RECIPROCAL RESPONSIBILITY AND SOCIAL SUPPORT AMONG WOMEN IN SUBSTANCE USE RECOVERY*

KATE L. BRERETON, PSY.D.

JOSEFINA ÁLVAREZ, PH.D.

Adler School of Professional Psychology

LEONARD A. JASON, PH.D.

EDWARD B. STEVENS, PH.D.

DePaul University

VIDA B. DYSON, PH.D.

CATHERINE McNEILLY, PSY.D.

Adler School of Professional Psychology

JOSEPH R. FERRARI, PH.D.
DePaul University

ABSTRACT

This study sought to identify individual- and house-level predictors of women's employment, education, and retention in self-run recovery homes. Data from a national study of 292 women in Oxford House, an international organization of recovery homes grounded on self-help/mutual aid

and 12-step principles were analyzed. Results indicated that the house's Reciprocal Responsibility predicted number of days of paid work. Individual and house variables did not predict participation in education. The presence of recovery home members in personal social networks was statistically significant in predicting retention in the recovery home. Lastly, results indicated that number of days of paid work were not predictive of likelihood of substance use in the next 12 months. The findings of this study indicate that the ability to develop social networks and Reciprocal Responsibility in recovery homes can contribute to positive outcomes for women.

INTRODUCTION

Over the past two decades researchers have become more attentive to developing specific treatment modalities that cater to the unique needs of women with substance use problems (Covington, 2002; Grella, 2008). Research highlights women's unique personal, interpersonal, and structural barriers to treatment and sustaining abstinence. For example, women are confronted with more interpersonal barriers, such as lack of support from friends and family and fear of losing custody of their children (Currie, 2001). Additionally, women face economic challenges, lack of adequate healthcare, and lack of gender responsive treatment programs (Center for Substance Abuse Treatment, 2009). Many women also grapple with personal barriers to treatment, which may include feelings of low self-esteem, shame, and guilt because of their substance use (Currie, 2001).

There are important gender differences that contribute to relapse. Specifically, women with substance use problems are more likely to relapse because of negative emotional states and interpersonal problems (Grella, Scott, Foss, & Dennis, 2008; Walitzer & Dearing, 2006). Many women report substance use as a way to numb negative and painful feelings related to racism, rejection, as well as unresolved guilt and shame (Brady, Back, & Greenfield, 2009). There are other barriers to recovery for women compared to men. For example, women tend to have lower employment and education rates than men (Brady & Ashley, 2005; Tuchman, 2010). Additionally, recovering women are more likely to have custody of children than men and experience stressors related to parenting and child care (Brady & Ashley, 2005). These unique personal, interpersonal, and structural barriers faced by women need to be addressed in treatment.

Housing also may be a particularly important barrier to women's recovery (Kim & Crutchfield, 2004). Lack of safe and sober housing may contribute to the high risk for relapse for individuals with substance use problems, as they often return to stressful family situations, other high-risk environments, or

homelessness. Housing assistance is one of the key factors in treatment of women with substance use problems (Mandell & Werner, 2008; Polcin, Korcha, Bond, & Galloway, 2010). Research has also shown that sober housing provides social support to individuals in recovery (Huselid & Self, 1991; Kim & Crutchfield, 2004; Polcin et al., 2010). The finding that social support contributes to recovery brought about novel continuum of care options, including therapeutic communities, halfway houses, and sober living housing (Polcin et al., 2010; Yablonsky, 1989). However, d'Arlach, Olson, Jason, and Ferrari (2006) found that few recovery houses in the United States are specifically designed for women with substance use problems. Although there is growing research on gender specific treatment for substance use problems, there is little research on housing for women. The aim of the current study was to better understand predictors of women's employment, education, and staying in the Oxford House, as these factors have been shown to contribute to continued abstinence (Brady & Ashley, 2005; Marsh, Cao, & D'Aunno, 2004; Smith & Marsh, 2002).

Oxford House is an innovative, international program that provides communal housing for a diverse group of both men and women recovering from substance use problems (Oxford House Inc., 2011). These sober living residences are grounded on self-help/mutual aid, 12-step principles (Polcin & Borkman, 2008). More specifically, Oxford Houses seek to promote sobriety and decrease relapse through housing, fellowship, self-sufficiency, and self-respect (Oxford House Inc., 2011). Additionally, this organization provides low cost housing that is controlled by the residents of the home rather than professional staff and there are no limitations on length of stay. The houses are run in a democratic fashion, by elected officers and the majority vote rules to make house decisions (see Jason & Ferrari, 2010a). The Oxford House approach is based on providing a sober environment, support for abstinence, and encouraging empowerment through developing self-sufficiency (Oxford House Inc., 2011).

Jason, Olson, Ferrari, and LoSasso (2006) found that individuals residing in Oxford Houses, compared to individuals receiving normative aftercare (self-help groups or outpatient treatment, while living in the community), had lower substance use, lower incarceration rates, and higher monthly incomes 2 years post-residential treatment. Davis and Jason (2005) explored sex differences in social support and self-efficacy among Oxford Houses' residents. They found for both men and women, more time as a resident in an Oxford House was related to more self-efficacy for not using alcohol and drugs as well as less social support for use of alcohol or drugs. Furthermore, women's social networks that had less support for alcohol and drug use had a significant impact on their abstinence self-efficacy (Davis & Jason, 2005).

There have been a few studies pertaining to women living in Oxford Houses. For example, d'Arlach and colleagues (2006) studied the effects of the presence of women with children on the other women in the house who did not have children. Residents in this study reported that having children in the household

had positive effects on their recovery by enabling them to feel useful. A by-product for mothers was having help with childcare readily available (d'Arlach et al., 2006). Additionally, Brown, Davis, Jason, and Ferrari (2006) examined women's experiences in the Oxford House as it relates to stress and coping. These studies suggest that Oxford House promotes building social networks that help women in recovery (see Jason & Ferrari, 2010b).

Jason, Olson, and Foli (2008) present an overview about what is known about women's experiences in the Oxford House. In particular, on average women tend to earn less and have fewer years of education than men. Oxford House requires all residents to pay rent and encourages all residents who are able to work to seek employment; however, women are more likely to be employed for fewer hours and many receive some government aid because they have dependent children. Women in Oxford Houses also tend to obtain more resources than their male counterparts (Brown et al., 2006). Specifically, previous research has shown that women overcome obstacles of economic disparity by utilizing the aid of the other women residing in the house (Jason et al., 2008). For example, women may provide each other with information regarding employment available in the community or share other resources. Belyaev-Glantsman, Jason, and Ferrari (2009) studied the relationship of ethnicity and gender to employment among both men and women living in Oxford Houses. Although there were no significant gender differences in number of days paid for work, this study showed men had higher overall incomes than women. In general, both men and women who stayed in the Oxford House for 6 months or more reported more days of work and higher incomes than residents who stayed less than 6 months.

The integral tenets of Oxford Houses include self-help, peer-based mutual support, and creating a sense of community (Oxford House Inc., 2011). According to Ferrari, Jason, Olson, Davis, and Alvarez (2002), Oxford Houses may provide women with a perceived sense of community that helps foster their long-term abstinence. Research has shown that abstinence social support is associated with recovery from substance use problems (Jason, Davis, Ferrari, & Anderson, 2007; Zywiak, Longabaugh, & Wirtz, 2002). Specifically, Jason, Stevens, Ferrari, Thompson, and Legler (2012) explored the relationship between social networks, relationships within Oxford House, and future abstinence. In this study, having one Oxford House member in one's personal social network increased the likelihood of future abstinence. Stevens, Jason, Ferrari, and Hunter (2010) examined the relationship between sense of community and self-efficacy among men and women in Oxford House. Their study found that residents with more Reciprocal Responsibility were more likely to have higher levels of abstinence self-efficacy.

Although the current research has shown the importance of Oxford Houses in promoting recovery, there are still more factors to be explored regarding women's experiences in the houses. Employment, education, and retention in

recovery settings have been shown to contribute to continued abstinence (Brady & Ashley, 2005; Marsh et al., 2004). However, no published study has examined social support and Reciprocal Responsibility (a component of sense of community) as predictors of employment, education, and retention for women in the Oxford House. This study examined how house variables (Reciprocal Responsibility and number of individuals in participant's social network within the house) moderate individual characteristics (size of personal social networks and presence of Oxford House members in personal social networks) to predict outcome variables (days paid for work, participation in education, and retention in the Oxford House). The relationship between number of days of paid work and likelihood of substance use or relapse was also investigated.

METHOD

Participants

This study analyzed archival data from Jason, Davis, Ferrari, and Anderson's (2007) larger National Institute on Drug Abuse funded study of Oxford Houses in the United States. The sample consisted of 292 women in 65 Oxford Houses from various states. Participants were current Oxford House residents at the beginning of the study; however, some had been in the Oxford House for years, while some had been in an Oxford House for only a few days.

The majority of the participants were Caucasian (57.7%) and African American (34.5%). The average age of participants was 36.5 years ($SD = 8.5$) and the average education level was 12.4 years ($SD = 2.3$). Concerning marital status, 48.8% were never married, 44.7% divorced, widowed, or separated, and 6.5% currently married. Women's employment status within the past 3 years included full-time employed (60.6%), part-time employed (17.8%), unemployed (17.4%), and retired/disabled (2.1%).

The average time in the Oxford Houses was 8.6 months ($SD = 13.2$), and average length of sobriety was 1.1 years ($SD = 1.5$). Participants' average lifetime substance use included: alcohol for 15.0 years ($SD = 9.5$), opiates for 5.1 years ($SD = 13.4$), cocaine for 7.5 years ($SD = 7.6$), and other drugs for 20.8 years ($SD = 37.5$) as well as on average 8.6 years ($SD = 9.2$) of poly-substance use. The average participant had been in alcohol treatment 2.3 times ($SD = 3.8$) and drug treatment 2.8 times ($SD = 2.6$) in their lives (Jason et al., 2007). Table 1 summarizes other participant characteristics.

Measures

Participants were administered the *Addiction Severity Index-Lite (ASI)* (McLellan, Kushner, Metzger, Peters, Smith, Grissom, et al., 1992). The *ASI* measures problems related to substance misuse along the following domains:

Table 1. Baseline Percentages and Mean
Frequencies of Participants' Characteristics
(*N* = 293)

Descriptor variable	Mean (*SD*)
Income ($)	
Employment[a]	563.8 (655.4)
Illegal activities[a]	.5 (7.5)
Total income[a,b]	750.7 (734.9)
Time since last alcohol use[c]	1.2 (1.6)
Time since last drug use[c]	1.4 (2.4)
Lifetime substance use[c]	
Alcohol to intoxication	11.7 (10.1)
Barbiturates	1.9 (5.3)
Sedative/hypnotics/tranq	2.9 (6.1)
Lifetime substance use[c]	
Amphetamines	4.3 (7.0)
Cannabis	8.0 (9.2)
Hallucinogens	2.5 (5.3)
Inhalants	1.2 (4.6)

[a]In the past 30 days.
[b]Total income comprises dollars received from employment, unemployment compensations, DPA, pension, benefits or social security, mate, family or friends, and illegal activities.
[c]In years.
Note: Adapted from Jason et al. (2007). Copyright by Elsevier Ltd.h.

drug/alcohol use, employment/support status, family/social relationships, legal status, medical status, and psychiatric status. Each domain assesses quantity, degree, and length of the problem both within the past 30 days and lifetime (McLellan et al., 1992). The *ASI* has demonstrated high inter-rater reliability, good test-retest reliability, satisfactory concurrent and predictive criterion validity, and construct validity (Leonhard, Mulvey, Gastfriend, & Schwartz, 2000). Individual items were taken from the *ASI-Lite's* general information section to report demographic data and descriptive statistics at Baseline.

Miller and Del Boca's (1994) *Form 90 Timeline Followback* was used to measure substance use, number of days paid for work, and number of days in training or educational activities. This is a semi-structured interview that assesses alcohol and drug use, residential history, general healthcare utilization,

and psychosocial functioning over a 90-day period (Miller & Del Boca, 1994). The *Form 90* has demonstrated good test-retest reliability and internal consistency (Miller & Del Boca, 1994). The Form 90 has also been found to have adequate criterion and construct validity (Sobell & Sobell, 1995).

Participants also completed a modified version of the *Important People and Activities Inventory* (*IPA*) (Clifford & Longabaugh, 1991), which excluded items focused on the *Activities* portion. This structured interview requires participants to identify individuals who are significant members of their networks with whom they have had contact within the past 3 months. In the *Important People* section, participants report up to 12 important people (12 years or older). For each important social contact, the measure assesses the type of relationship, duration of relationship, and frequency of contact as well as the network member's drinking habits (i.e., how much one drinks and how often one drinks). The following item was added to the measure: *Is this person an Oxford House resident?* (responses include *0 = no, 1 = yes*). The number of individuals in participant's social network within the house, size of participants' social networks, and presence of Oxford House members in personal social networks (a binomial variable) were taken from this measure. Overall, the *IPA* has demonstrated good test-retest reliability as well as strong construct validity (Longabaugh, Wirtz, & Zweben, 1998).

Additionally, participants completed the *Perceived Sense of Community Scale* (Bishop, Chertok, & Jason, 1997). This 30-item, 5-point Likert scale (1 = not at all true; 5 = completely true) measures psychological sense of community and contains three subscales: Mission, Reciprocal Responsibility, and Harmony (Bishop et al., 1997). Overall, the *Perceived Sense of Community Scale* has demonstrated good internal consistency, acceptable temporal stability, and appropriate construct validity with Oxford House residents (Bishop et al., 1997). For the purposes of this study, however, only the Reciprocal Responsibility subscale was utilized because it is the best predictor of mutual helping as it measures mutual support and shared responsibility among residents. The Reciprocal Responsibility subscale consists of 12 items on a Likert scale (1 = not at all true; 5 = completely true). It assesses perceptions that members both obtain responses to their individual needs and serve as a resource for the group. Sample items include: *a feeling of fellowship exists between members* and *members are willing to help each other.* The Reciprocal Responsibility subscale has demonstrated strong internal consistency with Oxford House residents in prior studies (Bishop et al., 1997; Stevens et al., 2012). Scores on this scale were used to measure house level Reciprocal Responsibility.

Procedure

The original study used a longitudinal design; data were collected between 2001 and 2003, at baseline, 4, 8, and 12 months. Participants were recruited from Oxford House clusters in five U.S. regions: North Carolina, Texas, Illinois,

New Jersey/Pennsylvania, and Washington/Oregon. The research staff engaged participants through two recruiting methods. The first recruiting method, resulting in 797 participants (88.9% of the total sample), included a published announcement in the monthly Oxford House newsletter. This newsletter, which was distributed by the Oxford House, Inc., indicated that a national study was being conducted and gave researchers' contact information. Additionally, researchers contacted the Oxford Houses through letters to the house presidents, follow-up phone calls to the houses, and when feasible conducted house visits. The second recruitment method, resulting in 100 participants, included having individuals who attended the annual Oxford House Convention fill out baseline questionnaires. Convention participants were asked to complete the questionnaires in a room with the research staff. Although this was a convenience sample and self-selections factors were present, later analyses of the data did not uncover significant differences between participants recruited at the Oxford House Convention and the rest of the sample (Jason et al., 2007).

Across both recruitment methods, participants were explained the purpose, goals, and longitudinal nature of the research. Consent forms were reviewed with each participant and they were informed that their participation was voluntary and they could withdraw from the study at any time without repercussions. Participants were paid $15 for filling out the baseline surveys, and the same amount was used for each subsequent wave that occurred in 4-month intervals to total a 1-year period. The majority of the data were collected in person by research staff; however, for a number of participants that left the Oxford House during the course of the study, measures were administered via telephone. After the completion of the final surveys, the research staff interviewed a random sample of the fourth wave participants' identified important person in order to better insure reliability of participants' self-reports of alcohol and drug use (Jason et al., 2007).

Oxford House representatives were involved as members of the original research team and participated in the study's design, data collection, and analysis. The original study was approved by the DePaul University Institutional Review Board and the current study was also approved by the Adler School of Professional Psychology's Institutional Review Board. The de-identified data set used in the current study was obtained via DePaul University's server, at the university's Center for Community Research.

FINDINGS

Analytical Plan

This study examined how house variables (Reciprocal Responsibility and number of individuals in participant's social network within the house) moderate individual characteristics (size of personal social networks and presence of Oxford

House members in personal social networks) to predict outcome variables (number of days paid for work, participation in education, and retention in the Oxford House). Raudenbush, Bryk, and Congdon's Hierarchical Linear Modeling (2004) was utilized. In addition, when dependent variables were binomial, Bernoulli hierarchical linear modeling in the form of logit link function was used (Raudenbush et al., 2004). Level-1 variables included individual level characteristics, with Level-2 variables accounting for house characteristics (i.e., women nested within the houses). This type of model allowed this study to examine the influence of each participant's characteristics and house experiences on the slope and intercepts of change in education, employment, and retention in the Oxford House. Lastly, a logistical regression analysis was used to examine the relationship between employment and relapse rates. It is important to note that this study did not control for any individual demographic variables, length of sobriety or length of stay in Oxford House because this was a cross-sectional investigation of affective attitudes in aggregate, not fixed individual characteristics. This research was not studying causality. Additionally, preliminary analyses indicated that length of sobriety was not significantly correlated with either Reciprocal Responsibility ($r = -.019$) or an individual's network size ($r = .009$).

Descriptive Statistics at Baseline: Level 1

Participants had a social network size mean of 6.56 individuals ($SD = 3.36$). Additionally, 68% of the women had an Oxford House member in their personal social networks. On average, these women had 1.74 Oxford House members in their personal social networks ($SD = 1.78$). The mean number of days of paid work in the 90 days prior to baseline measurement was 15.42 ($SD = 11.73$). The vast majority of women in this sample had zero days of education in 90 days prior to baseline measurement. In fact, only 12% had any days of education during this time period. The majority of women stayed in the Oxford House until the second wave of data collection, 4 months after baseline (68%). Overall, the relapse rate was low indicating only 21% of the women in the study relapsed at 4 months post-baseline; participants who relapsed either left the Oxford House or in some cases, they entered inpatient treatment and returned to Oxford House upon treatment completion.

Descriptive Statistics at Baseline: Level 2

The 292 women participants were nested within 65 Oxford Houses. House residents varied from six to fifteen individuals on average. On average 71% of the women members in a house mentioned a house resident in their social network ($SD = 0.56$). The average house Reciprocal Responsibility score was 4.02 out of 5 ($SD = 0.26$).

Data Analysis

Employment

HLM was used to simultaneously test if size of personal social network and presence of Oxford House members in personal social networks predicted number of days paid for work (past 90 days) at baseline. The *Important People Inventory* composite scores were put into the hierarchical linear model to predict days paid for work in the past 90 days. This Level-1 regression was run with independent variables grand centered around their means, and its slopes were fixed due to their insignificance. Days paid for work was used as a continuous variable. It was expected that women with larger social networks would be more likely to have more days of paid work. It was also anticipated that women with Oxford House members in their personal social networks would be more likely to have more days of paid work. However, none of the Level-1 hypotheses were statistically significant predictors of employment. There was a statistically significant house random effect ($p < 0.01$), indicating the house variables should be further explored. Table 2 presents the random house effect on number of days paid for work. The Level-2 regression was run with independent variables grand centered around the mean. Table 3 presents the relationships among house variables (Reciprocal Responsibility and number of individuals in participant's social network within the house), individual characteristics (size of personal social network and presence of Oxford House members in personal social network), and number of days of paid work. Level-2 analysis revealed Reciprocal Responsibility (a component of perceived sense of community) predicted number of days paid for work ($t = 3.18$, $p < 0.01$). Specifically, women in houses with higher Reciprocal Responsibility were more likely to report more days of paid work. Figure 1 shows the relationship between Reciprocal Responsibility and number of days of paid work. On the other hand, number of individuals in participant's social network within the house did not predict number of days paid for work.

Education

Bernoulli HLM analysis was used to test if Level-1 variables of size of personal social network and presence of Oxford House members in personal social

Table 2. Random Effect of House on Number of Days of Paid Work

Random effect	Standard deviation	Variance component	df	χ^2	p-Value
House	3.89519	12.17254	62	91.48589	0.009*
Level-1, r	10.81271	116.91478			

Table 3. HLM of House Variables, Individual Characteristics, and Days of Paid Work

Fixed effect	Coefficient	Standard error	t-Ratio	Approx. df	p-Value
Intercept	15.513184	0.844495	18.370	62	<0.001
Reciprocal Responsibility	5.038799	1.586502	3.176	62	0.002*
Number of Individuals in Participant's Social Network within the house	−0.935342	3.842873	−0.243	62	0.809
Personal Social Network	−0.142904	0.248960	−0.574	225	0.567
Presence OH members in Personal Social Network	0.485363	0.477056	1.017	225	0.310

networks predicted participation in education at baseline. The *Important People Inventory* composite scores were put into the hierarchical linear model to predict participation in education in the past 90 days. This Level-1 regression was run with independent variables grand centered around their means. Descriptive analysis had revealed that the vast majority of women in this sample had zero days of education in the 90 days prior to measurement. In fact, only 12% reported any days of education. Therefore, for the purposes of this study, participation in education was used as a binomial variable (0 = no, 1 = yes). It was expected that women with larger personal social networks and Oxford House members in their social networks would be more likely to participate in education.

This analysis indicated that both size of personal social network and presence of Oxford House members in personal social networks were not significantly predictive of participation in education. In addition, there was no evidence of a house level random effect. Overall, these findings were not supportive of a relationship between social network variables and participation in education.

Retention in the Oxford House

Bernoulli HLM analysis was utilized to concurrently determine if Level-1 variables of size of personal social network and presence of Oxford House
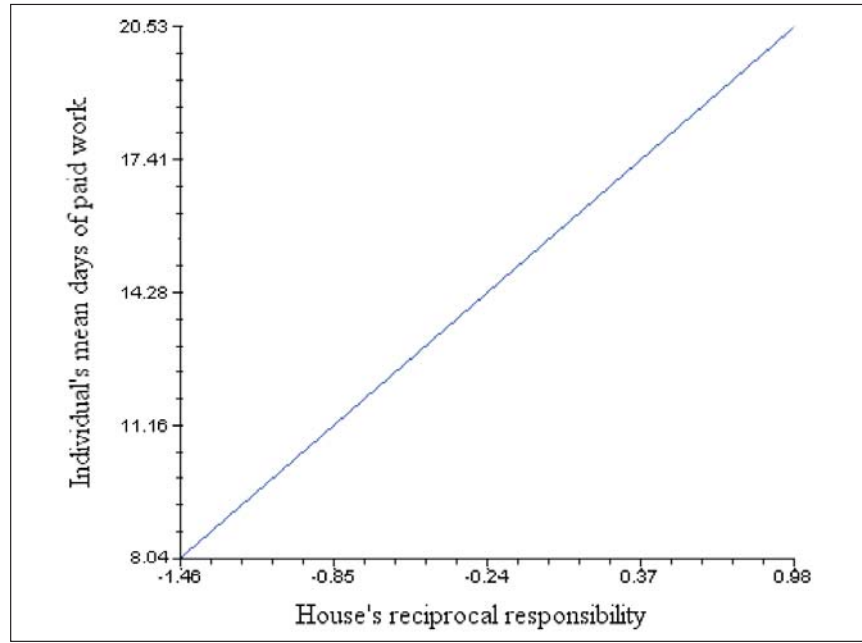
Figure 1. Relationship between reciprocal responsibility and
individual's mean days of paid work.
(Data centered (mean = 0), such that negative values are lower than
average Reciprocal Responsibility and positive values are greater
than average Reciprocal Responsibility scores.)

members in personal social networks predicted retention in the Oxford House
at baseline. The *Important People Inventory* composite scores were put into the
hierarchical linear model to predict retention in the Oxford House. Again, the
Level-1 regression was run with independent variables grand centered around
the mean. Robust standard errors were used because they were sufficient number of
houses ($df = 60$) to adjust for variance inflation in the model. Retention in the Oxford
House was used as a binomial variable ($0 = $ no, $1 = $ yes). It was expected that women
with larger personal social networks would be more likely to stay in the Oxford
House. It was also anticipated that women with personal social networks within the
Oxford House would be more likely to stay in the Oxford House.

Table 4 presents the relationships among personal social network, presence
of Oxford House members in personal social networks, and retention in the
Oxford House. Level-1 analysis showed size of personal social network did not
predict retention in the Oxford House. However, presence of Oxford House
members in personal social networks was significant in predicting if a participant

Table 4. HLM of Individual Characteristics and Retention in the OH
(Unit-specific model with robust standard errors)

Fixed effect	Coefficient	Standard error	t-Ratio	Approx. df	p-Value
Intercept	0.413389	0.251138	1.646	60	0.105
Personal Social Network	−0.019727	0.042147	−0.468	229	0.640
Presence OH members in Personal Social Network	0.556137	0.281611	1.975	229	0.049*

would stay in the Oxford House ($t = -1.98$, $p < 0.05$). The house random effect was not statistically significant. Since there is no house random effect there is nothing to explain in the multilevel sense (Level-2). Thus, house variables (Reciprocal Responsibility and number of individuals in participant's social network within the house) did not moderate individual characteristics (size of personal social networks and presence of Oxford House members in personal social networks) to predict retention in the Oxford House.

Relapse and Employment

Lastly, a logistical regression analysis was used to examine the relationship between employment and relapse rates. Number of days paid for work were put into the hierarchical linear model to predict the likelihood of any use in the next 12 months. The Level-1 regression was run with number of days paid for work grand centered around the mean and its slopes were fixed as well as with a random house effect. Use of substances was used as a binomial variable (0 = no, 1 = yes). It was expected that women with more days of paid work would be less likely to relapse. Level-1 analysis indicated that number of days of paid work was not statistically significant in predicting use of substances at 12 months. Additionally, the house random effect was not statistically significant ($p < .05$).

CONCLUSIONS

Overall, results indicated that women living in houses with higher Reciprocal Responsibility scores had more days of paid work in the 90 days prior to measurement. In other words, the more women felt they were receiving responses to their individual needs and served as a resource for a group, the more likely they

were to have more days of paid work. Additionally, other house variables not explained by individual characteristics and number of individuals in participant's social network within the house predicted days of employment. Also, house variables and individual characteristics were not found to predict participation in education. Presence of Oxford House members in personal social networks predicted staying in the Oxford House. However, contrary to what was expected, size of personal social networks and house variables did not predict retention in the Oxford House. Lastly, number of days of paid work was not predictive of likelihood of use in the next 12 months.

Reciprocal Responsibility may predict employment as working is one way to provide for the house while also meeting the individual's needs. Employment allows for an individual to have a greater sense of both personal accountability and self-efficacy (Jason et al., 2008). Also, as research has indicated, the Oxford House's mutually supportive environment may encourage women to help each other find and maintain work in order to help the individual and house (Jason et al., 2008). Therefore, if the majority of women in the house are employed and feel as if they are helping, this may create a more stable and positive atmosphere.

Since participants in this study were at different lengths of stay in the Oxford House, perhaps it is possible that for many participants, their social networks were not quite stable at the start of the investigation. Individuals in recovery generally need to find new social supports, as previous supports may include individuals with whom they used drugs or alcohol (Longabaugh et al., 1998). If using individuals are still a part of the participants' identified supports, then these individuals may not encourage employment and recovery. The composition of participants' social networks may explain why size of individuals in participant's social network within the house or size of personal networks did not significantly predict number of days of paid work. Future research needs to investigate not just size of network, but characteristics of network participants and support provided by network members.

The original longitudinal study indicated that length of stay affected outcomes (Jason et al., 2007). Therefore, it may take more than 4 months to positively change social support networks in order to then impact change on outcome variables. Also, Belyaev-Glantsman and colleagues (2009) found that women who stayed in the Oxford House for greater amounts of time (i.e., 6 months or more) showed more days of work, higher incomes, and more total income than residents who stayed less than 6 months. This finding suggests that further investigation may be helpful in viewing employment and support across the 1-year period covered by the original study.

When interpreting the lack of statistically significant findings related to participating in education, it is important to note that the vast majority of the women in this sample had zero days of education in the 90 days prior to measurement. Specifically, only 12% of women sought education during the time period included in the current study. Therefore, researchers attempted to correct for this

by using education as a binomial variable. However, the low base rate of participation in education likely decreased the statistical power and this may have contributed to the non-significant findings. To understand why participation in education in the past 90 days was so low, one must remember that Oxford House residents must obtain employment in order to contribute to the rent (Jason et al., 2008). Therefore, it appears that there may be other more pertinent and urgent goals, such as employment, when entering the Oxford House. Education may be a more long-term goal obtained once a resident has settled into the Oxford House and basic needs are met. Additionally, in order to participate in higher education, income or government assistance is needed. In fact, it is likely that these women may face even more barriers to obtain education if they have a criminal history that hinders them from receiving student loans. Regardless of the non-significant findings, it is important that research continue to explore predictors of education for women with substance use problems.

Contrary to what was expected, results indicated that size of personal social networks was not significantly predictive of retention in Oxford Houses. However, analysis revealed the presence of Oxford House members in personal social networks was significant in predicting a participant's retention in Oxford Houses. This may predict retention in the Oxford House as having an individual in one's social network with whom you have a shared experience with may have an impact on retention in the environment. This is consistent with the functioning of self-help groups in that they are beneficial because they provide reciprocated support through sharing of individual experiences and encouraging healthy behavior (Jason et al., 2001). Additionally, as mentioned before, it is possible that many participants' networks were not supportive of sobriety or retention in the Oxford House.

When understanding the relationship of employment and relapse, number of days paid for work was not signficantly predictive of relapse. It is important to note that of the women in this study only 21% relapsed. This low base rate of relapse may have lowered statistical power, which could contribute to these non-significant findings. Previous research has demonstrated the association between employment and substance use (Greenfield, Brooks, Gordon, Green, Kroop, McHugh, et al., 2007; Gregoire & Snively, 2001). However, it is possible that for women in the Oxford House attainment of employment is not a sole predictor of recovery.

Due to the naturalistic follow-up of participants from Oxford House facilities in the United States, women had different lengths of sobriety and time residing in the Oxford House at the onset of the original study (Jason et al., 2007). Prior research has suggested that length of stay affected positive outcomes (Jason et al., 2007), and it has been suggested that new members may not develop cohesion with the house for 6 to 8 months (Ferrari et al., 2002). Therefore, it may be helpful to further explore these outcome variables across the four waves of the original study. Perhaps there are other individual characteristics that were not

accounted for in this study that may better predict recovery, such as severity of alcohol or drug problem, mental health issues, access to mental health services, age, education level, etc. (Greenfield et al., 2007; Kim & Crutchfield, 2004).

Although the sample employed is diverse (i.e., 169 Caucasians and 101 African Americans), there is a relatively small sample size for those individuals who identify as Latina/Hispanic ($n = 7$) and other ($n = 15$). Therefore, the results may not be representative of the general population of women in recovery or Oxford Houses in the United States. Additionally, Oxford House residents that chose to participate in this study may be more motivated. Also, some participants may have dropped out of the study early if they did not have a good experience in the Oxford House (Jason et al., 2007). Since residents must also be abstinent from drugs and alcohol when living in the Oxford House, they may be further along in their recovery process, creating more differences from the general population. In particular, as previously mentioned, there was a low base rate of substance abuse among women (21%) at the 12-month follow-up. Finally, this study used a cross-sectional design; therefore, only associations among variables can be identified.

In general, the current research revealed a house effect on employment that was not explained by the variables examined in the study. Therefore, future research should continue to explore important factors of recovery homes that increase success for women in the Oxford Houses. Additionally, it is important that future research explore what types of relationships (i.e., AA sponsors and members, family, friends, mentors, residents, romantic partners, etc.) affect successful outcomes for women in the Oxford Houses. In particular, women's relationships have been shown to be an integral part of both substance misuse and recovery (Center for Substance Abuse Treatment, 2009). Research has suggested that women with social networks who had less support for drug/alcohol use showed an important impact on their abstinence self-efficacy (the belief that under stressful situations one can successfully cope without using substances) (Davis & Jason, 2005). Therefore, research may benefit from going one step further to investigate the types of relationships that contribute increased employment, education, and retention in recovery settings.

The current study on U.S. Oxford Houses may apply to other substance abuse treatment programs and recovery residences. Specifically, based on the current study, it could be beneficial for treatment providers to foster personal social networks and Reciprocal Responsibility within recovery settings in order to increase retention and employment.

REFERENCES

Belyaev-Glantsman, O., Jason, L. A, & Ferrari, J. R. (2009). The relationship of gender and ethnicity to employment among adults residing in communal-living recovery homes. *Journal of Groups in Addiction & Recovery, 4,* 92-99. doi: 10.1080/15560350802712462

Bishop, P., Chertok, F., & Jason, L. A. (1997). Measuring sense of community: Beyond local boundaries. *Journal of Primary Prevention, 18*, 193-212. doi: 10.1023/A: 1024690424655

Brady, K. T., Back, S. E., & Greenfield, S. F. (Eds.). (2009). *Women and addiction: A comprehensive handbook.* New York, NY: The Guilford Press.

Brady, T. M., & Ashley, O. S. (Eds.). (2005). *Women in substance abuse treatment: Results from the alcohol and drug services study (ADSS)* (DHHS Publication No. SMA 04-3968, Analytic Series A-26). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

Brown, J., Davis, M., Jason, L., & Ferrari, J. (2006). Stress and coping: The roles of ethnicity and gender in substance abuse recovery. *Journal of Prevention & Intervention in the Community, 31*, 75-84. doi: 10.1300/J005v31n01_07

Center for Substance Abuse Treatment. (2009). *Substance abuse treatment: Addressing the specific needs of women.* Treatment Improvement Protocol (TIP) Series 51. HHS Publication No. (SMA) 09-4426. Rockville, MD: Substance Abuse and Mental Health Services Administration.

Clifford, P. R., & Longabaugh, R. (1991). *Manual for the administration of the important people and activities instrument.* Adapted for use by Project MATCH for NIAAA 5 R01AA06698-05 Environmental Treatment of Alcohol Abusers. Richard Longabaugh, Principal Investigator.

Covington, S. S. (2002). Helping women recover: Creating gender-responsive treatment. In S. Straussner & S. Brown (Eds.), *The handbook of addiction treatment for women: Theory and practice* (pp. 52-72). San Francisco, CA: Jossey-Bass.

Currie, J. C. (2001). *Best practices treatment and rehabilitation for women with substance use problems* (ISBN 0-662-29772-5). Canada: Minister of Public Works and Government Services, Canada's Drug Strategy Division Health.

d'Arlach, L., Olson, B. D., Jason, L. A., & Ferrari, J. R. (2006). Children, women, and substance abuse: A look at recovery in a communal setting. *Journal of Prevention & Intervention in the Community, 31*, 121-131. doi: 10.1300/J005v31n01_11

Davis, M., & Jason, L. (2005). Sex differences in social support and self-efficacy within a recovery community. *American Journal of Community Psychology, 36*, 259-274. doi: 10.1007/s10464-005-8625-z

Ferrari, J. R., Jason, L. A., Olson, B. D., Davis, M. I., & Alvarez, J. (2002). Sense of community among Oxford House residents recovery from substance abuse: Making a house a home. In A. T. Fischer, C. C. Sonn, & B. J. Bishop (Eds.), *Psychological sense of community: Research, applications, and implications* (pp. 109-122). New York, NY: Kluwer Academic-Plenum, Inc.

Greenfield, S. F., Brooks, A. J., Gordon, S. M., Green, C. A., Kroop, F., McHugh, K., et al. (2007). Substance abuse treatment entry retention and outcome in women: A review of the literature. *Drug and Alcohol Dependence, 90,* 39-47. doi: 10.1016/ j.drugalcdep.2006.05.012

Gregoire, T. K., & Snively, C. A. (2001). The relationship of social support and economic self-sufficiency to substance abuse outcomes in a long-term recovery program for women. *Journal of Drug Education, 31*, 221-237. Retrieved from http://www. ncbi.nlm.nih.gov/pubmed/11696960

Grella, C. E. (2008). From generic to gender-responsive treatment: Changes in social policies, treatment services, and outcomes of women in substance abuse treatment.

Journal of Psychoactive Drugs, 5, 327-342. Retrieved from http://www.ncbi.nlm.nih. gov/pubmed/19256044

Grella, C., Scott, C., Foss, M., & Dennis, M. (2008). Gender similarities and differences in the treatment, relapse, and recovery cycle. *Evaluation Review, 32*, 113-137. doi: 10.1177/0193841X07307318

Huselid, R. F., & Self, E. A. (1991). Predictors of successful completion of a half-way house program for chemically dependent women. *American Journal of Alcohol Abuse, 17*, 89-101. doi: 10.3109/00952999108992812

Jason, L. A., Davis, M. I., Ferrari, J. R., & Anderson, E. (2007). The need for substance abuse after-care: Longitudinal analysis of Oxford House. *Addictive Behaviors, 32*, 803-818. doi: 10/1016/j.addbeh.2006.06.014

Jason, L. A., Davis, M. I., Ferrari, J. R., & Bishop, P. D. (2001). Oxford House: A review of research and implications for substance abuse recovery and community research. *Journal of Drug Education, 31*, 1-27. Retrieved from http://web.ebscohost.com. ezproxy.adler.edu/ehost/pdfviewer/pdfviewer?sid=ff489589-2cb5-4d61-b933-4e1793cdac22%40sessionmgr115&vid =15&hid=106

Jason, L. A., & Ferrari, J. R. (2010a). Oxford House recovery homes: Characteristics and effectiveness. *Psychological Services, 7,* 92-102. doi: 10.1037/a0017932

Jason, L. A., & Ferrari, J. R. (Eds.). (2010b). *Recovery from addiction in communal living settings: The Oxford House model.* New York, NY: Taylor & Francis.

Jason, L. A., Olson, B. D., Ferrari, J. R., & LoSasso, A. T. (2006). Communal housing settings enhance substance abuse recovery. *The American Journal of Public Health, 96*, 1727-1729. doi: 10.2105/AJPH.2005.070839

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

Jason, L. A., Stevens, E., Ferrari, J. R., Thompson, E., & Legler, R. (2012). Social networks among residents in recovery homes. *Advances in Psychology Study, 1,* 4-12. Retrieved from http://researchpub.org/journal/aps/number/vol1-no3/vol1-no3-1.pdf

Kim, S., & Crutchfield, C. (2004). An evaluation of substance abuse aftercare program for homeless women with children using confounding variable-control design. *Journal of Drug Education, 34*, 213-233. Retrieved from http://www.baywood.com/journals/ previewjournals.asp?id=0047-2379

Leonhard, C., Mulvey, K., Gastfriend, D., & Schwartz, M. (2000). The Addiction severity index: A field study of internal consistency and validity. *Journal of Substance Abuse Treatment, 18*, 129-135. Retrieved from http://www.journals.elsevier.com/ journal-of-substance-abuse-treatment/

Longabaugh, R., Wirtz, P. W., & Zweben, A. (1998). Network support for drinking, Alcoholics Anonymous and long-term matching effects. *Addiction, 93*, 1313-1333. doi: 10.1080/09652149834801

Mandell, K., & Werner, D. (2008). *Guidance to states: Treatment standards for women with substance use disorders.* The National Association of State Alcohol and Drug Abuse Directors. Retrieved from http://www.nasadad.org/resource.php?base_id=1482

Marsh, J. C., Cao, D., & D'Aunno, T. (2004). Gender differences in the impact of comprehensive services in substance abuse treatment. *Journal of Substance Abuse Treatment, 27,* 195-204. doi: 10.1016/j.jsat.2004.08.004

McLellan, T., Kushner, H., Metzger, D., Peters, R., Smith, I., Grissom, G., et al. (1992). The fifth edition of the Addiction Severity Index. *Journal of Substance Abuse*

Treatment, 9, 199-213. Retrieved from http://www.journals.elsevier.com/journal-of-substance-abuse-treatment/

Miller, W. R., & Del Boca, F. K. (1994). Measurement of drinking behavior using the Form-90 family of instruments. *Journal of Studies on Alcohol, 12*(Suppl.), 112-118. Retrieved from http://www.jsad.com/jsad/article

Oxford House, Inc. (2011). *Oxford House: Self-help for sobriety without relapse.* Retrieved from http://www.oxfordhouse.org/userfiles/file/

Polcin, D. L., & Borkman, T. (2008). The impact of AA on non-professional substance abuse recovery programs and sober living houses. In M. Galanter & L. A. Kaskutas (Eds.), *Recent developments in alcoholism, Volume 18: Research on Alcoholics Anonymous and spirituality in addiction recovery* (pp. 91-108). New York, NY: Springer.

Polcin, D. L., Korcha, R., Bond, J., & Galloway, G. (2010). What did we learn from our study on sober living house and where do we go from here? *Journal of Psychoactive Drugs, 42*, 425-433. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3057870/

Raudenbush, S., Byrk, A., & Congdon, R. (2004). HLM 6 for Windows [computer software]. Skokie, IL: Scientific Software.

Smith, B., & Marsh, J. (2002). Client-service matching in substance abuse treatment for women with children. *The Journal of Substance Abuse Treatment, 22*, 161-168. doi: 10.1016/S0740-5472(02)00229-5

Sobell, L. C., & Sobell, M. B. (1995). Alcohol consumption measures. In J. Allen & M. Columbus (Eds.), *Assessing alcohol problems: A guide for clinicians and researchers* (pp. 75-99). Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.

Stevens, E., Jason, L., Ferrari, J., & Hunter, B. (2010). Self-efficacy and sense of community among adults recovering from substance abuse. *North American Journal of Psychology, 12,* 255-264. Retrieved from http://najp.8m.com/

Stevens, E. B., Jason, L. A., Ferrari, J. R., Olson, B., & Legler, R. (2012). Sense of community among individuals in substance abuse recovery. *Journal of Groups in Addiction & Recovery, 7,* 15-28. doi: 10.1080/1556035X.2012.632319

Tuchman, E. (2010). Women and addiction: The importance of gender issues in substance abuse research. *Journal of Addictive Diseases, 29*, 127-138. doi: 10.1080/10550881003684582

Walitzer, K., & Dearing, R. (2006). Gender differences in alcohol and substance use relapse. *Clinical Psychology Review, 26,* 128-148. doi: 10.1016/j.cpr.2005.11.003

Yablonsky, L. (1989). *The therapeutic community.* New York, NY: Gardner Press, Inc.

Zywiak, W. H., Longabaugh, R., & Wirtz, P. W. (2002). Decomposing the relationship between pre-treatment social network characteristics and alcohol treatment outcome. *Journal of Studies on Alcohol, 63*, 114-121. Retrieved from http://www.jsad.com/

Direct reprint requests to:

Kate Brereton, Psy.D.
943 Hemingway Circle
Tampa, FL 33602
e-mail: KLBrereton@gmail.com