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Alcohol-related and mental health care for patients with unhealthy alcohol use and posttraumatic stress disorder in a National Veterans Affairs cohort

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ABSTRACT

Objective: Unhealthy alcohol use and posttraumatic stress disorder (PTSD) frequently co-occur. Patients with both conditions have poorer functioning and worse treatment adherence compared to those with either condition alone. Therefore, it is possible that PTSD, when co-occurring with unhealthy alcohol use, may influence receipt of evidence-based alcohol-related care and mental health care. We evaluated receipt of interventions for unhealthy alcohol use and receipt of mental health follow-up care among patients screening positive for unhealthy alcohol use with and without PTSD in a national sample from the Veterans Health Administration (VA).
Methods: National clinical and administrative data from VA's electronic medical record were used to identify all patients who screened positive for unhealthy alcohol use (AUDIT-C score ≥ 5) between 10/1/09–5/30/13. Unadjusted and adjusted Poisson regression models were fit to estimate the relative rate and prevalence of receipt of: brief interventions (advice to reduce or abstain from drinking ≤ 14 days after positive screening), specialty addictions treatment for alcohol use disorder (AUD; documented visit ≤ 365 days after positive screening), pharmacotherapy for AUD (filled prescription ≤ 365 days after positive screening), and mental health care ≤14 days after positive screening for patients with and without PTSD (documented with ICD-9 CM codes). In secondary analyses, we tested effect modification by both severity of unhealthy alcohol use and age.
Results: Among 830,825 patients who screened positive for unhealthy alcohol use, 140,388 (16.9%) had documented PTSD. Of the full sample, 71.6% received brief interventions, 10.3% received specialty AUD treatment, 3.1% received pharmacotherapy for AUD, and 24.0% received mental health care. PTSD was associated with increased likelihood of receiving all types of care. Adjusted relative rates were 1.04 (95% CI 1.03–1.05) for brief interventions, 1.06 (1.05–1.08) for specialty AUD treatment, 1.35 (1.31–1.39) for AUD pharmacotherapy, and 1.82 (1.80–1.84) for mental health care. Alcohol use severity modified effects of PTSD for specialty AUD treatment, AUD pharmacotherapy, and mental health care such that effects were maintained at lower severity but attenuated among patients with severe unhealthy alcohol use. Age modified all effects with the strength of the association between PTSD and care outcomes being strongest for younger (18–29 years) and older veterans (65 + years) and weaker or non-significant for middle-aged veterans (30–44 and 45–64 years).
Conclusions: In this large national sample of patients with unhealthy alcohol use, PTSD was associated with increased likelihood of receiving alcohol-related and mental health care. PTSD does not appear to be a barrier to care among VA patients with unhealthy alcohol use.

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1. Introduction

Posttraumatic stress disorder (PTSD) is associated with increased risk of unhealthy alcohol use (Jakupcak et al., 2010) and is theorized to be causally related to the onset of alcohol use disorders (AUDs; Jacobsen, Southwick, & Kosten, 2001; Ouimette, Read, Wade, & Tirone, 2010). Despite the high co-occurrence of unhealthy alcohol use and

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PTSD, there is little consensus on what the best course of care is for these conditions when they occur together (Institute of Medicine, 2014; Roberts, Roberts, Jones, & Bisson, 2016). When individuals present with unhealthy alcohol use, recommended interventions include brief alcohol counseling interventions ("brief interventions"), specialty addictions treatment, and pharmacotherapy (Jonas et al., 2012; VA/DoD, 2015). For individuals with PTSD and "complex" co-occurring conditions, such as alcohol or substance use disorders, care from specialists in general mental health or PTSD care is often recommended (VA/DoD, 2017). Although evidence is building for integrated or concurrent treatments that target both alcohol use and mental health conditions simultaneously (van Dam, Vedel, Ehring, & Emmelkamp, 2012), available practice guidelines do not provide clarification on how to assimilate condition-specific treatment recommendations into a coordinated course of care for a given patient.

Among patients with unhealthy alcohol use, PTSD may be a barrier to or a facilitator of alcohol-related care or general mental health care, but the extent to which this occurs may vary based on alcohol use severity. For instance, patients with PTSD are at elevated risk for AUD (Grant et al., 2015) and patients with AUD are more likely than those without to receive brief interventions for unhealthy alcohol use (Arndt, Schultz, Turvey, & Petersen, 2002; Kaner, Heather, Brodie, Lock, & McAvoy, 2001; Lapham et al., 2012). Alcohol use severity has been found to modify the effect of PTSD on referral to alcohol treatment, with PTSD being associated with higher rates of referral among those with moderate but not severe unhealthy alcohol use (Grossbard et al., 2013), and treatment recommendations differ for moderate versus severe unhealthy alcohol use (National Institute on Alcohol Abuse and Alcoholism, 2007; VA/DoD, 2015). Furthermore, despite a lack of empirical support, clinicians commonly report that AUD is a contraindication for PTSD treatment (Cook, Dinnen, Simiola, Thompson, & Schnurr, 2014), a practice which could increase receipt of alcohol-related care among patients with both PTSD and high levels of unhealthy alcohol use or, alternatively, dissuade patients from care if integrated treatment is preferred (Back et al., 2014).

The Veterans Health Administration (VA) may be an ideal place to study whether PTSD is associated with receipt of alcohol-related treatment and general mental health care given the high prevalence of both PTSD and unhealthy alcohol use among veterans (Lan et al., 2016; Seal et al., 2011). In 2008, VA sought to improve care for these commonly co-occurring conditions by requiring each VA facility to have at least one provider in either the specialty addictions or mental health setting serve as a substance use disorder (SUD) and PTSD (SUD-PTSD) specialist to provide concurrent treatment targeting both conditions (Bernardy, Hamblen, Friedman, & Kivlahan, 2011). VA also routinely screens patients for unhealthy alcohol use (Bradley et al., 2006) and PTSD (VA/DoD, 2017), which improves identification of patients with these conditions and enables a national study using electronic medical record data (Lapham et al., 2012).

No study to date has examined receipt of alcohol-related and mental health care in a large, national sample of patients across a range of ages with unhealthy alcohol use and PTSD. While one previous study in VA evaluated receipt of alcohol-related care among patients with and without PTSD and AUD, it was conducted among veterans returning from Iraq or Afghanistan (Grossbard et al., 2013), thus limiting generalizability given that these veterans are younger on average and age has been associated with differential receipt of alcohol-related care (Burman et al., 2004; Kaner et al., 2001; Williams et al., 2014). Furthermore, the study did not examine receipt of non-alcohol-related mental health care, which is an important outcome for those with PTSD. Others have examined the influence of alcohol use on general mental health care utilization among patients with PTSD (Berk-Clark, Balan, Shroff, Widner, & Price, 2016; Kaier, Possemato, Lantinga, Maisto, & Ouimette, 2014; Maguen et al., 2012; Seal et al., 2010), but not the influence of PTSD on care outcomes among patients with unhealthy alcohol use. Therefore, how PTSD may or may not modify the receipt of alcohol-related and mental health care among patients with unhealthy alcohol use overall and across age groups is understudied.

The present study—conducted in a national sample of all VA patients who screened positive for unhealthy alcohol use over a three-and-a-half-year period—evaluated receipt of brief interventions for unhealthy alcohol use, specialty addictions treatment for AUD, pharmacotherapy for AUD, and general mental health care among patients with unhealthy alcohol use with and without PTSD. Because the association between PTSD and receipt of care may vary by alcohol use severity and by age (Burman et al., 2004; Grossbard et al., 2013), we also conducted secondary analyses to examine potential effect modification by alcohol use severity and age.

2. Material and methods

2.1. Data source and study sample

Following methods from a previous study of alcohol-related care in VA, VA electronic health records (EHR) data were extracted from the national Corporate Data Warehouse and used to identify all patients with an outpatient appointment between October 1, 2009 and May 30, 2013 who had a positive screen on the Alcohol Use Disorders Identification Test Consumption (AUDIT-C), defined as a score greater than or equal to 5. This definition of unhealthy alcohol use is consistent with VA's performance measure that requires provision of brief interventions for patients with AUDIT-C scores of 5 or more (Lapham et al., 2012; Williams et al., 2017). For each patient, the first positive screen that occurred within the study period was used for the present study. Extracted EHR data also included information about sociodemographic characteristics, medical and psychiatric diagnoses, and alcohol-related and mental health treatment encounters following the positive screen.

2.2. Measures

2.2.1. Predictor variable

PTSD was the primary predictor variable and it was defined by the corresponding diagnosis code (309.81) from the International Statistical Classification of Diseases and Related Health Problems, Ninth Revision, Clinical Modification (ICD-9-CM). Patients were considered to have documented PTSD at the time of positive alcohol screening if the diagnosis was present in the chart 0–365 days prior to the positive screen.

2.2.2. Outcome variables

Brief interventions were defined as documented advice to reduce or abstain from drinking within 14 days following the index positive alcohol screen, consistent with VA's performance measure for evidence-based brief interventions (Lapham et al., 2015; Williams et al., 2014). As has been done previously, this measure was derived using EHR text data generated by documentation in VA's clinical decision support tool ("clinical reminder") for brief interventions (Lapham et al., 2015; Williams et al., 2014). **Specialty addictions treatment for AUD** was defined as any encounter associated with an AUD diagnosis in the specialty addictions inpatient or outpatient setting 0–365 days following the index positive screen (Appendix A). This allowed for differentiation of alcohol-related specialty addictions care from care for other SUDs. Visits with a VA SUD-PTSD specialist were coded as specialty addictions treatment for AUD when the encounter was associated with an AUD diagnosis. **Pharmacotherapy for AUD** was defined as any filled prescription for acamprosate, disulfiram, topiramate, or oral or injectable naltrexone 0–365 days following the index positive screen. Medications were selected based on their being FDA approved for treatment of AUD (acamprosate, disulfiram, and naltrexone; Anton et al., 2006) or having strong meta-analytic support (topiramate; Jonas et al., 2014). **Alcohol-related care** was defined as documented receipt of brief interventions, specialty addictions treatment for AUD, and/or pharmacotherapy for AUD, whereas **AUD-specific care** was defined as documented receipt