Published in final edited form as:

J Groups Addict Recover. 2009 January 1; 4(1-2): 82–91. doi:10.1080/15560350802712454.

A Longitudinal Analysis of Criminal and Aggressive Behaviors among a National Sample of Adults in Mutual-Help Recovery Homes

Darrin M. Aase, B.A.,

Center for Community Research, DePaul University

Leonard A. Jason, Ph.D.,

Center for Community Research, DePaul University

Bradley D. Olson, Ph.D.,

Foley Center for the Study of Lives, Northwestern University

John M. Majer, Ph.D.,

Department of Social Sciences, Richard J. Daley College

Joseph R. Ferrari, Ph.D.,

Department of Psychology, DePaul University

Margaret I. Davis, Ph.D., and

Department of Psychology, Dickinson College

Sandra M. Virtue, Ph.D.

Department of Psychology, DePaul University

Abstract

Criminal and aggressive behaviors are frequently observed among those recovering from substance abuse problems. In the present one-year longitudinal study, a national sample of residents from self-governed, communal living recovery homes for substance abuse completed baseline and follow-up measures of criminal and aggressive behavior. Results indicated that a length of stay of six months or longer was associated with lower levels of self-reported criminal and aggressive behaviors at the one-year follow-up. Environmental mechanisms proposed as influences for these outcomes, as well as treatment implications, are discussed.

Keywords

Crime; aggression; recovery homes; Oxford House

Although substance use and its correlates have been thoroughly investigated, less is known about the role of aggression and criminal behavior during recovery. Behavioral problems such as aggression and criminal activity frequently co-occur with substance use (Eklund & Klinteberg, 2005; Thomson, 1999). For example, over 40% of offenders on probation or in local U.S. jails were found to be drinking at the time of their offense (Bureau of Justice Statistics [BJS], 1998). While less than 10% of the general population has a substance use disorder, 68% of jailed inmates meet diagnostic criteria (BJS, 2005). Additionally, 90% of

crack or cocaine users reported a history of crime that involved theft and/or selling drugs (Inciardi, McBride, McCoy, & Chitwood, 1994).

Furthermore, both alcohol and drug use have been frequently associated with domestic violence (e.g. Murphy, Winters, O'Farrell, Fals-Stewart, & Murphy, 2005) and other aggressive acts (Bushman & Cooper, 1990; Miller & Potter-Efron, 1989). Alcohol and drug use may lead to reduced inhibition of these behaviors, while involvement in deviant activities might facilitate the development of substance abuse through social learning mechanisms (Kaplan, 1995). This reciprocal relationship between substance use and externalizing behaviors presents difficulties for the treatment of both issues. Consequently, interventions that address both types of behavior might be more effective than interventions that focus on one issue (e.g. Putt, Dowd, & McCormick, 2001).

An innovative setting that might address criminal and violent behavior problems in a cost-effective manner is *Oxford House*, a network of over 1,200 self-governing, mutual help recovery homes for individuals in recovery (Jason, Davis, Ferrari, & Bishop, 2001). The Oxford House model consists of self-run, democratic communities that do not include professional staff. There also are no restrictions on how long a person can remain a resident (Oxford House, 2000). By combining elements of residential treatment and mutual-help organizations, Oxford Houses might function as continuous sources of mutual support for individuals in recovery (Olson, Jason, Ferrari, & Hutcheson, 2005).

Individuals in recovery with aggressive and/or criminal behavior problems might respond favorably to the structure provided by Oxford House. For example, Ferrari, Jason, Davis, Olson, and Alvarez (2004) compared rules and regulations between traditional therapeutic communities and Oxford Houses, finding that Oxford Houses provided more strict rules related to disruptive behavior between residents and more regulations involving House living. However, they also found that Oxford Houses permit more personal liberties for residents compared to therapeutic communities, which might reduce noncompliance and rebellious attitudes towards strict behavior codes (Ferrari et al., 2004).

A recent study of the Oxford House model examined individuals randomly assigned to either regular aftercare or to an Oxford House upon discharge from inpatient substance abuse treatment (Jason, Olson, Ferrari, & LoSasso, 2006). Oxford House residents had significantly better outcomes for both substance use and incarceration rates when compared to participants in the usual care condition. A study of the same sample found better treatment outcomes for self-regulation, substance use, and incarceration when Oxford House residents stayed for at least six months (Jason, Olson et al., 2007). A recent study of a national sample of Oxford House residents found that staying in an Oxford House for six months or longer predicted higher rates of abstinence from substance use (Jason, Davis, Ferrari, & Anderson, 2007). Researchers studying other residential treatment modalities for substance abuse have also found that a six-month length of stay is a critical time-point that is associated with better outcomes for abstinence, illegal activity and employment (Bleiberg, Devlin, Croan, & Briscoe, 1994; Hubbard, Craddock, Flynn, Anderson, & Etheridge, 1997).

Given the connection between aggressive and criminal behaviors and substance abuse, the present study expands upon Jason, Davis et al.'s (2007) work by examining these behaviors over time in the same national sample of Oxford House residents. The present study examined a subset of this sample of Oxford House residents and measured their self-reported criminal and aggressive behaviors for one year. It was specifically predicted that individuals who remained in an Oxford House for at least six months after the baseline assessment would have better outcomes on measures of both criminal and aggressive behaviors at a one-year follow-up.

Method

Participants

A total of 897 participants (293 females, 604 males) were recruited to be in a national study on Oxford House residents (for a more detailed discussion of these recruitment methods, see Jason, Davis et al., 2007). Prior to a baseline assessment, the full sample of participants spent an average of 10.9 months ($SD = 15.05$) with a range of a few days to 10.2 years living in one of 170 Oxford Houses located across the United States. However, because we were interested in examining length of residence in an Oxford House prospectively, the present study examined a subset of the national sample ($n = 165$) who lived in an Oxford House for 30 days or less prior to the baseline assessment. These participants were unique within the sample because they did not have extensive experience within an Oxford House, which provided an opportunity to explore potential effects of living in an Oxford House over time. Of these participants, 88 (35 females, 53 males) completed all of the baseline and one-year follow-up measures, and constitute the sub-sample in the analysis.

The average age of the sub-sample was 36.4 ($SD = 8.1$, range = 18.6 – 55.7 years) and their average number of years of education was 12.6 ($SD = 1.8$). The sub-sample consisted of 58.0% Caucasians, 33.0% African-Americans, 5.7% Hispanic/Latinos, and 3.4% other ethnicities. Employment characteristics of the sample were assessed, and 62.5% of the participants were employed full time, 15.9% were employed part time, and 21.6% were unemployed. In the sub-sample, 53.4% reported being single, 40.9% were divorced, widowed, or separated, and 3.4% reported being married. Average monthly income for residents was \$610.02 ($SD = \682.96). With regard to legal status, 13.6% were currently awaiting legal charges. The authors believe that this is a representative sample of individuals in recovery for substance use.

Procedure

Approval from the Institutional Review Board was obtained prior to the study, and interviewers were provided with training on administering the surveys. After recruitment, all participants were informed that their answers would remain completely confidential and that they were allowed to withdraw from the study at any time. At baseline, the research personnel discussed the consent form with participants and asked them to complete a telephone contact sheet for reaching them at follow-up waves of the study. The majority of surveys were administered to participants in their House, or at the 2001 Oxford House world convention. Participants who were recruited at the convention completed the survey in a conference room which had been set aside for that purpose (see Jason, Davis et al., 2007). The research personnel went over the directions and remained available to answer questions. After completing the surveys, participants received a \$15 payment.

The study contained four waves of assessment, with data collected in four month intervals. For all waves after baseline, research personnel attempted to contact participants based on the telephone contact information they provided. Once contacted, all other assessment waves included surveys administered either in person, by mail, or over the telephone, and participants were again given a \$15 payment for each wave. All participants were thanked for volunteering to participate and given the research team's contact information if they had questions. After all of the data was collected, all participants were given written educational feedback that discussed the success of the study and restated the purpose of the project.

Measures

General baseline demographic and background information for participants, including initial time living in an Oxford House, was obtained from self-report items on the *Addiction*

Severity Index - Lite (ASI; McLellan et al., 1992). The ASI examines several areas commonly affected by substance abuse, such as medical condition, illegal activity, employment, family relations, and psychiatric condition. This measure is widely used, and has test-retest reliability of .83 or higher (McLellan et al., 1992).

Time in an Oxford House was determined using Miller and Del Boca's (1994) *Form 90* at each subsequent assessment. Adequate to excellent test-retest reliabilities have been reported for alcohol consumption (0.91 to 0.97) and days living in a residence (0.74 to 0.99; Miller, 1996). Consistent with Jason, Davis et al. (2007), this information from all follow-up waves was used to create a dichotomous variable for whether or not each participant remained living in an Oxford House for six months or not throughout the course of the study.

The *Global Appraisal of Individual Needs-Quick Screen (GAIN-QS; Titus & Dennis, 2000)* was used to measure criminal and aggressive behavior. It is a clinical screening instrument assessing a variety of psychological issues among the general population (Titus & Dennis, 2000). For determining criminal and aggressive behaviors in the current study, two specific subscales were used: the *General Crime Index (GCI)*, a four-item measure of self-reported illegal activities over the past twelve months (original $M = 0.44$, $SD = 0.89$, $\alpha = 0.69$), and the *Conduct Disorder-Aggression Index (CDAI)*, a six-item measure of aggressive and disruptive behaviors (original $M = 2.01$, $SD = 1.87$, $\alpha = 0.78$; Titus & Dennis, 2000). In the current sub-sample, the *GCI* had a baseline mean score of .98 ($SD = 1.29$; $\alpha = 0.75$), and the *CDAI* had a baseline mean score of 2.6 ($SD = 1.90$; $\alpha = 0.79$).

Results

Group Comparisons

Chi square analyses and *independent samples t-tests* were used to compare groups prior to the analysis. The group that remained in the study and the attrition group did not differ based on a number of variables: baseline crime and aggression scores, gender, ethnicity, marital status, whether they were presently awaiting legal charges, parole/probation status, employment status, total monthly income, years of education, lifetime incarceration in months, length of sobriety, income, age, and years of education.

Within the sub-sample of 88 participants, 41 stayed in an Oxford House for six months or longer. These residents were compared to those who left prior to six months ($n = 47$). The two groups did not differ significantly based on the following variables: baseline crime and aggression scores, ethnicity, marital status, whether they were presently awaiting legal charges, parole/probation status, employment status, total monthly income, years of education, length of sobriety, income, age, and years of education. However, the group that stayed in an Oxford house for six months or longer was more likely to be male, $\chi^2(1, N = 88) = 5.37, p < .05$, and had fewer lifetime months of incarceration, $t(86) = 2.0, p = .049$. These variables were analyzed in relation to the outcome variables, and no significant associations were found. Therefore, we excluded these variables from the analyses.

Longitudinal Analyses

SPSS GLM was used to conduct two univariate *ANCOVAs* comparing the groups based on their length of residence in an Oxford House on criminal and aggressive behavior outcomes. Because the groups based on time in an Oxford House did not significantly differ on baseline scores for criminal or aggressive behavior, *ANCOVA* is more powerful than using a repeated measures approach (Weinfurt, 2000, p.341). Baseline scores for crime and aggression were used as covariates in the analyses, and follow-up scores were the dependent variables.

For criminal behavior, there was a main effect of staying in an Oxford House for six months or longer, $F(1, 85) = 7.88, p = .006$. An examination of the estimated marginal means indicated that when controlling for baseline criminal behavior scores, those who remained in an Oxford House for six months or longer had significantly lower ($M = 0.20, SE = 0.13$) follow-up crime scores than those who left prior to six months ($M = 0.68, SE = 0.12$). With regard to aggressive behavior, the baseline aggression score covariate was significant in predicting follow-up aggression, $F(1, 85) = 4.72, p = .033$. Furthermore, there was a main effect of staying in an Oxford House for six months or longer, $F(1, 85) = 4.83, p = .031$. When controlling for baseline aggression scores, those who remained in an Oxford House for six months or longer had significantly lower ($M = 1.34, SE = 0.23$) follow-up aggressive behavior scores than those who left prior to six months ($M = 2.02, SE = 0.21$).

Discussion

This study examined the impact of time living in an Oxford House on self-reported criminal and aggressive behaviors. It was predicted that Oxford House residents who continued residence for at least six months in an Oxford House would have lower scores on subscales measuring these behaviors than residents who did not remain in Oxford House for six months. When examining these behavioral outcomes over time, staying in an Oxford House for six months or longer was associated with lower scores on measures of both criminal and aggressive behaviors.

There are several potential reasons why longer residency in an Oxford House might be associated with reduced criminal behavior. From a practical perspective, Oxford Houses tend to be in neighborhoods where there is low drug-trafficking and criminal activity (Jason et al., 2001; Ferrari, Jason, Blake, Davis, & Olson, 2006), thereby reducing opportunities to become involved in illegal activities. Additionally, most Oxford House residents are able to maintain stable employment and an adequate income (Jason et al., 1997). In fact, Jason et al. (2006) found that Oxford House residents had a significantly higher monthly income at a two-year follow-up than individuals who received standard substance abuse treatment.

In addition, the results of the present study supported our prediction that more time in an Oxford House would be associated with lower aggression scores. This outcome is consistent with previous research that found Oxford House residents have greater improvements in self-regulation compared to individuals receiving regular aftercare (Jason et al., 2006). These benefits are enhanced by staying in an Oxford House for six months or longer (Jason, Olson et al., 2007), suggesting that residents might improve their ability to inhibit their aggressive impulses over time. Such recovery outcomes might be a result of the unique contingencies that are utilized within Oxford Houses as methods of self-governance (Ferrari et al., 2004; Jason et al., 2003). Living in mutually-supportive settings that encourage pro-social behavior among abstinent support networks (Majer, Jason, Ferrari, Venable, & Olson, 2002) and increase self-efficacy and personal responsibility (Davis & Jason, 2005; Ferrari, Jason, Olson, Davis, & Alvarez, 2002) might improve interpersonal relationships. Residents may become more pro-social in their behavior over time and expand their ability to take the perspectives of others (Olson et al., 2005).

Perhaps one of the most direct mechanisms by which both criminal and aggressive behaviors can be reduced among individuals in recovery is through continued abstinence, as previous findings suggest (e.g. BJS, 1998). Because approximately 80% of the full sample reported total abstinence from substance use throughout the course of the study (Jason, Davis et al., 2007), it is not surprising that there were low levels of aggressive and criminal behaviors at the one-year follow-up. It is possible that continued sobriety by itself may have prevented some of these problematic behaviors from occurring within our sample.

Several limitations in this study warrant consideration. First, it is possible that some sample selection bias existed because this was a convenience sample. Furthermore, the research design used in the present study did not include a control group for comparative purposes, or collect non self-report collateral or biological verification of substance abstinence. Moreover, attrition is always problematic regarding the interpretation of results in longitudinal research due to inherent biases. However, at baseline, the group that later dropped out did not differ from the group that completed the study on a number of different variables. While this does not resolve the attrition issue, it appears that there were no major differences between the groups.

In summary, results of the present study suggest that spending more time in a supportive setting like an Oxford House might help to reduce the incidence of criminal and aggressive behaviors among individuals in recovery. These findings may be the result of some of the tangible benefits provided by an Oxford House environment (e.g. low-crime neighborhoods, higher income), improved self-regulation and pro-social behavior resulting from self-governing networks of abstinent peers, or even simply through the maintenance of abstinence. Future research should evaluate these mechanisms more closely, with the goal of understanding specific pathways by which mutually-supportive recovery environments like Oxford Houses could be beneficial for different populations of individuals in recovery for addiction.

Acknowledgments

Portions of this paper were based on the Master's Thesis of the first author. This research was financially supported by the U.S. National Institute on Drug Abuse (grant number DA13231)

References

- Bleiberg JL, Devlin P, Croan J, Briscoe R. Relationship between treatment length and outcome in a therapeutic community. *International Journal of Addictions* 1994;29:729–740.
- Bureau of Justice Statistics. Alcohol and crime: An analysis of national data on the prevalence of alcohol involvement in crime. Author; Washington, D.C.: 1998. (NCJ 168632)
- Bureau of Justice Statistics. Substance dependence, abuse, and treatment of jail inmates. Vol. 2002. Author; Washington, D.C.: 2005. (NCJ 209588)
- Bushman B, Cooper H. Effects of alcohol on human aggression: An integrative research review. *Psychological Bulletin* 1990;10:341–354. [PubMed: 2140902]
- Davis MI, Jason LA. Sex differences in social support and self-efficacy within a recovery community. *American Journal of Community Psychology* 2005;36:259–274. [PubMed: 16389499]
- Eklund JM, Klinteberg B. Personality characteristics as risk indications of alcohol use and violent behavior in male and female adolescents. *Journal of Individual Differences* 2005;26:63–73.
- Ferrari JR, Jason LA, Blake R, Davis MI, Olson BD. "This is my neighborhood" Comparing United States and Australian Oxford House neighborhoods. *Journal of Prevention and Intervention in the Community* 2006;31:41–49. [PubMed: 16595385]
- Ferrari JR, Jason LA, Davis MI, Olson BD, Alvarez J. Similarities and differences in governance among residents in drug and/or alcohol misuse: Self vs. staff rules and regulations. *Therapeutic Communities: The International Journal for Therapeutic and Supportive Organizations* 2004;25:179–192.
- Ferrari, JR.; Jason, LA.; Olson, BD.; Davis, MI.; Alvarez, J. Sense of community among Oxford House residents recovering from substance abuse: Making a house a home. In: Fischer, A., editor. *Psychological Sense of Community*. Kluger/Plenum, Inc.; New York: 2002. p. 109-122.
- Hubbard RL, Craddock SG, Flynn PM, Anderson J, Etheridge RM. Overview of 1-year follow-up outcomes in the Drug Abuse Treatment Outcome Study (DATOS). *Psychology of Addictive Behaviors* 1997;11:261–278.

- Inciardi J, McBride D, McCoy HV, Chitwood D. Recent research on the crack/cocaine/crime connection. *Studies on Crime and Crime Prevention* 1994;3:63–82.
- Jason LA, Davis MI, Ferrari JR, Anderson E. The need for substance abuse after-care: Longitudinal analysis of Oxford House. *Addictive Behaviors* 2007;32:803–818. [PubMed: 16843612]
- Jason LA, Davis MI, Ferrari JR, Bishop PD. Oxford House: A review of research and implications for substance abuse recovery and community research. *Journal of Drug Education* 2001;31:1–27. [PubMed: 11338963]
- Jason LA, Ferrari JR, Smith B, Marsh P, Dvorchak PA, Groessl EJ, Pechota ME, Curtin M, Bishop PD, Kot E, Bowden BS. An exploratory study of male recovering substance abusers living in a self-help, self-governed setting. *Journal of Mental Health Administration* 1997;24:332–339. [PubMed: 9230574]
- Jason LA, Olson BD, Ferrari JR, Layne A, Davis MI, Alvarez J. A case-study of self-governance in a drug abuse recovery home. *North American Journal of Psychology* 2003;5:499–514.
- Jason LA, Olson BD, Ferrari JR, Lo Sasso AT. Communal housing settings enhance substance abuse recovery. *American Journal of Public Health* 2006;96:1727–1729. [PubMed: 17008561]
- Jason LA, Olson BD, Ferrari JR, Majer JM, Alvarez J, Stout J. An examination of main and interactive effects of substance abuse recovery. *Addiction* 2007;102:1114–1121. [PubMed: 17567399]
- Kaplan, H. Contemporary themes and emerging directions in longitudinal research on deviant behavior. In: Kaplan, H., editor. *Drugs, Crime, and other Deviant Adaptations: Longitudinal Research*. Plenum Press; New York, NY: 1995. p. 233-241.
- Majer JM, Jason LA, Ferrari JR, Venable LB, Olson BD. Social support and self-efficacy for abstinence: Is peer identification an issue? *Journal of Substance Abuse Treatment* 2002;23:209–215. [PubMed: 12392807]
- McLellan AT, Kushner H, Metzger D, Peters R, Smith I, Grissom G, Pettinati H, Argeriou M. The fifth edition of the Addiction Severity Index. *Journal of Substance Abuse Treatment* 1992;9:199–213. [PubMed: 1334156]
- Miller, WR. Form 90: A structured assessment interview for drinking and related Behaviors, Test Manual. NIAAA; Bethesda, MD: 1996. (NIH Publication No. 96-4004)
- Miller WR, Del Boca FK. Measurement of drinking behavior using the Form 90 family of instruments. *Journal of Studies on Alcohol Supplement* 1994;12:112–118. [PubMed: 7722987]
- Miller M, Potter-Efron R. Aggression and violence associated with substance abuse. *Journal of Chemical Dependency Treatment* 1989;3:1–36.
- Murphy C, Winters J, O'Farrell T, Fals-Stewart W, Murphy M. Alcohol consumption and intimate partner violence by alcoholic men: Comparing violent and non-violent conflicts. *Psychology of Addictive Behaviors* 2005;19:35–42. [PubMed: 15783276]
- Olson BD, Jason LA, Ferrari JR, Hutcheson TD. Bridging professional and mutual-help: an application of the transtheoretical model to the mutual-help organization. *Applied and Preventative Psychology* 2005;11:167–178.
- Oxford House, Inc.. *Oxford House Manual*. Silver Springs; MD: 2000.
- Putt CA, Dowd ET, McCormick RA. Impact of pre-existing levels of hostility and aggression on substance abuse treatment outcome. *Counselling Psychology Quarterly* 2001;14(2):139–147.
- Thomson L. Substance abuse and criminality. *Current Opinion in Psychiatry* 1999;12:653–657.
- Titus, JC.; Dennis, ML. *Global Appraisal of Individual Needs Quick Screen (GAIN-QS): Instructions for Version 1*. Chestnut Health Systems; Bloomington, IL: 2000.
- Weinfurt, KP. Repeated measures analyses: ANOVA, MANOVA, and HLM. In: Grimm, L.; Yarnold, P., editors. *Reading and Understanding More Multivariate Statistics*. American Psychological Association; Washington, DC: 2000. p. 317-361.