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A Clean and Sober Place to Live: Philosophy, Structure, and Purported Therapeutic Factors in Sober Living Houses

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Abstract

The call for evidence based practices (EBP's) in addiction treatment is nearly universal. It is a noteworthy movement in the field because treatment innovations have not always been implemented in community programs. However, other types of community based services that may be essential to sustained recovery have received less attention. This paper suggests sober living houses (SLH's) are a good example of services that have been neglected in the addiction literature that might help individuals who need an alcohol and drug-free living environment to succeed in their recovery. The paper begins with an overview of the history and philosophy of this modality and then describes our 5-year longitudinal study titled, "An Analysis of Sober Living Houses." Particular attention is paid to the structure and philosophy of SLH's and purported therapeutic factors. The paper ends with presentation of baseline data describing the residents who enter SLH's and 6-month outcomes on 130 residents.

Keywords

Housing; Sober Living House; Recovery House; Social Model Recovery

Both addiction researchers and treatment providers are increasingly calling for more evidence based practices (EBP) (McCarty, September 6, 2006; Mee Lee, September 6, 2006; Miller, Zweben & Johnson, 2006). In recent years, considerable resources have been directed toward bridging research and treatment (Polcin, 2004). Perhaps the best known example of these efforts is the National Institute on Drug Abuse Clinical Trials Network (CTN) (National Institutes of Health, September 28, 1999). The CTN is an effort to conduct EBP trials in community based treatment programs to demonstrate generalization of EBP's to these "real world" settings.

While bridging research and treatment is an important goal in which the addiction field is making progress, community services that might play critical roles in the long term success of recovery have not received sufficient attention (Polcin, 2006a). Alcohol and drug dependent individuals with histories of homelessness, incarceration, and lack of social support for sobriety are particularly vulnerable to relapse without the provision of long term community based services that support sobriety.

This paper attempts to broaden the view of recovery beyond EBP's by describing the potential role of sober living houses (SLH's). The paper begins with a depiction of the history of SLH's along with a description of how the sober living philosophy of recovery evolved over time. Our 5-year longitudinal study funded by the National Institute on Alcohol Abuse and

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Alcoholism titled, “An Evaluation of Sober Living Houses” is then described. Particular attention is paid to the structure, operations, and purported therapeutic factors of SLH’s. Finally, baseline findings from our research that describe the characteristics of individuals entering the houses and 6-month outcomes on 130 residents are presented.

Definition of Sober Living Houses

SLH’s are alcohol and drug free living environments for individuals attempting to maintain abstinence from alcohol and drugs (Wittman, 1993). They offer no formal treatment but either mandate or strongly encourage attendance at 12-step groups. SLH’s have been important resources for individuals completing residential treatment, attending outpatient programs, leaving incarceration or seeking alternatives to formal treatment (Polcin, 2006b).

Although there are similarities between SLH’s and other residential facilities for substance abusers, such as “halfway houses,” there are important differences as well. Unlike many halfway houses, SLH’s are financially sustained through resident fees and individuals can typically stay as long as they wish. Because they do not offer formal treatment services, they are not monitored by state licensing agencies. However, many sober living homes are members of SLH coalitions or associations that monitor health, safety, quality, and adherence to a social model philosophy of recovery that emphasizes 12-step group involvement and peer support. Examples of SLH coalitions in California include the California Association of Addiction Recovery Resources (CAARR) in the northern part of the state and the Sober Living Network in the south. Over 24 agencies affiliated with CAARR offer clean and sober living services. The SLN has over 250 individual houses among it membership. Outside of California, the “Oxford House” model of sober living is popular, with over 1,000 houses nationwide as well as a presence in other countries (Jason, Davis, Ferrari & Anderson, 2007). However, because there is no formal monitoring of SLH’s that are not affiliated with associations or coalitions it is impossible to provide an exact number of SLH’s in California or nationwide.

The History and Evolution of the Sober Living House Model

The earliest models of SLH’s began in the 1830’s and were run by religious institutions such as the YMCA, YWCA, and Salvation Army (Wittman, 1993; Wittman, Bidderman & Hughes, 1993). These “dry hotels” or “lodging houses” evolved in part out of the Temperance Movement, which sought ways for individuals to overcome social pressures to drink. These Temperance based SLH’s tended to be run by operators and landlords who had strong personal convictions about sobriety. Unlike many contemporary SLH’s, residents generally had little input into operations of the facility and landlords/operators frequently encouraged attendance at religious services.

After World War II many metropolitan areas increased in population. Along with a tighter housing market came more widespread alcohol related problems (Wittman, Biderman & Hughes, 1993). At the same time, the era of self help recovery via Alcoholics Anonymous (AA) was emerging. In the city of Los Angeles, recovering AA members opened “twelfth step” houses to address the increased need for alcohol and drug free living environments. Managers of these houses either mandated or strongly encouraged attendance at AA meetings to facilitate residents’ recovery. Operations of the house were generally the responsibility or the house manager or owner. By the 1960’s Los Angeles supported several dozen such houses (Wittman, Bidderman & Hughes, 1993).

The need for sober housing increased during the 1970’s and continues today. Wittman (1993) observed that one reason for the increased need was the decline of affordable housing in metropolitan areas during the mid 70’s. Cities decreased rooming houses and single room

occupancy hotels that were frequently used as sober living residences. As a result, there were fewer SLH's available at the time when the need was high.

Other factors that contributed to the need for more SLH's was the deinstitutionalization of psychiatric hospitals without the provision of adequate community based housing (Polcin, 1990) and the decline of residential addiction treatment programs (Wittman, 1993). The result has been an explosion of homelessness. As reviewed elsewhere (Polcin et al., 2004), homelessness affected nearly 6 million people from 1987 to 1993. Conservative estimates indicate 40% suffer from alcohol problems and 15% suffer form drug problems (McCarty et al., 1991). In one county in Northern California, a study of homelessness revealed a lifetime prevalence for substance use disorders of 69.1% (Robertson & Zlotnick, 1997).

Newer Models of Sober Living Houses

An important exception to the decline of SLH's during the 1970's was the development of Oxford Houses (O'Neill, 1990). When a halfway house for substance abusers in Montgomery County Maryland closed, the clients continued their residence by paying rent and utilities themselves and implementing a shared, democratic style of managing the house. The residents were apparently satisfied with this new arrangement and the model rapidly expanded. While they are common in other parts of the country, they are rare in California, where other types of SLH's existed before Oxford Houses became widespread.

The Oxford House model offers a "social model" recovery philosophy (Kaskutas, 1999) that emphasizes peer support for sobriety and shared, democratic leadership in managing house operations. In addition, Oxford houses are financially independent of outside organizations and are financially self-sustaining. Although residents are not required to attend 12-step groups, they are generally encouraged to do so. Research in Oxford houses indicates that 12-step involvement is high, with about 76% of the residents attending 12-step meetings at least weekly (Nealon-woods, Ferrari & Jason, 1995).

Other types of SLH's have been more varied in their operations. The early "dry hotels" or "lodging houses" in particular were dominated by the influence of landlords or managers. Some SLH's today continue with a "strong manager" model of operations. Often, a person in recovery rents out rooms, collects money for rent and bills, evicts individuals for relapse and either mandates or strongly encourages attendance at 12-step meetings. The potential downfall of these types of houses is they do not capitalize on the strength of peer support and peer empowerment. Fortunately, many contemporary house managers have recognized the value of integrating social model recovery principles into house operations. These houses tend to have a residents council or a similar mechanism for resident empowerment and input into house operations. In California, SLH coalitions such as CAARR and the SLN require evidence of resident involvement in managing operations because peer support and empowerment are thought to be key factors in the success of SLH's.

An Evaluation of Sober Living Houses

"An Evaluation of Sober Living Houses" is a 5-year study funded by the National Institute on Alcohol Abuse and Alcoholism (Polcin, Galloway, Taylor & Benowitz-Fredercks, 2004). It aims to track 300 individuals over 18 months who live in 20 different SLH's administered by 2 different agencies. This report will focus on 6-month outcomes for 130 individuals residing in 16 sober living houses affiliated with Clean and Sober Transitional Living (CSTL) in Sacramento, California.

Study procedures included recruiting residents for the research within their first week of entering the SLH. All participants signed informed consent documents and were informed that

their responses were confidential. A federal certificate of confidentiality was obtained to further protect study confidentiality. Interviews were conducted at entry into the houses and at 6-month follow-up. We expected residents entering SLH's who had established sobriety would maintain that sobriety, while those with recent substance use would show significant improvement.

Primary outcome measures included the Addiction Severity Index (ASI) (alcohol, drug, medical, legal, family/social, and vocational severity scales) (McLellan, et al., 1992), six month measures of substance use (Gerstein et al, 1994), and the Brief Symptom Inventory to measure psychiatric severity (Derogatis & Melisaratos, 1983). In addition, we examined factors that correlated with outcome. Our protocol includes measures of social support for sobriety (Zwyak & Longabaugh, 2002) and involvement in 12-step groups (Humphreys, Kaskutas & Weisner (1998). To assess for DSM psychiatric diagnostic categories at baseline we used the Psychiatric Diagnostic Screening Questionnaire (PDSQ) (Zimmerman & Mattia, 1999).

Before reporting study findings that compare resident functioning at baseline and 6-month follow up, a description of the houses at CSTL will be provided that emphasizes SLH structure, operations, and philosophy.

Clean and Sober Transitional Living

CSTL was founded in 1986 by a recovering alcoholic and addict who had lost a brother to addiction and could not find affordable housing that was conducive to recovery. He and several roommates opened their own sober living house and the facility grew to the sixteen houses today. All of the houses are located in a suburb seventeen miles northeast of Sacramento, California. All houses are within a 9 mile radius of each other, which facilitates a sense of community and commitment.

Currently, about 90% of the residents pay their rent using their own funds; about 10% of the residents have their rent paid by SASCA (Substance Abuse Services Coordinating Agency), an agency created for graduates of Substance Abuse Programs in the California Department of Corrections.

CSTL embraces the Alcoholics Anonymous and Narcotics Anonymous philosophy of recovery and requires residents to be active members in those programs. The CSTL goal is to help the addicted person create a new, alcohol and drug-free lifestyle. To accomplish this goal, CSTL offers a long term, continuous clean and sober living environment and a culture of sobriety in a community of peers. Social support for sobriety is emphasized along with "experiential learning," where residents learn strategies from each other about how to succeed in recovery. In addition, residents support each other in informal ways, such as providing suggestions about where to find work or how to seek help for medical or psychiatric problems. Consistent with the principles of social model recovery, residents are empowered through participation in a "Resident Congress."

Phase System—One of the ways that CSLT has built upon the traditional sober living house model is through implementation of a phase system. Rather than all residents immediately having the same responsibilities and freedoms as soon as they enter the house, the phase system ensures more structure for new members and increasing freedoms for those who have resided in the house for a longer period. The program has found that increased limits and responsibilities early in the residence helps individuals adapt to the sober living environment. As they develop stability in their residence and recovery they tend to be more successful with the increased freedom and autonomy of phase II.

There are 6 Phase I houses with 71 beds. To minimize isolation and maximize accountability, bedrooms are shared by two or three people. All houses have 4 bedrooms with the exception

of the larger main house, which includes offices for the administrative staff and the general manager. This house also has a large community dining room offering home cooked dinners nightly. The fee of $695 for Phase I houses includes rent, utilities, and family style meals.

There are 10 phase II houses and 65 beds, 61 of which have private rooms. Rent is $395 for a shared room and $495 for a private room and includes furniture and utilities; residents are responsible for food.

Policies and Operations—Before entering CSTL, prospective residents must have begun a program of recovery. Some may be clean and sober because of incarceration, yet they may be motivated to engage in sustained abstinence from alcohol and drugs. Others residents enter with a recent history of residential treatment, while others have become substantively involved in outpatient or self-help programs. Beyond that, decisions are made on a case by case basis.

All residents begin in Phase I, where they have the most restrictions and demanding chores. Residents in Phase I carry an AA/NA meeting card that is checked for compliance with the expectation that they attend five meetings per week. Residents must abide by a nightly curfew and sign in and out for accountability. To progress to Phase II, a resident must have been in Phase I a minimum of thirty days and have not been reprimanded for any violation of house rules for thirty days. The resident requests the General Manager put them on the waiting List for a Phase II house which usually has a thirty to ninety day wait. Phase II entails fewer restrictions and more freedoms. For example, meeting cards to validate 12-step meeting attendance are not required, there are no curfew requirements, and overnight guests are permitted twice per week.

CSTL offers no form of counseling but requires that residents agree to 7 conditions:

1. not drink any form of alcohol;
2. not use any mind altering substances;
3. attend five 12-step meetings per week;
4. attend the mandatory Sunday Night House Meeting (a two hour meeting where residents share what they did for their recovery that week as well as set goals for the following week and share how their week went overall);
5. obtain a sponsor and be active in a 12-step program;
6. sleep at CSTL at least five nights per week;
7. be accountable for whereabouts when off CSTL property

In addition to abiding by the above seven conditions, residents are required to complete chores and conduct themselves in a manner conducive to and consistent with recovery. Residents are encouraged to find employment if they are not already employed when they move in.

CSTL tests for drugs and alcohol at random in both Phase I and Phase II. If relapse is suspected, the resident is given an opportunity to admit to their use and a urine sample is taken. If the resident denies use and the urinalysis is positive, the resident is immediately terminated from the program. If the resident admits use, the resident is required to leave the property for 72 hrs and then appears before a “judicial committee” made of senior peer residents who then determine whether or not the resident is allowed to stay. Typical consequences for the first relapse are community service activities or attendance at ninety 12-step meetings in ninety days. Grounds for immediate termination include drinking or drug use on the property, taking a fellow resident out to use, acts of violence, and sexual misconduct.

If residents desire a change in the rules, they can make a request to the Resident Congress which is governed by current residents and alumnae. Residents also have an opportunity for input through their House Manager. The House Manager is a liaison between the residents and the General Manger and advocates for residents. The House Manager is someone who has demonstrated responsibility, integrity, is in good standing with the community and abides by rules and regulations and is chosen by the General Manager.

Who Goes to CSTL?—Data from our research on 211 individuals enrolled in the study has been presented at the Addiction Health Services Research (AHSR) Conference (Polcin, 2006, October 23–25). Baseline findings suggest that SLH's serve a variety of individuals in need of an alcohol and drug free living environment that supports recovery. The most common referral source was the criminal justice system (25%), followed by family/friend (23%), self (20%) and inpatient/residential treatment (13%). The role CSTL plays in addressing housing problems for those in the criminal justice system can also be seen in the fact that 35% of the sample indicated that jail or prison had been their usual housing situation over the past 6 months. Few incoming residents reported stable housing over the past 6 months. While 7% reported renting an apartment as their primary housing, 23% reported staying with family or friends and 12% reported homeless as their primary living situation. Ten percent indicate that a residential treatment facility was their primary living situation.

In terms of demographic characteristics, a majority were male (76%), white (72%) and never married (51%). The mean age was 36.5 (10.10).

While residents presented with a variety of substance abuse problems, those with methamphetamine (49%) and alcohol (44%) dependence were the most prevalent. This finding in part reflects the geographic area of the houses in the central valley area of California, an area known to have high rates of methamphetamine abuse. Other substances were less prominent: marijuana (25%) and cocaine (21%).

CSTL provides services to a large percentage of individuals who suffer from psychiatric symptoms. We used the Psychiatric Diagnostic Screening Questionnaire (Zimmerman & Mattia, 1999) to screen for prevalence of sixteen psychiatric disorders. Results indicated widespread mental health problems. Large proportions of the sample met screening criteria for various disorders: social phobia 46%, generalized anxiety 41%, post traumatic stress disorder 38%, major depression 35%, and psychotic disorders 30%. While the screening criteria were significantly lower than the symptom level required for a DSM diagnosis, it does indicate the existence of psychiatric issues that should be assessed and treated.

Despite the high prevalence of psychiatric severity, relatively few residents engaged in psychiatric services. Only 12% reported attending outpatient psychotherapy sessions and only 30% reported receiving psychiatric medications between baseline and 6-month follow up. Attendance in formal outpatient addiction treatment programs was also low, with 80% reporting no alcohol or drug treatment during the 6 month assessment period.

Six Month Outcomes—Six month follow up findings have been reported on 130 residents (Polcin, 2006, October 23–25). Findings indicated that residents made important improvements between baseline and 6-month follow up. Despite the finding that 56% had left the houses by the 6 month time point, 40% of the sample reported complete abstinence from alcohol and drugs between baseline and 6-month follow up. An additional 24% reported they had been completely abstinent five of the last six months.

To assess whether residents made improvement between baseline and 6-month follow up we conducted comparisons of study variables between the two time points. Because most of the

variables had data that were not normally distributed, we used a nonparametric analysis, Wilcoxon Signed Ranks Tests for 2 Related Samples. Results showed that residents made significant improvement over the 6-month period in terms of the number of months they used drugs or alcohol ($Z=-6.1$, $p<.001$). On average, residents used substances about 3 of the 6 months before entering the sober living houses. That declined by half at 6-month follow up, when they indicated they used substances 1.5 months on average. When we examined only those individuals who relapsed (n=78), we found a significant reduction in the severity of substance use between baseline and 6-month follow up. "Peak Density" (number of days of substance use during the month of heaviest use) (Gerstein et al., 1994) declined from an average of 23 days at baseline to 16 at 6-month follow up ($Z=-3.4$, $p<.01$). Other improvements were noted in the number of days worked ($Z=-5.0$, $p<.001$), percent arrested ($Z=-3.3$, $p<.01$) and severity of psychiatric symptoms ($Z=-3.4$, $p<.01$).

Although residents entered the SLH's with relatively low ASI scores for Alcohol (mean=.17) and Drug (mean=.08) scales, there were nonetheless significant improvements at 6 months for alcohol ($Z=-2.9$, $p<.01$) and drug ($Z=-2.8$, $p<01$) scales. Significant improvement was also noted on the ASI employment scale ($Z=-6.1$, $p<.001$) (Polcin, 2006, October 23–25).

What Factors are Associated with Outcome?—One of the goals of the research was to identify factors that were associated with outcome. Interestingly, referral source was not associated with outcome and those with criminal justice mandates did as will as those who entered voluntarily (Polcin, 2006b). The two factors that appeared to be the strongest factors associated with 6-month outcome were: 1) measures of psychiatric severity and 2) involvement in 12-step groups (Polcin, 2006, October 23–25).

A modified version of the Alcoholics Anonymous Affiliation Scale was used to assess 12-step involvement groups (Humphreys, Kaskutas & Weisner, 1998). The scale was modified to include other types of 12-step meetings besides Alcoholics Anonymous, such as Narcotics Anonymous. This measure included more than attendance at meetings; it also assessed activities such as getting a sponsor, sponsoring others, participating in meetings, and volunteering for service work (e.g., set up chairs, organize literature, and clean up after meetings). Psychiatric severity was measured using the BSI (Derogatis & Melisaratos, 1983).

Logistic regression models were used to assess whether selected variables from 6-month assessments were associated with 6-month outcome. As Table 1 indicates, involvement in 12-step groups such as Alcoholics Anonymous or Narcotics Anonymous was strongly associated with the number of months individuals used substances over the past 6 months. As involvement in 12-step groups increased, individuals were about half as likely (OR=0.56) to be members of the higher use group (defined as using substances during 2–6 months versus 0 to 1 month).

Involvement in 12-step groups was also a significant predictor of ASI alcohol severity. Table 2 shows that those with more involvement were less likely to be associated with higher alcohol severity (O.R=0.75).

The other variable that was associated with 6-month outcome was psychiatric severity. At 6 months, those with higher psychiatric severity were nearly three times more likely to be members of the high alcohol severity group. As shown in Table 3, psychiatric severity at 6 months also predicted higher ASI drug severity (OR=2.1).

Limitations—There are a number of limitations that should be apparent. First, the sample was limited in size, geographic diversity, and type of SLH's studied. Results obtained from other areas of the country, other types of SLH's (particularly "strong manager" houses), or larger sample sizes could yield different results. Second, the study was descriptive and did not

include comparison with individuals in a control group. We therefore do not know whether comparable individuals would do better or worse in other types of living arrangements. Finally, the results only examined 6-month outcomes. Whether these results hold over longer periods of time is unknown.

Conclusion

The addiction treatment field must progress beyond the types of evidence based treatments recommended in the literature if it is to succeed in helping large number of individuals achieve sustained sobriety. Sober living houses are an excellent example of an underutilized modality that could help provide clean and sober living environments to individuals completing residential treatment, engaging in outpatient programs, leaving incarceration, or seeking alternatives to formal treatment.

This paper has reviewed the historical roots of SLH's along with the evolution of the SLH philosophy of recovery. Findings from our study on SLH's show they are utilized by a variety of individuals and that residents show improvement at 6 month follow up in a variety of areas, including substance use, work, arrests and psychiatric symptoms. While psychiatric severity is high and improves at 6 months, relatively limited numbers of residents receive adjunctive psychiatric services and higher psychiatric severity is associated with poorer outcome. Consistent with the sober living philosophy of peer support for recovery, higher involvement in 12-step groups such as Alcoholics Anonymous was associated with better outcome.

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Table 1

Logistic regression of 6-month variables predicting number of months used any substances at 6-month follow up (0–1 versus 2–6) (N=130)

6-month Variable	OR	CI
AA/NA Involvement	0.56***	0.43 – 0.73

*** $p<0.001$, controlling for age, sex, race, and psychiatric severity

Table 2

Logistic regression of 6-month variables predicting ASI Alcohol Severity (Dichotomized) (N=130)

6-month Variable	OR	CI
AA/NA Involvement	0.75*	0.60 – 0.94
Psychiatric Symptoms (BSI)	2.8**	1.3 – 5.8

* $p<0.05$,

** $p<0.01$, controlling for age, sex, race and alcohol related social support

Table 3

Logistic regression of 6-month variables prediction ASI Drug Severity (Dichotomized) (N=130)

6-month Variable	OR	CI
Psychiatric Symptoms (BSI)	2.1*	1.0 – 4.2

* $p<0.05$, controlling for age, sex, race, and drug related social support

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ORIGINAL RESEARCH

Motivation to maintain sobriety among residents of sober living recovery homes

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Background: The study of motivation in the substance abuse field has typically examined the extent to which substance users want to quit or reduce substance use. Less frequently examined is the desire to maintain sobriety after achieving abstinence. The current study examined motivation to maintain sobriety among residents of sober living houses (SLHs), a type of recovery home for individuals with alcohol and drug problems. Previous research on this population showed favorable longitudinal outcomes over 18 months. Resident views about the costs of not using substances (ie, the difficulties encountered when not using), as well as the perceived benefits of not using, were strong predictors of substance use outcomes.

Methods: This study adds to these findings by conducting two focus groups with individuals familiar with the structure and day-to-day operations of SLHs, including administrators of SLH organizations, owners, and peer managers.

Results: Focus group results supported the importance of costs and benefits as motivational forces influencing abstinence. However, participants also emphasized characteristics of the sober living recovery environment as important factors influencing motivation. Interactions among recovering peers offer unique opportunities for feeling understood, recognizing vulnerability in others, identifying with the recovery processes of others, receiving supportive confrontation, and engaging in mutual accountability. These experiences are important elements of motivation that become activated by involvement in the SLH environment and are difficult to replicate outside of that context.

Conclusion: In addition to recognizing how motivation can be enhanced by addressing costs and benefits experienced by individuals, operators of recovery homes need to understand motivation as a function of the recovery home social environment. Additional studies are needed on motivation as a longitudinal construct in a variety of peer-oriented environments. Studies are also needed to better specify interactions within SLHs that increase and hinder motivation among different types of residents.

Keywords: recovery residence, sober living house, social model, social environment

Introduction

Studies assessing motivation for change in the literature on addiction have found significant but modest associations between motivation and subsequent treatment outcome.[1,2] Most of these studies have been limited in a number of respects. First, studies typically measure motivation only at treatment entry and overlook how motivation can change over time. Second, studies on motivation have typically addressed motivation to stop or reduce use of alcohol and drugs. Motivation to maintain abstinence from drugs and alcohol among individuals who have ceased their substance use has largely been ignored. Finally, motivation has typically been studied within

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the context of formal treatment programs. We therefore know little about motivation after treatment completion or among persons participating in peer-oriented services, such as 12-step programs or residential recovery homes.

Research conducted by Korcha et al[3] was an exception to the typical studies on motivation. They studied motivation at three 6-month intervals among 167 individuals entering residential recovery homes in California. They assessed motivation to maintain sobriety in addition to motivation to quit or reduce substance use. Motivation was measured using the costs and benefits subscales of the Alcohol and Drug Consequences Questionnaire (ADCQ),[4] which was conceptualized using perceived costs and benefits of continuing sobriety. Examples of costs included items such as "I will have difficulty relaxing", "I will get depressed", and "I will feel bored". Examples of benefits include items such as "I will have a better relationship with my family", "I will feel better about myself", and "I will be more active and alert". Overall, participants expressed strong motivation for sobriety; they consistently reported higher perceptions of benefits than costs of sobriety at each interview.

With the use of lagged generalized estimating equation models across time, higher scores on the ADCQ costs scale consistently predicted increased substance use and severity of problems related to use. Higher scores on the benefits scale predicted better alcohol and drug outcomes, although the effects were less consistent and weaker than the costs scales. In a follow-up analysis, Korcha et al[5] found that the cost scale was resilient; it was not moderated by a variety of social and demographic factors that the researchers examined. However, an analysis by Polcin et al[6] found that high costs were particularly strong predictors among persons with high psychiatric severity. Korcha et al[5] found that the benefits scale was particularly influential between two subgroups: persons who had low affiliation with 12-step recovery groups and persons who had large social networks. The authors concluded that involvement in 12-step programs was a strong, resilient predictor of good outcome and individual perceptions about benefits only became important when participants had decreased 12-step attendance and activities. Among persons with large social networks, recognition of benefits was thought to operate as a prophylaxis to the high-risk situations that one might be increasingly exposed to when engaged in a large social network.

Purpose

The purpose of the current study was to expand upon the quantitative findings reported earlier by eliciting views about motivation from persons who actively work with sober living houses (SLHs) and SLH residents on a daily basis, including administrators of SLH associations, owners of the homes, and house managers. While our findings for the influence of perceived costs and benefits on sobriety were compelling, we surmised there might be a variety of motivational influences not tapped by the ADCQ that could be identified by these individuals. In addition, we wanted to better understand our quantitative findings by hearing how our focus group participants viewed them. Based on our findings, we aimed to develop suggestions for maximizing motivation to maintain sobriety. Finally, we hoped our results would provide direction for additional research on motivation in SLHs and other types of recovery homes. Study procedures were reviewed and approved by the Public Health Institute Institutional Review Board. Informed consent procedures were approved by the Public Health Institute Institutional Review Board. As the study data was limited to perceptions about motivation in sober living recovery homes and did not involve disclosure of individual level personal information from focus group participants, informed consent was limited to description of focus group procedures and verbal agreement to participate.

Analysis

Data of two 1-hour focus groups were audiotaped and transcribed. Two raters independently hand coded text for dominant themes within specific content areas queried during the interview. Content areas included questions addressing general factors motivating residents, peer influences, family influences, views about costs and benefits of sobriety as motivational influences, and views about our quantitative findings showing how motivation varied by social network and psychiatric severity characteristics. The two coders then discussed the themes each area generated and discrepancies were resolved through discussion. Dominant themes within each area were finalized and examples of relevant text were selected for inclusion in the study.

Methods

Participants

The current study used a mixed method design, drawing on previous quantitative research in recovery homes[3,5,6] and new qualitative data from two focus groups to create a broader, more comprehensive view of motivation. The first focus group consisted of six individuals associated with a sober living organization in Northern California: the owner of the houses, a longtime administrative coordinator, and four current or recent house managers. All of the participants except the administrative coordinator were men and all were in recovery from alcohol and drug problems. In addition to being a site for

collection of focus group data, these were the houses used to collect the prior quantitative data on motivation.[3,5,6]

The program consists of 16 recovery homes divided into a beginning phase for new residents and a more advanced phase for residents who have established some period of sobriety, typically a month or more. House sizes range from three to 12 bedrooms, the latter being a large phase I house where entering residents benefit from more containment (eg, rules such as curfews) and support from the larger community. The houses use a "social model" approach to recovery[7–9] that emphasizes peer support as the essential ingredient in recovery. No onsite services are offered but residents are encouraged to pursue services they need in the community, and all are required to attend 12-step meetings. While living at the house, residents are expected to be involved in work, school, or other productive activities. Residents are expected to abstain from alcohol and drugs, required to attend house meetings, and involved in upkeep of the facility. Costs associated with the homes are primarily covered through resident fees, although some criminal justice programs will pay 1 month or 2 months of rent for ex-offenders upon entry into the SLH. Residents are free to live in the homes for as long as they like, but most use it as transitional living into independent living in the community. The average length of stay is slightly over 5 months (mean =166 days; standard deviation =163). An evaluation of resident outcomes showed significant improvement on measures of alcohol and drug use, severity of drug and alcohol problems, employment, and arrests. Improvements were evident between baseline and 6-month follow-up and continued at 18 months even though the vast majority had left the homes at that point.[10] Consistent with the social model view of recovery, social network characteristics and the level of involvement in 12-step groups predicted outcome. More detailed information about SLHs is available in Polcin and Henderson[11] or Wittman and Polcin.[12]

The second focus group consisted of six individuals associated with the sober living network in Southern California. The operations of these houses are generally similar to those studied in Northern California, although there is no phase system that residents transition through as time in the home increases. Sober living network is an advocacy network for SLHs that provides certification and training for approximately 500 homes in California. Participants included an administrator and five house managers, four men and one woman. The houses they operated ranged in size from six to 16 bedrooms.

Process and content of focus groups

Both focus groups were audiotaped in private locations onsite at the SLH organizations. Interviews took slightly >1 hour to complete and began with a general, open-ended question about factors felt to influence motivation to remain abstinent from alcohol and drugs. Specific follow-up questions included inquiries about the influence of peers, family, and friends on motivation. We then presented findings from our quantitative studies of motivation and asked participants to comment on them. Results presented to them included our findings that both costs and benefits predicted whether an individual used substances. We also presented the finding that two factors appeared to moderate the impact of benefits (ie, 12-step involvement and size of the social network). Finally, we asked participants to comment on our finding that persons with high psychiatric severity had worse substance abuse outcomes, and costs, but not benefits, were particularly strong predictors of those worse outcomes. Table 1 identifies the questions asked.

Results

Overall views about motivation

In response to the general question about motivation for maintaining sobriety, focus group participants emphasized many factors based on benefits and costs. For example, implementation of random and targeted urine screening, which could lead to eviction if positive for drug use, was viewed as an important motivator for keeping one's sobriety. Many individuals

Table 1 Focus group questions

General questions
What do you think are the key factors that motivate residents to stay sober?
Do you think motivation varies depending on how long they have been at the sober living house?
Interpersonal influences
Are there ways that peer support influences motivation?
Are there ways that support from family and friends influences motivation?
Costs and benefits
(After defining costs and benefits as they are used on the Alcohol and Drug Consequences Questionnaire)
Both costs and benefits predicted outcome. What are your thoughts about that?
Moderating influences
Benefits had a stronger impact on residents who did not get involved in 12-step groups very much. What are your thoughts about that?
Residents with smaller social networks (defined as the number of important people in your life) had more sobriety overall than residents with large social networks. The exception was residents with large social networks also reported high benefits of sobriety. What are your thoughts about that?
When we looked at persons with high psychiatric severity, we found costs but not benefits predicted outcome. We also found costs were much higher among those with high psychiatric severity. What are your thoughts about that?

enter the SLH with few if any other viable housing options. Participants also noted that costs related to substance use prior to entering the SLH were important motivators. Comments included, "I think one of the big motivators too is when most got here [they were] broken up. … ran into the ground". "I've literally seen people come in here that look like they're about two inches from dying".

Consistent with studies of treatment entry for substance abuse problems,[13] motivation to enter recovery homes was often viewed as a response to external pressure. Focus group participants pointed out there were significant costs for many residents if they did not take action to deal with their substance abuse. The consequences of inaction could include financial, legal, and interpersonal costs. One house manager stated, "I think the majority of people that come in their families, loved ones, employers, the courts are the motivator of them coming in here". Several managers noted that financial pressures from families can increase motivation. This was particularly common for young persons who were still financially dependent on their parents.

> … the fear of being homeless. And you know if we can get the parents to pull the cash away from them, then that becomes a very real fear and then you are motivated because it's either there or the street.

Although family and other types of pressure were viewed as motivation to enter the recovery home, over time these sources of pressure came to be experienced as beneficial reasons to maintain abstinence. As residents rebuilt their lives over time, they often got their families back.

> And so when most of the family are coming here they're like dropping them off … We love you but we can't watch you … if an individual makes it through at least the first sixty or ninety days [the] family starts coming back around and they become willing to help … they come to have dinner with them … even maybe come to a meeting. They become willing to come get them and take them out to eat or go to shopping or come home for the weekend.

Several house managers described motivation as a process where initially motivation was based on negative consequences associated with substance use, "deficit motivation". However, for the resident to succeed over time, there needed to be a switch at some point to motivation that was based on the benefits of recovery.

> Deficit motivation … the felonies and the evictions and the breakups … [When] the deficit motivation is gone … . see ya … But you've got to realize that you've got to get into a growth motivation so you start hearing about the benefits and a lot of the benefits are unactualized benefits. Because you have to work for them. They don't just happen … you're expected to do the work.

Examples of benefits included finding work, reengaging with one's family, clearing up legal problems, and regaining a driver's license. Several participants pointed out that achieving these goals typically required practical and emotional support from resident peers. One manager described a meeting labeled the "Been There, Done That" meeting. "We have the meetings where you can become of service and help people get to doctors, court appointments, I mean anything". Another participant pointed out that the resident who developed that meeting received recognition in the household for his efforts, which furthered his commitment to the house as well as his individual recovery. Ways that residents supported one another resulted in a type of substitute family where persons could reside until they were able to begin reestablishing trust with their family.

> Very few have family support that still want to engage when they first come in here and that's what makes motivation too for someone to be here in this environment … this kind of becomes your replacement family but it gives you time to start mending with the family …

SLH social environment

The importance of the social environment within the SLH was emphasized as a motivator for sobriety in multiple ways. Peer support and experiences of comradery engaged residents in ways that would be difficult to replicate outside the SLH context. Over time, appreciation of the value of these experiences becomes a potent benefit of maintaining abstinence. One focus group participant stated:

> … having instead of just a couple people they've got like this little town of peers here that are like-minded, that all have the same goal … we've got to leave our old places, people behind if we want to stay clean and sober. So if you have to do that you've got to have new people. And a sober living environment provides that.

Study participants felt residents were most likely to be receptive to feedback when it came from other residents rather than house managers. Within an interpersonal context of understanding and support, they were more motivated to address issues they needed to work on and acknowledge ways they were vulnerable to relapse. One participant stated, "They're more apt to listen to their peers in regards to

behavior or advice or criticism, whether it's constructive you know whether it's critical or just trying to be helpful".

The SLH environment also created a context where residents could recognize vulnerability in others and take action to be helpful.

> One of the things that I think is completely awesome is when somebody is having a bad day around here and you can kind of see … You kind of feel it, the aura … There [are] people that step up that ask you, hey, what's going on?

One of the participants gave an example from her own recovery experience in a SLH. She described feeling upset and going for a walk. Suddenly, she was surrounded by her peers who stated they were going with her.

> And part of me was like what the … Why are you going with me? What's your problem? But the other part of me was like, wow, they're showing they care for me … . And what they said was, you're not okay. Everything on your face shows terror, anger and fear, and we just want to go with you … that's what sober living is all about … I thought that things were okay that day but clearly I was not okay.

The care and concern experienced by this participant became an important motivator toward continuing sobriety. Experiences like this were felt to be examples of ways that mutual accountability was facilitated and supported sobriety within the household. Each individual in the household was accountable to other residents, not only in terms of their own behavior (eg, maintaining abstinence), but also in terms of contributing to a healthy recovery environment. The actions of the peers in the above case to reach out and help the resident who was upset and potentially vulnerable to relapse is an excellent example.

There were similar comments from other participants, including the contention that peers could often confront each other in ways that were experienced as helpful and supportive and resulted in increased motivation. One manager used the phrases "carefrontation" and "positive peer pressure". "… you've got a group of guys around you trying to push you in a positive direction it can help motivate you to change your behavior …"

A final way that residents were thought to be motivated had to do with leadership of the house manager. One participant felt that the house manager "hopefully, is almost parentified. [Residents] want their approval … their validation". Using residents' motivation for approval, it was suggested that house managers make it a "goal to create a healthy family dynamic … How do we learn to communicate, express our feelings, have conflict resolution without getting loaded or punching a guy in the face?" Motivation based solely on compliance with external demands without learning these skills and without internal emotional work on oneself was felt to be short-lived.

Reflections on cost/benefit quantitative findings

In addition to general questions about motivation, we asked participants to comment on our quantitative findings.[5] We presented to them the finding that perceived cost of sobriety was a robust predictor of substance use. We explained that when residents felt abstinence it would be difficult and would require them to tolerate high discomfort, they then tended to use substances more. This was particularly the case for persons with high psychiatric severity. We also noted that perceived benefits of abstinence were associated with sobriety overall, but benefits were particularly influential for persons who were less involved in 12-step meetings and persons who had a large number of persons in their social networks.

Reactions of focus group participants to our findings highlighted a number of points. Several participants thought perceived costs of sobriety were more prevalent in early recovery.

> The costs I would say those are for somebody that is in very early recovery and hasn't had some treatment … . hasn't got any relief, emotional relief yet.

One participant noted that costs of abstinence subsided as one worked a recovery program and found new ways to manage the challenges of abstinence. "You've got to find a sufficient substitute".

When we presented findings about ways the benefits operated differently for different groups (ie, interactions with 12-step involvement and size of one's social network), participants mostly responded to the latter issue. The finding about differential effects of benefits for persons with high versus low 12-step involvement drifted into general discussions about how recovery through the 12-step program worked. There were also few reflections about why benefits would be more important for persons with larger social networks. However, there were interesting reflections about the overall finding that smaller social networks had better outcomes than large networks. Several participants felt that in early recovery, it was common to feel like you were friends with large numbers of fellow 12-step members. As recovery proceeded, many individuals become more discerning about their relationships and considered persons in their social

network to be those they knew more intimately. As one participant put it, "find four people you can call at two in the morning and that's more important than fifty people on speed dial".

Reflections on psychiatric findings

We also asked participants to reflect on our finding that persons with more serious psychiatric problems had higher costs associated with sobriety and higher levels of substance use. One response was that standard SLHs were not a good option for some of these individuals. One participant in charge of overseeing a large group of houses pointed out that "some people with schizophrenia or mental health disorders do better in a small house that's just like a six-bed house because of their psychosis and they're paranoid they do much better with just a smaller group". In addition, participants pointed out that persons with dual diagnosis needed a less demanding and more tolerant environment.

One manager described one of his facilities as primarily housing persons with dual diagnoses of psychiatric and substance use disorders. He felt many such residents were able to do well "if you can keep them medication compliant and you can get them introduced into co-occurring disorder groups". He described the house as part of a "full service partnership", where residents who were relapsing could readily be admitted to other types of housing without a sobriety requirement. However, his perception was that a significant number of dual diagnosed individuals preferred the modified SLH arrangement.

Discussion

Motivation has rarely been studied outside the context of formal treatment programs, and it has usually been studied in terms of desire to stop or cut down substance use. This study combined previously published quantitative data with new qualitative work to study motivation to maintain sobriety in SLHs. Unlike formal treatment, SLHs rely primarily on peer support rather than professionally delivered services as the primary therapeutic mechanism. The practice of social model recovery within the houses has important implications for understanding and enhancing motivation.

Motivation as a function of household relationships

In most studies, motivation is conceptualized as an individual's desire to make changes, recognize problems, and take steps to address problems.[14,15] Strategies to enhance motivation involve individual-based interventions such as motivational interviewing.[16] A relatively novel but not unexpected finding in the current study was the conceptualization of motivation in terms of the SLH peer environment.

There are a number ways that peer dynamics within SLHs can facilitate motivation to maintain sobriety. Focus group participants felt there was often a level of understanding among peers that made it easy to recognize when a fellow resident was experiencing difficulty and was vulnerable to relapse. The typical response was to reach out to these individuals to find out what was wrong and be of assistance. Although residents sometimes initially rejected these overtures, they often came to experience them as supportive, as one manager put it, a type of "carefrontation". Helping fellow residents was one way to receive acknowledgment and recognition that strengthened one's commitment to the shared goal of abstinence.

Focus group participants also pointed out that residents were often able to consider feedback from their peers that they might reject if it came from others. It needs to be emphasized that the interactions they were referencing typically focused on potential harm to the resident, their areas of vulnerability, and were not personal attacks. Within the supportive environment of the SLH, residents were often able to acknowledge vulnerability and potential harm in ways that increased their commitment to abstinence and to the overall household. The emphasis on feedback about potential harm being experienced as supportive is consistent with previous research on supportive confrontation in SLHs.[17–19] However, for individuals to feel supported by these interactions, it is important that the comments came from persons who are respected. They are particularly helpful when received from persons who have extensive recovery experience.[18]

Our study findings suggest that understanding motivation in SLHs requires a broader conceptualization. First, motivation exists at different levels, including individual, interpersonal, and household. One way to increase motivation is to facilitate self-reflection among individuals about reasons to maintain sobriety. However, residents of SLHs also enhance motivation in other ways, including ways they reach out to residents to help them avoid relapse. Initially, the resident may avoid relapse primarily as a response to external pressure. However, our focus group participants suggested that over time, and when coming from trusted peers, they may be more receptive to accepting the validity of potential harm. The care and concern from fellow residents becomes important reasons to stay sober, and relapse could result in the loss of valued personal relationships. The challenge to managers of SLHs and other types of recovery residences

is facilitating an environment within the SLH where social interaction among peers facilitates motivation for recovery. Specific suggestions on ways to enhance social environments within SLHs are given in Polcin et al.[8] Although motivation to change substance use has been discussed in terms of potential loss of intimate partners, friends, and family, it has typically not been examined in terms of desire to maintain relationships with peers in recovery.

Several house manager participants characterized life in a SLH as a family and that may be part of the reason household relationships can serve as important motivators. In terms of support for recovery, the SLH family can often provide more than actual families. Khantzian and Mack[20] pointed out that fellow members of Alcoholics Anonymous often have a level of understanding about one another that creates the safety necessary to honestly discuss issues that otherwise might not be discussed at all, not even with intimate family members. The identification with other Alcoholics Anonymous members is a way persons in early recovery are able to regain the self-esteem necessary to move forward. This peer dynamic may be even more prevalent for recovering persons who live together in one household. The unique ways peers are able to give and receive support in SLHs appear to be important motivators to maintain sobriety.

View of costs and benefits

In addition to emphasizing the peer context of motivation, focus group participants emphasized the importance of a variety of well-established factors known to influence motivation. These included the important role of costs associated with substance use as motivation to seek help.[4] In particular, they mentioned family pressures, legal problems, and periods of homelessness or the threat of homelessness. They also emphasized the important role of benefits associated with abstinence as a reason to continue sobriety. However, participants felt there were time-varying influences for some motivational factors. For example, they felt perceived costs of sobriety (ie, the challenges associated with not using) were more prominent early in recovery. Persons still using substances or those in early recovery were viewed as often not having confidence that they could manage without substances. In contrast, managers felt the benefits of sobriety were stronger influences at later time points. With the passing of time, residents in recovery regained important aspects of their lives that had been lost, particularly relationships with estranged family members. To date, there has been limited examination about the ebb and flow of motivation over time, particularly factors related to maintenance of sobriety.

Participants were not able to explain potential reasons for factors that moderated benefits (size of the social network and level of involvement in 12-step groups). However, there were general comments about how the size of one's social network changed over time. They felt early in recovery a large number persons in 12-step recovery meetings were considered to be part of one's social network. However, many persons felt differently over time. As the recovery process proceeded, they felt many persons were more discerning about whom they identified as a member of their social network. In general, it was felt to be more important to have strong relationships with a fewer number of persons than superficial connections with many.

When we presented our previous finding that persons with psychiatric disorders experienced higher costs associated with abstinence and those higher costs were associated with more substance use (ie, Polcin et al[6]), there was little surprise. Although persons with more psychiatric problems showed improvement on measures of alcohol and drug use, study group participants indicated that traditional SLHs might not be the best option for some of these individuals. Modifications were needed to reduce the level of stress and increase flexibility around relapse policies. One manager described a facility designed for these dual diagnosed persons that employed a "Housing Choice" model that offered a variety of housing options to individuals. Chronic homelessness occurring with substance abuse and mental illness further complicates housing choices. Although some of the dual diagnosed residents opt for housing funded by the Department of Housing and Urban Development that does not focus on abstinence, a significant number of residents desire a trial in a house with a focus on abstinence. A variety of housing providers targeting services for substance abuse, mental illness, and homelessness are debating which housing models best match individual needs. Waegemakers Schiff and Schiff[21] provide a recent review of this literature.

Limitations

There are a number of limitations in our study. First, the data were limited to two focus groups in California and results might be different in other geographical areas. The N's were small (N=6 for each group) and only included two women. Second, we only interviewed administrators and managers of the houses, not residents. However, most of the house managers who participated in the focus groups had at a previous time been residents themselves in sober houses and they were therefore able to draw upon their experiences as a resident as well as a manager when responding to focus group questions. Third, SLHs represent

one type of residential setting and may not be generalizable to other recovery homes or residential treatment programs. Fourth, the focus group methods resulted in qualitative data that cannot be used to verify that the factors emphasized by participants caused increases in motivation. Fifth, we asked participants to comment on our findings about motivation that assessed motivation using the ADCQ. There are other measures of motivation that might have resulted in different findings. Finally, our questions asking participants to comment on the findings from our research on the ADCQ were difficult for some participants to understand.

Conclusion

Individuals who are intimately familiar with SLHs felt motivation to maintain sobriety among residents in their homes was influenced by factors known to affect motivation in formal treatment programs. These included the perceived costs and benefits associated with substance use and abstinence. However, motivation has typically been measured only at treatment entry and focus group participants felt the factors influencing motivation differed over time. Perceived costs were viewed to be more influential early in treatment and benefits were thought to be more influential as recovery time increased. More research is needed on the trajectories of costs and benefits across time for different populations of substance abusers.

Studies on motivation rarely identify peer relationships within service settings as important motivators to sustain recovery over time. However, focus group participants felt relationships within SLHs were potent motivators for continued sobriety. Fellow peers provided a level of understanding and support that to a large degree was viewed as uniquely supportive. Ways that residents reached out to fellow peers in distress were felt to facilitate motivation at individual and household levels. There is a serious need for research on the specific types of peer interactions that best facilitate motivation for different individuals. The content and intensity of peer interactions that are helpful might vary by resident characteristics (eg, age, sex, length of time in the residence, history of addiction and treatment, and severity of co-occurring problems). We also need information about destructive peer interactions that hinder motivation.

Housing service providers are struggling to identify housing models that best respond to the needs of specific subgroups, particularly persons with psychiatric disabilities and chronic homelessness who may not be motivated for abstinence. Focus group participants felt that standard SLHs may not be appropriate for some of these individuals and modifications were being made in SLHs designed to serve residents who presented serious psychiatric disorders in addition to substance abuse. There is a need for research on the effectiveness of different housing models for different populations and research that can inform placement of different residents across time. Housing choice should not be viewed as a single event for individual residents, but as an ongoing choice based on needs and motivation.

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Disclosure

The authors report no conflicts of interest in this work.

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Eighteen Month Outcomes for Clients Receiving Combined Outpatient Treatment and Sober Living Houses

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Abstract

One of the most frequent and frustrating challenges facing clients in outpatient treatment is finding a living environment that is free of alcohol and drugs and supportive of recovery. Sober Living Houses (SLHs) have been suggested as one potential solution (Polcin, 2009). Among other advantages, SLHs are financially self-sustaining and residents can remain there as long as they wish, provided they comply with house rules and expectations. This study examined 18-month outcomes for 55 individuals receiving outpatient treatment combined with residence in a SLH. Repeated measures analyses comparing 6-month time periods showed significant improvement on measures of alcohol and drug use, arrests, and days worked. The Addiction Severity Index (ASI) showed significant improvement on legal and employment scales. On ASI alcohol and drug scales, individuals entered SLHs with very low severity that was maintained at 18 months. Involvement in 12-step groups was associated with reductions in alcohol and drug use.

Keywords

Sober Living House; Outpatient Treatment; Recovery House; Social Model; Alcoholics Anonymous

Over the past several decades, treatment for addiction problems in the U.S. has transitioned from services delivered primarily in inpatient or residential settings to services delivered in outpatient programs (Institute of Medicine, 1997; McLellan, 2006). While outpatient programs have the advantage of containing costs and enabling clients to continue activities (e.g., work and school) that can support recovery, there are disadvantages as well. Relapse rates are high for clients who do not live in environments that support recovery and in some cases clients live in environments that actively encourage alcohol and drug use (Howard, La Veist, & McCaughrin, 1996). For these individuals, the progress they make while attending outpatient programs can be undermined by characteristics of the social environment where they live (Polcin et al, 2004). This issue is particularly prominent in low income areas where there are higher rates of crime, heavy drinking, and illicit drug use. Studies in the U.S. have shown that publicly financed programs in urban areas treat large proportions of clients who reside in destructive living environments that do not support recovery (Howard, La Veist, & McCaughrin, 1996). In addition, treating addiction problems among homeless clients

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without the provision of an alcohol and drug free living environment is especially challenging because they face constant obstacles to their health and safety as well as their sobriety (Polcin, 1999).

There is therefore a need for more alcohol and drug free housing for clients who are involved in outpatient treatment programs. After reviewing selected literature on halfway houses for addictive disorders, we introduce SLHs as a potentially more effective solution to the problems that outpatient clients have finding alcohol- and drug-free places to live. We then report on outcomes for 55 SLH residents over an 18 month period.

Selected Research on Halfway Houses

Research has shown that when clients do receive housing as part of treatment there is evidence that it is beneficial. For example, Hitchcock, Stainback and Roque (1995) found that provision of halfway house living arrangements while clients attended outpatient treatment resulted in better retention and achievement of treatment milestones than clients who made their own living arrangements in the community. Milby et al (2005) reported similar findings. They studied whether the provision of abstinent contingent housing during outpatient treatment was more effective than no provision of housing or housing that did not require sobriety. Although all three groups made improvement on outcome measures, the abstinent contingent housing group improved the most. Thus, there is an urgent need to address housing problems for clients in outpatient treatment.

Although halfway house models are effective, there are several inherent limitations. As we have reviewed in previous papers (i.e., Polcin & Henderson, 2008; Polcin, 2009), the first is that they are time limited. Rather than clients having the choice to leave when they feel sufficiently stable and confident about alternative living arrangements, they are forced to leave within a predetermined time frame developed by the program. A second concern is funding. Many halfway house programs rely on state or local funding, which makes the houses vulnerable to budget cuts. In addition, because they are not financially sustained through resident fees and it is primarily program staff who manage the facilities, there can be a limited sense of resident ownership and empowerment (Polcin, 2009).

Sober Living Houses

A model of housing known as “Sober Living Houses” (SLHs) addresses these concerns. As reviewed elsewhere (i.e., Polcin & Henderson, 2008), SLHs are alcohol and drug free living environments for individuals attempting to establish or maintain abstinence from drugs and alcohol. They typically do not offer any formal treatment services, but encourage or require attendance at self-help groups such as Alcoholics Anonymous. One of the advantages of SLHs is that residents are free to stay as long as they like. A second advantage is that they are financed through resident fees, which inoculates them from state and local budget cuts. Some houses are sufficiently inexpensive to accommodate residents who are on General Assistance or Social Security Disability Income (Polcin, 2009). However, others are more expensive and serve primarily individuals who work full time or have access to other financial resources, such as support from their families. Because they are financially self-sustaining and efforts are made to involve residents in management of the houses, a sense of resident empowerment and commitment is generated.

Most SLHs operate as freestanding programs and have no affiliation with specific treatment programs, although residents may be attending various outside substance abuse, mental health, and other services in the community (Polcin & Korcha, 2006). However, there is no inherent reason why SLHs cannot be affiliated with specific programs, similar to halfway or aftercare houses offered by some treatment programs (Polcin, 2009).

Options Recovery Services

Options Recovery Services (ORS) is an outpatient program located in Berkeley, California that offers services to a variety of clients suffering from addictive disorders. A unique aspect of the program is the provision of SLHs for a limited number of clients. ORS treats about 800 clients per year, primarily individuals who are low income. Structured into 3 phases, the program offers a variety of recovery services including intensive case management, recovery groups, and aftercare. When clients begin the program they are required to attend ORS 5 days per week and attend daily 12-step groups. As clients progress through the phases of treatment there are fewer requirements and increased flexibility. However, throughout all phases of treatment clients are expected to be attending 12-step meetings and working a 12-step program of recovery (Polcin, 2009).

In response to the large number of clients in the outpatient program who were homeless or lacked stable housing, ORS developed SLHs where clients could reside while they attended the outpatient program. Although most SLHs are freestanding programs not affiliated with any formal treatment (Polcin & Henderson, 2oo8), there is no inherent reason why they can't be associated with formal services (Polcin, 2009). Unlike most halfway houses, the SLHs were designed so that residents could remain in the houses after completing the outpatient program and continue their residency as long as they wished provided they complied with house rules. ORS currently has 4 houses with 58 beds. Most residents are eligible for some type of government economic assistance and they use that assistance to meet expenses at the SLHs. The agency adjusts fees based on amount of income. For those on General Assistance (GA), the fees are $250 per month and for those on Social Security Insurance (SSI) the fees are $350 per month (Polcin, 2009).

The SLHs at ORS are structured in a way that encourages resident involvement. A "senior resident" who generally has a substantial time in recovery and who has lived in the SLH longer than other residents is designated a house manager. This individual is responsible for making sure house rules are followed and consequences for rule violations are carried out. In addition, the house manager monitors the physical site for health and safety and reports needed repairs or changes to the ORS executive director. Mandatory house meetings are held each week that focus on resident responsibilities, such as rotation of household chores, resident responsibilities, and enforcement of house rules. Residents have some input into development and enforcement of house rules and policies during house meetings, but policy is primarily developed by the agency's executive directors in consultation with house managers. House rules and expectations include things like a curfew, no smoking, and abstinence from alcohol and drugs. Relapse is grounds for eviction from the house but is usually handled by referring the individual to a more intensive, residential treatment (Polcin, 2009).

Previous Studies on Sober Living Houses

While studies on SLHs have been limited, there have been three reports, one on freestanding SLHs (Polcin & Henderson, 2008), one on SLHs affiliated with outpatient treatment (Polcin, 2009) and one examining longer term outcomes in both types of houses (Polcin et al, in press). In a study of 211 individuals interviewed within one week of entering freestanding SLHs Polcin and Henderson (2008) found that residents were referred from a variety sources. The most common referral source was the criminal justice system (25%), followed by family/friend (23%), self (20%) and inpatient/residential treatment (13%). Regardless of referral source, residents showed improvement at 6 month follow up in a variety of areas, including substance use, work, arrests and psychiatric symptoms. Consistent with the sober

living philosophy of peer support for recovery, higher involvement in 12-step groups such as Alcoholics Anonymous was associated with better outcome.

In a study assessing 55 individuals residing at ORS SLHs (i.e. houses affiliated with outpatient treatment) Polcin (2009) found residents made improvements in the number of months of abstinence, maximum number of days of substance use per month, and number of arrests. In addition, retention in the houses was excellent, with 76% residing in the houses at least 5 months.

A more recent analysis looked at both freestanding and the ORS houses associated with treatment (i.e., Polcin, et al., in press). Although direct comparisons between the two models were not conducted, longitudinal outcomes of residents in both types of houses showed similar improvements at 12 months. On primary outcomes measuring alcohol and drug problems the patterns were the same. Residents in both types of houses either entered with high severity that improved at 6 months and was maintained at 12 months, or they entered the houses with low severity that was maintained at 12 months (Polcin et al., in press).

Purpose

The purpose of the analyses reported here is to build on the previous findings by examining outcomes for the same sample of ORS residents in SLHs at 18 months and examining a variety of theoretically relevant covariates of outcome (e.g., 12-step involvement and social support for abstinence). Our primary interest was to assess outcomes that measure the severity of drug and alcohol problems. We expected that residents who entered with higher severity of drug and alcohol problems would show significant improvement. For residents entering with low severity of alcohol and drug problems we expected low severity to be maintained at 18 month follow up. Secondary outcomes included measures of employment, psychiatric, legal, medical, and family problems. Because social support for abstinence and involvement in 12-step groups are central to the recovery philosophy ofSLHs, we expected these factors to correlate with better outcome.

Methods

Sample

Study participants consisted of 55 individuals entering 4 different SLHs that were operated by Options Recovery Services. Table 1 depicts demographic characteristics. Nearly all the participants were male due to the closing of the only women's house shortly after the study began. The racial distribution was African American (59%), white (30%), and other (11%). The mean age was 43 years (se=1.2). Most residents had completed high school or a GED (73%). Nearly half of the residents had been self referred of referred by family or friends. About 24% were criminal justice referrals and a third had spent some time in a controlled environment during the month before entering the house. Many of the residents had histories of homelessness. When asked to indicate their usual housing situation the past six months, a third indicated homeless or in a shelter. During the year before entering the program, the most common substances residents were dependent on were cocaine (60%) and alcohol (55%) (not shown in the table). Other dependencies were less common: cannabis (18%), heroin (15%), and amphetamines (12%). For a more complete description of the sample and the SLHs see Polcin (2009).

Procedures

All study participants were interviewed during their first week of entering the houses between January 2004 and July 2006 and interviewed again at 6-, 12-, and 18-months. Interviews required about 2 hours and participants were paid $30 for the baseline interview

and $50 for each of the follow up interviews. All participants signed an informed consent to take part in the study and all were informed that their responses were confidential. Study procedures were approved by the Public Health Institute Institutional Review Board and a federal certificate of confidentiality was obtained, adding further protection to confidentiality.

To reach individuals for follow up interviews we required them to provide contact information (e.g., phone number, address, e-mail, names of friends who might know there whereabouts, family members' phone numbers, health service professions from whom they received services, shelters they frequented, and criminal justice personnel). Follow up rates for were 86% at 6 months, 76% at 12 months and 71% at 18 months. As described below, we used generalized estimating equations (GEE) for our analyses, which enabled all participants to be included in analyses even if they missed follow up interviews.

Measures

1) *Demographic Characteristics* included standard demographic questions such as age, gender, ethnicity, marital status, and education. Demographic characteristics were used to describe the sample and were also used as covariates in GEE analyses to assess whether they predicted outcome.

2) *DSM IV Checklist for Past 12 Month Alcohol and Drug Dependence* was used to assess substance use disorders over the past 12 months. Items are based on DSM IV diagnostic criteria (American Psychiatric Association, 2000; Forman, Svikis, Montoya & Blaine, 2004). This measure was administered at baseline only to describe substance dependencies among the sample.

3) *Addiction Severity Index Lite (ASI):* The ASI is a standardized, structured interview that assesses problem severity in six areas: medical, employment/ support, drug/alcohol, legal, family/social and psychological. The ASI measures a 30 day time period and provides composite scores between 0 and 1 for each problem area. The ASI has demonstrated good reliability and validity in numerous studies (McLellan et al., 1992). Although the instrument includes a measure of psychiatric severity as well, we opted to use the more comprehensive Brief Symptom Inventory, which is described below. ASI alcohol and drug scales were used as primary outcomes and the other ASI scales (i.e., medical, family, legal and vocational) were used as secondary outcomes.

2) *Psychiatric symptoms:* To assess current psychiatric severity we used the Brief Symptom Inventory (Derogatis & Melisaratos, 1983). This 53-item measure assesses severity of psychiatric symptoms on nine clinical scales as well as three global indices. Items are rated on a 5-point scale and ask about symptoms over the past 7 days. We used the Global Severity Index as an overall measure of psychiatric severity, on of our secondary outcome variables.

3) *Six month measures of alcohol and drug use*: These measures were taken from Gerstein et al. (1994) and labeled Peak Density and 6-month abstinence. *Peak Density* was the number of days of any substance use (i.e., any alcohol or drug) during the month of highest use over the past 6 months. *Six-month abstinence* was a dichotomous yes/no regarding any use of alcohol of drugs over the past 6 months. These measures were used as primary outcome variables.

4) *Additional 6-month Variables:* Two additional measures were taken from Gerstein et al. (1994). These included measures of *arrests* and *days worked* over the past 6 months. Both were used as secondary outcome variables.

5) *Alcoholics Anonymous Affiliation Scale*: This measure includes 9 items and was developed by Humphreys, Kaskutas and Weisner (1998) to measure the strength of an individual's affiliation with AA. The scale includes a number of items beyond attendance at meetings, including questions about sponsorship, spirituality, and volunteer service positions at meetings. An overall scale score ranging from 0 – 9 is generated by summing the items. Measures of internal consistency have been shown to be good across a variety of groups. We included involvement in other 12-step groups in addition to AA, such as Narcotics Anonymous (NA). We therefore refer to "12-step" affiliation throughout the paper rather than AA affiliation.

6) *Drinking and drug use status in the social network:* These measures were taken from the Important People Instrument (Zywiak, et al., 2002). The instrument allows participants to identify up to 12 important people in his or her network whom they have had contact with in the past six months. Information on the type of relationship (e.g., spouse, friend), amount of contact over the past 6 months (e.g., daily, once or twice a week) and drug and alcohol use over the past 6 months (e.g., heavy user, light user, in recovery) was obtained for each person in the social network. The drinking status of the social network was calculated by multiplying the amount of contact by the drinking pattern of each network member, averaged across the network. The same method is applied to obtain the drug status of the network member; the amount of contact is multiplied by the pattern of drug use and averaged across network members.

Analysis Plan

Our primary interest was to determine if outcome measures improved between baseline and 6 months and if areas of improvement were maintained at 12 and 18 months. On variables where residents entered with low problem severity, we were interested to see if problems increased over time. To assess longitudinal changes for each of our outcome measures (ASI scales, GSI, Peak Density, abstinence and arrests) we used Generalized Estimating Equation (GEE) models (Diggle, Heagerty, Liang & Zeger, 2002) that compared each follow up time point (i.e., 6, 12 and 18 months) with baseline. Each outcome measure was entered into a separate model controlling for a variety of baseline demographic covariates (i.e., age, race, education, marital status and gender).

We developed additional GEE models to assess whether factors that are central to the recovery philosophy of SLHs (i.e., involvement in 12-step groups and establishing a social network supportive of abstinence) were related to outcome. A key advantage of GEE models is that resulting coefficients and odds ratios allow a longitudinal interpretation of within-individual change in the outcome over time and how those changes are associated with covariates of interest. We used separate models examined how the 12-step involvement, drinking status of the social network and drug use status of the social network predicted improvement in outcome variables over time. Models controlled for demographic characteristics and time of the interview. Because most of our outcome measures were continuous (ASI, GSI, and Peak Density) most outcomes are reported as coefficients and standard errors. Those that are dichotomous (abstinent versus not and arrested versus not) are reported as odds ratios.

Results

Baseline Characteristics

In addition to demographic characteristics, Table 1 shows resident functioning on outcome variables at the baseline time point. Residents entered the SLHs with relatively low ASI

alcohol (mean=0.07, se=0.02), drug (mean= 0.05, se=0.01), and legal (mean=0.09, se=0.02) severity. Other outcome measures at baseline were of moderate to high severity, which included other ASI scales (family, medical and employment) and the GSI (psychiatric symptoms). Measures that assessed the previous 6 months before residents entered the SLH revealed more extensive substance use. For example the average Peak Density of substance use over the 6-month period prior to entering the house was 19.3 (se=1.7) days of substance use per month and only 11% had been abstinent for the entire 6-month period. In addition, involvement in the criminal justice system was common, with about 40% reporting an arrest during the past 6 months.

Longitudinal Outcomes

GEE analyses were used to assess how outcome measures at 6-, 12- and 18-month follow up compared to baseline. For outcome variables measuring a 6 month period of time, there was a consistent longitudinal pattern (see Table 2). Between baseline and 6 months nearly all of these variables showed significant improvement. At 12 and 18 months we found that most of these improvements persisted. This was the pattern for abstinence over the past 6 month, Peak Density, and arrests. For number of days worked we found we found significant improvement relative to baseline at 12 and 18 months, but not at 6 months. In addition, the magnitude of these improvements was large. For example, relative to baseline, residents at 6 months were 16 and one-half times likely to report being abstinent. By 18 months the odds ratio dropped to 6.5, but was still highly significant.

Variables that measured shorter lengths of time generally had a different pattern. For example, residents entered the SLHs with relatively low ASI alcohol and drug scale scores that were maintained at follow up time points. The mean for alcohol severity at baseline was 0.07(se=0.02). That remained essentially the same at 6 months (mean=0.06, se=0.02) and 12 months (mean=0.5, se=0.02) and increased only slightly at 18 months (mean=0.11, se=0.03). We found the same pattern for drug severity. At baseline, residents entered with a mean of 0.05(se=0.01). At 6 months, drug severity was similar (mean=.03, se=0.01) and remained about the same at 12 months (mean=0.05, se=0.2). At 18 months drug severity increased only slightly (mean=0.11, se=0.3).

It is important to note that residents were able to retain their improvements even after leaving the SLH. Among the resident contacted for follow up interviews 71% had left the residence 12 months and by 86% had left at 18 months. However, we found little in terms of exacerbation of problems at these time points.

On other ASI variables, we saw residents enter with relatively higher severity that did not improve. This was the case for ASI Family and medical severity, as well as psychiatric symptoms on the BSI. (See Table 1 for baseline values for these variables).

Predictors of Outcome

In general, we found very few demographic predictors of outcome and no consistent patterns in terms of any subgroups having better outcomes over time. Some variables that did not improve over time nonetheless had significant covariates. These included the ASI alcohol, ASI medical and Global Severity scales on the BSI. ASI alcohol severity was lower for residents with at least a high school education (coefficient=−0.06, se=0.03, p<.05). Higher education was also associated with lower psychiatric severity on the BSI (coefficient=−0.32, se=0.16, p<.05). Older age was associated with higher psychiatric (coefficient=0.35, se=0.13, p<.01) and medical severity (coefficient=0.12, se=0.05, p<.05).

Table 3 shows how three variables that are theoretically related to the recovery philosophy in SLHs (i.e., 12-step involvement, drinking in the social network and drug use in the social

network) predicted outcomes that improved over time. As expected, level of involvement in 12-step groups was a strong predictor of outcome, particularly on the primary outcome variables measuring a 6 month period of time. Residents with a higher level of involvement in 12-step groups were 25% more likely to be abstinent. Twelve-step involvement was also a predictor of Peak Density (coefficient=−1.27, se=0.42) and ASI legal severity (coefficient= −0.01, se=0.01). A statistical trend was noted for 12-step involvement predicting number of arrests during the past 6 months (OR=0.79, p=0.07).

Twelve step involvement was also associated with better outcomes on several variables that did not show significant longitudinal improvement, including ASI drug (coefficient = −0.01, se=0.01, p< .05) and legal (coefficient = −0.01, se=0.01, p< .05) severity. However, it did not predict any other primary or secondary outcomes (e.g., ASI alcohol severity, ASI employment severity, and days of work).

We also expected that alcohol and drug use in the social network would predict outcome. We found this confirmed for Peak Density and days worked, but not for most other variables. (See Table 3 for coefficients and standard errors). Peak Density was predicted by both alcohol and drug use in the social network and days worked was predicted by drug use. The only other outcome variable predicted by substance use in the social network was drug use predicting ASI alcohol severity (coefficient=0.06, se=0.02, p<.01) (not shown in the table).

Discussion

A relatively new development in addiction services is to provide residence in sober living houses while clients attend outpatient treatment. To the best of our knowledge, our study represents the first long term follow up of individuals receiving these services. Overall, our findings provide important descriptive support for this combination of services.

Primary Outcomes

Findings on our primary outcome variables assessing alcohol and drug problems confirmed our hypotheses. We expected that residents who entered the SLHs with high severity would show significant improvement at 6 months and that the improvement would be maintained at 12 and 18 months. For residents who entered the houses with low severity at baseline, we expected low severity to be maintained at all subsequent time points. Not surprising, we found variables measuring a 6 month period of time to be high at baseline, whereas variables measuring a shorter time period (e.g. the ASI scales, which measure 30 days) to be lower in severity. In general, the SLHs required that prospective residents have 30 days of abstinence from alcohol and drugs and be in good standing in the outpatient treatment program before they are eligible to enter the SLHs. Thus, it is not surprising that measures assessing that time period would reflect low severity. If severity were high at that time point they would not have been eligible for entry. However, the critical question here was whether low severity could be maintained over time. Our analyses confirmed that there was no significant increase in severity of alcohol or drug problems on the ASI up to 18 months.

It was also not surprising that when we examined substance use during the 6 months before residents entered the SLHs (abstinence and peak density variables), we found higher severity. This period of time of course included 5 months during which residents were not obligated to be abstinent or be attending the outpatient program. Because residents entered the SLHs with higher severity on these variables there were opportunities to improve on them, which is what we found. More importantly, improvements were maintained at 12 and 18 months, even though two-thirds had left the SLH by 12 months.

Secondary Outcomes

Results on secondary outcome measures were similar to the primary outcomes in that variables measuring a 6 month time period showed significant improvement over time. At baseline about 40% had been arrested during the past 6 months. The odds of being arrested between baseline and 6 months went done by over a fifth. It was interesting that the odds of being arrested continued to decrease at 12 and 18 months even though larger proportions were no longer residing at the SLH. Thus, the improvement does not appear to be solely a function of residing in the SLH.

Improvement in days worked followed a different pattern. Here, there was no significant difference in number of days worked over the past 6 months between baseline and 6 months. However, we did find improvement at 12 and 18 months. One reason for this finding is that the program discourages residents from seeking work during the first few months of treatment. The program takes the position that working on one's recovery should take precedence during the early months of treatment and employment should be postponed until after the resident settles into several months of sustained recovery.

Despite the program's emphasis on not working during the early months of treatment, we nevertheless found significant improvement at 6 months on the ASI employment scale. One reason why ASI employment may have improved while days worked did not is that the ASI employment scale includes items that measure things like involvement in school and vocational training and obtaining a state identification card. The program does not discourage residents from enrolling in school or training programs early in treatment. Like number of days employed, ASI employment at 12 and 18 months continued to improve relative to 6 months.

The only other ASI scale showing significant improvement was the legal scale. Like number of arrests, legal problems improved from baseline to 6 months, and those improvements were maintained at 12 months. Although the 18 month finding was no longer statistically significant, it nevertheless continued as a statistical trend in the expected direction. The improvements were particularly noteworthy because they occurred despite the fact that individuals entering the SLHs had relatively low severity on the legal scale. By the time study participants were entering the SLHs they had typically been abstinent for a month and in good standing in the outpatient program. For most residents, it was probably the case that their legal problems would be resolved if they continued the program of recovery they had begun. Thus, they were not overly concerned about their legal status at the time they entered the houses

Three areas where residents entered the SLHs with moderate to high severity that did not improve were medical, psychiatric and family problems. We expected that improvement in alcohol and drug problems would also result in improvement in these coexisting areas. Understanding why we did not find this requires further investigation. However, one potential factor might be that problems in these areas might reflect chronic conditions that are not easily improved. For example, some residents had medical problems with a chronic course, such as HIV and hepatitis. Others had unremitting psychiatric conditions such as recurring anxiety, depression and psychotic disorders. In terms of family relationships, some residents were estranged from family and continued to have no or limited contact even after entering the houses. Thus, there may have been limited opportunities for improvement.

It is worth noting that residents on average made large improvements in terms of alcohol and drug use and other areas despite the ongoing presence of these coexisting problems. While lack of improvement on psychiatric, medical and family problems suggests that the program

should do all that it can to increase services to address them, it is also a tribute to the gains that residents were able to make despite the persistence of these problems.

Correlates of Outcome

Overall, our primary and secondary outcomes did not vary by demographic characteristics such as such as age, race and education. Thus, the aforementioned improvements that we found might be generalized to various demographic groups. However, one caveat is that our N of 55 was relatively low in terms of statistical power and a larger sample might have found differences not tapped here.

Consistent with the philosophy of recovery used in the combined outpatient treatment and SLH residency was our finding that social support characteristics were associated with some outcomes. Involvement in 12-step groups was the strongest predictor of outcome. More involvement in 12 step groups over the past 6 months was associated with a higher likelihood of being abstinent, lower Peak Density, and lower ASI legal severity. However, 12-step involvement did not predict other ASI outcomes, including alcohol and drug severity. Part of the reason may be that our measure of 12-step involvement assessed a 6 month period of time, whereas the ASI only assesses the past 30 days. The 5 months that factor into the 12-step involvement scale but not the ASI Alcohol and Drug scales could be a source of “noise” that detracted from our ability to find associations. This difference in time periods assessed was not an issue for out other primary outcomes, abstinence and Peak Density, both of which measured a 6 month time period. Also, residents entered with low ASI alcohol and drug severity that changed minimally over time. Lack of variation on these variables might have added to the difficulty finding associations.

In addition to involvement in 12-step groups, we also expected that social networks that were supportive of abstinence would be associated with outcome variables over time. Like involvement in 12-step groups, developing social support for sobriety is a critical component of the recovery philosophy of SLHs. However, the results were mixed. We found that our measures of drinking and drug use within the social network were predictive of Peak Density but not abstinence. The only other outcome variable predicted by substance use in the social network was drug use status predicting number of days worked over the past 6 months. One factor that might have played a role in the lack of association found is the limited variability on these measures. For example when we examined whether individuals had heavy drinkers or drug users in their social networks we found the 80% or more reported no heavy drinkers and no heavy drug users. This occurred across all time points for both drinking and drug use. It should be pointed out that participants were asked about “important people” in their social networks. By the time they were entering the SLHs (baseline) they may have been have cut ties to individuals who were actively using and therefore did not identify them as “important people” in the social network.

Limitations

There are several limitations to the study that are important to consider. First, although we conducted longitudinal comparison of resident functioning over time, we did not compare outcomes of SLH residents with individuals residing in other living situations. Because there was no comparison group, we cannot necessarily conclude that SLHs caused the improvements. Individuals self selected themselves into the SLHs and the characteristics of these individuals may have at least in part accounted for the longitudinal improvements. A second limitation is that the context of the study was in the U.S., where abstinence oriented treatments are common. The SLH approach to recovery would not be appropriate for individuals interested in harm reduction and it might need to be modified if used in other countries or cultural contexts.

Conclusion

The lack of a living environment that supports sustained recovery is a major obstacle to successful treatment of substance use disorders in outpatient programs. Although SLHs have traditionally been independent of formal treatment, ORS developed SLHs that provide support for recovery while clients attend their outpatient treatment program and after they complete treatment. The houses are financially self sustaining and geared to be affordable to the clients most in need of stable housing, such as those who at low economic levels, on General Assistance, or previously homeless. Unlike traditional halfway houses, there is no predetermined maximum length of stay, so the residents themselves can decide when they are ready to leave.

In our study of 55 residents we found two patterns of outcome over 18 months: 1) On instruments that measured a 6-month period of time we found significant improvement between baseline and 6 months and those improvements were maintained at 12 and 18 months. These included measures of alcohol and drug use, arrests and days worked. We found similar patterns for ASI legal and employment scales. 2) On ASI alcohol and drug scales we found residents entered the houses with low severity that was continued at all subsequent time points. When we examined predictors of outcome we found that higher level of involvement in 12-step groups predicted better outcome.

There is a need for studies with larger samples that are better controlled (e.g., random assignment to comparison conditions). However, based on the promising findings here, SLHs should be considered as an adjunct to outpatient treatment for clients who have access to limited financial resources or reside in destructive living environments.

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Table 1

Baseline characteristics

	N=55
Demographics	**%**
Male	94
Never Married	46
Children under 18	44
White/Caucasian	30
GED/High School Education	73
Controlled Environment (past 30days)	33
Referral source	
Criminal	24
Inpatient	4
Self / Family / Friend	46
Other	27
Continuous Measures	mean (S.E.)
Age	43(1.2)
Income from all sources	$447 (55)
Length of stay (# days)	254(24)
ASI Alcohol	0.07(0.02)
ASI Drug	0.05(0.01)
ASI Medical	0.36(0.54)
ASI Legal	0.09(0.02)
ASI employment	0.86(0.03)
ASI family	0.25(0.02)
Global Severity Index (GSI)	0.67(0.08)
Peak Density	19.3(1.7)
Dichotomous Measures	%
Arrested past 6 months	40
Employed past 6 months	44
Abstinent from Alcohol and Drugs past 6 months	11

Table 2

Outcomes over time using generalized estimating equation (GEE) models

	Continuous Measures		Dichotomous Measures			
Demographic	**Days Worked**	**ASI Legal**	**ASI Employment**	**Peak density**	**Abstinence**	**Arrests**
	Coef (s.e.)	**Coef (s.e.)**	**Coef (s.e.)**	**Coef. (s.e.)**	**OR_{adj} (95% CI)**	**OR_{adj} (95% CI)**
Interview						
Baseline (ref)	---	---	---	---	---	---
6-month	7.98(8.27)	−0.04(0.02)[a]	−0.10(0.03) [c]	−15.54(1.75) [c]	16.45(6.61–40.90)[c]	0.17(0.06–0.49)[b]
12-month	31.31(8.66)[c]	−0.06(0.02)[a]	−0.16(0.03) [c]	−15.54(1.85) [c]	15.05(5.88–38.50)[c]	0.04(0.01–0.28) [b]
18-month	39.14(8.65)[c]	−0.04(0.02)	−0.17(0.03) [c]	−10.71(1.84) [c]	6.52(2.60–16.44)[c]	0.12(0.03–0.44) [b]

Note: Days Worked, Peak Density, Abstinence and Arrests assess the past 6 months. ASI variables measure past 30 days. Analyses controlled for age, race, and education.

[a] p<.05;

[b] p<.01;

[c] p<.001

Table 3

Covariates predicting outcome measures using generalized estimating equation (GEE) models

	Days Worked	ASI Legal	Peak density	Abstinence
	Coef (S.E)	**Coef (S.E)**	**Coef. (S.E)**	**OR_{adj} (95% CI)**
12-step involvement scale	ns	−0.01(0.01) [a]	−1.27(0.42) [b]	1.25(1.02–1.54) [a]
Drinking status of social network	ns	ns	3.10(1.57) [a]	ns
Drug status of social network	−22.65(7.62)[b]	ns	4.71(1.60)[b]	ns

Note: Coefficients and odds ratios have been adjusted for time of interview, age, race, and education.

Days Worked, Peak Density, Abstinence and Arrests assess the past 6 months. ASI variables measure past 30 days.

[a] p<.05;

[b] p<.01;

[c] p<.001