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Trauma treatment for veterans in buprenorphine maintenance treatment for opioid use disorder

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HIGHLIGHTS

- Buprenorphine treatment engagement rates at 6-months post-admission was 45.7%.
- Nearly half of buprenorphine-seeking Veterans carried a PTSD diagnosis.
- Veterans receiving concurrent PTSD treatment had better buprenorphine retention.
- Most Veterans were not receiving trauma treatment during buprenorphine maintenance.
- Veterans with a heroin use history had higher buprenorphine dropout than pill users.

ABSTRACT

Introduction: Opioid use disorder (OUD) rates are high among veterans. PTSD is also prevalent among veterans; those with comorbidity have worse outcomes than those without comorbidity. This study assessed buprenorphine retention rates in veterans initiating OUD treatment, comparing veterans without PTSD to veterans with PTSD who were receiving versus not receiving concurrent trauma treatment.
Methods: This retrospective chart review examined consecutive referrals to buprenorphine maintenance (N = 140). PTSD diagnosis was identified by chart review and retention was defined as continuous buprenorphine maintenance 6-months post-admission. Logistic regression analyses compared buprenorphine retention for veterans without PTSD and PTSD-diagnosed veterans who received concurrent trauma treatment to a reference group of PTSD-diagnosed veterans who did not receive trauma treatment. Models adjusted for opioid type, age, and service-connected status.
Results: Sixty-seven (47.9%) buprenorphine-seeking veterans carried a PTSD diagnosis; only 31.3% (n = 21) received trauma treatment while in buprenorphine maintenance, with 11.9% (n = 8) receiving evidence-based psychotherapy for PTSD. Among PTSD-diagnosed veterans who received trauma treatment, 90.5% (n = 19/21) were in buprenorphine maintenance at 6-months, compared to 23.9% (n = 11/46) of PTSD-diagnosed veterans without trauma treatment, and 46.6% (n = 34/73) of veterans without PTSD. In the full model, veterans with trauma treatment had 43.36 times greater odds of remaining in buprenorphine treatment than the reference group.
Conclusions: Most PTSD-diagnosed veterans in buprenorphine treatment were not receiving trauma treatment. Those receiving concurrent trauma treatment had better retention, suggesting OUD and trauma can be simultaneously addressed. Future clinical trials should investigate trauma-focused treatment for veterans with comorbid PTSD who are seeking buprenorphine for OUD.

1. Background

1.1. Epidemiology of opioid use disorder in veterans

Opioid misuse is an escalating epidemic and a significant public health issue (Volkow, Frieden, Hyde, & Cha, 2014; Weiss et al., 2011), with opioid overdoses, suicides, and emergency room visits for opioid overdose related to prescription and non-prescription opioid use occurring at alarming rates (Banerjee et al., 2016; Rudd, Aleshire, Zibbell, & Matthew Gladden, 2016; Unick, Rosenblum, Mars, & Ciccarone, 2013). There has also been a dramatic rise in the incidence of infectious disease related to injection drug use (including hepatitis C and HIV) and in social problems related to this epidemic (Haffajee & Frank, 2018). The Center for Disease Control estimates the overall cost of this epidemic to be $78.5 billion annually (Florence, Zhou, Luo, & Xu, 2016).

Military veterans are diagnosed with opioid use disorders (OUD) at higher rates than non-veterans (Gordon et al., 2007; Oliva et al., 2017). Veterans are twice as likely to die from accidental poisoning as non-

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veterans, with opioids frequently identified as causal agents in these accidental deaths (Bohnert, Ilgen, Galea, McCarthy, & Blow, 2011). Recent data indicate that the number of veterans diagnosed with OUD who receive VA healthcare nearly tripled from 2003 to 2017, increasing from 25,031 to 69,142 (Wyse, Gordon, Dobscha, et al., 2018). Prescription opioid misuse is significantly and independently associated with heroin initiation among veterans (Banerjee et al., 2016), and is also linked to chronic pain and posttraumatic stress disorder (PTSD), which are both more common in veteran populations than civilian populations (Golub & Bennett, 2013; Seal et al., 2016).

1.2. Opioid use disorder treatment

Medication-assisted treatments (MAT), including buprenorphine or buprenorphine/naloxone, methadone, and injectable naltrexone, are the most effective treatments for OUD, and are associated with significant reductions in morbidity, mortality, and spread of infectious disease (e.g., Thomas et al., 2014; van den Brink & Haasen, 2006). Buprenorphine is a partial opioid agonist that blocks the effects of other opioids (Rosen et al., 1994), thus reducing illicit use during treatment (Thomas et al., 2014; Weiss et al., 2011). The Veterans Health Administration (VHA), which is the largest healthcare system in the country, has made the use of pharmacotherapies to treat OUD a priority, and now includes rates of those on MAT in standard measures of performance (Manhapra, Quinones, & Rosenheck, 2016; Wyse et al., 2018). While buprenorphine maintenance is a useful tool to combat the opioid epidemic, it is undermined by high dropout rates (Carroll & Weiss, 2016), with 6-month retention rarely exceeding 50%. Dropout is associated with poor outcomes (Hser et al., 2014; Pinto et al., 2010; Sordo et al., 2017) including risk of overdose, particularly in the first 30 days after discontinuation (Manhapra, Rosenheck, & Fiellin, 2017).

The benefit of adding additional psychosocial treatments to MAT has varied across studies. Some studies examining patients on buprenorphine have suggested that there were no significant differences in opioid use outcomes between those receiving and those not receiving additional substance counseling, sparking controversy (Fiellin et al., 2013; Weiss et al., 2011). Brief physician management (15 mins) has been compared to extensive medication adherence and drug counseling (45 mins) among OUD participants on buprenorphine, with no differences between groups in opioid-negative urines, abstinence, or retention (Tetrault et al., 2012). Other research has shown that addiction-focused behavioral treatments did not increase positive outcomes (e.g., retention, other substance use, or opioid use) among those on buprenorphine (Ling, Hillhouse, Ang, Jenkins, & Fahey, 2013).

There remains a question about whether added treatment is more effective for subgroups of patients, including those with comorbid conditions like posttraumatic stress disorder (PTSD) (Carroll & Weiss, 2016), as untreated comorbidities can impact rates of retention to OUD maintenance. Comorbid psychiatric illness is a risk factor for non-compliance (e.g., incorrect pill count, negative buprenorphine in urine screens) and dropout among veterans receiving buprenorphine for OUD (Fareed et al., 2014).

1.3. Comorbid trauma and addiction

There are high rates of comorbid PTSD among those with OUD, and there are some reasons to hypothesize that trauma-focused treatment may enhance response to MAT. PTSD, which can occur following a traumatic event, is manifested by symptoms that include reexperiencing the trauma, intrusive memories associated with the event, avoidance, hyperarousal, and negative changes in mood and cognition (APA, 2013). PTSD affects approximately 8% of the general population (Blanco et al., 2013). Rates are higher in military veterans, with prevalence ranging from 11% to 30% depending on service era (Gradus, 2017; Magruder et al., 2005; Thomas et al., 2010). PTSD is one of the most prevalent mental health diagnoses treated within the VHA (e.g., Seal et al., 2012). Veterans afflicted by PTSD are more likely to be impacted by opioid and other drug use disorders (Dabbs, Watkins, Fink, Eick-Cost, & Millikan, 2014; Golub & Bennett, 2013; Lan et al., 2016), making the treatment of comorbid PTSD and substance use disorders (SUD) particularly important. One recent study of Operations Enduring Freedom and Iraqi Freedom (OEF/OIF) veterans seeking VHA services found that as many as 63% of those diagnosed with SUDs also had a PTSD diagnosis (Seal et al., 2011), and another study found that, after adjusting for demographics and military status, the odds of having a prior PTSD diagnosis were 28 times greater among service members with OUD compared to service members without OUD (Dabbs et al., 2014). Among veterans who served in the OEF/OIF conflicts, those with PTSD were more likely to receive prescription opioids for pain (Seal et al., 2012; Seal et al., 2016), exhibit prescription misuse (Banerjee et al., 2016), and experience adverse outcomes such as overdose, suicide, injuries, and illicit substance use (Banerjee et al., 2016; Seal et al., 2016). The process of re-integrating into the civilian world while coping with psychological and physical conditions may increase the likelihood that veterans will develop opioid problems (Golub & Bennett, 2013; Seal et al., 2016).

PTSD may reduce the likelihood of response to buprenorphine treatment. In a large national health insurance database ($n = 2947$), having a comorbid psychiatric diagnosis was related to significantly poorer buprenorphine adherence (Litz & Leslie, 2017), and research has also linked childhood trauma to buprenorphine dropout, particularly when patients endorse childhood physical and emotional neglect (Kumar, Stowe, Han, & Mancino, 2016). Individuals with trauma and addiction comorbidity have been reported to have poorer health, more severe clinical profiles, and worse treatment adherence than those without traumatic experiences or PTSD symptomatology (Hien et al., 2010; Seal et al., 2016; Simpson, Lehavot, & Petrakis, 2017). While individuals with comorbid SUD and PTSD seek treatment more often than those without PTSD, their prognosis is often poor (Hien et al., 2015; Ouimette, Ahrens, Moos, & Finney, 1997; Pietrzak, Goldstein, Southwick, & Grant, 2011), particularly when trauma is left untreated (Possemato, Wade, Andersen, & Ouimette, 2010).

The potential benefit of combined addiction and trauma-focused treatment for people with comorbid PTSD and addiction has been hypothesized by several groups (Back, 2010). Improvements in PTSD symptomatology are associated with better SUD results (Hien et al., 2010; Ouimette, Brown, & Najavits, 1998) and a multi-site VA database study found that among male veterans receiving inpatient SUD treatment, receipt of PTSD-focused treatment within 3 months post-discharge predicted SUD remission 5 years later (Ouimette, Moos, & Finney, 2003), while SUD outpatient care did not predict 5-year remission.

Although there is a growing literature examining treatment of trauma among individuals with SUD, most studies have primarily focused on participants with either alcohol (e.g., Persson et al., 2017) or drug use disorder without specifying drug type (Norman & Hamblen, 2017; Simpson et al., 2017). There is growing consensus that trauma treatment can be provided safely in early recovery (e.g., Kaysen et al., 2014). A review of psychological interventions for comorbid PTSD and SUD by Roberts, Roberts, Jones, and Bisson (2015) found that individual trauma-focused psychotherapies were associated with higher dropout rates than the control conditions to which they were compared; however, the authors noted that this is also true of trauma-focused interventions for PTSD in general. Among the only MAT studies was an uncontrolled feasibility pilot study in which twelve Israeli women on methadone maintenance were treated with Prolonged Exposure (PE) with relatively low dropout (10 out of 12 participants completed PE) and significant reductions in PTSD and depressive symptoms (Schiff, Nacasch, Levit, Katz, & Foa, 2015). Another study found monetary incentives improved PE attendance among methadone maintenance patients, which in turn resulted in PTSD improvements, better methadone attendance, and no increased drug use (Schacht, Brooner, King, Kidorf,