Benefits and costs associated with mutual-help community-based recovery homes: The Oxford House model

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A B S T R A C T

We used data from a randomized controlled study of Oxford House (OH), a self-run, self-supporting recovery home, to conduct a cost–benefit analysis of the program. Following substance abuse treatment, individuals that were assigned to an OH condition (n = 68) were compared to individuals assigned to a usual care condition (n = 61). Economic cost measures were derived from length of stay at an Oxford House residence, and derived from self-reported measures of inpatient and outpatient treatment utilization. Economic benefit measures were derived from self-reported information on monthly income, days participating in illegal activities, binary responses of alcohol and drug use, and incarceration. Results suggest that OH compared quite favorably to usual care: the net benefit of an OH stay was estimated to be roughly $29,000 per person on average. Bootstrapped standard errors suggested that the net benefit was statistically significant. Costs were incrementally higher under OH, but the benefits in terms of reduced illegal activity, incarceration and substance use substantially outweighed the costs. The positive net benefit for Oxford House is primarily driven by a large difference in illegal activity between OH and usual care participants. Using sensitivity analyses, under more conservative assumptions we still arrived at a net benefit favorable to OH of $17,830 per person.

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1. Introduction

Each year, 600,000 inmates are released back into communities, often without receiving substance abuse or mental health treatment during their incarceration (NIDA, 2002). Many ex-offenders are released from prison with ongoing drug addictions, and studies indicate that substance abuse within correctional facilities is at roughly the same rate prior to incarceration, ranging from 74% to 82% (Keene, 1997). While many factors contribute to criminal recidivism (e.g., lack of employment or housing), the strongest predictor of criminal recidivism is substance use (Charles E. Culpeper Foundation & The Robert Wood Johnson Foundation, 1998). One of the most effective ways of reducing criminal recidivism is through substance abuse treatment (Broome, Knight, Hiller, & Simpson, 1996), and some intensive prison-based drug treatment programs have contributed to reduced recidivism rates (Wexler, 1994, 1995). Substantial reductions in recidivism rates have documented when in-prison Therapeutic Communities were combined with community transition programs (Wexler, 1995).

Researchers have maintained that recovery homes are an essential component of the solution for a wide range of offenders (Steadman, Morris, & Dennis, 1995). While professional aftercare settings are likely to be effective in creating a stable abstinence support system, enhancing self-efficacy, and helping residents find employment than these types of recovery homes, recovery homes might have advantages compared to more traditional post-incarceration modalities. Oxford Houses (OH), self-run, abstinence settings for individuals dealing with substance abuse problems, qualifies as one type of available recovery home (Jason, Olson, & Foli, 2008). Since its inception in the 1970s, the number of OHs has grown to over 1400 nationally. Furthermore, some of these homes contain individuals who have been released from jail and are part of an electronic monitoring program. No professional staff is involved with the houses; residents live together in a democratic, moderately sized, single-sex, single-family home and provide each other with a supportive abstinence social support network. The residents, however, must follow OH guidelines, which include paying rent, abstaining from alcohol and drug use, and avoiding disruptive behavior. Houses do not typically have a formal process for identifying someone who is using substances, but as they are all recovering users they know what to look for; any OH resident found to be using drugs or alcohol is immediately removed from
the house. OH residents are free to decide whether to seek psychological or drug treatment by professionals or NA/AA affiliation. OH residents have the freedom to decide whether or not to seek the treatment of their choice while they receive support and guidance from peer residents (see Jason, Ferrari, Davis, & Olson, 2006, for details).

In an era of constrained federal, state and local budgets, policy makers are looking for ways to achieve the greatest return on the scarce dollars available to them. Jason, Davis, Joseph, Ferrari, and Anderson (2007) examined abstinence-specific social support and successful abstinence from substance use in a national sample of approximately 900 OH residents. Results were quite positive; only 18.5% of the participants over the course of the one-year study reported any substance use. Additionally, over the course of the study, increases were found in the percentage of their social networks who were abstainers or in recovery.

Olson et al. (2006) examined economic costs of OH relative to the costs of impatient treatment and incarceration prior to entering the OHs. Economic estimates were derived for inpatient costs based on the OH sample, estimates from prior research sources (French, Salomé, Sindelar, & McLellan, 2002), and subsequent adjustments for inflation increases. Average yearly approximations of societal costs of inpatient care for this sample ranged from $3930 (French, Salomé, Sindelar, et al., 2002) to $16,965 (Schinka, Francis, Hughes, LaLone, & Flynn, 1998). Societal program costs for incarceration were even higher. The annual prison cost estimates per inmate ranged from $22,344 (Marion, 2002) to $62,927 (Rosten, 2003). Averaging the jail and prison figures, the annual societal program incarceration cost estimate per participant ranged from $19,989 to $40,281. The study found that costs associated with the OH program were relatively low, whereas costs associated with inpatient and incarceration history prior to entering OHs were high. This study however did not compare the costs and benefits of those in OHs to those in a comparison condition.

In another study, Jason, Olson, Ferrari, and Lo Sasso (2006) evaluated the evidence surrounding the costs and benefits of the OH program. In this NIAAA grant-supported study, 150 individuals who completed treatment at alcohol and drug abuse facilities in the Chicago metropolitan area were recruited, with half being randomly assigned to live in an OH, while the other half received community-based aftercare services (usual care). A twenty-four months follow-up found 31.3% of participants assigned to the OH condition reported substance use compared to 64.8% of usual care participants. 76.1% of OH participants were employed versus 48.6% of usual care participants, and days engaged in illegal activities during the 30 days prior to the final assessment was a mean of 0.9 for OH and a mean of 1.8 for usual care participants. OH participants earned roughly $550 more per month than participants in the usual care group. This study hinted at financial benefits of the OH condition, but an explicit cost–benefit analysis had not been conducted.

The present work builds on the earlier studies by conducting a systematic analysis of the costs and benefits to society of the OH program, relative to usual aftercare following substance abuse treatment. Our work includes the critical cost drivers of treatment, including opportunity costs, and the primary domains of benefits from treatment. The current work uses data from a randomized study mitigating the potential for bias from selection effects.

2. Methods

2.1. Cost–benefit analysis

We use a cost–benefit approach to study the relative effects of OH versus usual care. In this case, usual care represents the lack of the OH program and any number of inpatient or outpatient treatment substance use treatment modalities as well as 12-step peer-assistance programs, which all OH members may use as well. Our analysis takes the societal viewpoint for costs and benefits as is customary in such studies (Gold, 1996). As is common in cost–benefit studies we pay careful attention to testing the sensitivity of our results to alternative assumptions. In addition, we use bootstrap methods to account for uncertainty in the estimation procedures.

2.2. Data and measures

2.2.1. Data

Data for this study were from adults leaving substance abuse treatment, and the study and follow-up assessments occurred between 2002 and 2005. Participants were randomly assigned to either an OH or usual after care condition (i.e., customary aftercare services: see Jason, Olson, et al., 2007 for more details). Of those approached to be part of the study, only 4 refused participation. There were no significant differences between OH and usual care conditions on socio-demographic variables. Enrolled participants were interviewed every 6 months for a 24 month period. All individuals assigned to the OH condition showed a dropout to an OH. Overall, completion rates of participants filling out questionnaires across the 24-month assessment period were comparable for the two conditions (at the 24-month assessment, over 90% of participants filled out the questionnaires). In addition, to increase the validity of abstinence self-report data, a person in each participant's support network listed on the final follow-up assessment was required to confirm the participant's self-reported abstinence at 24-months.

2.2.2. Measures

The primary measures used in this study were self-reported values of treatment enrollment, substance abuse, employment, involvement in illegal activity, and if the respondent was incarcerated at the two year follow-up. For treatment enrollment, each respondent reported the number of 12-step meetings, inpatient/residential treatment programs, and outpatient treatment programs he or she had been enrolled during the 6 months prior to each follow-up. Further, each respondent reported whether or not they had used drugs or alcohol at any time during the last 90 days prior to follow-up.

For employment measures, each respondent reported her employment status (employed or unemployed) at the time of the follow-up, as well as, her net income from legal employment during the last 30 days prior to follow-up. For illegal activity, each respondent reported the number of days engaged in illegal activity during the last 30 days prior to the follow-up. Incarceration rates were measured based on whether or not the respondent was incarcerated at the 24 month follow-up.

When self-reported measures were missing, we imputed values using predictive mean matching methods. Predictive mean matching methods use simulated regression models to impute missing values for non-respondents by selecting observed values of respondents with similar characteristics. First, missing age and education values were matched on Oxford House status, gender, and values for income, employment status, and illegal working days at the baseline. Missing values for income, number of treatment programs, and illegal working days were imputed at each follow-up by matching on these values separately at earlier follow-ups, and on age, education, and Oxford House status. For example, the number of inpatient treatment programs at the 12 month follow-up was matched on respondents' age, education, Oxford House status, and the number of inpatient treatment programs at the baseline and 6 month follow-up assessment.
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