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Substance use consequences, mental health problems, and readiness to change among Veterans seeking substance use treatment

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ABSTRACT

Individuals seeking substance use treatment who have one or more co-occurring mental health problems tend to have lower treatment engagement, higher rates of attrition, and poorer treatment outcomes. Readiness to change (RTC) is an integral construct in the recovery process, with higher RTC associated with improved treatment outcomes. However, the impact of psychiatric symptoms on RTC is not fully understood, especially among specialty subpopulations, such as military Veterans. Therefore, the aim of the present study was to examine the associations of mental health problems with RTC in a sample of Veterans initiating outpatient substance use treatment. The present sample was comprised of 278 Veterans (12% women, M_{age} = 48.22, *SD* = 14.06) who completed self-report intake measures assessing past month substance use frequency, substance-related consequences, symptoms of insomnia, depression, and anxiety, and importance and confidence to change one's substance use. Four separate canonical correlation analyses focusing on RTC alcohol, opioid, cannabis, and nicotine use were conducted. Veterans' inclusion in each analysis was not mutually exclusive. Results indicated that *greater* depression, anxiety, consequences, and frequency of alcohol use corresponded with *greater* importance to change alcohol use. Likewise, *greater* depression, anxiety, and insomnia symptoms along with frequency of use and consequences related to *greater* importance *and* confidence to change one's opioid use. In contrast, *greater* anxiety, depression, insomnia, and frequency of use were associated with *less* confidence in one's ability to change cannabis use. None of these variables were related to one's RTC nicotine use. Findings highlight the importance of assessing mental health problems at outset of substance use treatment, as they may be an indication of RTC and could be used as a catalyst to advance Veterans forward in the process of behavior change.

1. Introduction

The co-occurrence of substance use and mental health problems is high among individuals seeking substance use disorder (SUD) treatment (Bose, Hedden, Lipari, & Park-Lee, 2016; Chan, Dennis, & Funk, 2008; McGovern, Xie, Segal, Siembab, & Drake, 2006; Watkins et al., 2004). Moreover, clients with co-occurring mental health symptoms tend to have more severe SUDs, greater functional impairment, more interpersonal and social problems, and more legal problems (McGovern et al., 2006; Schäfer & Najavits, 2007; Torrens, Rossi, Martinez-Riera, Martinez-Sanvisens, & Bulbena, 2012), making it challenging to engage and retain these clients in treatment. For instance, studies have found mental health problems correspond with lower treatment engagement, higher rates of attrition, and poorer treatment outcomes in SUD patients (Bradizza, Stasiewicz, & Paas, 2006; Compton, Cottler, Jacobs, Ben-Abdallah, & Spitznagel, 2003; Krawczyk et al., 2017). These treatment challenges may be particularly relevant to U.S. military Veterans (Teeters, Lancaster, Brown, & Back, 2017), given that substance use and mental health problems are generally more frequent among Veterans than civilians (Hoggatt, Lehavot, Krenek, Schweizer, & Simpson, 2017). Thus, a critical next step in understanding the challenges faced by Veterans with SUDs is examining the factors associated with treatment engagement, which may have important implications for identifying pathways to enhance treatment initiation and retention.

One mechanism to increase treatment initiation and retention is using targeted brief motivational interventions to increase readiness to

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change (RTC; Prochaska, DiClemente, & Norcross, 1992; Rollnick, 1998). RTC is conceptualized as a combination of one's perceived importance to make a change and confidence in ability to achieve it (i.e., self-efficacy; DiClemente, Schlundt, & Gemmell, 2004; Rollnick, 1998). Both anecdotal and empirical reports indicate substantial variability in individuals' RTC their drinking and drug use behaviors when initiating SUD treatment (Carney & Kivlahan, 1995; Edens & Willoughby, 2000). For example, higher RTC, especially greater self-efficacy, has been associated with increased treatment engagement, more quit attempts, better treatment retention, sustained abstinence, and reduction of substance use among individuals with problematic drug and alcohol use (Bertholet, Gaume, Faouzi, Gmel, & Daeppen, 2012; Carboni & DiClemente, 2000; Joe, Simpson, & Broome, 1999; Pantalon, Nich, Franckforter, & Carroll, 2002; Penberthy et al., 2007; Project MATCH Research Group, 1997). The link between higher RTC and improved outcomes suggests that readiness could also inform precision medicine approaches (Collins & Varmus, 2015) by identifying those who are likely to do well in treatment and those who could potentially benefit from an initial brief intervention aimed at increasing motivation to change, boosting commitment to change, and identifying change goals and plans followed by cognitive or behavioral interventions.

Because RTC appears to be a critical factor associated with treatment success, several studies have examined factors that account for differences in RTC alcohol and drug behaviors (DiClemente, Doyle, & Donovan, 2009). Excessive use of drugs and alcohol can have a wide variety of deleterious effects including loss of family and friends, physical injury, and financial and legal problems. Numerous studies have demonstrated that greater recognition of such consequences has been linked to more desire and willingness for substance use change (e.g., Blume & Schmaling, 1996, 1998; Blume, Schmaling, & Marlatt, 2006; Carey, Scott-Sheldon, Carey, & DeMartini, 2007; DiClemente et al., 2009; Palfai, McNally, & Roy, 2002). Indeed, increasing awareness of substance-related consequences is considered an integral component in the process of behavior change (Prochaska et al., 1992; Rollnick, 1998) and is a primary focus in treatments aimed at increasing motivation to reduce one's use or abstain all together (Miller & Rollnick, 2012).

Not only do psychosocial consequences of substance use impact RTC, but the co-occurrence of mental health problems also may play an important role in increasing RTC (Blume & Schmaling, 1998; Blume, Schmaling, & Marlatt, 2001; Smith & Tran, 2007). Although some mental health problems (e.g., depression, anxiety, and insomnia) may be a trigger for substance use as an attempted coping mechanism (i.e., negative reinforcement), withdrawal and sustained heavy use may in turn lead to the co-occurrence of these problems or exacerbate existing psychiatric symptoms (Cerdá, Sagdeo, & Galea, 2008; DuPont & Gold, 2007; Hall, Degenhardt, & Teesson, 2009). Existing studies have shown that chronic substance use is associated with increased rates of mental health problems, such as depression, anxiety, and insomnia (Conroy & Arnedt, 2014; Fergusson, Boden, & Horwood, 2011; Volkow, Baler, Compton, & Weiss, 2014). The deleterious impact substance use has on these psychological problems may subsequently increase individuals' desire to change their alcohol and/or drug use. This desire to change could occur because the consequences of continued use come to outweigh the positive aspects of using. Furthermore, the initial reinforcing effects of substance use, such as elevation in mood and improvement in sleep (Buckner et al., 2015; Whiting et al., 2015), may diminish with continued heavy use (Berridge & Robinson, 2016), potentially reducing individuals' initial motivation for using substances as coping mechanisms (Bonn-Miller, Boden, Bucossi, & Babson, 2014; Cooper, Frone, Russell, & Mudar, 1995; McCabe, Cranford, Boyd, & Teter, 2007).

There is also evidence to support the notion that mental health problems may enhance individual's RTC. For instance, in one study, impaired mental and physical health was found to be the primary reason for seeking treatment among individuals who use cannabis (van der Pol et al., 2013). Other studies also have shown that greater endorsement of depressive symptoms correspond with greater RTC among female, but not male, tobacco smokers (Haukkala, Uutela, Vartiainen, McAlister, & Knekt, 2000), college student risky drinkers (Smith & Tran, 2007), patients dually-diagnosed with SUD and mental health disorders participating in an inpatient treatment program (Blume et al., 2001; Blume & Schmaling, 1998), and among problem gamblers (Gomes & Pascual-Leone, 2009). However, some studies have linked depression with lower self-efficacy for tobacco smoking cessation (Haukkala et al., 2000; Kanfer & Zeiss, 1983). Thus, while mental health problems may increase RTC for some, they may also decrease RTC for others, particularly those who believe they must rely on alcohol and drugs in an attempt to cope with psychiatric symptoms (Bonn-Miller et al., 2014; Cooper et al., 1995; McCabe et al., 2007). These findings highlight the importance of better understanding the mechanisms by which mental health problems might differentially influence one's importance to change and one's confidence in achieving that change.

To date, relatively little research has examined the associations between other mental health problems (e.g., anxiety, insomnia) with RTC substance use, despite these being common co-occurring diagnoses. For example, anxiety has been found to be as common, if not more common, in individuals who use alcohol or drugs as depression (Grant et al., 2004; Lasser et al., 2000; Seal et al., 2011), and findings suggest a positive association between anxiety and RTC drinking behavior among college student risky drinkers (Smith & Tran, 2007). Moreover, anxiety symptoms accounted for greater variability in RTC scores compared to depressive symptoms, highlighting its potential importance as a mechanism for increasing RTC. Although informative, these prior findings were drawn primarily from samples of college student drinkers and high functioning alcohol-dependent participants with little psychiatric comorbidity. Additionally, they have focused almost entirely on RTC alcohol use. Thus, it remains unclear whether these findings extend to other types of substances, to other substance using populations, such as Veterans, or to other treatment settings, especially outpatient treatment where a large portion of SUD treatment is conducted in the US (Fuller & Hiller-Sturmhöfel, 1999; SAMHSA, 2013).

1.1. Current study

The present study aimed to expand prior research by examining the associations among mental health problems (e.g., depression, anxiety, insomnia) and RTC substance use among Veterans seeking outpatient SUD treatment. Rather than focusing solely on alcohol as has been done in prior studies, we assessed RTC for alcohol and other frequently used substances in this population including marijuana, opioids, and nicotine. In addition, we took a more nuanced approach to evaluating the associations between mental health problems and RTC by focusing on the RTC components of importance to change and self-efficacy. Understanding the associations different mental health problems have with importance to change and self-efficacy may have important implications in optimizing treatment planning at the outset of care. We hypothesized mental health problems to be positively associated with importance to change substance use based on the ideas that substance use may exacerbate symptoms and/or the acute effects of substances become less reinforcing with time. We also hypothesized mental health problems to be negatively associated with self-efficacy as individuals may perceive themselves as less able to change their use due to problems associated with their mental health.

It also is important to understand whether psychiatric conditions are associated with RTC apart from other relevant factors such as frequency of substance use and related consequences. As aforementioned, Veterans seeking substance use treatment frequently are at risk for a cluster of mental health symptoms and tend to have more problematic use and more severe substance-related problems (Chan et al., 2008; McGovern et al., 2006; Watkins et al., 2004), which may in turn increase one's RTC substance use (e.g., Blume et al., 2006; DiClemente et al., 2009). Thus, it is possible that any association co-occurring