

Brief Report

# Positive Associations between Women's Employment at the Community-Level and Opportunities and Interpersonal Sharing within Recovery Homes

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**Abstract:** The background of this study was an investigation of a sustainability issue involving how to deal with increasing deaths due to substance use as well as housing instability among those with substance use problems. Our study investigated the relationship between community-level women's employment and two key variables within Oxford House recovery homes: levels of employment and the sharing of resources among residents. These variables are crucial for the sustainability of recovery homes as they contribute to maintaining an ecological balance in communities. For our methods, we gathered data from recovery homes located in three different regions of the United States. The focus was on examining how women's employment rates in these communities correlate with the employment statuses of house residents and their resource-sharing behaviors. Regarding the results, we found a positive association between rates of employment among women in these communities and employment within the recovery houses and resource lending among residents. We conclude that women's employment at the community-level appears to be a significant macro-level factor that promotes supportive social and environmental policies. These community-level policies enhance employment opportunities and encourage interpersonal sharing within recovery homes, contributing to ecological balance and sustainability in terms of environmental, economic, and social dimensions.

**Keywords:** women's employment; zip codes; recovery homes; Oxford House



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## 1. Introduction

Recovery homes for those with substance use disorders are complex and ubiquitous ecosystems, and residents' integration into these settings may be critical for facilitating the sustainability of substance use recovery resources in communities [1]. There is a need to develop more socio-economic and integrated approaches to understand sustainable processes for those with substance use disorders, particularly given the increasing problems involving the mortality of those with substance use disorders in part due to housing instability. Recovery homes might be part of a sustainable solution, as they provide communal living environments for individuals seeking a space to gain stability, structure, and social connection while attempting to stay abstinent from alcohol and/or substance use [2].

According to recent estimates, there are nearly 18,000 recovery homes in the United States [3], making them one of the largest shared living programs, and they play a vital role in addressing the community impact of alcohol and/or substance use issues. This influence has been found to be bidirectional, with the community environment impacting the success of recovery homes. As an example, residents' willingness to share resources is associated with outcomes such as increased wages, social support, and self-esteem [4], and it is also associated with lower rates of relapses [5]. These types of social network dynamics may contribute to understanding how these homes create desirable and sustainable recovery

outcomes. It is possible and one of our hypotheses that economic conditions within the environment from which these houses are located could influence interpersonal dynamics in the recovery houses, such as with regard to loaning resources.

Therefore, it is important to identify exogenous conditions that predict outcomes among residents of recovery homes. For example, Jason et al. [6] evaluated a model that used a latent recovery factor to predict relapse, and a resident's probability of relapse was related to the "recoveries" of home peers rather than a member's own "recovery" status. In other words, this points to the social environment, as the resident relapse rate is related to the total recovery capital available in the homes. These house characteristics might make it more likely that improvements will be sustained after the residents leave these houses. Another of our hypotheses is that it is possible that economic conditions in the surrounding communities, particularly regarding employment, might make it more likely for residents to succeed in a house, as measured by their ability to find and retain employment.

At the house level, Jason et al. [7] examined friendship, advice seeking, and willingness to loan, as well as house president ratings, in relation to several variables such as house members' ability to pay monthly rent, their involvement in chapter activities, and how selective they were in accepting new residents. Using latent analyses, it was determined that the houses that had the lowest eviction rates were most likely to have residents who loaned others money, were more involved in chapter activities, and were better able to pay monthly house rent. This study suggests recovery homes have different ecological features that may influence and sustain recovery outcomes, and this finding is also connected with our hypotheses that what occurs within the surrounding community has sustainability impacts on the conditions influencing residents' ability to be successful.

Oxford House (OH) is the largest single network of recovery homes in the United States, serving approximately 28,000 individuals nationwide [8–10]. OH is distinct from other recovery home models in that it is entirely self-run; residents hold leadership positions, and there are no professional staff on site. Decisions, including the entrance of new residents, are made democratically, and all residents contribute to the upkeep and rent of a house [2]. Ferrari et al. [11] conducted a study to further assess the ecological characteristics of self-run OHs in a national sample. The OHs examined were in four distinct areas, such as urban, suburban upper middle class, and working-class environments. Neighborhood factors such as socioeconomic status were not significantly related to relapse rates. Kassanits et al. [12], however, found higher relapse rates among residents of OHs in neighborhoods with lower education and income levels. This finding suggests that recovery homes may house residents who have better outcomes when situated in ecological areas populated with people with higher incomes and greater education. However, the contrasting findings of [11,12] point to system-level characteristics that might affect relationships and behaviors among individuals in recovery. Environmental variables such as employment levels and social network measures may have important associations that have implications for understanding how to enhance successful and sustainable outcomes in these post-treatment settings.

The current study investigated the associations between women's employment at the community level and two variables within Oxford House recovery homes: levels of employment and sharing of resources. The data used in this study were collected from recovery homes in three regions of the US. The data were obtained from the 2015 American Community Survey (ACS), collected by the US Census Bureau. We hypothesized that female employment rates might suggest facilitating economic conditions in a community, especially as females in recovery confront more barriers to entering the labor force, including discrimination [13]. We hypothesized that when there is higher female employment in a community and therefore possibly more employment opportunities, rates of overall employment in recovery homes would be higher. In addition, we hypothesized that when rates of women's employment are higher within a community, residents of recovery homes might be more willing to share resources with peers because of having more access to resources due to being employed. If more macro-factors are related to these

types of dynamics, they might point to mechanisms that help to sustain recovery resources in communities.

## 2. Method

The current study was conducted in 42 OHs in the US [3]. There are over 3000 OH recovery homes in the US, providing safe housing to about 28,000 individuals in recovery. Each house is self-run without any professional staff. They are gender-specific, usually including 6 to 12 residents. The OHs are democratically run, and requirements for remaining in the homes include not using illegal drugs or alcohol, paying monthly rent, and contributing to house maintenance. Residents enter OH from a variety of acute care and criminal justice settings, including in-patient treatment centers, incarceration, and drug court programs. Some enter OH directly from homelessness or other precarious living situations [14,15]. Individuals looking to live in OH must be voted in by current residents. An 80% majority is required to accept a new resident [2].

Data were collected from OHs located in North Carolina, Texas, and Oregon in the US. Including residences from different geographical regions provided some ability to address the generalizability of findings to recovery homes in other locations. Communication with residences about possible participation helped field staff assemble lists of residences to approach, and recruitment attempts were made in approximately the order that residence contact information became available. Member-elected house presidents were asked to introduce the study to residents by reading a project-provided script about the study; houses were accepted into the study if the house president and all or all but one member agreed to participate. The first thirteen consenting houses from each state were accepted, and three more houses were added, making a total of forty-two. One house dropped out completely, but another was added after wave 1, bringing the total to forty-three houses. However, only 42 houses had 2 or more waves of information available on their residents, constituting the data used in a prior study [6].

Participants were part of a longitudinal study that collected information every four months over a 2-year period for a total of 7 waves from 2015 to 2018. Participants were recruited and interviewed by field research staff in face-to-face meetings. If a participant left the home, their departure was classified as voluntary or involuntary. Involuntary exits included relapse, disruptive behavior, or failure to pay rent. Voluntary exits included leaving for other reasons such as desiring to live independently or with a spouse or friends. Participants were compensated USD 20 for completing each assessment. Permission was obtained through the DePaul University Institutional Review Board.

## 3. Measures

Resident demographic information included age, race/ethnicity, and sex. Employment status and education were obtained and classified as working part-time or full time (coded 1) or not working (unemployed, student, retired, on disability; coded as 0) and high school degree or less (0) vs. any college or other form of higher education (1), respectively.

In total, 93% of 714 eligible participants participated. Of these 666 residents, 602 were included in the current study. The sample was 51% male and 49% female. Their average age was 37.0 (SD = 10.5). Regarding race, 78.8% were White, 10% were Latinx, 8.5% were Black, and 2.7% were either Asian American, Alaskan Native, American Indian, or Pacific Islanders.

### House Employment within the OH

The employment rate in the OHs was calculated by dividing the proportion of residents employed by the total number of residents living in the house. The median house employment rate was 87.5% and ranged from 25 to 100% ( $M = 77.81$ ,  $SD = 0.26$ ).

### Community Employment Rate

Female employment rates were examined within 30 zip codes where OH recovery homes were located. The data were obtained from the 2015 American Community Survey (ACS) conducted by the US Census Bureau. The ACS collects detailed yearly demographic,

social, economic, and housing information from communities across the United States from the U.S Census Bureau. The female community employment rate was measured as the percentage of females aged 16 years or older who were in the labor force. The median female employment rate was 56.3% (suggesting that about half of all females surveyed were employed). Female employment percentages ranged from 38.7 to 65.6 ( $M = 55.17$ ,  $SD = 5.98$ ) in the zip codes studied.

#### 4. Loaning

The *Social Network Instrument* (SNI; [16]) was used to assess the social dynamics within each OH. All residents rated each other via what is referred to as a whole network. Money loaning, signifying willingness to lend resources, was counted as a connection with another resident if the person loaning money was willing to lend USD 500 or USD 100 but not considered a connection if he/she was only willing to loan USD 50, USD 10, or USD 0. This study examined patterns of bidirectional (or simply “directed”) relationships, with each resident (ego) rating every other person in the house (alters). *Reciprocity* measures the tendency for mutual (bidirectional) connection in willingness to loan. Reciprocity is the proportion of all the edges for which a reciprocal edge is present, and this was the measurement used in our study.

#### 5. Data Analysis

Linear mixed-effects models were utilized to evaluate the hypotheses due to the data set’s structure. The nature of the data indicates a nested structure, meaning that observations within houses are likely to be correlated over time [17,18]. Statistical analysis was conducted using R 4.3.2, with the lme4 package [19] employed for multilevel analyses. Female community employment served as a fixed effect. House identification number (HID), zip code, and state were included as random effects for house employment, but state and zip code were removed in the model predicting willingness to loan as the variance component was estimated to be near zero.

#### 6. Results

##### House Employment

The effect of the female community employment rate was positive and significant for house employment ( $\beta = 0.79$ ,  $SE = 0.23$ ,  $z(1874) = 3.54$ ,  $p < 0.001$ ). As the employment rate of women in the OH community increased, the overall employment rate of the residents in the OH increased. The fixed effect of community female employment accounted for 3.8% of the variance in this model ( $R^2$  Marginal = 0.038), with random effects (State, Zip, HID) accounting for another 69.2% of the variance.

##### Willingness to Loan Money

In a separate model, the community-level female employment rate positively predicted willingness to loan reciprocity within the house ( $\beta = 0.35$ ,  $SE = 0.10$ ,  $z(1874) = 3.56$ ,  $p < 0.001$ ). As the employment rate of women in an OH’s community increased, the willingness of residents to loan money increased. The fixed effect of female employment in a community accounted for 0.9% of the variance in the model ( $R^2$  Marginal = 0.009), and the random effect of HID accounted for 0.7%.

#### 7. Discussion

The rates of women’s employment in a community were related to higher house employment and lending of resources. These findings suggest that higher female employment rates might reflect facilitating conditions in the environment that allow both higher employment within recovery homes and more reciprocity of loaning. This suggests an ecological balance involving environmental, economic, and social sustainability. However, this association does not indicate causality. Still, it is not surprising that when the surrounding community has enhanced employment opportunities for females, there would also be a greater likelihood of employment among the residents of the recovery houses.

The relationship between the macro-environmental levels of female employment and the sharing of resources was an association that was possibly due to higher resources within the house, which could have influenced the greater willingness to be generous and trusting with respect to loaning peers USD 100 or USD 500.

It is possible that higher female employment rates might signify a more facilitating and positive economic condition for everyone or might relate to other policies that positively affect sustainability, economic opportunities, the social services available, or public service transportation [20]. Higher community levels of female employment might be a marker of either the types of jobs available, the cost of living in such areas, or affordable transportation that enables residents of recovery homes to achieve high levels of employment and have access to more opportunities to work through role models, job contacts, or norms [21]. This is a complex set of associations, as there are multiple cultural and social norms that affect women in the workforce, such as having children [22].

In addition, when there were higher female community employment rates, levels of reciprocal sharing were higher. This finding suggests that with higher employment rates in the community, which is connected to higher house levels of employment, there could be more resources available, such as trust of the house residents, which might be the reason for the increased reciprocal loaning exchanges. Still, the relationship to external employment rates found in the current study and what occurs in terms of employment, as well as sharing resources, will need further investigation.

There are several limitations in the current study. We examined only a few of the possible variables of interest, and dropout and relapse rates could be examined in future studies. There are also multiple other variables that might have impacted the findings, including the available resources, both economic and social, that contributed to the findings, and future research will need to examine these other factors [23,24]. We also did not examine the influence of rates of male community employment on the house and social network variables or the differential rates of house employment among men and women. Finally, while there is a strong association between environmental/community-level factors when it comes to employment, for loaning, the percentage of variance explained is relatively small. Loaning behavior probably has a lot of individual and house-level factors that corroborate what has been found in previous research (e.g., social networking features like trust [4]).

In summary, it does appear that the macroeconomic conditions of a community influence the following economic and social sustainability factors: rates of employment and the sharing of resources in Oxford House recovery homes. Kassanitis et al. [12] found higher relapse rates occurring in neighborhoods with lower income and education levels, whereas Ferrari et al. [11] found that neighborhood socioeconomic status did not predict relapse rates. These studies occurred during different decades, and the explanation for these differences may be changing economic or other factors during these time periods. Although we are not certain of how to explain the findings, it is important to continue to explore such macro sustainability factors that influence the potential outcomes of residents in recovery homes [25]. One practical implication is that locating recovery homes in settings with higher overall employment rates for women might be a way of enhancing the ability of these homes to potentially have beneficial employment and sharing outcomes for residents. Our study contributes to the literature on sustainability, particularly as it promotes an understanding of how environments and economic and social domains influence recovery and sustainability for those with substance use disorders.

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