

Regular article

## Organizational- and individual-level correlates of posttreatment substance use: A multilevel analysis

Toorjo Ghose, (Ph.D.)\*

*Center for Interdisciplinary Research on AIDS, Yale University, New Haven, CT 06510, USA*

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### Abstract

In addressing the need to study the effects of organizational factors on individual-level treatment outcomes, this study used hierarchical models to examine the organizational- and individual-level correlates of posttreatment substance use. Risk for posttreatment use varied significantly across organizations. Factors in the external institutional environment of facilities significantly influenced risk for use: managed care regulation increased the risk, whereas Joint Commission on the Accreditation of Healthcare Organizations accreditation decreased it ( $p < .01$  for both). On the individual level, longer treatment episodes and treatment completion reduced the risk ( $p < .01$  for both) after controlling for client characteristics. The benefits of length of stay in treatment were modified by elements of the external institutional environment and organizational treatment technology. The ameliorative effects of prolonged treatment were reduced by higher levels of managed care regulation, organizational monitoring, caseload size ( $p < .01$  for all), and proportion of degreed staff ( $p < .05$ ). The results highlight the influence of organizational factors on posttreatment use. © 2008 Elsevier Inc. All rights reserved.

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### 1. Introduction

Studies on substance abuse treatment effectiveness have focused on individual-level correlates of treatment outcomes (Etheridge, Hubbard, Anderson, Craddock, & Flynn, 1997; Hubbard et al., 1989; Schildhaus, Gerstein, Dugoni, Brittingham, & Cerbone, 2000; Sells, 1975; Simpson & Sells, 1982). With a few exceptions (Heinrich & Fournier, 2004; Hser, Anglin, & Fletcher, 1998; Sosin, 2002), the organizational correlates of posttreatment substance use are unexamined. Orwin, Ellis, Williams, and Maranda (2000) pointed out that substance abuse treatment practice and policy will be better informed by understanding the link between organizational variables and treatment outcomes. Scholars have speculated that program policies, the quality of therapeutic staff, and the breadth of services provided by a facility substantially influence outcomes (Anglin & Hser,

1990; Ball & Ross, 1991; McGlothlin & Anglin, 1981). Consequently, researchers have emphasized the need to use multilevel models in examining program-level and individual-level processes in substance abuse treatment (Broome, Simpson, & Joe, 1999; Heinrich & Lynn, 2002; Hser, Joshi, & Anglin, 1999; Orwin & Ellis, 2002).

This study answered the need to expand the universe of correlates of posttreatment use to include organizational factors. It used data from the Alcohol and Drug Services Study (ADSS) 1996–1999, a national study on substance abuse treatment conducted by the U.S. Department of Health and Human Services Substance Abuse and Mental Health Services Administration [USDHHS SAMHSA] (2002). Individual-level and organizational factors were simultaneously examined in a multilevel analysis of posttreatment illicit drug use.

#### 1.1. Addressing research gaps

The lack of research on the link between organizational processes and individual-level treatment outcomes can be

\* Center for Interdisciplinary Research on AIDS, Yale University, 40 Temple St., Suite 1B, New Haven, CT 06510, USA. Tel.: +1 310 902 7277.  
E-mail address: toorjo.ghose@yale.edu.

attributed to limitations of data sets (Heinrich & Fournier, 2004) and analytical methods (Yoo & Brooks, 2005). This research sought to address both shortcomings.

This study used data from the ADSS, which contains rich information on clients and their posttreatment behaviors as well as the treatment facilities they attended. The ADSS is the latest in a series of three national studies on substance abuse treatment clients and facilities. It builds on the previous two, the Drug Services Research Study 1990 and the Services Research Outcome Study 1989–1995, by using a more complete sampling frame, incorporating an enhanced sampling design, and including more detailed measures of facilities, treatment services, and clients in treatment (Office of Applied Studies, 2005). The data set allows an examination of a more comprehensive set of organizational- and individual-level variables than that undertaken in previous studies.

In addressing the dearth of analytical methods to examine the multiple levels of treatment, this study used hierarchical logistical models that simultaneously examine individual-level and organizational influences on posttreatment substance use. These multilevel models account for the variance within facilities and that between them, resulting in more precise estimations of variance and accurate inferences (Roudenbush & Bryk, 2002).

## 1.2. Conceptual framework

Scholars have argued that substance abuse service provision and treatment outcomes are affected by factors in the external political and economic environment of a facility, by internal program-level variables, and by client characteristics (Etheridge & Hubbard, 2000; Ghose, 2007; Heinrich & Fournier, 2004). Drawing on this work, this study used a multilevel conceptual framework comprising external as well as internal organizational and individual-level factors to examine posttreatment substance use. It was assumed that factors at each of these levels influence the treatment process, thus ultimately affecting posttreatment outcomes. In identifying correlates of posttreatment use, the factors examined include (1) those external to the organization that influence treatment decisions, (2) aspects of the internal program-level treatment technology, and (3) individual-level treatment characteristics.

### 1.2.1. The external organizational environment

Pfeffer and Salancik (1978) argued that an organization's policies, norms, and practices are influenced by external agencies on which it is dependent for resources. Moreover, institutional theorists pointed out that organizational practices are shaped by an external community of agencies from which an organization seeks legitimacy (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Treatment-related decisions and processes are influenced by three types of actors in a treatment facility's external environment: sources of funding; the administrative and regulatory effects of a

larger parental organization that governs the facility; and monitoring agencies to which it is accountable.

*1.2.1.1. Managed care and the private sector.* Managed care organizations have significantly expanded their role as a funding resource for substance abuse treatment facilities through the years (Alexander, Lemak, & Campbell, 2003). Scholars have found that increased managed care regulation decreases treatment intensity (Lemak & Alexander, 2001a,b), reduces the number of services (Corcoran & Vandiver, 1996; Gold, Hurley, Lake, Ensor, & Berenson, 1995; Iglehart, 1996; Lo Sasso & Lyons, 2004; Olmstead, White, & Sindelar, 2004), limits the autonomy of the provider (Alexander & Lemak, 1997; Mechanic, Schlesinger, & McAlpine, 1995; Schlesinger, Dorward, & Epstein, 1996; Schwartz & Wetzler, 1998), fails to increase technical efficiency in service provision (Alexander, Wheeler, Nahra, & Lemak, 1998), and increases relapse rates (Sosin, 2005).

Scholars have found that service provision and treatment are adversely affected when a facility depends on the private sector rather than the government for its resources. For example, as compared with public nonprofit facilities, private for-profit facilities have been shown to be less likely to provide social and medical services (Friedmann, Durkin, Lemon, & D'Aunno, 2003).

Given the constraints imposed on services and treatment by managed care and for-profit ownership, it is proposed that they will adversely affect posttreatment outcomes.

*1.2.1.2. Accreditation.* Monitoring agencies have been found to increase the quality of treatment provided in treatment centers. Facilities accredited by the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) have been shown to be more likely to provide primary care and mental health services (D'Aunno, 2006; Friedmann, Alexander, & D'Aunno, 1999) and physical examinations as well as routine medical care (Durkin, 2002).

*1.2.1.3. Parent organizations.* An important element of an organization's external environment is its relationship with its parent facility. D'Aunno, Vaughn, and McElroy (1999) noted that parent facilities tend to provide greater financial and resource support to substance abuse facilities that adopt their methods, technologies, and ideologies. Support from a parent facility has been found to be associated with service provision to specialized populations (Ghose, 2007), whereas a lack of links with parental entities has been shown to be associated with provision of fewer services (Lee, Reif, Ritter, Levine, & Horgan, 2001) and, in many cases, dissolution of the facility (Johnson & Roman, 2002).

Given the supportive role that the JCAHO and parental organizations play in the provision of services, it is proposed that they will have beneficial effects on posttreatment outcomes.

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