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Full length article

The association of psychiatric comorbidity with treatment completion among clients admitted to substance use treatment programs in a U.S. national sample



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ABSTRACT

Background: Psychiatric disorders are highly comorbid with substance use disorders and play an important role in their course and recovery. However, the impact of comorbidity on treatment outcomes has not been examined in a U.S. national sample. This study explores the impact of psychiatric comorbidity on treatment completion among individuals admitted to publicly funded substance use treatment facilities across the United States. *Methods:* Using data on first-time treatment episodes in the U.S. from the Treatment Episode Dataset-Discharges (TEDS-D) for the years 2009–2011, logistic regression was used to assess the association between psychiatric

(TEDS-D) for the years 2009–2011, logistic regression was used to assess the association between psychiatric comorbidity and treatment non-completion, and Cox proportional hazards regression was used to assess the association between comorbidity and rate of attrition. Analyses were performed for all substances together and then stratified by primary substance of abuse (alcohol, cannabis, stimulants, or opioids).

Results: Of 856,385 client treatment episodes included in our analysis, 28% had a psychiatric comorbidity and 38% did not complete treatment. After adjusting for socio-demographic and treatment characteristics, clients with psychiatric comorbidity had higher odds of not completing treatment relative to those without comorbidity $[OR = 1.28 \ (1.27-1.29)]$, and had an earlier time to attrition $[HR = 1.14 \ (1.13-1.15)]$. Psychiatric comorbidity was most strongly associated with treatment non-completion and rate of attrition in those admitted primarily for alcohol $[OR = 1.37 \ (1.34-1.39); HR = 1.19 \ (1.17-1.21), respectively]$.

Conclusions: Individuals with psychiatric comorbidities receiving treatment for substance use disorders face unique challenges that impact their ability to complete treatment. The findings call for further efforts to integrate treatment for psychiatric comorbidities in substance use treatment settings.

1. Introduction

The successful retention of individuals who suffer from substance use disorders (SUDs) in treatment and long-term recovery remains a persistent challenge. Indeed, many authors have pointed to the need to improve the quality and effectiveness of existing treatment programs and systems to address the varied needs of patients (Pating et al., 2012; Watkins et al., 2015; Saloner and Sharfstein, 2016). A particularly relevant factor in addressing the needs of this patient population is the high prevalence of comorbid psychiatric conditions. Epidemiological studies have repeatedly pointed to comorbidities between substance use disorders and mood, anxiety, and personality disorders, in particular (Lai et al., 2015). Comorbidity of substance use and mental health

disorders have also been found to be highly prevalent among treatmentseeking populations, (McGovern et al., 2006) with adults more often experiencing co-occurring internalizing disorders and adolescents more often experiencing externalizing disorders (Chan et al., 2008).

Individuals with SUDs who have psychiatric comorbidities not only experience barriers that impact access to care (Mojtabai et al., 2014), but also have more difficulty integrating into existing treatment and recovery programs (Torrens et al., 2012; Urbanoski et al., 2007). Clients with co-occurring psychiatric comorbidities are likely to experience more severe clinical, social, and legal problems than the general population, and may thus require more specialized care than what is typically available in substance use treatment programs (Cacciola et al., 2001; McGovern et al., 2006; Torrens et al., 2012). Studies that explore

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the relationship between psychiatric comorbidity and treatment outcomes among drug and alcohol users often find that psychiatric disorders are associated with lower treatment retention and poorer outcomes (Bradizza et al., 2006; Compton et al., 2003; Ouimette et al., 1999). Similar findings have been reported for substance using adolescents with comorbid psychiatric disorders (Tomlinson et al., 2004). Nevertheless, the impact of psychiatric comorbidity on substance use outcomes is not always consistent and may vary by sex, the type and severity of comorbidity, substance use type, and treatment setting (Choi et al., 2015; Compton et al., 2003; Mertens and Weisner, 2000: Polcin et al., 2015). Past research on the association of psychiatric comorbidities with substance use treatment outcomes has been mainly limited to small samples and select treatment programs. Studies have yet to examine these associations at a national level in the United States and explore variations in this association by the type of substance of use. Greater understanding of the impact of psychiatric comorbidities on treatment completion in the U.S. as a whole, and variations in these associations may have implications for national policies and design of services.

The current study addresses this need by exploring differences in treatment completion patterns among individuals with and without psychiatric problems using three years of U.S. national data on substance use treatment episodes from the Treatment Episode Dataset (TEDS). The study further examines whether comorbidity has a differential effect on treatment completion for different classes of substances, specifically alcohol, cannabis, stimulants, and opioids.

2. Material and methods

2.1. Source of data

Data on treatment episodes were obtained for the years 2009, 2010, and 2011 from the Treatment Episode Dataset-Discharges (TEDS-D), a database of substance use treatment episodes in the United States. The TEDS is managed by the Substance Abuse and Mental Health Services Administration (SAMHSA) and includes information regarding admissions and discharges from treatment programs that receive public funding throughout the 50 U.S. States, the District of Columbia and Puerto Rico. This dataset includes information from the large majority of programs that provide treatment for substance use in the United States, but does not include data from settings that are entirely dependent on private revenue or, in most cases, treatment occurring in hospitals or correctional settings (SAMHSA, Center for Behavioral Health Statistics and Quality, 2016).

We limited our analyses to records from the TEDS in which clients had no prior treatment episodes so that each record represents a unique episode for a client. Furthermore, we removed all detoxification treatment episodes from the analysis as they are shorter and serve the purpose of stabilizing, not treating patients for substance use disorders. This approach is consistent with other studies that have removed detoxification episodes when evaluating factors associated with treatment completion in the TEDS (Saloner et al., 2014; Sahker et al., 2015). For the sake of completeness, sensitivity analyses were conducted including detoxification episodes and this had no effect on results of the analyses (results not shown). Analyses were also limited to those who presented to treatment primarily for problems related to alcohol, cannabis, stimulants and opioids; treatments for other substances made up only 2% of treatment episodes and were excluded. Finally, we excluded eight states that did not report the psychiatric comorbidity variable to TEDS: Connecticut, Georgia, Minnesota, Oregon, Texas, Vermont, Virginia, and Nevada, and a ninth state as an extreme outlier, Michigan, which only reported 0.31% treatment episodes as having a psychiatric comorbidity.

2.2. Measures

Our primary outcome of interest was treatment non-completion, which we defined as a binary variable of having a treatment episode marked with a discharge reason of "left against professional advice," "terminated by facility," or "incarcerated." Treatment episodes in the reference category were those with discharge reasons marked as "treatment completed," or "transferred to another treatment program or facility." The 5% of the clients who died during treatment or who did not have a defined reason for discharge were excluded. Our primary independent variable was having a comorbid psychiatric problem, which was defined by an indicator in the TEDS as "having a psychiatric problem in addition to an alcohol or drug use problem." The assessment of comorbidity in the TEDS is based on clinical diagnoses, screening results, claims information, or self-report (TEDS State Instruction Manual: SAMHSA, Center for Behavioral Health Statistics and Quality, 2014). Depending on the state, specific guidelines to be used at each facility are determined either at the state or facility level, and information on specific states can be accessed from the TEDS central base (Crosswalk: SAMHSA, Center for Behavioral Health Statistics and Quality, 2016).

To attempt to isolate the impact of having a psychiatric problem on the odds of non-completion, we adjusted for several potentially confounding socio-demographic and treatment characteristics including age group, sex, race/ethnicity, educational attainment, marital status, employment status, number of substances of abuse reported at admission, source of referral (self/individual, criminal justice, health/ substance use provider, community organization, school/employer), and primary drug of abuse (alcohol, cannabis, stimulants, opioids). To control for different treatment settings and types of programs we also adjusted for type of treatment facility that included either non-intensive outpatient (ambulatory services for individual, family or group treatment, or pharmacological therapies), intensive outpatient (ambulatory services for two or more hours per day on three or more days per week, partial hospitalization), hospital residential (24-h medical care in a hospital facility in conjunction with substance use treatment services), short-term residential (30-days or less of non-acute care in a setting with treatment services for substance use), and long-term residential (more than 30 days of non-acute care in a setting with treatment services for substance use and including transitional living/halfway houses). Due to the variation in treatment conditions as well as the classification of comorbidity within different states, we also included state fixed effects using dummy variables for each state in which the episode took place.

2.3. Data analysis

A total of 856,385 treatment episodes with information on all independent and dependent variables of interest were included in the complete case analyses. First, we compared individuals with and without psychiatric comorbidity in our sample by examining which characteristics had a greater than 5 percentage point risk difference, which is consistent with thresholds that other authors have used to assess clinically meaningful risk differences in the large TEDS datasets (Marie et al., 2015; Sahker et al., 2015). Statistical significant differences were assessed using chi-square tests. To control for confounding by variables that were associated with psychiatric comorbidity in our sample and that also have been identified in the literature as associated with treatment completion, we used multiple logistic regression to examine the association between psychiatric comorbidity and odds of non-completion, adjusting for state and all demographic and treatment characteristics described above. We also conducted a sensitivity analysis to test whether this association differed between high-comorbidity reporting states and low-comorbidity reporting states by stratifying states based on reporting high or low prevalence of psychiatric comorbidity based on the median prevalence of comorbidity across

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