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How Should We Study Residential Recovery Homes?

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Abstract

Purpose—Persons with serious alcohol and drug problems who are attempting to maintain abstinence often lack an alcohol and drug free living environment that supports sustained recovery. Residential recovery homes, called “sober living houses” in California, are alcohol and drug-free living environments that offer long-term support for persons with addictive disorders. They do not offer formal treatment services but usually encourage or mandate attendance at self-help recovery groups such as Alcoholics Anonymous.

Approach—This paper weighs the strengths and weaknesses of different research designs for studying residential recovery homes. Alternatives to randomized designs that are able to capture “real world” data that are readily generalized are described and understudied topics are identified.

Findings—A significant limitation of traditional randomized designs is they eliminate mutual selection processes between prospective residents and recovery home residents and staff. Naturalistic research designs have the advantage of including mutual selection processes and there are methods available for limiting self-selection bias. Qualitative methods should be used to identify factors that residents experience as helpful that can then be studied further. Innovative studies are needed to investigate how outcomes are affected by architectural characteristics of the houses and resident interactions with the surrounding community.

Practical implications—Use of the recommended strategies could lead to findings that are more informative, intuitively appealing, and interpretable.

Social implications—Recovery homes and similar programs will be more responsive to consumers.

Originality—This paper represents one of the first to review various options for studying recovery homes and to provide suggestions for new studies.

Keywords

Drug Treatment; Recovery Home; Sober Living House; Research Design; Residential Treatment

Providers of alcohol and drug treatment in the U.S. and elsewhere are increasingly recognizing the limitations of acute care models designed to establish initial abstinence. There is a growing consensus that many persons with alcohol and drug problems require ongoing services that help sustain recovery over time. While some providers have responded by offering harm reduction services that focus on reducing the severity of substance use and related problems (e.g., Toumbourou & Hamilton, 1994), others have emphasized the potential role of abstinence based residential recovery homes (National Association of Recovery Residences, 2012).

Sober Living Houses (SLHs) are a type of recovery home that is abstinence-based and emphasizes a “social model” recovery philosophy that focusses on peer support and resident empowerment (Wittman & Polcin, 2014). While there are many different types of recovery homes in the U.S. and elsewhere (see the review by the National Association of Recovery Residences [2012] for a complete description of ways that recovery homes vary by structure, staffing, services offered and governance), this paper focuses primarily on SLHs in California. Unlike residential treatment programs or halfway houses, residents of SLHs are free to stay as long as they wish provided they abide house rules (e.g., maintain abstinence from alcohol and drugs, attend regular house meetings, participate in maintenance of the household, and pay rent and fees on time). In addition, SLHs require or strongly encourage some type of involvement in mutual help groups, 12-step programs being the most common. SLHs serve the needs of a variety of persons with alcohol and drug disorders, including those leaving residential treatment programs, those needing an alcohol and drug-free place to live while they attend an outpatient treatment program, those transitioning into communities after incarceration, and individuals seeking recovery options that do not involve formal treatment. Most houses are privately run and costs are covered by resident fees rather than government funding.

SLH providers view peer support and peer empowerment as the primary mechanisms by which individuals improve their lives (Wittman & Polcin, 2014). Involvement in mutual help groups, such as 12-step recovery meetings, is either mandated or strongly encouraged. The level of structure and oversight in these facilities is typically minimal. SLHs need to be distinguished from long-term therapeutic community treatment programs for drug addiction, which offer far more intensive levels of structure, a variety of group and individual counseling services, and different funding mechanisms (De Leon, 1990).

SLHs and other types of residential recovery homes are becoming increasingly popular in the U.S. and elsewhere. In California there are over 800 privately run SLHs associated with recovery house associations that monitor health, safety, and operational standards, such as the Sober Living Network (SLN) and the California Association of Addiction Recovery Resources (CAARR) (Wittman & Polcin, 2014). In 2011 the National Association of Recovery Residences (NARR) was formed now includes a membership representing over 1,900 houses throughout the U.S. (NARR, 2012). NARR has developed a typology of levels for recovery residences ranging from those that are largely unstructured and peer operated (Level I) to highly structured homes offering professional services (Level IV). California SLHs are best described by Level II, where there is some oversight from a house manager but limited structure and a primary emphasis on peer support as a way to facilitate recovery.

Research on Recovery Homes

Only recently has the field begun systematic studies of long-term, peer operated recovery homes, such as sober living houses in California (Polcin, et al., 2010a; 2010b) and Oxford Houses (Jason et al., 2006; Jason et al., 2007). Oxford Houses represent a specific type of sober living residence popular outside California. Relative to Sober Living Houses in California they are more homogeneous in terms of size and operation and they tend to be more frequently located in suburban rather than inner city areas. The Polcin et al studies of

SLHs examined two types of sober living houses, one group of 16 freestanding houses (N=245) that were freestanding and not associated with any type of treatment and one group of 4 houses (N=55) where residents lived while they attended an offsite outpatient treatment program. The former were located in a middle class suburb of Sacramento, California and the latter was located in a low income urban area in Berkeley, California. The study used a quasi-experimental longitudinal design that assessed individuals at baseline (entry into the house) and 6-, 12-, and 18-month follow-up. Outcomes were similar in both types of residences. On average residents showed significant improvement between entry into the residence and 6-month follow-up on multiple measures (e.g., substance use, arrests, and employment). Importantly, improvements were maintained at 18-month follow-up even if residents had left the sober living home.

Oxford House studies have been encouraging as well. One study of Oxford Houses assessed graduates from a long-term therapeutic community treatment program (N=150). Half were randomly assigned to Oxford Houses and half to aftercare as usual. Initially there were no differences between the two conditions, but at 2-year follow-up the Oxford House condition fared better in terms of substance use and other outcomes (Jason, et al, 2006). Another study assessed 897 residents who had been living in an Oxford House from one day up to 122 months. This sample of individuals currently residing in Oxford houses was followed up at four-month interviews over a one-year period. Results at the final assessment showed 13.5% of the respondents reported using alcohol or drugs during the previous 90 days (Jason, Davis, Ferarri, & Anderson, 2007).

While these initial studies have been encouraging (Reif, et al., 2014), they nonetheless evidence a range of limitations. These include descriptive studies without randomized or other types of comparison groups, comparison groups comprised of a single setting, examination of narrowly defined samples that do not generalize broadly (e.g., graduates of long-term treatment programs who subsequently enter recovery homes), and outcome studies that did not use “intent-to-treat” designs assessing participants longitudinally from entry into the homes through follow-up time points.

Purpose

This paper considers some of the strengths and weaknesses of various research designs for studying SLHs and other types of recovery residences. Included in this discussion are strategies for modifying designs to mitigate limitations. The paper also identifies topics needing more attention, including identification of therapeutic factors predicting outcome, resident and provider experiences, social and architectural factors within houses affecting outcome, and resident interaction with the surrounding neighborhood.

Considerations for Study Designs

The use of randomization has become the gold standard in medical and behavioral research. Advantages of this method include the potential to establish causality of treatment effects on outcome by comparing an active treatment with a control or comparison condition. The problem with nonrandomized study designs is they involve voluntary, self-selection of participants receiving interventions. Thus, the types of individuals who self-select to

receive an intervention can confound the effects of treatment. However, for some types of research there are significant downsides to using randomization and including self-selection has advantages. This section reviews some limitations of randomized designs for studies of recovery residences, ways to modify designs to mitigate limitations, and alternatives that investigators can consider.

Self-Selection of Residents into Recovery Homes

One of the most important and meaningful events during a person's tenure at a residential recovery home occurs before they even enter the facility. It is when they decide to seek entry into a recovery home and attend an admission interview, which may include interactions with a mix of current residents, the house manager, and other staff. The combined effect of the interview process, the invitation from staff and residents to enter the home, and the applicant's acceptance of that invitation is a sense of mutual commitment that sets the stage for subsequent experiences that are supportive of the recovery process. For example, the personal connection established during the interview can facilitate the applicant's motivation to fulfill the obligations of being a resident and their willingness to offer support to other residents. Conversely, current residents and staff who participate in the interview process and the decision to invite the applicant into the home are likely to feel more of a commitment to the new resident and offer more support and encouragement than they would if they were not part of the admission process.

One of the downsides of using randomization when studying recovery residences is the elimination or at least substantial weakening of this mutual selection process between the applicant and the recovery home. Rather than entering a particular residence because they believe it is a good fit for their needs, residents taking part in randomized research designs enter the residence because study procedures direct them there. Rather than admitting an applicant because they are a good match for the recovery home environment, recovery homes participating in randomized designs might admit the person on the basis of their commitment to the research.

The case for including self-selection in research on long-term therapeutic communities for drug addiction has been well articulated by DeLeon, Inciardi, and Martin (1995). Among a number of considerations, they emphasized that randomization in this type of research is not always feasible or desirable. For example, criminal justice institutions may mandate that referrals for offenders be based on individual needs and they may therefore resist participation in random assignment.

There are also questions about generalization of study findings when using randomized designs. Ultimately, the characteristics of individuals who are agreeable to being randomized to where they will live for months or even years may not be reflective of the characteristics of persons who seek out recovery homes based on need and motivation. This was born out in a paper by Melberg and Humphreys (2010), who studied how randomization procedures in drug treatment studies resulted in biased samples. They assessed 98 randomized clinical trials and found 29% of the potential participants were unwilling to enroll in studies. An additional 29% were excluded because they did not meet eligibility criteria used to bolster claims about causality. Humphreys and Weisner (2000) reported

similarly biased samples in clinical studies for alcohol problems. In a paper describing alternatives to randomized designs Humphreys, Phibbs and Moos (1996) contended that random assignment to study conditions is often neither possible nor desirable in longitudinal evaluations of mutual help organizations.

There may be ethical questions as well. Randomization of persons with serious alcohol and drug disorders to weak or time limited comparison conditions may not be defensible (DeLeon, Inciardi & Martin, 1995). Moreover, learning about recovery options from family, friends, or professionals; considering the pros and cons of different potential programs; and deciding on the recovery program that is the best match may be integral to the recovery process.

Controlling for Self Selection Bias

There are various strategies that researchers can employ to minimize the limitations of self-selection. DeLeon, Inciardi, and Martin (1995) suggested the use of multivariate statistical models that can control for a wide variety of individual characteristics that could potentially be associated with outcome. These types of analyses allow researchers to show improvement over time and the relative influence of factors associated with improvement. Examples include statistical models such as mixed model regressions and generalized estimating equations. Use of these procedures in studies of recovery residences can to some degree mitigate the contention that factors other than the recovery residence are responsible for improvement.

Humphreys, Phibbs and Moos (1996) expanded upon these ideas by developing a two-stage model to control for bias caused by self-selection. Their approach relies on regression procedures where participation in a service is modeled in an initial equation that yields a sample selection correction factor. The correction factor is then included in a second equation that predicts outcome. This allows the evaluator to interpret the observed effects of self-selection effects in terms of the magnitude and direction.

There are additional advantages to using statistical models that parse out relative influences of factors predicting outcome. In a paper addressing the effectiveness of Alcoholics Anonymous Kaskutas (2009) noted that many topics in public health research (e.g., smoking) do not readily lend themselves to randomized designs because of ethical and practical considerations. Among a number of issues to consider in assessing causality in non-randomized designs is the concept of “theoretical plausibility.” This notion suggests that the case for causality is supported to some degree when outcomes are related to the theoretical rationale of an intervention or the purported mechanisms of how the intervention is helpful. For example, in research on SLHs in California (Polcin, et al., 2010a, 2010b) researchers found that residents made significant reductions in substance use that were maintained over an 18-month period. Predictors of outcome included characteristics of residents’ social network and level of involvement in 12-step groups. Both of these factors are central to the theory of how recovery residences facilitate the recovery process.

Matching Designs

One way to maintain a naturalistic focus in research on recovery residences that includes mutual selection processes yet includes some type of comparison group is to use matched designs. Matching allows for “real world” examination of residential recovery homes the way they actually operate and compares outcomes in these facilities with outcomes of similar individuals not residing in a recovery residence. One of the challenges of using matching designs in this type of research is finding appropriate comparison groups (DeLeon, Inciardi & Martin, 1995). Matched designs require equivalence of the two study conditions on key variables and it can be difficult to match participants in a recovery residence on variables such as substance abuse history, criminal justice status, prior treatment, and severity of coexisting problems that can affect outcome (mental health, medical, and employment history). Given the incipient state of research on residential recovery settings it is even unclear which factors would be most important to match. In addition, an ideal comparison condition would include equivalence of time and attention in the living situations, both of which would be difficult to arrange.

If the goal is to simply compare outcomes for individuals with substance abuse problems who enter a recovery residence with those who do not, one could use propensity score matching (PSM) (Rosenbaum & Rubin, 1983). PSM estimates the effect of an intervention by controlling covariates that predict receiving the intervention. Thus, PSM reduces bias due to confounding influences that would be found simply comparing outcomes among individuals who received the treatment versus to those that did not. The challenge of using this method in research on recovery homes is that it can be difficult to control for all of the various factors that might influence entry into a recovery residence. For a more complete description of PSM methods in substance abuse research see Ye and Kaskutas (2009).

Modifications of Randomized Designs

There are ways to decrease undesirable aspects of randomization. For example, rather than assigning residents to a specific recovery residence and requiring the residence to admit the individual based solely on randomization, participants can be randomized to a study condition that involves *application* to any of a number of recovery residences that meet specific criteria. This would allow for inclusion of an application process where the applicant and recovery home residents and/or staff assess whether there is a good fit between the individual’s needs and characteristics of the environment. However, researchers using this method still face the question of finding an appropriate comparison condition to which residents in recovery homes are compared.

Another way to employ randomization so that it does not detract from natural self-selection of persons into recovery homes is to randomize individuals to study conditions after they have entered the sober living facility. Study conditions might include residence in a sober living house alone versus a sober living residence plus an enhanced condition that offers additional services. For example, in our current study of sober living houses for criminal justice offenders houses are assigned to a sober living as usual condition or a condition that involves sober living residence plus receipt of an enhanced case management intervention, which is designed to help residents adapt to the sober living house environment, comply

with their terms of parole or probation, and find and maintain employment. The limitation of course is that one cannot test effectiveness of sober housing as an intervention relative to an alternative. Rather, one is testing whether a particular enhancement facilitates outcome.

Physical and Social Characteristics of Sober Living Houses

Most of the research on recovery homes to date has focused on resident level variables rather than house characteristics. However, even when houses adopt similar operational standards they might vary considerably in terms of physical and social characteristics and these factors could weigh heavily in terms of their influence on outcomes. How house level characteristics interact with individual characteristics to influence outcome could be particularly important to investigate.

One issue that has been largely neglected in the recovery home and treatment literature is the architectural layout of facilities and how they are juxtaposed to surrounding neighborhoods. In an article about SLHs in California Wittman et al (2014) suggested that SLHs should have sociopetal designs that facilitate social interaction balanced with some provision of privacy. For example, social interaction is enhanced in homes that have common meeting areas that are attractive and readily accessible to all residents. Privacy is enhanced by having a secure place to store belongings. Wittman, et al. also suggested there was a need for physical designs that allowed for transparency and oversight of who was entering the facility in order to maintain an alcohol- and drug-free environment. Finally, it was argued that acceptance of the SLH from the community required upkeep of the house at levels commensurate with the surrounding neighborhood. All of these issues need attention in terms of assessing their impact on outcomes and the viability of houses within local communities. For a more complete description of architectural influences on SLHs see the special edition of the *International Journal of Self-Help and Self-Care* (Polcin, 2014).

Social environments within recovery house settings have also received minimal attention. This is particularly concerning because aspects of residents' social networks and their level of involvement in 12-step programs such as Alcoholics Anonymous have been shown to be related to substance use outcome (Polcin et al., 2010a). It would be interesting to investigate how social characteristics identified by Moos (1997) are associated with outcomes. These include measurement of domains identified in the Community Oriented Program Evaluation Scale (COPEs), such as Involvement, Support, Spontaneity, Autonomy, Practical Orientation, Problem Orientation, Anger and Aggression, Order and Organization, Clarity, and Staff Control.

Voices of Residents, Operators, and Community Stakeholders

Because research on recovery residences is still in its infancy (Reiff, et al., 2014), we are only beginning to understand key factors that influence resident outcomes. For recovery homes that provide professional drug treatment and other services there is a need to assess how those services are related to outcome. However, California SLHs do not provide professional services that can then be studied in terms of their associations with outcome. Rather, purported therapeutic elements are based on characteristics of the social environment within home and the level of mutual support shared among residents. Although

there are guidelines and standard for SLHs that belong to recovery home organizations, there may be enormous variation in terms of what actually occurs in these residences. To a large degree, best practices are unclear and certainly not currently based on empirical evidence.

In this scenario, it is essential to conduct qualitative studies that draw on the experiences and reports of residents and managers of the facilities. Such investigations are important because they can identify factors experienced as helpful. How these factors relate to objective measures of outcome can then be assessed using quantitative methods. Questions for managers and residents should address factors that facilitate and hinder recovery processes in the following domains: organization and management, rules and requirements for residency, social processes within the household, peer support, physical characteristics of houses, and linkage with other services (e.g., medical, mental health, legal, and employment).

There is a need for research to capture the perspectives of other stakeholder groups as well including neighbors who reside near the homes. NIMBY (not in my back yard), refers to resistances from neighbors and other stakeholders to the presence of recovery homes and similar types of residences in communities. Although qualitative data collected from SLHs in California suggest next door neighbors tend to be very supportive of sober living houses (Polcin, et al., 2012a), NIMBY resistances continues to proliferate. Interviews with neighbors and local service providers suggest that stigma plays a more prominent role in the development of negative perceptions than specific concerns about recovery residences. There is therefore a need for more effective dissemination of existing findings about recovery residences as well as additional research verifying the effectiveness of “good neighbor” policies used by my most houses.

In addition to studying neighbors of SLHs there is a need for research documenting how other stakeholder groups (e.g., government officials and other community service providers) differ by locality. A study of one geographic area in northern California found that public health and local government officials strongly supported houses that were well managed (i.e., required abstinence, had well maintained facilities, and evidenced good neighbor policies) (Polcin et al., 2012a). However, in Southern California some local governments have presented legal challenges that would limit the size and number of houses (Wittman & Polcin, 2014). There is therefore much to be learned about the concerns of these officials, upon what they base their concerns, and what might alleviate them. Surveys of substance abuse and mental health professionals (Polcin, et al., 2012b) suggest that interaction between SLH residents and community stakeholders is one way to dispel myths about persons residing in SLHs and their impact on the community. There is also a serious need for more dissemination of research findings on SLHs and other types of recovery homes to stakeholder groups so that discussions can be well informed rather than based on biases.

The viability of SLHs in residential neighborhoods requires support and collaboration from a variety of local service providers (e.g., medical, mental health, legal, and employment). Interaction with these providers gives SLHs validity within the broader service community as well as access to resources that are often needed by residents. In a study of recovery

homes in Philadelphia Mericle et al (2014) found residents frequently presented problems that a SLH environment alone could not address. Collaboration with community service providers can also help providers remember SLHs as a referral resource for their clients who have substance use disorders.

Given the widespread problems of substance abuse problems in community based service settings, coordination and cross referrals with SLHs seem critically important. However, it is surprising how many community service providers know little or nothing about SLHs and other community based recovery residences. Additional health services research is needed to describe the best practices for coordinating care between recovery home and community services.

Studying the Neighborhood Context of Recovery Homes

Until recently, research on neighborhood influences on alcohol and drug problems has been limited to measures of factors such as crime, economic status, and population density. Jacobson (2004) expanded this line of thinking by emphasizing the importance of examining restorative as well as risk influences. That is, factors that facilitate as well as hinder recovery in communities. The implication for SLH and other recovery home researchers is that in addition to assessing traditional factors, such as crime and economic status, they might also assess the influence of proximity of homes to alcohol outlets (hindering factors) as well as mutual help groups and services (facilitating influences).

Recent innovations in neighborhood research have begun to take a more sophisticated approach that assesses factors like “activity spaces” (Coulton, 2012; Mennis & Mason, 2011). These are methods that go beyond documenting neighborhood characteristics because they assess the frequency and types of interactions that individuals have in the communities where they live and work. For example, in terms of assessing recovery homes one could inquire with residents about their use of supportive services in their neighborhoods (e.g., 12-step meetings, medical care, mental health services, and legal assistance) as well as access to and use of community resources such as public transportation, parks and other recreation areas. One could also assess susceptibility to destructive influences such as alcohol outlets and areas where drugs are marketed.

To date, most studies of SLHs and other recovery residences have been conducted in middle class suburban areas (e.g., Jason, et al., 2007; Polcin et al, 2010a). The neighborhood characteristics of these residences are different from those of houses located in urban areas and different types of residences might be necessary to meet residents’ needs (Mericle, et al., 2014). There is a serious need for additional studies of houses located in low income, inner city areas that serve residents with more serious problems.

Summary

Recovery from substance use disorders is increasingly emphasizing the importance of an alcohol- and drug-free living environment. Although the number of residential recovery homes for persons with alcohol and drug problems has risen rapidly in recent years there have been relatively few concurrent studies assessing their operations and outcomes. There

is an understandable desire among researchers and funders of studies to support implementation of randomized trials, where participants are assigned to recovery residences versus a comparison condition. Results from these types of randomized designs could be used to make causal attributions about effectiveness. However, one limitation is that randomized designs circumvent an important process in the recovery home experience, the mutual selection process that occurs as prospective residents apply for admission. Although matched designs comparing recovery housing to some other condition is an alternative, finding appropriate comparison conditions can be challenging. Naturalistic designs have the advantage of studying outcomes from houses as they are normally operated and include mutual selection processes. However, limitations include a weakened position for arguing causality. This paper has reviewed strategies for addressing the limitations of these various designs and identified a variety of issues in need of more attention from researchers.

Recommendations

1. Researchers using random assignment should assign individuals to a broad recovery home condition that allows individuals to pursue residence in different recovery houses rather than one specific house. This allows for some degree of mutual selection between study participants and recovery homes, which is important because it sets the stage for subsequent experiences in the home.
2. Another way to use randomization methods in recovery house research is to assign residents to an enhanced recovery house condition versus recovery housing as usual after they enter the house. While this does not constitute a randomized trial of recovery home effectiveness, it can reveal important ways that recovery homes can be effectively augmented.
3. When using non-randomized, naturalistic designs, researcher should consider using methods that control for self-selection bias, such as the Humphreys et al (1996) two-stage regression model to control for biases caused by self-selection or propensity score matching as described by Ye and Kaskutas (2009).
4. Researches should consider using longitudinal models that assess how theoretically relevant constructs (e.g., social support for recovery and involvement in mutual-help groups) predict recovery outcomes. While not a “proof” of causality, it is one element that can lend support to the contention that favorable outcomes are the result of the housing service.
5. Research on recovery homes is in its infancy and there are a host of important factors that need attention. These include studies describing how resident, house, and neighborhood characteristics are associated with outcome. Architectural features that can influence social interaction and neighbor perceptions are particularly understudied. Multi-level assessments parsing out the relative effects of individual, house, and neighborhood variables on outcome could be used to inform providers about where to best direct their efforts.
6. There is a need for research on recovery homes designed for specific populations, such as criminal justice, women with children, and sexual minority groups.

7. We need to recognize that recovery housing is not a “one size fits all” phenomenon. That is precisely why the National Alliance of Recovery Residences (2012) developed a four-level typology of residences ranging from unstructured, peer-run residences (e.g., sober living houses) to those that are highly structured and operated by professional staff. Research is needed to determine good resident candidates for the different levels.
8. More work is needed on the community context of recovery residences, particularly the role of stigma in harming the viability of houses. Key informant interviews with various stakeholder groups (e.g., local government officials, neighbors of recovery houses, criminal justice workers and local housing departments) could help identify sources of resistance needing to be addressed. Assessing neighborhood influences should address restorative factors that facilitate recovery (e.g., proximity of 12-step groups and other supportive services) as well as risk factors.
9. Residents entering SLHs frequently present a variety of service needs that can be addressed by accessing outside resources in the community. Studies are therefore needed about the extent to which SLHs coordinate with community service providers and residents receive professional services for various problems, such as medical, mental health, legal and unemployment.
10. With several important exceptions (e.g., Mericle, et al, 2014; Polcin, et al., 2010b) most studies of recovery homes have used houses located in suburban areas. There is a need for more studies on recovery homes that can accommodate low income, inner city residents.

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