services literature, which illustrate weaknesses in research designs and inconsistent conclusions about the effectiveness of current models. Problems among some of the seminal studies on homelessness include poorly defined inclusion and exclusion criteria, inadequate measures of alcohol and drug use, unspecified or poorly implemented comparison conditions, and lack of procedures documenting adherence to service models. Several recent papers have suggested broader based approaches for homeless services that integrate alternatives and respond better to consumer needs. Practical considerations for implementing a broader system of services are described and peer-managed recovery homes are presented as examples of services that address some of the gaps in current approaches. Three issues are identified that need more attention from researchers: (1) improving upon the methodological limitations in current studies, (2) assessing the impact of broader based, integrated services on outcome, and (3) assessing approaches to the service needs of homeless persons involved in the criminal justice system.

Keywords: Homelessness, Housing first, Substance abuse, Recovery home, Residential treatment

Homelessness in the U.S. has been a significant problem for decades and communities have struggled to find solutions. On any given night in 2013, over 600,000 persons in the U.S. were homeless (National Alliance to End Homelessness, 2014). The public health implications of homelessness are significant and include syndemic interactions that exacerbate substance abuse, health problems, HIV risk, and mental health symptoms (Fitzpatrick-Lewis *et al.*, 2011; Kertesz, Crouch, Milby, Cusimano, & Schumacher, 2009; Larimer *et al.*, 2009). Mortality rates among homeless persons are more than three times that of persons with some type of housing (O'Connell, 2005).

Homelessness is associated with increased risk to be involved in the criminal justice system. A variety of papers document high rates of homelessness for offenders leaving state prisons (Petersilia, 2003) and local jails (Freudenberg, Daniels, Crum, Perkins, & Richie, 2005; Petteruti & Walsh, 2008). Once they are homeless, these individuals are at increased risk to reengage in illegal activities that result in re-incarceration (Greenberg & Rosenheck, 2008). Lack of stable housing also leaves individuals vulnerable to being victims of crime such as physical and sexual assault (Gaetz, 2006).

There have been increases in funding for homeless services in recent years and it appears to be having a

© 2015 The Author(s). Published by Tayler & Francis.
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivaties License http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.
DOI: 10.1179/1573658X15Y.0000000004

beneficial effect (National Alliance to End Homelessness, 2014). Between 2012 and 2013, overall homelessness in the U.S. decreased by 3.7%, although there was significant variation among individual states. Funding has increased for a variety of housing programs, including emergency shelters, permanent housing, and specialized Veteran's Administration programs. As funding increases, service providers, researchers, and local governments debate about what types of services to increase.

Although studies vary, research consistently shows over a third of individuals who are homeless experience alcohol and drug problems (e.g., Gillis, Dickerson, & Hanson, 2010) and up to two-thirds have a lifetime history of an alcohol or drug disorder (Robertson, Zlotnick, & Westerfelt, 1997). The relationship between homelessness and substance abuse is complex, with studies suggesting that substance use can be both a cause and consequence of homelessness (National Coalition for the Homeless, 2009). Until recently, few services addressed the needs of substance abusing homeless persons who were not motivated to address their substance use. In addition, even when homeless individuals were motivated to address substance abuse problems, access to the variety of services needed were lacking. Notably lacking has been successful integration of substance abuse treatment, permanent stable housing, and related services such as mental health.

This paper begins with a brief description of two approaches addressing co-occurring substance abuse and homelessness, Housing First and linear. Next, we highlight how reviews of the homeless services literature have reached mixed and inconsistent conclusions about the effects of services for this population and we point out a variety of methodological weaknesses that limit the confidence of research findings. The paper then describes several recent papers calling for broader based, flexible, and integrated service delivery to homeless persons (e.g., Corporation for Supportive Housing & National Council for Behavioral Health, 2014; Paquette & Winn, 2015). We add to this literature by suggesting that peer-managed alcohol and drug recovery homes could play a greater role in the mix of services offered to homeless persons, particularly those who are motivated to pursue abstinence and have some period of stability in the community. Practical considerations for improved service integration are presented along with suggestions for research that can strengthen the empirical base for integrated, broader based services.

Models for assisting homeless individuals with substance abuse

Two prominent models have emerged in response to the need for housing for persons with co-occurring substance abuse and unstable housing: linear and Housing First. The linear approach (Kertesz *et al.*, 2009; Ridgway & Zipple, 1990) emphasizes abstinence from substances as an explicit goal. Substance abuse treatment is an integral first step to eventually obtaining permanent stable housing. Thus, stable housing is an end goal. In contrast, Housing First takes the view that provision of subsidized and in some cases free housing should occur first (Tsemberis, Gulcur, & Nakae, 2004). While case management services are sometimes offered to residents, Housing First emphasizes a "low threshold" with personal choice about whether to address substance abuse and mental health problems. Housing First programs provide permanent housing largely without conditions, either in decentralized apartments or larger, congregant facilities. The accepting tone of this approach may be particularly helpful to persons who are chronically homeless (longer than one year) and persons with chronic psychiatric conditions such as schizophrenia (Padgett, Gulcur, & Tsemberis, 2006). In addition, the Housing First approach serves as an alternative to formal treatment for persons who have had negative experiences.

Research on Housing First

A variety of studies support both Housing First and linear models. Kertesz *et al.* (2009) reviewed outcomes for both models and concluded they evidenced different strengths. When individuals with mental health and substance abuse problems enter Housing First programs and are provided subsidized or free housing without requirements, such as completing treatment or abstinence from drugs, retention is excellent (e.g., Collins, Malone, & Clifasefi, 2013; Tsemberis *et al.*, 2004). However, findings for other outcomes are mixed or not well studied, particularly substance abuse problems. For example, some studies reporting favorable outcomes (e.g., Padgett *et al.*, 2006; Padgett, Stanhope, Henwood, & Stefancic, 2011) did not assess important measures of drinking, such as days of heavy drinking and drinking-related problems. The definition of heavy drugs in these studies was a very low threshold: any drug use four or more times over a six-month assessment period. In the Home Chez Soi study of Housing First in Canada, Kirst, Zerger, Misir, Hwang, and Stergiopoulos (2015) used two individual items from the Addiction

Severity Index (ASI) Alcohol Scale to assess alcohol outcome rather than the ASI scaled scores. No rationale was provided. Another example of questionable measures among Housing First studies was the use of a dichotomous measure of treatment attendance to assess the effect of treatment on outcome. Attendance was defined as any treatment during the last month (even a single session) versus no treatment (e.g., Collins, Malone, & Larimer, 2012).

There have also been concerns about inclusion and exclusion criteria. Some studies did not specify substance abuse inclusion criteria that would ensure substance abuse problems existed among the residents at the time they entered the study (e.g., Tsemberis *et al*., 2004). In this scenario, no differences in substance abuse outcomes between study conditions might be the result of limited room for improvement among individuals in both groups rather than equivalent effectiveness of interventions. A different type of problem is the use of a single group design of participants who entered Housing First with high rates of alcohol problems. Here, the improvements noted over time could be due to regression to the mean or ceiling effects (e.g., Collins, Malone, Clifasefi, *et al*., 2012). Finally, Kertesz *et al*. (2009) questioned the appropriateness of some of the "usual care" comparison conditions, many of which were unspecified aggregate conditions, limited by underfunding, and lacking evidence-based interventions. In recent analyses of data from the Home Chez Soi study (e.g., Kirst *et al*., 2015; Stergiopoulos *et al*., 2015), there was very little information about the treatment as usual (TAU) condition, including services received or offered. Especially important, there is nothing about the availability of housing for the TAU group. We do know the Housing First condition received subsidized and in some cases free housing. The potential effects of offering subsidized housing as part of the TAU condition were unknown.

Research on linear approaches

While formal substance abuse treatment programs that are part of the linear approach to homelessness have been studied for many years and have demonstrated consistent albeit moderate effectiveness (National Institute on Drug Abuse, 2012), there have been serious problems with retention. A majority of persons in formal treatment programs do not complete treatment (Ball, Caroll, Canning-Ball, & Rounsaville, 2006; Palmer, Murphy, Piselli, & Ball, 2009). Tsemberis *et al*. (2004) suggested many homeless individuals, particularly those with significant mental health disorders, are unwilling or unable to comply with linear model requirements such as engaging in treatment and maintaining abstinence from drugs and alcohol. Relative to Housing First, most studies have shown the linear models yield significantly lower retention rates (Kertesz *et al*., 2009).

An area of strength in linear housing models is they have been shown to have favorable substance abuse outcomes. For example, using a state-of-the-art, abstinent contingent housing and treatment approach known as the Birmingham model, Milby, Schumacher, Wallace, Freedman, and Vuchinich (2005) showed that abstinent contingent housing had better cocaine outcomes than non-abstinent contingent housing. The review of homeless studies by Hwang, Tolomiczenko, Kouyoumdjian, and Garner (2005) concluded that a variety of substance abuse and mental health interventions can help homeless individuals, but specific types of interventions do not show superior efficacy. However, a serious problem for linear programs is they often lack stable, permanent housing options for individuals who complete treatment even though the model calls for provision of permanent housing as part of the continuum or care. Even when individuals in linear service models achieve abstinence, they are vulnerable to relapse and reoccurrence of homelessness if they are not able to find permanent housing (Kertesz *et al*., 2009).

Systematic reviews of homeless services studies

Systematic reviews of the homeless services literature have reached inconsistent conclusions. For example, Rog *et al*. (2014) assessed studies of permanent supportive housing for homeless persons with mental illness and substance abuse and concluded permanent supportive housing was associated with reduced homelessness, increased housing tenure, and deceased hospitalizations. Compared to other housing models (e.g., those requiring abstinence or engagement in treatment), consumer satisfaction among residents in permanent supportive housing was higher. However, Hwang *et al*. (2005) concluded that studies assessing the independent effect of subsidized housing alone on substance abuse, physical health, and mental health were inconsistent. Their conclusions suggested that provision of case management to homeless persons with substance abuse problems was important regardless of whether supportive housing was provided. A good example of combined Housing First and intensive case management or Assertive Community Treatment is the Home Chez Soi

study in Canada (Kirst *et al*., 2015; Polvere, Macnaughton, & Piat, 2013; Stergiopoulos *et al*., 2015). Fitzpatrick-Lewis *et al*. (2011) reviewed 84 studies on the effectiveness of housing services for homeless people with substance abuse issues or other concurrent disorders (e.g., mental illness). They indicated provision of housing was associated with increased housing tenure and decreased substance use, relapse, and health services utilization. However, they also concluded that abstinent dependent housing was more effective in achieving abstinence than non-abstinence dependent housing or no housing.

Permanent housing services, such as Housing First, have been identified as "best practices" by the Substance Abuse and Mental Health Service Administration, the U.S. Department of Housing & Urban Development, and the U.S. Conference of Mayors (Corporation for Supportive Housing & National Council for Behavioral Health, 2014; Kertesz *et al*., 2009). Although Housing First has enjoyed widespread popularity, a recent review by Waegemakers Schiff and Schiff (2014) concluded political support was more the basis for popularity than scientific evidence that met best practices criteria. Of particular note is the fact that 11 of the 18 studies reviewed used data from one site in New York City (Pathways to Housing). In addition, many studies had inadequate procedures for selecting appropriate participants and lacked measures to assess services delivered. The authors concluded there were favorable results for Housing First studies overall, but methodological problems resulted in weak reliability and generalizability.

Considerations for research

Taken together, systematic reviews show some degree of support for Housing First and linear approaches, but they also clearly illustrate the need for more research before we can make definitive conclusions. There is a need for research procedures and measures that are more rigorous. For example, confidence in research findings would be improved with more consistent use of standardized assessment instruments to assess substance use, mental health problems, and services received. In particular, inspection of clinical records to determine current or past substance use and mental health disorders, which has been used in some of these studies, is methodologically weak. When the term dual diagnosis is used, we need to be clear about disorders that were included and excluded as well as their severity.

There is also a need for studies to better clarify intervention and comparison conditions. When a term such as "usual care" is used it needs to be specified. What services are included in usual care? How accessible are the services? What services do participants actually receive? For example, Kertesz *et al*. (2009) noted that linear models of care are designed to provide permanent housing arrangements after individuals comply with treatment and abstinence requirements. However, treatment providers do not typically control housing subsidies and therefore treatment does not always lead to housing, even when the treatment is effective. Rog *et al*. (2014) addressed the lack of clarity about services received in terms of fidelity. Although they focused primarily on inadequate fidelity for assessing adherence to permanent housing models, fidelity problems are arguably worse in terms of measuring fidelity to comparison conditions.

Although most of the literature reviews on homeless services call for more studies using randomized designs, there are potential downsides to this approach. In a paper on residential recovery homes for persons with alcohol and drug disorders, Polcin (in press) pointed out that randomization eliminates self-determination of services received. The process of selecting a recovery home and being offered admission by a program sets the stage for subsequent recovery experiences. Because consumer choice and empowerment about receipt of housing and other services is central to the Housing First model there are concerns about generalization of results when using randomized designs. In addition, the sample of persons who are willing to be randomized to where they live for months or even years may be different from self-selected samples one individuals choosing to enter housing conditions.

An alternative to randomized designs is to use pre–post naturalistic designs where outcomes between groups of individuals receiving different service models are compared over time. Although naturalistic designs cannot be used to show causality, they have the advantage of mirroring real world conditions and that increases generalization of study findings. In addition, there are ways to strengthen these designs to increase confidence about their effects. Examples include the use of multivariate models that parse out the relative effects of influential variables that can confound intervention effects, matching designs that compare outcomes for similar individuals in intervention and comparison conditions, and propensity score matching, which controls for covariates that

predict receiving an intervention versus not receiving it (Polcin, in press).

A final issue that needs more attention is how community stakeholders experience homeless services. If housing models are to expand and meet the current need for housing among the homeless, there will need to be significant political and popular support. Not in my back yard (NIMBY) has been the term used to describe opposition to housing and other services in community settings. Lee, Tyler, and Wright (2010) noted that federal initiatives to address homelessness have been offset to some extent at the local level by NIMBY resistance to housing services in suburban areas and by the enactment of "quality of life" ordinances that criminalize homeless people's basic survival behaviors. However, relatively few papers addressing homeless services have addressed strategies to overcome NIMBY resistances. For example, where possible, it would be helpful to document community support for homeless services as well as understand resistances in more detail. Studies of stakeholder views about abstinence-based recovery homes for persons with substance use disorders have shown strong neighborhood support as well as support from local government (e.g., Jason, Roberts, & Olson, 2005; Polcin, Henderson, Trocki, Evans, & Wittman, 2012). Resistances to recovery homes tended to come from persons unfamiliar with them. Among a number of strategies suggested was more interaction between recovery home residents and stakeholder groups. However, it is unclear to what extent these findings and suggestions can generalize to homeless services, particularly centralized Housing First programs where service providers view substance use as a personal choice. Among neighbors of recovery houses there was strong support for the requirement that residents remain abstinent from drugs and alcohol (Polcin *et al*., 2012).

Integrated service delivery

Gillis *et al.* (2010) suggested there is enormous heterogeneity among homeless persons' needs and preferences. For example, Polvere *et al*. (2013) found most persons enrolled the Housing First condition in the Home Chez Soi study had positive experience, but a subgroup felt socially isolated in the decentralized apartments. Homeless persons also vary by needs, which can range from mild to severe mental health, medical, and substance abuse problems. They also can vary in terms of risk for HIV infection and involvement in the criminal justice system. Moreover, there is heterogeneity in the level of motivation to address these problems. Some homeless persons recognize their problems and are receptive to services that might be helpful. Others are unaware or want to deal with problems on their own.

The heterogeneous characteristics of homeless persons support the use of a flexible, multidimensional approach to service delivery rather than one focusing on a single model (Corporation for Supportive Housing & National Council for Behavioral Health, 2014; Paquette & Winn, 2015). For example, for homeless persons with co-occurring substance abuse who have no desire to quit using substances and no criminal justice mandate requiring treatment Housing First might be the best approach. There may be few other options for them. Because these individuals frequently present service needs for substance abuse, mental health, and other problems, Housing First approaches that provide on-site case management that can connect them with the types of services they need is important (e.g., Stergiopoulos *et al*., 2015).

Homeless individuals who are motivated to address their substance abuse issues should typically be referred to a treatment program because research shows treatment is effective for many individuals, including those who are homeless (Hwang *et al*., 2005; National Institute on Drug Abuse, 2012). However, seriously lacking in many linear approaches is the permanent housing service after completion of treatment. As Kertesz *et al*. (2009) noted, treatment providers do not typically control housing subsidies and therefore treatment does not always lead to housing, even when the treatment is effective. Therefore, an issue that providers should consider when determining referrals for homeless persons with substance abuse problems is the availability of permanent housing after treatment is completed.

Although there is currently widespread support for resident centered approaches that emphasize consumer readiness and choice (e.g., Tsemberis *et al*., 2004), we need to recognize that some homeless persons are mandated to receive treatment by the criminal justice system. Typically, criminal justice systems require abstinence among offenders with alcohol or drug problems and therefore refer these individuals to abstinence-based treatment programs. For them, motivation is often based on a desire to avoid incarceration rather than to address alcohol or drug use. This does not necessarily bode poorly for treatment outcome. Among the larger population of substance abusers, those coerced into treatment through the criminal justice

system have fared as well as those entering voluntarily (National Institute on Drug Abuse, 2012).

Despite their criminal justice status, persons coerced into treatment or abstinent contingent housing through the criminal justice system have some degree of choice. First, they can opt for criminal justice sanctions rather than enter treatment. Second, they often have choices about programs to which they can apply. Finally, the programs are typically not obligated to accept individuals, which results in some degree of mutual selection. The limitation of Housing First for these individuals is that the criminal justice system typically mandates abstinence, which is inconsistent with the Housing First approach.

Korcha and Polcin (2012) pointed out there is a need for more research targeting outcomes for the growing numbers of individuals being released from incarceration, particularly in California where large numbers of ex-offenders are reentering communities. They suggested that peer-managed recovery homes, which are described in detail below, may be good options for many of these individuals. Because they do not mandate abstinence, Housing First services typically receive fewer referrals from the criminal justice system. Although few studies have addressed Housing First approaches for criminal justice offenders, one study did assess outcomes for Housing First residents with a history of misdemeanor crimes. Individuals in the sample apparently did not have a criminal justice mandate requiring services (i.e., Clifasefi, Malone, & Collins, 2013). Consistent with a variety of studies in the substance abuse field, the single group design showed that longer retention in the program resulted in better criminal justice outcomes. It would be interesting to assess outcomes of criminal justice referrals to Housing First without a mandate for abstinence, if a criminal justice jurisdiction would be willing to agree to such a condition.

Residential recovery homes for homeless persons

Overlooked in most of the current debates about services for homeless persons with co-occurring substance abuse is the potential role of residential recovery homes. These facilities serve a variety of persons with substance abuse disorders and represent a range of settings, some of which are unstructured and peer managed and others that are managed by professionals who provide on-site services (National Association of Recovery Services, 2012). Most recovery homes emphasize a "social model" philosophy of recovery that emphasizes peer support for abstinence and involvement in 12-step recovery programs (Polcin, Mericle, Howell, Sheridan, & Christensen, 2014). However, Mericle, Miles, Cacciola, and Howell (2014) noted that some recovery homes in Philadelphia included a variety of on-site services (e.g., counseling and medical care) in addition to peer support. Recent papers specifically targeting housing for the homeless (e.g., Corporation for Supportive Housing & National Council for Behavioral Health, 2014; Paquette & Winn, 2015) have supported an enhanced role for recovery residences. However, they are not appropriate for all homeless persons. Particularly contraindicated are individuals who do not wish to abstain from substances and those with severe and persistent mental illness. Nevertheless, Paquette and Winn (2015) suggested that including recovery homes in the mix of potential housing services is a positive response to calls for increased consumer choice in selection of services.

Recovery homes that offer a relatively higher degree of structure and on-site services, such as some of the houses described by Mericle *et al.* (2014) in Philadelphia, can be entry points for some persons into homeless service systems, particularly those who are motivated to live in an alcohol- and drug-free environment. However, one of the pitfalls of some of these facilities is that they offer time-limited lengths of stay and lack provision of permanent housing once residents reach the maximum length of time in the residence.

Peer-managed recovery homes

Expansion of two types of peer-managed recovery homes could help address the need for permanent sober housing: California Sober Living Houses (SLHs) (Polcin, 2009; Polcin & Henderson, 2008) and Oxford Houses (Jason, Olson, & Foli, 2008). Peer-managed recovery homes are resources for persons who have established some stability in the community and who are motivated to maintain an abstinence-based lifestyle. The individuals who enter these homes are typically not chronically homeless (longer than one year) or persons with chronic and severe mental illness (e.g., schizophrenia and other persistent psychotic disorders). The reason for this is that peer-managed homes require a level of autonomy and stability that is not often characteristic of individuals who are chronically homeless or suffering from severe mental illness. However, this does not mean that housing and psychiatric problems are not prevalent issues. In studies of SLHs, only 36% of the entering residents indicate they have stable housing at the

time they enter (Polcin, Korcha, Bond, & Galloway, 2010a; Polcin, Korcha, Bond, & Galloway, 2010b). In one study of an urban SLH program over a third (35%) indicated homeless or shelter was their typical living situation the past six months (Polcin *et al*., 2010a). In a different sober living program, a majority (52%) indicated they were marginally or temporarily housed, examples of which included staying with friends or leaving incarceration with no stable place to stay (Polcin *et al*., 2010b). Majer, Jason, Ferrari, and North (2002) studied Oxford Houses in St. Louis and reported that half had a history of homelessness. Similarly, psychiatric symptoms are issues in peer-managed recovery homes even though there were few persons with chronic, severe disorders such as schizophrenia. For example, Polcin, Korcha, and Bond (2015) found the average level of psychiatric severity in a sample of 245 SLH residents was similar to that of persons attending outpatient treatment for mental health symptoms.

Although peer-managed recovery homes do not offer formal services on-site, residents are free to pursue whatever professional services they need in the community and most homes encourage or require residents to be involved in 12-step recovery groups such as Alcoholics Anonymous. Some SLHs are targeted as "step down" homes where individuals can live after they complete a residential treatment program. In addition, some outpatient treatment programs have opened SLHs as alcohol- and drug-free living arrangements for individuals enrolled in outpatient treatment. However, most California SLHs and all Oxford Houses are free-standing facilities not associated with formal treatment.

Unlike formal treatment or Housing First approaches, the residents themselves typically pay most of the costs through earned income, family resources, or government subsidies, such as general assistance or social disability insurance. Because residents share living arrangements, the rental costs per person tend to be affordable. However, persons with no stable income, family support, or government subsidy may not be able to meet their financial obligations. As long as residents are able to meet financial obligations and comply with house expectations (e.g., abstinence), they can remain as long as they like. Relapse typically results in the resident leaving the home for some minimal period of time, but they typically can reenter if assessed as motivated to reestablish abstinence. Learning from relapses is viewed as an important part of recovery. Thus, these settings offer the potential for long-term and even permanent housing with very little cost to state and local governments.

Studies of sober living and Oxford Houses have revealed favorable longitudinal outcomes on measures of alcohol, drug, employment, and legal problems (Jason *et al*., 2008; Polcin *et al*., 2010a, 2010b). These studies used established, psychometrically sound instruments, such as the ASI (McLellan *et al*., 1992), the Brief Symptom Inventory (Derogatis & Melisaratos, 1983), and the Diagnostic Interview Schedule (Robbins, Cottler, & Keating, 1989). To enhance generalization of study findings, few inclusion/exclusion criteria were used.

None of the sober living and Oxford House studies specifically targeted recruitment of homeless persons. However, research on broad samples of residents that included significant numbers of persons with a history of homeless has yielded favorable outcomes. For example, in a study of 53 residents of Oxford Houses in St. Louis, half of the sample had a history of homelessness (Majer *et al*., 2002). Six-month outcomes showed 42% continued to reside in the houses and 27% left the houses on good term. In a study of 55 residents in SLHs in California over one-third indicated their primary living situation during the past six months was homeless or living in a shelter and another 16% indicated their primary housing was criminal justice incarceration (Polcin *et al*., 2010a). Six months after entry into the SLHs, residents showed significant improvement in terms of substance use, arrests, and employment. Importantly, these improvements were maintained at 18 months even though most residents had left the homes by that point.

Integration of peer-managed recovery homes into broad based services

Peer-managed recovery homes such as California SLHs and Oxford Houses have the potential to play unique roles within linear and Housing First models. Within linear models, they can be housing resources for previously homeless persons completing residential treatment or places for them to reside while they attend outpatient programs (Polcin *et al*., 2010a). Kertesz *et al*. (2009) pointed out that the lack of permanent housing is a common gap in linear systems of care. Peer-managed recovery homes have the potential to fill that gap because residents are free to stay as long as they wish. Because recovery homes require alcohol and drug abstinence and encourage or mandate attendance at 12-step groups, they provide an approach that is consistent with most treatment programs. In this way, recovery

homes emphasize concepts and practices that are familiar to residents and reinforcing of their treatment experiences. For individuals who found treatment to be helpful, this consistency adds to the therapeutic value.

Peer-managed homes can also compliment Housing First approaches to homelessness. For example, once stabilized in a Housing First apartment some individuals may decide at some point to quit their substance use. However, if they reside in an environment that tolerates substance use, pursuing that goal might be difficult. Living in a recovery home environment might be a much more effective way of responding to the individual's needs at that point and therefore should be available. Conversely, when individuals in recovery homes are not able or willing to comply with requirements for abstinence Housing First should be a readily available alternative to homelessness. In this manner there would be a cross referral process based on resident needs rather than competition between the two approaches.

One of the obstacles to peer-managed recovery homes is cost. Currently, most individuals in Oxford Houses and California SLHs pay rent using earned income or family resources. In a limited number of cases, the criminal justice system will pay for several months of rent but subsequently will expect the resident to pay costs. In low-income urban areas, some residents are able to pay costs using social security disability or general assistance. However, these homes are often not ideal because to make them affordable the homes serve a large numbers of residents per square footage and multiple residents share bedrooms. There is no clear rationale why one type of permanent housing is subsidized by government funding (Housing First) and one is not (recovery homes). Ensuring the availability and affordability of peer-managed recovery homes within Housing First and linear models of care would contribute important services currently lacking: permanent, abstinent-based housing that draws primarily on peer support as the active ingredient for successful recovery.

Conclusion

Researchers and practitioners frequently debate about the most appropriate service models for homeless persons with co-occurring substance abuse. However, a variety of weaknesses in the methods that have been used to study homeless services suggests caution when pointing to empirical research supporting different models. To improve the evidence base for systems of care for homeless persons with substance use disorders there needs to be closer attention to measurement of the characteristics of homeless persons, specification of inclusion and exclusion criteria that help focus studies on specific problems, and assessment of the types of services participants receive within different models. Although randomized designs have the advantage of showing causality, they can entail problems with generalization to the real world conditions of homeless persons, such as the typical ways they access services. This paper urges researchers to consider a wide array of research designs to address different aspects of homeless services.

Although several recent papers (e.g., Corporation for Supportive Housing & National Council for Behavioral Health, 2014; Paquette & Winn, 2015) have called for broader based service delivery systems that integrate Housing First and linear models, little has been done to integrate these models in community practice. This paper has described ways these two models complement each other and ways that practitioners could implement broader based, integrated approaches that respond better to individual needs. Homeless persons often move through different periods of motivation ranging from a desire to receive help to address their problems to simply receiving help for basic needs such as food and shelter. Current service systems for the homeless have not been sufficiently flexible to respond to these changes.

Currently, when criminal justice offenders are leaving incarceration and have a mandate to receive services, they typically are referred to programs that require abstinence from alcohol and drugs. This procedure is understandable given the consistent association between substance use and crime and relatively favorable outcomes for offenders in abstinence-based treatment programs. However, peer-based recovery homes could play stronger roles in providing long-term abstinent housing as part of the endpoints for linear-based service systems. Although the Housing First principle of supporting abstinence as one option for residents is not generally consistent with criminal justice requirements mandating abstinence for all ex-offenders, it would be interesting to assess illegal activities and arrests among Housing First residents without mandated abstinence.

Absent in most of the debates about services for homeless persons with co-occurring substance abuse is the potential role of peer-managed recovery homes, such as California SLHs and Oxford Houses. Most of these facilities require a level of functional

and financial independence that is frequently lacking among persons who are chronically homeless or suffering from severe mental illness. However, they have the potential to fill existing service gaps for both Housing First and linear models. Within Housing First models, they can be an important referral resource when residents receiving permanent housing subsidies decide they wish to attempt abstinence. Many Housing First environments are not suitable for persons attempting abstinence because they allow substance use among residents and are unlikely to have the social support often necessary to support abstinence. In linear service systems, peer-managed recovery homes can provide permanent housing after inpatient treatment, during concurrent outpatient care, or after residence in a more structured, professionally staffed recovery home. The potential impact of peer-managed recovery homes on linear service systems is high because lack of permanent, affordable housing that maintains the gains made in treatment has been a serious and widespread problem within linear systems.

Disclaimer statements

Contributors Dr. Polcin is the sole author of this paper.

Funding National Institutes of Health.

Conflicts of interest No conflicts of interest.

Ethics approval No data were collected for this paper. Ethical approval not required.

References

Ball, S., Caroll, K., Canning-Ball, M., & Rounsaville, B. (2006). Reasons for dropout from drug abuse treatment: symptoms, personality, and motivation. *Addictive Behaviors*, *31*, 320–330.

Clifasefi, S. L., Malone, D. K., & Collins, S. E. (2013). Exposure to project-based Housing First is associated with reduced jail time and bookings. *International Journal of Drug Policy*, *24*, 291–296.

Collins, S. E., Malone, D. K., & Clifasefi, S. L. (2013). Housing retention in single-site Housing First for chronically homeless individuals with severe alcohol problems. *American Journal of Public Health*, *103*(*S2*), S269–S274.

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. *American Journal of Public Health*, *102*, 511–519.

Collins, S. E., Malone, D. K., & Larimer, M. E. (2012). Motivation to change and treatment attendance as predictors of alcohol-use outcomes among project-based Housing First residents. *Addictive Behaviors*, *37*(*8*), 931–939.

Corporation for Supportive Housing & National Council for Behavioral Health (2014). *National substance use treatment and housing leadership forum: Framing paper*. Washington, DC, October 6–7.

Fitzpatrick-Lewis, D., Ganann, R., Krishnaratne, S., Ciliska, D., Kouyoumdjian, F., & Hwang, S. W. (2011). Effectiveness of interventions to improve the health and housing status of homeless people: A rapid systematic review. *BMC Public Health*, *11*(*1*), 638–642.

Freudenberg, N., Daniels, J., Crum, M., Perkins, T., & Richie, B. (2005). Coming home from jail: The social and health consequences of community reentry for women, male adolescents, and their families and communities. *American Journal of Public Health*, *95*, 1725–1736.

Gaetz, S. (2006). Safe streets for whom? Homeless youth, social exclusion, and criminal victimization. *Canadian Journal of Criminology and Criminal Justice*, *46*, 423–456.

Gillis, L., Dickerson, G., & Hanson, J. (2010). Recovery and homeless services: New directions for the field. *The Open Health Services and Policy Journal*, *3*, 71–79.

Greenberg, G., & Rosenheck, R. (2008). Jail incarceration, homelessness, and mental health: A national study. *Psychiatric Services*, *59*, 170–177.

Hwang, S. W., Tolomiczenko, G., Kouyoumdjian, F. G., & Garner, R. E. (2005). Interventions to improve the health of the homeless: A systematic review. *American Journal of Preventive Medicine*, *29*, 311–311.

Jason, L. A., Olson, B. D., & Foli, K. J. (2008). *Rescued lives: The Oxford House approach to substance abuse*. New York: Routledge.

Jason, L. A., Roberts, K., & Olson, B. D. (2005). Attitudes toward recovery homes and residents: Does proximity make a different? *Journal of Community Psychology*, *33*, 529–535.

Kertesz, S. G., Crouch, K., Milby, J. B., Cusimano, R. E., & Schumacher, J. E. (2009). Housing First for homeless persons with active addiction: are we overreaching? *Milbank Quarterly*, *87*(*2*), 495–534.

Kirst, M., Zerger, S., Misir, V., Hwang, S., & Stergiopoulos, V. (2015). 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.

Korcha, R. A., & Polcin, D. L. (2012). Addressing the deluge of early release prisoners into US communities. *Addiction*, *107*(*1*), 4–5.

Larimer, M. E., Malone, D. K., Garner, M. D., Atkins, D. C., Burlingham, B., Lonczak, H. S., & Marlatt, G. A. (2009). Health care and public service use and costs before and after provision of housing for chronically homeless persons with severe alcohol problems. *JAMA*, *301*(*13*), 1349–1357.

Lee, B. A., Tyler, K. A., & Wright, J. D. (2010). The new homelessness revisited. *Annual Review of Sociology*, *36*, 501.

Majer, J. M., Jason, L. A., Ferrari, J. R., & North, C. S. (2002). Comorbidity among Oxford House residents: A preliminary outcome study. *Addictive Behaviors*, *27*(*5*), 837–845.

Mericle, A. A., Miles, J., Cacciola, J., & Howell, J. (2014). Adherence to the social model approach in Philadelphia recovery homes. *International Journal of Self Help and Self Care*, *8*(*2*), 259–275.

Milby, J. B., Schumacher, J. E., Wallace, D., Freedman, M. J., & Vuchinich, R. E. (2005). To house or not to house: The effects of providing housing to homeless substance abusers in treatment. *American Journal of Public Health*, *95*(*7*), 1259.

National Alliance to End Homelessness (2014). *The state of homelessness in America 2014*. Retrieved from http://www.endhomelessness.org/library/entry/the-state-of-homelessness-2014.

National Association of Recovery Residences. (2012). *A primer on recovery residences: frequently asked questions* (46pp.). Altanta, GA [accessed: 2012-10-02]. Archived by WebCite at http://www.webcitation.org/6B7e01VSk.

National Coalition for the Homeless. (2009). *Substance abuse and homelessness*. Retrieved from http://www.nationalhomeless.org.

O'Connell, J. J. (2005). *Premature mortality in homeless populations: A review of the literature*. Nashville, TN: National Health Care for the Homeless Council.

Padgett, D. K., Gulcur, L., & Tsemberis, S. (2006). Housing First services for people who are homeless with co-occurring serious mental illness and substance abuse. *Research on Social Work Practice*, *16*(*1*), 74–83.

Padgett, D. K., Stanhope, V., Henwood, B. F., & Stefancic, A. (2011). Substance use outcomes among homeless clients with serious mental illness: Comparing Housing First with treatment first programs. *Community Mental Health Journal*, *47*(*2*), 227–232.

Palmer, R. S., Murphy, M. K., Piselli, A., & Ball, S. A. (2009). Substance user treatment dropout from client and clinician perspectives: A pilot study. *Substance Use & Misuse*, *44*, 1021–1038.

Paquette, K. & Winn, L. (2015). Housing models to support recovery and reduce homelessness: Opportunities for collaboration and expansion across systems of care. Manuscript in preparation.

Petersilia, J. (2003). *When prisoners come home: Parole and prisoner reentry*. New York: Oxford University Press.

Petteruti, A., & Walsh, N. (2008). *Jailing communities: The impact of jail expansion and effective public safety strategies.* Washington, DC: Justice Policy Institute.

Polcin, D. L. (2009). A model for sober housing during outpatient treatment. *Journal of Psychoactive Drugs*, *41*(*2*), 153–161.

Polcin, D. (in press). How should we study residential recovery homes? Therapeutic Communities: The International Journal of Therapeutic Communities.

Polcin, D. L., & Henderson, D. (2008). A clean and sober place to live: Philosophy, structure, and purported therapeutic factors in sober living houses. *Journal of Psychoactive Drugs*, *40*(*2*), 153–159.

Polcin, D. L., Henderson, D., Trocki, K., Evans, K., & Wittman, F. (2012). Community context of sober living houses. *Addiction Research & Theory*, *20*(*6*), 480–491.

Polcin, D. L., Korcha, R. A., & Bond, J. C. (2015). Interaction of motivation and psychiatric symptoms on substance abuse outcomes in sober living houses. *Substance Use & Misuse*, *50*(*2*), 195–204.

Polcin, D. L., Korcha, R., Bond, J., & Galloway, G. P. (2010a). Eighteen month outcomes for clients receiving combined outpatient treatment and sober living houses. *Journal of Substance Use*, *15*, 352–366.

Polcin, D. L., Korcha, R., Bond, J., & Galloway, G. P. (2010b). Sober living houses for alcohol and drug dependence: 18-month outcomes. *Journal of Substance Abuse Treatment*, *38*(*4*), 356–365.

Polcin, D., Mericle, A., Howell, J., Sheridan, D., & Christensen, J. (2014). Maximizing social model principles in residential recovery settings. *Journal of Psychoactive Drugs*, *46*(*5*), 436–443.

Polvere, L., Macnaughton, E., & Piat, M. (2013). Participant perspectives on Housing First and recovery: Early findings from the At Home/Chez Soi project. *Psychiatric Rehabilitation Journal*, *36*(*2*), 110.

Ridgway, P., & Zipple, A. (1990). The paradigm shift in residential services: From the linear continuum to supported housing approaches. *Psychosocial Rehabilitation Journal*, *13*, 20–31.

Robertson, M. J., Zlotnick, C., & Westerfelt, A. (1997). Drug use disorders and treatment contact among homeless adults in Alameda County, California. *American Journal of Public Health*, *87*(*2*), 221–228.

Robbins, L., Cottler, L., & Keating, S. (1989). NIMH Diagnostic Interview Schedule: Version III: Revised (DIS-III-R). St. Louis: Washington University.

Rog, D. J., Marshall, T., Dougherty, R. H., George, P., Daniels, A. S., Ghose, S. S., & Delphin-Rittmon, M. E. (2014). Permanent supportive housing: assessing the evidence. *Psychiatric Services*, *65*, 287–294.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, *70*(*1*), 41–55.

Stergiopoulos, V., Hwang, S. W., Gozdzik, A., Nisenbaum, R., Latimer, E., Rabouin, D., & Goering, P. N. (2015). Effect of scattered-site housing using rent supplements and intensive case management on housing stability among homeless adults with mental illness: A randomized trial. *JAMA*, *313*(*9*), 905–915.

Tsemberis, S., Gulcur, L., & Nakae, M. (2004). Housing First, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. *American Journal of Public Health*, *94*, 651–656.

Waegemakers Schiff, J., & Schiff, R. A. (2014). Housing First: paradigm or program? *Journal of Social Distress and the Homeless*, *23*(*2*), 80–104.