



Treatment strategy profiles in substance use disorder treatment programs: A latent class analysis



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ABSTRACT

Background: Modern treatment options for substance use disorder are diverse. While studies have analyzed the adoption of individual evidence-based practices in treatment centers, little is known about the specific make-up of treatment strategy profiles in treatment centers throughout the United States. The current study used latent class analysis to profile underlying treatment strategies and to evaluate philosophical and structural supports associated with each profile.

Methods: Utilizing three aggregated and secondary datasets of nationally representative samples of substance use disorder treatment centers ($N = 775$), we employed latent class analysis to determine treatment strategy profiles. Using multinomial logistic regression, we then examined organizational characteristics associated with each profile.

Results: We found three distinct treatment strategy profiles: centers that primarily relied on motivational interviewing and motivational enhancement therapy, centers that utilized psychosocial and alternative therapies, and centers that employed comprehensive treatments including pharmacotherapy. The multinomial logistic regression revealed that philosophical and structural center characteristics were associated with membership in the comprehensive class. Centers with philosophical orientations conducive to holistic care and pharmacotherapy-acceptance, resource-rich infrastructures, and an entrepreneurial reliance on insured clients were more likely to offer diverse interventions. All associations were significant at the .05 level.

Principle conclusion: The findings from this study help us understand the general strategies of treatment centers. From a practical perspective, practitioners and clients should be aware of the variation in treatment center practices where they may offer or receive treatment.

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1. Introduction

Substance use disorder (SUD) treatment in the United States (U.S.) is controversial. While few question the growing SUD problem, some do not believe that formal treatment is the appropriate response (Pescosolido et al., 2010). Others charge that much SUD treatment has limited effectiveness because of its adherence to the recovery principles of Alcoholics Anonymous (AA; Fletcher,

2013; Dodes, 2014). Nevertheless, care options include evidence-based practices (EBPs), like psychosocial and medication-assisted treatment (MAT), as well as alternative therapies, though center implementation of these is challenging. This is partly because translational processes from randomized clinical trials (RCT) to center implementation are notoriously problematic. For example, RCT generalizability is threatened when treatment realities are not reflected in study designs and research subject exclusions (Miller et al., 2006; Swearingen et al., 2003). Additionally, RCT findings may indicate statistically significant but substantively trivial differences when compared with treatment-as-usual. Promising RCT results may be ultimately lost when regulatory bodies, including insurance providers, reshape EBP delivery, such as altering treatment dosage by constricting the amount of time patients are allowed in treatment (Gotham, 2006). Finally, once an EBP is available, client preference (Rieckmann et al., 2007) or financial constraints, such as required co-payments (Morgan et al., 2013), may limit center utilization.

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Previous literature has tended to address center adoption of single EBPs, and the majority of programs offer limited treatment options (Bradley and Kivlahan, 2014). This is despite research indicating that access to diverse treatment facilitates recovery by maximizing the likelihood of addressing clients' complex, individual needs (Webb, 2001). Little is known about how combinations of EBPs are available as treatment strategy profiles (TSPs) within individual centers. The purpose of the current study is to generate a classification of treatment centers based on their use of EBPs and to examine the philosophical and structural correlates of centers' offerings. Using representative, secondary data from three aggregated samples and latent class analysis, we examine the TSPs of SUD treatment centers across the U.S. We then employ multinomial logistic regression to consider center-specific philosophical and structural supports as likely correlates of diverse EBP offerings.

As SUD treatment has evolved over the past 40 years, paradigms have emerged that support differing beliefs about SUD and its appropriate treatment. These include behavioral, medical, and comprehensive orientations. AA's 12-steps exemplifies the behavioral paradigm and encourages belief in a Higher Power, recognition of helplessness, importance of sustained motivation with social support, and complete abstinence. AA's philosophy has been intensely integrated into SUD treatment in the U.S. (The National Center on Addiction and Substance Abuse at Columbia University, 2012), but other behavioral therapies have attracted sufficient research attention to be recognized as EBPs, including contingency management (CM), multisystemic therapy (MST), and motivational enhancement therapy (MET). These share strategies for changing behavioral patterns for continued sobriety and relapse prevention, but may not always be compatible with the 12-steps, particularly when motivation is encouraged via external rather than internal processes, as is the case with CM and MST (McGovern et al., 2004; Vaughn and Howard, 2004). The behavioral paradigm seems particularly acceptable to those supporting treatment options for criminal justice (CJ) clients whose treatment is closely controlled by the state (Ducharme et al., 2007; Kubiak et al., 2009; Rich et al., 2005). Conversely, use of treatments emphasizing personal responsibility, like the 12-steps, has been criticized for female clients because they are more likely to have histories of trauma and victimization, suggesting risks of self-blame (Sanders, 2006, 2010).

In contrast to the behavioral model, the medical model frames SUD as an illness that is largely outside of individual control, a paradigm of long duration that has manifested in a variety of treatments (White, 2014). A key distinction between the medical and behavioral paradigm is the use of MAT. Starting with disulfiram in 1951, the U.S. Food and Drug Administration has approved several medications for SUD treatment. These include acamprosate, naltrexone, and buprenorphine. It is important to note that the medical model does not preclude psychosocial accompaniments and is usually recommended in conjunction with psychosocial treatments (Jhanjee, 2014), but because of its use of chemicals, this paradigm may be seen as antithetical to a behavioral orientation and complete abstinence.

Integrating aspects of the behavioral and medical model, comprehensive treatment may have its origins from the counselors and administrators in SUD treatment with backgrounds in social work. This model draws focus to the multi-faceted environment in which long term recovery occurs and the need to address individuals' medical, personal, and social problems that may be either linked or co-existing with their SUD. It has a strong emphasis on social support and access to multiple sources of help to maximize individual resilience. Recently, the U.S. government has encouraged broader treatments that utilize integrated approaches. The *Patient Protection and Affordable Care Act* (ACA; 2010) promotes greater healthcare integration for SUD clients, and the National Institute on Drug Abuse (NIDA, 2012) encourages wraparound service

provision. The wraparound services that are core to the comprehensive paradigm shift from one-dimensional approaches to those that address individuals' multiple role demands in the spheres of family, the workplace and community life.

Treatment philosophies alone do not determine which treatments a center selects to implement and sustain. With the exception of the Minnesota Model (Cook, 1988), no clear models have been available to guide decisions on different arrays of treatment strategies. Centers' treatment strategies are thus dependent on varying access to information about new practices, structural opportunities to accommodate them, and funding to support them. A number of studies shed light on the importance of these factors, indicating that centers with national accreditation and more staff with advanced degrees tend to have greater access to information about new treatments and absorptive capacity to adopt them (Ducharme et al., 2006; Knudsen and Roman, 2004). Similarly, structural resources, like access to prescribing staff and infrastructural supports for coordinated care found in larger, older, and hospital-based programs, have been demonstrated to facilitate innovation (Abraham et al., 2010; Knudsen et al., 2007; Roman and Johnson, 2002). Finally, center reliance on competitive funding may increase pressure to provide a wide-range of treatments as is the case with entrepreneurial centers dependent on private funds, clients with insurance, or with for-profit status (Aletraris et al., 2015; Knudsen et al., 2006, 2007).

2. Material and methods

2.1. Sample and procedures

Data were aggregated from three studies from the National Treatment Center Study, a family of studies of SUD programs in the U.S., for the purpose of secondary analysis. These studies produced three datasets, a sample of: nationally representative centers, privately funded centers, and centers operating within NIDA's Clinical Trials Network (CTN), which were combined in one dataset ($N=775$). The data from each were collected between 2009 and 2012. The period of data collection is timely as the ACA was passed in 2010 and offers the opportunity to better understand SUD treatment during this pivotal time. The centers in each dataset offered at least one level of care between American Society of Addiction Medicine's Level I (structured outpatient treatment) and Level III (residential/inpatient treatment) services. For each study, interviews were conducted onsite and face-to-face with administrative and clinical directors. Data about internal management practices were provided by the administrative director. Information about patient care was provided by the clinical director. All research procedures were approved by the Institutional Review Board of the University of Georgia.

Centers were selected for the nationally representative and private study so that they were geographically representative and included a wide range of treatment facilities. This was accomplished through a statistical sampling process in which all counties in the U.S. were assigned to one of 10 geographic strata of equivalent population sizes. From this, random sampling of counties within strata was conducted. Computation of treatment centers in those sampled counties was completed primarily using federal and state treatment directories.

For selection in the nationally representative study, centers reported at least 25% of their patients as primarily alcohol dependent. Interviews were conducted between June, 2009 and January, 2012 with 307 treatment programs (response rate=68%). For selection in the private study, centers were considered eligible if they received less than 50% of their annual operating revenues from government grants or contracts. Data were collected between June, 2009 and the end of 2011 from 327 primarily privately funded treatment programs (response rate=87.7%). The third study was a population study of centers participating in the CTN, a national network of university-based research centers and community treatment programs (CTPs) that implement structured clinical trials (Hanson et al., 2002). Data were collected from 2011 to 2012, from 167 CTPs (response rate=80%). Programs that could be classified as opioid treatment programs were removed from this analysis, leaving 142 CTN centers.

2.2. Measures

We measured 11 EBPs in three categories: MAT, psychosocial, and alternative therapies. All measures were dichotomous (1 = offered; 0 = not offered). Measures for MAT included tablet and injectable naltrexone, disulfiram, acamprosate, and buprenorphine. We measured whether a center offered CM, MI, MET, and MST as our indicators of psychosocial therapies. Finally, the alternative therapies measured included acupuncture, music therapy, and art therapy.

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