



HHS Public Access

Author manuscript

J Subst Abuse Treat. Author manuscript; available in PMC 2023 February 01.

Published in final edited form as:

J Subst Abuse Treat. 2022 February ; 133: 108638. doi:10.1016/j.jsat.2021.108638.

The Role of Recovery Housing During Outpatient Substance Use Treatment

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Abstract

Background: Recovery housing generally refers to alcohol- and drug-free living environments that provide peer support for those wanting to initiate and sustain recovery from alcohol and other drug (AOD) disorders. Despite a growing evidence base for recovery housing, relatively little research has focused on how recovery housing may benefit individuals accessing outpatient substance use treatment.

Methods: Using administrative and qualitative data from individuals attending an outpatient substance use treatment program in the Midwestern United States that provides recovery housing in a structured sober living environment, this mixed methods study sought to: (1) determine whether individuals who opted to live in structured sober living during outpatient treatment (N=138) differed from those who did not (N=842) on demographic, clinical, or service use characteristics; (2) examine whether living in structured sober living was associated with greater likelihood of satisfactory discharge and longer lengths of stay in outpatient treatment; and (3) explore what individuals (N=7) who used the structured sober living during outpatient treatment were hoping to gain from the experience.

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Results: Factors associated with the use of recovery housing during outpatient treatment in multivariate models included gender, age, and receiving more services across episodes of care. Living in structured sober housing was associated with greater likelihood of satisfactory discharge and longer length of stays in outpatient treatment. Focus group participants reported needing additional structure and recovery support, with many noting that structure and accountability, learning and practicing life, coping, and other recovery skills, as well as receiving social and emotional support from others, were particularly beneficial aspects of the sober living environment.

Conclusions: Findings underscore the importance of safe and supportive housing during outpatient substance use treatment as well as the need for future research on how housing environments may affect engagement, retention, and outcomes among individuals accessing outpatient substance use treatment.

1. Introduction

Recovery housing is an increasingly common service modality (Jason et al., 2020) and is often used by individuals in recovery from addiction to alcohol and other drugs (Kelly et al., 2017). Recovery residences go by a variety of different names and can provide a range of services, but they generally refer to alcohol- and drug-free living environments that provide peer support for those wanting to initiate and sustain recovery from alcohol and other drug (AOD) disorders (Jason et al., 2013). Studies of residents in Oxford Houses (Jason et al, 2006; Jason et al., 2007; Jason et al., 2015), sober living houses in California (Polcin et al., 2010a; Polcin et al., 2018; Polcin et al., 2010b), and other more structured and clinically oriented settings, like therapeutic communities (TCs; De Leon, 2010; National Institute on Drug Abuse, 2002; Vanderplasschen et al., 2013), have found that these types of environments are associated with positive outcomes, including abstinence from alcohol and drugs, gains in employment, and decreased involvement in the criminal justice system.

Despite these encouraging findings, gaps in the scientific literature on recovery housing exist because research has focused on recovery housing that is generally considered substance use treatment (TCs) or recovery housing that provides only peer support (Oxford Houses and sober living houses in California). Some research has described recovery residences that are purposefully linked with outpatient substance use treatment or that also provide residents with a variety of services in addition to social support and mutual aid as part of their stay in the residence (Mericle et al., 2015; Mericle et al., 2017; Polcin, 2009), but such descriptions are limited. Further, despite findings that suggest that individuals living in residences, which are affiliated with treatment programs, have improved outcomes over time (Mericle et al., 2019; Polcin et al., 2010a), robust evidence for the effectiveness of this type of recovery housing is lacking. In an effort to begin to fill this gap in the literature, this mixed-methods study sought to report reasons that individuals in outpatient substance use treatment may use treatment-affiliated recovery housing and to examine demographic, clinical, and service use differences among clients who utilize recovery housing and those who do not, as well as whether utilizing recovery housing during outpatient treatment is associated with increased odds of satisfactory discharge and longer lengths of stay in outpatient treatment.

1.1 Benefits of and limitations to outpatient treatment

Numerous studies point to the effectiveness of substance use treatment, including outpatient treatment. In a meta-analysis of 78 studies of drug treatment conducted between 1965 and 1996, Pendergast and colleagues (Pendergast et al., 2002) found that treatment had both a statistically significant and clinically meaningful effect on reducing drug use and crime; they further found that treatment modality, which included both residential and outpatient settings, was not related to effect sizes for either drug use or crime outcomes. In a more recent analysis of the evidence base for intensive outpatient treatment (IOP), McCarty and colleagues (McCarty et al., 2014) concluded that, in multiple studies comparing IOP to inpatient or residential care, IOP was as effective as these other types of care for most individuals.

One of the most consistent predictors of favorable treatment outcomes across multiple modalities is treatment completion (Hser et al., 2004), yet dropout from substance use treatment is common. A recent meta-analysis of 151 in-person psychosocial SUD treatments conducted between 1965 and 2016 found that the average dropout rate across all studies and study arms was 30.4% (Lappan et al., 2020). Studies that have examined predictors of dropout have largely focused on client-level factors rather than program or treatment characteristics (Brorson et al., 2013). Although examining client-level factors may help clinicians to identify and support clients who may be at-risk for dropout, studies must also identify what programs can do that may help to reduce dropout. One study focused specifically on that question, interviewing 154 individuals who dropped out of outpatient treatment (54% of the outpatient sample), found that the most common program-level factors included dissatisfaction with the program, especially counselors, unmet social service needs, and lack of flexibility in scheduling (Laudet et al., 2009).

1.2 Addressing potential limitations by expanding the substance use continuum of care

In the study that Laudet and colleagues (2009) conducted, two-thirds of the clients who left treatment (67.2%) said that nothing could have been done by the program to keep them engaged in services. Of those who did identify things that the program could have done, the majority identified helping clients access social (food, employment, and housing) services; the next most popular area in need of improvement centered on a desire to have counselors that were more supportive and understanding of their needs. Case management or activities to otherwise access or provide social services are often referred to as “ancillary services” (Substance Abuse and Mental Health Services Administration, 2018), a name denoting their subordinate status to other clinical services that programs can provide to clients. While concepts of empathy and therapeutic alliance are commonly taught and well-researched aspects of counseling and other allied professions, these factors may not be the same as truly knowing and understanding what clients are experiencing, particularly in their early recovery.

To address shortcomings experienced by clients attending substance use treatment, services that can augment the care that traditional substance use treatment programs provide may be necessary. Indeed, these sorts of services, aptly named recovery support services, are steadily growing in popularity and acceptance (Laudet & Humphreys, 2013). As a service

delivery modality, recovery support services, which both substance use disorder treatment programs and community organizations can provide, help to engage and support individuals in treatment, and provide ongoing support after treatment (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016). These support services are typically delivered by trained case managers, recovery coaches, and/or peers, and specific supports include help with navigating systems of care, removing barriers to recovery, staying engaged in the recovery process, and providing a social context for individuals to engage in community living without substance use.

1.3 Recovery housing as a support to keep clients engaged and increase recovery capital

One of the most common and comparatively more researched types of recovery support services is recovery housing (Laudet & Humphreys, 2013). According to recent guidelines that SAMHSA developed, recovery housing is an intervention that is specifically designed to address the recovering person's need for a safe and healthy living environment while supplying the requisite recovery and peer supports (Substance Abuse and Mental Health Services Administration, 2019). Recognizing that a variety of different types of residences could meet this definition, the National Alliance for Recovery Residences (NARR) has developed categories demarcating four levels of support provided by different types of recovery residences (National Association of Recovery Residences, 2011). At one end of the spectrum are Level I residences, which are characterized as being "peer-run." An example of this type of residence is the Oxford House model (Jason & Ferrari, 2010; Jason et al., 2008). Level IV residences, which are characterized as "treatment providers", are at the other end of the spectrum. An example of this type of care is the TC model (De Leon, 2000). Regardless of organizational structure and services provided, fundamental to all types of recovery housing is implementation of the social model principles of recovery. Social model programs draw heavily from mutual help traditions, such as AA, and emphasize the role of experiential knowledge, nonhierarchical relationships between helpers and those being helped, and active involvement of the clients in the well-being of the recovery community and interfacing with the community at large (Borkman, 1998; Kaskutas et al., 1998).

Recovery support services, like recovery housing, seek to augment the resources that individuals bring to their recovery; these basic resources (physical, social, human, and cultural resources) are collectively termed "recovery capital" (Cloud & Granfield, 2008; Granfield & Cloud, 2001). Recovery residences can help residents to build recovery capital across these domains in a variety of different ways, even in residences where no clinical or recovery support services are provided (Cano et al., 2017; Mericle, Carrico, et al., 2019). For example, by providing residents with affordable housing, recovery housing can help residents to accrue financial capital. Research has shown that living among other peers in recovery can build social support and instill a sense of community (Ferrari et al., 2002; Jason et al., 2014; Jason et al., 2016; Stevens et al., 2018; Stevens et al., 2015). Delineating and enforcing house rules, promoting accountability to members of the household, encouraging involvement in mutual help groups, and fostering communal learning drawing from "collective experiential knowledge" (Borkman, 1999; Heslin et al., 2012; Jason et al., 2007) may enhance a variety of different aspects of human capital as well. Opportunities to enhance human capital may be more readily available in recovery housing

settings that provide services to expressly enhance recovery knowledge and skills as well as services to address mental health issues and other skills essential for optimal negotiation of daily life.

1.4 Study objectives

Taken together, these aspects of recovery housing—adherence to social model principles and attention to concrete needs of individuals in recovery—can help individuals attending outpatient treatment to stay engaged in treatment and improve long-term recovery outcomes. Studies examining the role of housing, in general (Milby et al., 2005), and the role of recovery housing, in particular (Tuten et al., 2017), demonstrate a clear link between addressing concrete housing needs and substance use treatment outcomes compared to conditions without such housing. However, neither of these studies focused on the nature of the housing environment, who may benefit from recovery housing, or how aspects of this environment may have directly or indirectly contributed to increases in recovery capital. The current study represents a critical first step in addressing these issues. Using administrative and qualitative data from individuals attending outpatient substance use treatment, this study: (1) determines whether individuals who opt to live in recovery housing during outpatient treatment differ from those who do not on demographic, clinical, or service use characteristics; (2) examines differences between these two groups with respect to discharge status and length of stay; and (3) explores what individuals who use recovery housing during outpatient treatment are hoping to gain from the experience.

2. Methods

Data for this observational study came from two sources: de-identified administrative data that the substance use treatment program maintained; the program tracked all patients who entered the program between 2017 and 2019 and collected focus group data from residents living in the recovery residence that the treatment program operated during 2019. The Public Health Institute IRB approved and monitored all human subjects procedures.

2.1 Sites and participants

An addiction treatment program located in a large metropolitan area in the upper Midwest provided outpatient treatment and recovery housing. Day treatment (otherwise known as “partial hospitalization”) and intensive outpatient (IOP) are offered onsite with recovery housing available as an additional option to participants in either of these two levels of care. Levels of care differ in program intensity with day treatment scheduled for approximately six hours per day, Monday through Friday, and IOP scheduled for three hours per day, Monday through Thursday. IOP sessions are scheduled at a variety of times to accommodate busy schedules and allow participants to continue with work, attend school, or take care of responsibilities at home.

Placement in either level of care is dependent primarily on illness severity with other factors considered. Individuals enrolled in day treatment or IOP typically transition into the program from a higher level of SUD care (residential or day treatment) or, due to lower SUD severity at the onset, “step in” to the program as the first level of care. Licensed counselors

deliver treatment programming based on Twelve Step Facilitation (Nowinski & Baker, 1992). The program includes motivational interviewing techniques, cognitive behavioral approaches, and contingency management methods. The delivery model is group-based, with individual sessions occurring with licensed addiction treatment counselors. Psychology and psychiatry staff, who recognize SUDs as brain diseases that are primary, chronic, and progressive, treat co-occurring mental health disorders, with the goal of treatment being long-term abstinence from alcohol, illicit drugs, and/or misused prescription medications.

This program operates a licensed, clinically supervised recovery residence (referred to by the program as “structured sober living”) in a separate area of the building. The residence, provided as an option only to those enrolled in day treatment or IOP onsite, accommodates up to 13 men and up to 11 women in a gender-specific living environment and is designed for adults who need a structured living environment while participating in outpatient care. Staff discuss the recovery housing option with all clients as part of the intake process and individuals may enter or exit recovery housing at any point during the course of their care at the site.

Recovery housing programming includes topic-specific group sessions designed to assist residents in strengthening sober living skills, establishing new routines, practicing relapse prevention strategies, and focusing on transition planning to address potential barriers to healthy recovery. Residents receive weekly coaching and individual counseling beyond that delivered in the concurrent treatment program. Prior to November 2018, a sober coach provided this additional support; beginning in November 2018, a licensed addiction counselor filled this role. Addiction technicians are onsite evenings, overnight, and weekends and provide another source of support to residents. In addition to remaining abstinent from all mood-altering substances, residents must attend four or more Twelve Step meetings per week; have a Twelve Step sponsor; meet with a coach or counselor regularly; and work, go to school, or volunteer on a full-time basis. Residents must also commit to a one-month stay, at a minimum, with a preferred commitment of at least three months. Although a hallmark of recovery housing, most notably sober living houses in California, is an open-ended length of stay (Polcin & Henderson, 2008), providers sometimes recommend a minimum length of stay to residents (Mericle et al., 2015; Mericle et al., 2017).

2.2 Recruitment and data collection procedures

2.2.1 Administrative data—We retrieved de-identified administrative data for individuals admitted to the treatment location between January 1, 2017, and December 31, 2018, who enrolled in any of the following programs: day treatment, intensive outpatient treatment, outpatient treatment, recovery housing, and outpatient mental health. Data from these admissions included the history of services received at any other location run by the parent program through mid-2019. Data included demographics, treatment service, location of service, registration year, discharge year, discharge status, length of stay, substance use, and ICD 10 diagnoses. Demographic and clinical data capture potential service needs that might be indicative of deficits in recovery capital or characteristics of more vulnerable populations who might benefit from additional services during outpatient treatment. Service

delivery data characterize service use dimensions, which also may be indicative of greater service needs, and service use outcomes.

2.2.2 Resident focus group—Residents in the structured sober living residence learned of the opportunity to participate in a focus group about their experiences there in two primary ways. Staff posted a flyer announcing the date, time, and location (a group room at the treatment facility) of the focus group in common areas and distributed the flyer to residents during a house meeting prior to the focus group. Residents who attended for the focus group at the designated time received information about the purpose and nature of the study as well as risks and benefits of participation. English-speaking residents age 18 or older who are able to provide informed consent (i.e., are not expressing symptoms of cognitive impairment) were eligible to participate. Seven of the fourteen residents living at the residence at the time participated in the focus group (all non-Hispanic White; five males and two females); all those who came to learn more about the focus group agreed to participate. The demographic breakdown (gender or race/ethnicity) of the focus group was representative of those who were living in the house at the time. The focus group lasted approximately 60 minutes and staff digitally audio-recorded the group.

2.3 Instruments and measures

2.3.1 Administrative data—In addition to demographic characteristics (e.g., gender, race/ethnicity, age, and educational attainment), we created variables to examine dimensions of service need and service use. Using data provided on ICD 10 diagnosis, we created summary variables to categorize client diagnoses and to represent the total number of different types of diagnoses clients had been given at any point by the treatment provider. We created a variable to identify kinds of substance use diagnoses on record (alcohol use only, drug use only, or alcohol and drug use). Further, to summarize the number of different types of diagnoses, diagnostic codes were grouped into physical health, mental health, substance use (alcohol and other drug disorders), and other (e.g., diseases of the nervous system, signs of abnormal clinical and laboratory findings, not elsewhere classified, and reporting factors influencing health status and contact with health services, symptoms) categories. After tallying across types, the study team created a variable to indicate whether clients had 0–1 or 2 or more different types of diagnoses.

We created service use variables to represent the total number of: treatment episodes on record (dichotomized to indicate 1 versus 2 or more); locations where clients had been treated within the provider's network of facilities (dichotomized to indicate 1 versus 2 or more); and different types of services received (e.g., day treatment, intensive outpatient treatment, outpatient treatment, recovery housing, and outpatient mental health) across each episode of care (continuous, ranging from 1 to 8). Because recovery housing stays were linked to the outpatient treatment programs, the total number of services received for those in recovery housing did *not* include their current recovery housing stay. Discharge status reflects discharge from the episode of outpatient services received during the study window. For those who received recovery housing, this is the status of discharge from outpatient treatment received while in recovery housing. Satisfactory discharge status reflects discharges or transfers with staff approval, as well as conditional discharges with

staff approval. We calculated length of stay as days between admission and discharge within an episode of care. Because individuals who received recovery housing in the structured sober living residence would often “step down” to a lower level of outpatient care after leaving it, we included the amount of time in this lower level of care in the length of stay calculation. Although less common, individuals could also “step up” into recovery housing from a lower level of outpatient care or add it after they initiated day treatment or IOP. Like the individuals who stepped down into recovery housing, length of stay for those individuals stepping up included time spent in outpatient treatment prior to recovery housing if it was within the same episode of care and within the study window.

2.3.2 Resident focus group—We created the focus group interview guide to cover three primary topic areas: factors that influenced the decision-making process to move into the structured sober living residence; perceived challenges and benefits to it; and the role of recovery housing, more generally, in improving outcomes. The guide prompted residents to reflect on how they learned about the structured sober living residence and what made them think that moving into it was the best option for them. To assess challenges and benefits, we encouraged residents to consider several different aspects of the residence—the physical setting/environment, residents, and staff/programming. Finally, when discussing the role of recovery housing in improving outcomes, we asked residents what they considered to be key ingredients of recovery housing and what people (diverse groups—prospective residents, treatment providers, and other stakeholders) should know about recovery housing.

2.4 Data analyses

2.4.1 Administrative data—Analyses included only variables missing less than 30% of cases, with all but one variable missing less than 10% of cases. We used Little’s test of missing completely at random (MCAR) and its extension for testing the covariate-dependent missingness (CDM) to ensure the appropriateness of using variables with partially observed data (Li, 2013; Little, 1988). The CDM test including recovery housing status was non-significant, meaning that the missing-data mechanism could be reasonably viewed as CDM given this variable. We estimated frequencies and measures of central tendency to summarize client characteristics. The study tested differences between those using and not using recovery housing using Chi-square, Fisher’s exact, and Student’s t tests. We also tested differences using logistic regression models to determine how much the factor increased or decreased the odds of using recovery housing. In addition to being tested separately, we entered factors significant at the bivariate level into a simultaneous logistic regression model to determine whether they were still significant when adjusting for all other factors. We used logistic and linear regressions to test the relationships between recovery housing status and outpatient discharge status and length of stay. After testing the independent relationship between recovery housing status and these variables, we added variables related to recovery housing in the prior multivariate analysis to test the robustness of these relationships. The study team conducted all analyses using Stata/MP 16.0 for Windows (StataCorp., 2019).

2.4.2 Resident focus group data—We transcribed the audio recording of the focus group verbatim according to pre-determined conventions (O’Connell & Kowal, 1999) and

redacted information that might identify participants. We analyzed transcripts using the framework approach (Ritchie et al., 2003), which is closely related to both thematic (Braun & Clarke, 2006) and qualitative content analysis (Morgan, 1993). The framework approach involves a series of interconnected stages that facilitates constant refinement of themes facilitating the development of robust conceptual frameworks (Gale et al., 2013; Smith & Firth, 2011). Using this process, we developed initial codes from the topic areas addressed in the interview guide, and we created coding subcategories after thorough “familiarization” (Gale et al., 2013) with the content of the focus group and discussions between coders about potential themes. To facilitate retrieval of coded passages, to refine and illustrate common themes, and to tally both how often a particular theme was mentioned by different speakers, we used a spreadsheet to generate a matrix (codes by participants) and catalogue illustrative quotes.

3. Results

3.1 Sample characteristics

Of the 980 clients who received services at the outpatient treatment program during the study period, the majority of clients were male (65%), non-Hispanic White (87%), age 30 or older (68%), and had some sort of postsecondary education (89%; see Table 1). Forty-four percent of the sample had both alcohol and drug diagnoses in their records, and the majority (52%) more than two different types of ICD 10 diagnoses. The overwhelming majority received only one episode of treatment (84%) at a single location (70%) and received an average number of 2.9 services per treatment episode. Roughly two-thirds (65.9%) had an average length of stay of 87.5 days. Table 1 also displays, gender, age, and all measures of service need, service use, and outcomes by recovery housing status.

3.2. Differences between those who did and did not utilize recovery housing

Fourteen percent (n=138) of the clients who entered outpatient treatment at the program during the study period also used the structured sober living. During the episode of care associated with this stay, the majority (67%) of clients stepped down into a lower level of outpatient treatment after leaving the residence. Few clients (n=3) entered the structured sober living after initiating outpatient, and the remaining left treatment at the location after their stay in the residence. Bivariate logistic regressions revealed several significant findings (shown in Table 2 below). Being female was associated with greater odds of using the structured sober living (OR=1.75, p=0.002). Being in the older age categories (e.g., 30–39 and 40+) compared to being in the youngest age category was associated with lower odds of using the structured sober living (OR=0.48, p=0.003; OR=0.40, p<0.001, respectively). Having both alcohol and drug use disorder diagnoses compared to having just an alcohol use disorder (OR=2.24, p<0.001), and having multiple types of diagnoses (OR=3.24, p<0.001) were associated with greater odds of using the structured sober living. Receipt of multiple episodes of treatment (OR=2.46 p<0.001), services at multiple locations (OR=3.59, p<0.001), and receiving more services (OR=1.73, p<0.001) were also associated with higher odds of structured sober living use. However, as Table 2 also displays, the study found some differences attenuated when including all variables to be associated with recovery housing at the bivariate level in the same logistic regression model. Factors that

remained significantly associated with use of the structured sober living (either increasing or decreasing odds) included: female gender (aOR=1.87, $p=0.003$), being in the older age groups (aOR=0.57, $p=0.032$ and aOR=0.44, $p=0.002$, respectively), and receiving more services across episodes of care (aOR=1.87, $p=0.003$).

Table 3 presents findings from logistic and linear regression analyses examining the association between recovery housing status and outpatient discharge and length of stay, independently and adjusting for gender, age, and number of services received. Receiving recovery housing in the structured sober living residence was associated with increased odds of having a satisfactory discharge from outpatient treatment at the program (OR=2.91, $p<0.001$); a relationship that remained statistically significant after adjusting for factors associated with using recovery housing in multivariate analyses. Those receiving recovery housing were in outpatient treatment an average of 156.3 days while those only receiving only outpatient treatment were in treatment an average of 76.4 days. As Table 2 displays, receiving recovery housing was associated with a statistically significant increase in outpatient length of stay at the program ($B=79.8$, $p<0.001$). This relationship also remained statistically significant after adjusting for factors associated with using recovery housing.

3.3 Qualitative themes

We organized themes that emerged from the focus group into three general topic areas: Needing a safe and supportive living environment, factors that were particularly important to the structured sober living environment, and key challenges with respect to recovery housing. We present findings in these areas next.

3.3.1 Needing a safe and supportive living environment—Comments about this theme stemmed from questions regarding factors that led residents to enter the structured sober living residence. The majority ($n=5$) of the participants in the focus group talked about being advised to move into a sober living residence upon completion of inpatient treatment. This advice and the decision to move into sober living, even if it was not explicitly recommended, stemmed from a recognition that their own home environment was not conducive to their immediate recovery needs ($n=4$) and that they needed additional support that could be provided in a sober living environment ($n=5$). As one resident put it, “I needed to get away from my environment. There were too many triggers and too many negative memories there. I couldn’t go there right away. I knew I needed a safe environment so that I could slowly integrate back into my life” (P006). Another resident commented that “I just don’t think that I was ready for ‘the real world’. This is the first step...another step in that direction” (P001). According to another resident, “I know, personally, that I don’t want to use... If I was living by myself, I might have a harder time not using just because it is only about me in that situation. But here, I wouldn’t want to make others here feel uncomfortable” (P002).

3.3.2 Breaking down the critical components—What exactly about the sober living environment made it safe and supportive? Residents in the focus group talked about: structure and accountability ($n=5$); learning and practicing life, coping, and other recovery skills ($n=5$); and social and emotional support received by others in the residence ($n=4$).

Residents talked about how the design and expectations of the program fostered a sense of both safety and responsibility, to themselves and to others. As one resident noted, “There’s someone at the desk, and there are techs here. Your entire support staff that’s here pretty often. There is a counselor that is working specifically at the residence... all those levels of accountability that contribute to feeling safe” (P002). Daily household chores were a key aspect of accountability for residents. One resident explained that, “We make our bed every day. It’s the first step toward getting back to the real world, to real life—work, a job” (P007).

Residents also commented on how aspects of services provided to the residents helped them to learn about themselves and how to manage challenges to their recovery. Whether it was the availability of psychologists or other aspects of programming, like daily meditation and group meetings or weekly family nights, residents pointed to how the sober living environment provided them with practical tools for their recovery. As one resident reflected, “The requirements that are a part of living here... makes you even bigger, better, stronger, and faster” (P003). One resident commented on how this programming also benefited her family: “My husband is a proponent of this because I am in a place where he doesn’t have to worry about me. He’s positively impacted because my chance of relapse is lower. He doesn’t have to come home and wonder what kind of condition I am in. So for the families that are impacted by our condition, they get to sleep a full night without worrying. I think that is a really important thing” (P006).

The structure of the program and services provided were enhanced by the setting in which they were delivered. The comradery and support that participants received from other residents enhanced the program. Residents talked about being inspired by individuals who had “time in the program” (P003) as well as concrete ways in which residents supported one another. For example, one resident noted that, “I think the way we share with one another about our experiences and what we have learned throughout the day can be really helpful” (P002). Another resident commented that, “Here, I am connected with people who are like-minded. The care and concern is unconditional. There is no judgement. I just find myself wanting to run back from work and come back here. I just feel so safe here. And I am a big strong guy, but it is just something where I feel very peaceful here” (P003). This was echoed by another resident who said that, “I sleep well, and we are surrounded by people who care” (P006).

3.3.3 Potential challenges—In comparison to the potential benefits of living in the facility, residents mentioned potential challenges to a lesser extent. Two challenges that participants most frequently discussed were financial challenges and the more general challenge, that all individuals in recovery face, of finding a recovery residence that would fit their needs. Financial challenges were related to the fact that living in the residence was not covered by insurance. As one resident explained, “...they [insurers] don’t pay for any sober housing. There is no insurance company that pays for sober living that I am aware of, unless you have some sort of triple platinum kind of plan” (P003). Although residents can work while living in the residence, this may not be possible for all residents, and having “no money coming in” (P004) was noted as a challenge. Despite this challenge, residents saw their stay as a worthwhile investment. One resident related that “...living here is [paid for]

out of pocket. For me though, there was no other option. This was the place I wanted to go.” (P006).

Some residents had been in other recovery residences prior to moving into this residence. Meeting one’s needs could mean ensuring that the house provided or facilitated residents’ accessing specialized services; comfort often reflected living with a smaller number of residents who could understand their experiences. As one resident explained, “I think that it needs to have a strong treatment component and have professionals available to the patients. I think that, also, numbers in the house make a big difference. When you are living on a floor with 50 some women, and you see your counselor if you are lucky once a week, you may never see a psychiatrist the whole time you are there because your condition is not as bad as the person sitting next to you...I think that smaller numbers are good” (P005). Another resident remarked on house composition, saying that, “I wouldn’t want to be in a program where I am surrounded by all 20-somethings that might be night owls, and I may have two or three roommates, and then my recovery is at risk” (P006). This resident encouraged all those who might be considering recovery housing to “tour, tour, tour! You have to see where you are going to be laying your head at night.”

4. Discussion

In its working definition of recovery, SAMHSA recognized the importance of “home” or having a safe and stable place to live as critical to supporting a lifestyle in recovery (Substance Abuse and Mental Health Services Administration, 2011). Recovery housing provides this stability and is one of the more well-researched recovery support services (Laudet & Humphreys, 2013). However, research on recovery housing to date is largely focused on residences that exclusively provide peer-support (e.g., Oxford Houses) and types of environments (e.g., therapeutic communities) that would be considered residential treatment, despite growing understanding of the diversity of levels of support that can be provided by recovery residences (National Association of Recovery Residences, 2011). Further, researchers and practitioners often conceptualize recovery housing as an “aftercare” endpoint for individuals stepping down or out of residential treatment or other structured settings (e.g., criminal justice settings).

While many individuals use recovery housing in this way, researchers have paid less attention to how recovery housing can be used to support individuals prior to reaching the level of symptom severity that would require residential treatment or criminal justice involvement, or for individuals who cannot attend residential treatment due to lack of finances or insurance coverage. Those who are enrolled in outpatient treatment may benefit from recovery housing to encourage engagement, prevent attrition, and potentially prevent or reduce the likelihood of disease progression. The current study found that individuals who used the structured sober living residence differed from their counterparts who did not on key demographic and clinical characteristics generally indicative of needing more services and support, and that living in the structured sober living was associated with increased odds of satisfactory discharge and outpatient treatment episodes with longer lengths of stay. This study also found that the structured sober living provided these residents with what they reportedly were looking for and noted as being beneficial to their recovery.

4.1 Deficits in recovery capital

At the bivariate level, differences between those who did and did not use recovery housing generally reflected a greater likelihood of more vulnerable groups (e.g., women, younger clients, those with multiple diagnoses) and those with more complex service use trajectories (e.g., those having multiple treatment episodes, receiving services at multiple locations, and receiving more services across episodes of care) to be living in the structured sober living facility during their outpatient treatment. Although many differences between groups attenuated in multivariable analyses, differences by gender, age, and services received remained significant in multivariable post-hoc sensitivity analyses in which we also adjusted for type of outpatient service received (because those in the structured sober living also needed to be enrolled in day treatment or IOP). Indeed, individuals attending the focus group acknowledged that they needed additional supports that could be provided in a sober living environment. In addition to providing needed support to residents, staying in recovery housing also provided respite from worry and reassurance to family members. For women with caretaking responsibilities living in the structured sober living, respite might also mean providing them time to focus solely on meeting their own recovery needs. Fortunately, many of these individuals also noted that they were advised to move into a sober living residence by a treatment professional, reflecting an attempt to match individuals with potentially less recovery capital with additional recovery supports. Recent efforts to measure recovery capital have produced assessments of recovery capital that range in length from 10 (Vilsaint et al., 2017) to 50 items (Groshkova et al., 2013), covering key domains related to recovery from an SUD. While recovery housing research has increasingly used these measures (Cano et al., 2017; Mericle, Carrico, et al., 2019), whether clinicians are using such tools in treatment settings to establish care plans and identify individuals who may need additional support during their recovery is unclear. Greater use of these measures could also aid in refinement of cut-points for these measures in order to further enhance their clinical utility.

4.2 Increasing retention in treatment and improving discharge status

This study found that living in the structured sober living residence was associated with longer lengths of stay in outpatient treatment, even after adjusting for differences between groups. However, this likely occurred because those who entered recovery housing often stepped down into lower levels of outpatient treatment after leaving recovery housing. If the study had restricted analyses of length of stay to just the duration of the outpatient service received when individuals entered the structured sober living (post-hoc analyses available from corresponding author), recovery housing was associated with shorter lengths of stay. These findings underscore the importance of the structured sober living in maintaining engagement in outpatient treatment generally, but also the importance of addressing financial barriers and assessing match/fit between residents and sober living environments that focus group members noted, which may shorten individuals' ability to stay in higher levels of care (like day treatment or IOP) while in recovery housing.

This study also found that individuals who received recovery housing in the structured sober living residence while receiving outpatient treatment had increased odds of being discharged satisfactorily from the outpatient service when they entered the structured sober living residence. Because so many clients who lived in the structured sober living residence

transitioned to another type of outpatient service after leaving sober living, we ran post hoc analyses (also available from the corresponding author) examining discharge status from this service. Although the strength of the relationship attenuated when analyzing the discharge from this other type of outpatient service, it remained statistically significant after adjusting for differences between groups. This attenuation may suggest that individuals leaving the structured sober living residence may have done so before they were ready or had supports in place in their new living setting and that treatment programs and residents should consider factors associated with entry into sober living. Indeed, when using the discharge status from the structured sober living residence as the discharge status rather than the outpatient service discharge status, differences in discharge status by whether individuals received recovery housing were no longer significant, again highlighting the need to examine factors surrounding one's transition out of sober living. Thus, while many individuals remained in outpatient treatment even after leaving the structured sober living residence, which is encouraging, these findings call for closer examination of why individuals may leave and how to provide additional support to these individuals to ensure that they have what they need to stay in recovery housing or are connected with similar kinds of support that the structured sober living had offered.

4.3 Key housing elements to support recovery

SAMHSA's acknowledgement of a home's importance to recovery has been instrumental in moving the field to recognize the potential of recovery housing. Although research defining recovery housing, delineating different types and models, and establishing standards for them (National Association of Recovery Residences, 2011; Substance Abuse and Mental Health Services Administration, 2019) has progressed greatly, the field can benefit from more research that measures critical components of recovery housing and establishes evidence-based recovery housing practices. And although researchers have used measures developed to assess social environments of treatment settings (residential and otherwise), such as the social model philosophy scale (Kaskutas et al., 1998) and the Community Oriented Evaluation Scale (COPEs; Moos, 1988), these measures were not developed to assess the environments of recovery residences (Harvey & Jason, 2011; Mericle et al., 2014). Residents living in the structured sober living environment in this study identified elements of structure and accountability as well as social and recovery support as being critical in their recovery, so the field must develop measures of these elements to determine whether recovery residences are indeed meeting residents' needs. Clearly defining and operationalizing these constructs may also help those in recovery, as well as those working with them, whether it be clinicians or recovery support service providers, to determine whether an environment (whether it be the recovering person's home or a recovery residence) is offering what the person most needs.

4.3 Limitations and future directions

Information about this structured sober living setting and the characteristics and experiences of the residents living there highlight an innovative approach to supporting individuals accessing outpatient substance use treatment, but this study is not without limitations. One limitation is the generalizability of study findings. Findings from this study are from one recovery residence in a Midwestern state. Although research is growing on the number and

nature of recovery housing across the country, how similar or different this setting may be to other recovery residences that may be used in conjunction with outpatient treatment is unclear. Another limitation is that residents' characteristics came from administrative data. Although this method allowed us to examine differences between a large number of individuals accessing treatment, it restricted the kinds of information at which we could look. Although we analyzed demographic and clinical data that might be indicative of deficits in recovery capital or characteristics of more vulnerable populations, the study did not include key indicators of physical capital (e.g., income, insurance, and current housing status), and we did not analyze data from a formal measure of recovery capital. Further, the study had a great deal of missing data on key demographic variables (e.g., race/ethnicity and educational attainment). Post hoc sensitivity analyses adjusting for whether individuals were missing data on these variables did not produce substantively different findings, but future studies should pay careful attention to data collection procedures.

Moreover, data on employment status were available for fewer than half of the individuals in the dataset. Another limitation is that findings on the experiences of residents in the structured sober living represent one snapshot in time. The composition of residents in the house and how well they got along with each other at the time likely had an effect on their perception of the value of their experience. Moreover, only fourteen residents lived in the house at the time of the focus group, and only half participated in the focus group. Although no differences existed between those who did and did not participate in the focus group based on key demographics, individuals who were more eager to share positive opinions about the residence may have participated in the focus group. To be certain, future studies should use more active recruitment strategies to encourage participation or plan data collection activities around established meeting times to increase awareness of these activities. Finally, although we examined discharge status and length of stay, we did not assess whether living in the residence was associated with increases in recovery capital or other aspects of well-being that might be associated with recovery outside of treatment.

Future studies should address these limitations, namely research studies should recruit individuals entering outpatient treatment and prospectively follow those who do and do not use recovery housing. Future research could assess housing environments, a broader range of demographic and individual-level measures, as well as recovery capital at multiple time points to examine the relationship between housing environments and recovery capital and whether this changes over time and mediates key treatment and recovery outcomes. Ideally, such a study would implement random assignment to recovery housing and non-recovery housing settings, but doing so may present a number of logistical and ethical challenges (Polcin, 2015). Future work would benefit from statistical techniques, such as propensity score matching (Rosenbaum et al., 1973), that could strengthen causal inference.

4.4 Summary and conclusions

Despite a growing evidence base for recovery housing, relatively little research has focused on how recovery housing may benefit individuals accessing outpatient substance use treatment. This study found that individuals who used the structured sober living environment differed from their counterparts who did not on key demographic and clinical

characteristics and that they were more likely to have a satisfactory discharge status and longer lengths of stay in outpatient services; the study also found that the provision of more support and services was indeed what residents were looking for, and participants noted these as being benefits of this setting. Findings underscore the importance of safe and supportive housing during outpatient substance use treatment as well as the need for future research on how housing environments may affect engagement, retention, and outcomes among individuals accessing outpatient substance use treatment. However, recent attention to unethical practices, such as patient brokering (i.e., entities receiving a fee for referring clients to treatment programs), has discouraged the otherwise beneficial practice of establishing organizational linkages (formal or informal) between recovery housing and treatment providers (Mericle et al., 2019). Clarifying the benefit of recovery housing as an adjunct to outpatient substance use treatment is critical to supporting the full spectrum of addiction treatment and recovery support, and can help to identify ways to prevent the unethical practices that can undermine the impact and efficacy of such programs. This research helps to identify pathways to develop clinical decision support tools to help clinicians identify individuals who may benefit from recovery housing, identify problems in processes and characteristics of home environments (regardless of type) that may be detrimental to treatment and positive recovery outcomes, and it contributes to the existing body of evidence that points to the benefits of recovery housing in the treatment of addiction.

Acknowledgements

This work was supported by the National Institute on Alcohol Abuse and Alcoholism (NIAAA; R01AA027782). The funding agency had no role in: the study design; the collection, analysis or interpretation of data; in the writing of the report; or the decision to submit the paper for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIAAA or the National Institutes of Health. In addition to our funders, the authors would like to thank Adam Erdman and Alex Lessard for their help in preparing the administrative data for analyses as well as Lee Kaskutas for her assistance analyzing the qualitative data.

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Highlights

- Recovery housing, like structured sober living may increase engagement in outpatient treatment.
- Factors associated with structured sober living generally reflected greater service needs.
- Structured sober living was associated with greater odds of satisfactory discharge and longer lengths of stay in outpatient treatment.
- Residents in structured sober living reported needing a safe and supportive living environment, and that it provided accountability, practicing of key recovery skills, and social support.
- Residents in structured sober living reported challenges pertaining to financial concerns and finding a good fit.

Table 1.

Demographics, Service Delivery Characteristics, and Outcomes by Recovery Housing Status (N=980)

	Full Sample (N=980)		Outpatient Only (N=842)		Recovery Housing (N=138)		Test of Differences
	n	%	n	%	n	%	
Gender							0.002
Male	638	65.1	564	67.0	74	53.6	
Female	342	34.9	278	33.0	64	46.4	
Race/Ethnicity (N=914)							0.339
Non-Hispanic White	795	87.0	675	86.7	120	88.9	
Non-Hispanic African American	39	4.3	37	4.8	2	1.5	
Hispanic	46	5.0	38	4.9	8	5.9	
Non-Hispanic Other	34	3.7	29	3.7	5	3.7	
Age (N=921)							<0.001
<=29	294	31.9	230	29.1	64	48.9	
30–39	238	25.8	210	26.6	28	21.4	
40+	389	42.2	350	44.3	39	29.8	
Educational Attainment (717)							0.909
High school or less	75	10.5	64	10.5	11	10.5	
College/some college/vocational	516	72.0	442	72.2	74	70.5	
Graduate/professional	126	17.6	106	17.3	20	19.1	
Substance Use Diagnosis (N=976)							0.001
Alcohol only	394	40.4	358	42.7	36	26.3	
Drug only	157	16.1	134	16.0	23	16.8	
Alcohol & drug	425	43.6	347	41.4	78	56.9	
Total Types of Diagnoses							<0.001
0–1	467	47.7	433	51.4	34	24.6	
2+	513	52.4	409	48.6	104	75.4	
Total # of Treatment Episodes							<0.001
0–1	820	83.7	722	85.8	98	71.0	
2+	160	16.3	120	14.3	40	29.0	
Total Locations							<0.001
1	684	69.8	623	74.0	61	44.2	
2+	296	30.1	219	26.0	77	55.8	
Total Number of Service Types (M, SD)	2.9	1.4	2.7	1.3	3.9	1.3	<0.001
Satisfactory Discharge Status	621	65.9	507	63.0	114	83.2	<0.001
Average Length of Stay (N=935; M, SD)	88	105.2	76.4	87.9	156	162.4	<0.001

Notes. Valid percentages are presented. Differences between those using and not using recovery housing were tested using Chi-square, Fisher's exact, and Student's t tests.

Table 2.

Bivariate and Multivariable Logistic Regression Models Examining the Association between Demographic, Service Need, and Service Use Variable and Use of Recovery Housing

	Bivariate Models			Multivariable Model		
	OR	95% CI	<i>p</i>	aOR	95% CI	<i>p</i>
Gender						
Male (Ref)						
Female	1.75	[1.22, 2.52]	0.002	1.87	[1.24, 2.82]	0.003
Race/Ethnicity						
Non-Hispanic White (Ref)	0.30	[0.07, 1.28]	0.104			
Non-Hispanic African American	1.18	[0.54, 2.60]	0.674			
Hispanic	0.97	[0.37, 2.56]	0.951			
Non-Hispanic Other	0.30	[0.07–1.28]	0.104			
Wald test	$\chi^2 (3) = 2.87$		0.412			
Age						
<=29 (Ref)						
30–39	0.48	[0.30, 0.78]	0.003	0.57	[0.34, 0.95]	0.032
40+	0.40	[0.26, 0.62]	<0.001	0.44	[0.26, 0.74]	0.002
Wald test	$\chi^2 (2) = 19.74$		<0.001	$\chi^2 (2) = 10.67$		0.005
Educational Attainment						
High school or less (Ref)						
College/some college/vocational	0.97	[0.49, 1.93]	0.940			
Graduate/professional	1.10	[0.49, 2.44]	0.819			
Wald Test	$\chi^2 (2) = 0.19$		0.909			
Substance Use Diagnosis						
Alcohol only (Ref)						
Drug only	1.71	[0.97, 2.98]	0.061	1.51	[0.77, 2.93]	0.228
Alcohol and Drug	2.24	[1.47, 3.40]	<0.001	1.44	[0.87, 2.39]	0.155
Wald Test	$\chi^2 (2) = 13.98$		0.001	$\chi^2 (2) = 2.27$		0.322
Total Types of Diagnoses						
0–1 (Ref)						
2+	3.24	[2.15, 4.88]	<0.001	1.09	[0.64, 1.87]	0.751
Total # Treatment Episodes						
1 (Ref)						
2+	2.46	[1.62, 3.72]	<0.001	1.44	[0.89, 2.34]	0.137
Total # Treatment Episodes						
1 (Ref)						
2+	3.59	[2.48, 5.20]	<0.001	1.34	[0.78, 2.33]	0.292
Total Number of Service Types	1.73	[1.52, 1.98]	<0.001	1.52	[1.25, 1.85]	<0.001

Table 3

Bivariate and multivariable simultaneous logistic and linear regression models examining the association between recovery housing and outpatient discharge status and length of stay.

	Satisfactory discharge				Length of stay							
	Unadjusted	Adjusted	OR	95% CI	Unadjusted	Adjusted	Coeff	95% CI	P			
Recovery housing	2.91	[1.82, 4.66]	<0.001	3.01	[1.80, 5.04]	<0.001	79.8	[61.0, 98.7]	<0.001	65.9	[45.8, 86.0]	<0.001
Gender												
Male (Ref)				0.60	[0.45, 0.81]	0.001				10.1	[-9.9, 24.1]	0.159
Female												
Age												
29 (Ref)												
30-39				1.15	[0.79, 1.66]	0.471				15.6	[-1.8, 33.1]	0.079
40+				1.39	[0.99, 1.94]	0.057				16.9	[1.3, 32.5]	0.034
				$\chi^2 (2) = 3.69$		0.158				$\chi^2 (2) = 4.87$		0.088
Total number of service types				1.15	[0.79, 1.76]	0.017				17.5	[12.4, 22.5]	<0.001