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The prevalence of substance use disorders and psychiatric disorders as a function of psychotic symptoms

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ABSTRACT

Background: Psychotic symptoms represent one of the most severe and functionally impairing components of several psychological disorders. One group with particularly high rates of psychotic symptoms is chronic substance users. However, the literature on psychotic symptoms and substance use is quite narrow and has focused almost exclusively on drug-induced psychosis, neglecting the population of substance users with psychotic symptoms occurring independently of acute drug effects.
Method: The current study examined demographics, substance dependence, and psychiatric comorbidities among substance users with current (CurrSx), past (PastSx), and no psychotic symptoms (NoSx). Patients ($n = 685$) were sequential admissions to a residential substance use treatment center from 2006 to 2009.
Results: Compared to NoSx, those who endorsed CurrSx were significantly more likely to meet criteria for lifetime alcohol dependence and lifetime amphetamine dependence. CurrSx were more likely than PastSx to meet for lifetime cannabis dependence. Additionally, CurrSx were more likely to meet criteria for a comorbid psychiatric disorder compared to NoSx, and evidenced a greater number of current psychiatric disorders. NoSx were less likely than both CurrSx and PastSx to meet criteria for Borderline Personality Disorder.
Conclusion: Individuals with non-substance induced psychotic symptoms appear to meet criteria for specific substance use disorders and psychiatric disorders at higher rates than those without psychotic symptoms; these effects were most evident for those with current as opposed to past symptoms. Findings suggest that these individuals may need specialized care to address potential psychiatric comorbidities and overall greater severity levels relative to substance users without psychotic symptoms.

1. Introduction

Psychotic symptoms, including delusional beliefs and hallucinatory experiences, are associated with significant psychosocial impairment (Granholm et al., 2009, 2011; Tarrier et al., 1993) and may place affected individuals at a heightened risk of developing clinically relevant psychotic disorders including schizophrenia (Fonseca-Pedrero et al., 2011; Laurens et al., 2007; Lataster et al., 2009). Incidence of psychotic symptoms in the general population has been reported to range from 4.8% to 8.3% depending on the specific symptom examined (Nuevo et al., 2012). Substance users represent one group with particularly high rates of psychotic symptoms (Kuzenko et al., 2011; Smith et al., 2009), and these symptoms can pose significant challenges during substance use treatment. Indeed, individuals with substance use disorders and co-occurring psychosis frequently evidence less motivation to change, reduced treatment engagement, and an increased likelihood of dropping out of treatment prematurely relative to individuals with substance use disorders alone (for review, see Horsfall et al., 2009).

Despite the clear negative impact that psychotic symptoms can have on substance users, relatively little is known about this group, as the available literature on substance use and psychotic symptoms has focused almost exclusively on acute drug-induced

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psychosis (Barnett et al., 2008; Smith et al., 2009). In the few studies that have examined non-substance induced psychosis among substance users, the studies were often limited to a narrow set of drug classes (e.g., Dekker et al., 2009; Kuzenko et al., 2011; Salo et al., 2011; Lichlyter et al., 2011) and most did not address key variables such as psychiatric comorbidity. One study that did assess a wide range of drug classes and psychiatric comorbidities reported elevated rates of dependence and comorbidity among individuals endorsing psychotic symptoms (McMillan et al., 2009). However, the methodology utilized in this study did not examine specific psychotic symptoms and relied on participant recall of previous psychiatric diagnoses made by health care providers. A more recent study examining the effects of substance abuse on subsequent psychotic symptoms revealed that a significant portion of the occurrence of subclinical psychotic symptoms in adulthood may be attributed to excessive cannabis and multiple-drug use during adolescence (Rosller et al., 2012). However, the design of the study restricts direct causal interpretations and Diagnostic and Statistical Manual of Mental Disorders criteria were not used to classify substance use in all cases. Additionally, both of these studies (Rosller et al., 2012 and McMillan et al., 2009) used a general population rather than participants within a clinical setting for substance use treatment. Thus, the field lacks a clear clinical picture of individuals with co-occurring substance use disorders and non-substance induced psychosis presenting for treatment.

To better characterize this particularly at-risk group, the current study examined demographic characteristics, substance dependence, and psychiatric comorbidity among substance users with current, past, and no psychotic symptoms utilizing the Structured Clinical Interview for the DSM-IV and the Diagnostic Interview for Personality Disorders. The study was conducted in a residential drug treatment setting that required full detox prior to entry and constant sobriety throughout treatment, which holds several strengths for the purposes of this report. First, assessing individuals in the context of sobriety allows for the isolation of psychotic symptoms from acute drug effects. Second, this approach provides a control for contextual factors that may differ between those with and without psychotic symptoms outside of the treatment setting that might differentially impact assessment. Third, although the residential setting does limit generalizability to the larger group of substance users not in treatment or in a less restrictive form of treatment, there are aspects of this setting that may increase generalizability by limiting differential self-exclusion by more impaired individuals due to the burden of study participation. Specifically, the center takes in a broad range of voluntary and court-mandated individuals and once enrolled in the center, research participation requires no travel and little other investment on the part of the individual. This removal of several barriers to participation and the subsequent impact on differential self-selection may be especially important in a study focused on psychotic symptoms. The purpose of the current study was to assess results presented in previous research indicating that individuals endorsing psychotic symptoms evince a greater likelihood of meeting dependence criteria for several substances including marijuana (Rosller et al., 2012; Dekker et al., 2009), cocaine (Kuzenko et al., 2011), amphetamines (Lichlyter et al., 2011), as well as Poly-drug use (Rosller et al., 2012), within the context of the improvements in methodology listed previously. Additionally, we aimed to assess previous results indicating that individuals endorsing psychotic symptoms often meet criteria for mood and anxiety disorders at an increased rate relative to individuals with no history of psychotic symptoms (Michail and Birchwood, 2009; Koreen et al., 1993). Lastly, we examined differences between individuals endorsing past versus current psychotic symptoms in terms of meeting criteria for substance use, mood, and anxiety disorders.

2. Methods

2.1. Participants

Patients ($n = 685$) were sequential admissions into an inpatient substance use treatment facility in Washington, D.C. from 2006 to 2009. The mean age of the sample was 43 ($SD = 10.5$). The majority of the sample was male (65.9%) and court-mandated to treatment (70.8%). The majority of the sample consisted of African Americans (90.3%), followed by Caucasians (4.5%), Hispanics (1.8%), American Indian/Alaskan Natives (.5%), Asians (.3%), and individuals identifying as "other" (2.6%). At the time of admission into the treatment center, participants were required to submit a negative urine drug screen. Those with positive drug screens had to complete a detoxification program and evidence no acute pharmacological effects of drug use before they were admitted to the facility; there was great variety in the detoxification programs used across participants but most included medical assistance over several days. Inpatient treatment typically ranged from 28 to 180 days and was dependent on the patients' treatment funding sources. Patients were only permitted to leave the facility for scheduled appointments such as psychiatric and primary care appointments. Drug-testing occurred on a weekly basis and any use was grounds for immediate removal from the center. Because patients were assessed early in their treatment, none had been removed from treatment at the time of assessment. Patients were involved in a number of daily programs intended to help them develop a substance-free lifestyle. These programs were based on Alcoholics Anonymous and Narcotics Anonymous techniques and included relapse prevention skills training.

2.2. Recruitment and consent

Intake assessments were conducted by doctoral level graduate students and senior research staff with patients during their first week at the inpatient substance use treatment center. The assessments served two purposes: (1) to provide diagnostic information to treatment staff at the center, and (2) to gather data for the current study. Patients were invited to participate in research following the intake assessment and were provided details regarding how information collected during the assessment would be used. Data for the current study includes only cases where informed consent was obtained from patients following the assessment (<5% of patients declined to provide informed consent). The study protocol was reviewed and approved by the University of Maryland Institutional Review Board.

2.3. Measurements

Information regarding Axis I disorders and Antisocial Personality Disorder (ASPD) was garnered using the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders IV (SCID-IV; First et al., 1995). A brief assessment of demographic information was also included and the Diagnostic Interview for Personality Disorders (DIPD) was used to assess Borderline Personality Disorder (BPD), as it has been argued to be a more comprehensive measure of BPD than the SCID-IV (Zanarini et al., 1987). Patients met criteria for psychotic symptoms using the SCID-IV if they evidenced either delusions or hallucinations as defined by the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV). Current psychotic symptoms were indicated if the individual reported experiencing the symptoms in the past month, whereas lifetime psychotic symptoms were indicated if psychotic symptoms were reported as ever occurring, but not in the past month. In the context of the assessment, we were careful to exclude substance-induced psychotic symptoms. In all