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Patterns of co-occurring addictions, posttraumatic stress disorder, and major depressive disorder in detoxification treatment seekers: Implications for improving detoxification treatment outcomes

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ABSTRACT

Background and objectives: Poly-substance use and psychiatric comorbidity are common among individuals receiving substance detoxification services. Posttraumatic stress disorder (PTSD) and major depressive disorder (MDD) are the most common co-occurring psychiatric disorders with substance use disorder (SUD). Current treatment favors a one-size-fits-all approach to treating addiction focusing on one substance or one comorbidity. Research examining patterns of substance use and comorbidities can inform efforts to effectively identify and differentially treat individuals with co-occurring conditions.
Methods: Using latent class analysis, the current study identified four patterns of PTSD, MDD, and substance use among 375 addiction treatment seekers receiving medically supervised detoxification.
Results: The four identified classes were: 1) a PTSD-MDD-Poly SUD class characterized by PTSD and MDD occurring in the context of opioid, cannabis, and tobacco use disorders; 2) an MDD-Poly SUD class characterized by MDD and alcohol, opioid, tobacco, and cannabis use disorders; 3) an alcohol-tobacco class characterized by alcohol and tobacco use disorders; and 4) an opioid-tobacco use disorder class characterized by opioid and tobacco use disorders. The observed classes differed on gender and clinical characteristics including addiction severity, trauma history, and PTSD/MDD symptom severity.
Discussion and conclusions: The observed classes likely require differing treatment approaches. For example, people in the PTSD-MDD-Poly SUD class would likely benefit from treatment approaches targeting anxiety sensitivity and distress tolerance, while the opioid-tobacco class would benefit from treatments that incorporate motivational interviewing. Appropriate matching of treatment to class could optimize treatment outcomes for polysubstance and comorbid psychiatric treatment seekers. These findings also underscore the importance of well-developed referral networks to optimize outpatient psychotherapy for detoxification treatment-seekers to enhance long-term recovery, particularly those that include transdiagnostic treatment components.

1. Introduction

Psychiatric comorbidity is highly prevalent in addiction treatment seekers; for instance, 11–41% of people seeking treatment for a substance use disorder (SUD) also meet criteria for posttraumatic stress disorder (PTSD: Read, Brown, & Kahler, 2004). SUD-PTSD comorbidity is especially noteworthy as this comorbidity is associated with more intense cravings and higher rates of relapse following addiction treatment (Berenz & Coffey, 2012) than is SUD alone. Both PTSD and SUD are associated with increased risk for major depressive disorder (MDD: Lai, Cleary, Sitharthan, & Hunt, 2015). Further, PTSD or SUD comorbid with MDD is associated with more severe psychosocial impairment than either PTSD or SUD alone (Erfan, Hashim, Shaheen, & Sabry, 2010). Difficulties in treating SUD comorbidities may be exacerbated in the detoxification setting where treatment seekers may have different motivations and priorities than those in traditional outpatient settings (Freyer-Adam, Gaertner, Rumpf, John, & Hapke, 2010). Indeed, the few differential predictors of SUD treatment outcome identified in Project MATCH are characteristics that are more common in PTSD-SUD samples: more severe psychopathology and anger (Coffey, Schumacher, Brimo, & Brady, 2005). The goal of this study was to identify comorbidity profiles in a special population of people who use substances, detoxification treatment seekers, in order to inform integrative SUD-comorbidity treatment protocols.

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Given the prevalence and negative sequelae of psychiatric comorbidity in addiction treatment seekers, current practice guidelines recommend integrative treatments that address both addiction problems and co-occurring psychiatric problems throughout the course of treatment (SAMHSA, 2006). Integrated protocols often consist of cognitive behavioral therapy (CBT) combined with motivational interviewing techniques or a combination of different CBT protocols. Although integrative treatments are the most efficacious option, many patients still do not respond to these treatments, leaving room for improvement and innovation (Hien et al., 2009). Currently, there is no established standard regarding what components, treatment targets, or number of sessions to include in integrative treatment protocols. Often providers are left to make educated guesses about these important decisions. Research targeted towards better understanding subgroups of detoxification seekers is important to highlight potential differences that can be targeted in treatment. Yet, detoxification seekers have often been excluded from large scale psychotherapy outcome research making it unclear how results from prior patient characteristic/treatment matching research apply to this group (Project MATCH, 1997).

One area of clarity in treatment guidelines is the necessity of delivering treatment for an appropriate duration – a challenge in the detoxification setting given that treatment goals in this context are focused on medically stabilizing patients from extreme use (SAMHSA, 2006). Despite this challenge, detoxification facilities, as the entry point into addiction treatment, are also in a unique position to increase patient success. Detoxification facilities can make long-term treatment recommendations following stabilization that are individualized to the unique needs and problem areas experienced by patients. People seeking treatment at detoxification centers may be more motivated for treatment (Freyer-Adam et al., 2010); yet, people with comorbidities are more likely to drop out of treatment than people without comorbidities, emphasizing the need to match comorbidity profiles to post-detox referral patterns (Tómasson & Vaglum, 1998).

In addition to psychiatric comorbidities, polysubstance use also creates challenges for treatment. Polysubstance use is associated with more severe addiction problems (Moss, Goldstein, Chen, & Yi, 2015), more frequent emergency department admissions (Tait, Hulse, Robertson, & Sprivulis, 2005), greater risk of both non-fatal and fatal overdose (Darke et al., 2014), greater dropout in detox settings (Tómasson & Vaglum, 1998), and greater risk for relapse following treatment than outcomes for people who use a single substance (Branson, Clemmey, Harrell, Subramaniam, & Fishman, 2012). Furthermore, polysubstance use is associated with increased rates of both MDD and PTSD than rates of these disorders among people who use a single substance (Conway et al., 2013); this is particularly true among those who have experienced interpersonal violence (Ullman & Long, 2008).

Many forms of interpersonal violence disproportionately affect more women than men (Black et al., 2011); which likely contributes to gender-related PTSD-SUD disparities. Women often present with more complex psychiatric symptoms and severe symptoms than men, related to higher rates of interpersonal violence including rape (Najavits, Weiss, & Shaw, 1997). Although women are more likely to have PTSD, men are more likely to seek treatment for SUDs (Cohen, Feinn, Arias, & Kranzler, 2007; Najavits et al., 1997). These findings underscore the importance of examining gender differences in studies of psychiatric and SUD comorbidity.

Latent class analysis (LCA) is a person-centered statistical technique that identifies subgroups of individuals who share common values on some set of variables. This feature makes it an ideal tool for examining patterns of polysubstance use and psychiatric comorbidity in people who use substances. Furthermore, in the context of detoxification treatment, it can inform the referral process used to determine appropriate treatment options following medical stabilization by identifying subgroups of patients with common problem areas. Research using LCA in SUD populations has typically identified three classes: a limited involvement class (characterized by alcohol, tobacco, and marijuana use); a moderate involvement class (characterized by substance use including alcohol, tobacco, marijuana, and amphetamine use); and an extended involvement class (characterized by the use of a large number of substances including alcohol, tobacco, marijuana, amphetamines, nonmedical prescription drugs, and other illicit drugs). Members of the extended involvement class tend to have elevated levels of anxiety and depression (Connor et al., 2013). Yet, most research conducting LCAs in people who use substances has not examined PTSD as a comorbid diagnosis. Further, when studies have examined PTSD it was as a covariate, rather than as an indicator variable (a variable used to define classes). This conceptual difference can dramatically impact findings – considering PTSD as an indicator suggests that PTSD is considered to have a possible shared etiology while considering it as a covariate suggests that PTSD is considered more a post-hoc complication. Utilizing PTSD as a covariate is contrary to the tension-reduction model of PTSD-SUD comorbidity which postulates that SUD problems develop after a traumatic event as part of a maladaptive coping process (Berenz & Coffey, 2012).

Despite the growing literature applying LCA to polysubstance use and comorbid psychiatric disorders, limited research has attempted to identify subgroups of people in detoxification treatment-seekers. As described, this is a substantial limitation given that class identification in this unique population can inform treatment and referral approaches which may be especially important in a short-term setting.

1.1. Current study

The current study used LCA to examine how PTSD, multiple SUDs, and MDD may co-occur in a sample of adults seeking medically supervised detoxification. We specifically chose to focus on MDD as an additional comorbidity given the frequency of MDD diagnoses in relation to both PTSD and SUDs and is (Quello, Brady, & Sonne, 2005; Nixon, Resick, & Nishith, 2004). We also sought to examine differences between LCA-identified subgroups on key clinical characteristics relevant to PTSD, polysubstance use, or MDD including addiction problem severity, trauma history (i.e., sexual/physical assault in childhood vs. adulthood), and PTSD/MDD symptom severity. Finally, given established gender differences in the prevalence of psychiatric disorders, we also considered how the observed subgroups differed according to gender.

Hypotheses:

1. *We hypothesized that multiple classes would be identified reflecting the complexity of psychiatric comorbidity and polysubstance use.*
2. *We further hypothesized that classes with greater psychiatric comorbidity* (i.e., *greater proportion of probable PTSD diagnoses*) *would experience more severe addiction problems, greater trauma history, higher psychiatric symptom severity, and contain a larger proportion of women than other classes.*

2. Materials and method

2.1. Participants

Participants were 375 adults seeking medically assisted detoxification at the inpatient unit of the Alcohol, Drug Addiction, and Mental Health Crisis Center in Northeast Ohio. This detoxification center is a private, non-profit organization providing both residential (i.e., inpatient medically assisted detoxification, housing for intoxicated individuals, etc.) and non-residential (i.e., alcohol/drug addiction assessments and treatment referrals, group counseling, 12-step meetings, etc.) services regardless of patients' ability to pay. Participants were recruited within two days of their admission ($M = 2.02$, $SD = 1.35$) and, on average, participants spent 4.5 days receiving treatment at the detoxification facility. Consistent with the detoxification center's demographics (91% Caucasian, 65% male) participants largely identified as Caucasian (93.2%) with 6.9% identifying as African-American, 0.5% Asian, and 6.9% identifying their ethnicity as Hispanic/Latino. The