



Drug use and childhood-, military- and post-military trauma exposure among women and men veterans



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ABSTRACT

Background: The current study was undertaken to examine whether posttraumatic stress symptoms (PTSS) and depressive symptoms mediated the association between trauma exposure (combat-related trauma and non-combat traumas occurring before, during, and after military service), and drug abuse symptoms use among male and female veterans.

Methods: Participants were 2304 (1851 male, 453 female) veterans who took part in a multi-site research study conducted through the Department of Veterans Affairs Mid-Atlantic Mental Illness Research, Education and Clinical Center (VISN 6 MIRECC). Path analytic models were used to determine the association between problematic past-year drug use and combat-related and non-combat trauma experienced before, during, or after the military and whether current post-traumatic stress symptoms or depressive symptoms mediated these associations.

Results: For both male and female veterans, depressive symptoms significantly mediated the effects of pre- and post-military trauma on drug abuse symptoms.

Conclusion: Mental health providers who work with trauma-exposed Iraq and Afghanistan era veterans should assess for drug use, depressive symptoms, and life-span trauma (i.e., not only combat-related traumas) as part of a thorough trauma-based assessment for both men and women.

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1. Introduction

Over 2.5 million U.S. veterans have deployed to war zones since October 1, 2001 (Epidemiology Program, 2013). War-zone deployments and the subsequent mental health issues that may be seen in a number of returning veterans are associated with risk for substance addiction or misuse (Institute of Medicine, 2012). We know little about the associations between trauma exposure (including combat exposure), posttraumatic stress symptoms (PTSS), depressive symptoms, and problematic drug use among veterans of recent wars. In a sample of current-era veterans, we examined the associations of lifespan trauma (before, during, and after military service) and combat exposure with drug abuse symptoms, and whether depressive and post-traumatic stress symptoms mediated this

association. Further, we examined whether these associations differed by gender.

Results from the 2008 Department of Defense Health Related Behavior Surveys conducted with over 28,000 active duty personnel found a substantial number (11.1%) reported prescription drug misuse (Bray et al., 2009). A smaller, though still concerning, number (2.3%) endorsed illicit drug use (e.g., marijuana, cocaine, barbiturates; Bray et al., 2009). Similarly, rates of amphetamine and narcotic prescription use are increasing among active duty members (Bray et al., 2010) and veterans (Wagner et al., 2007). Moreover, in a study of substance use over the military-veteran life course, Golub and Bennett (2014) found marijuana use and prescription pain killer misuse increased after separation from military service.

According to the stress-coping or self-medication model of addiction, drug use serves to reduce negative affect, such as mood states associated with depressive and posttraumatic stress symptoms (Dass-Brailsford and Myrick, 2010), and boost positive affect, thus, reinforcing substance use (Khantzian, 1985; Shiffman, 1982; Wills and Shiffman, 1985). More specifically, drug use may serve as a way to “cope” with stress and traumatic stress symptoms such as hyperarousal or numbing/detachment, by blocking the distress of intrusive thoughts and memories and by mitigating the feelings of estrangement or distance from friends and loved ones (Dass-Brailsford and Myrick, 2010). Although substances such as marijuana and benzodiazepines may initially seem to improve these psychological symptoms (Bremner et al., 1996; Jacobsen et al., 2001), those who attempt to reduce or stop their substance use may experience additional negative affect and consequences including withdrawal symptoms.

Although limited research has examined how pre-military trauma and combat exposure are related to problematic drug use among current era veterans, there is evidence that veterans may use substances to blunt mental health symptoms associated with trauma exposure. For example, childhood trauma exposure (Danielson et al., 2009; Rosen and Martin, 1998) and mental health symptoms before deployment (Jacobson et al., 2008) are associated with alcohol use (Kelley et al., 2013). Whether combat and noncombat-related trauma exposure confers differential risk for mental health disorders, and thus possibly differential risk for self-medication with substances for female versus male veterans, is inconclusive (e.g., Irish et al., 2010; Tanielian and Jaycox, 2008; Vogt et al., 2011). For instance, some researchers have found that combat-related traumatic event exposure has a stronger association with depression (Tanielian and Jaycox, 2008) and PTSD/PTSS (Irish et al., 2010; Luxton et al., 2010; Skopp et al., 2011; Tanielian and Jaycox, 2008) for women than it does for men. In contrast, Vogt et al. (2011) demonstrated that female and male veterans of recent conflicts in Afghanistan and/or Iraq had similar PTSD rates when combat exposure was taken into account.

Some researchers have also found or suggested that non-combat related traumatic event exposure may affect PTSD and drug use differently for women than it does for men. Women veterans are more likely than men to experience pre-military physical assault and sexual abuse (Zinzow et al., 2007), and military sexual trauma (MST), both during the service (Suris and Lind, 2008) and during deployment specifically (Kimerling et al., 2010). Furthermore, Davis and Wood (1999) found a high incidence of PTSD related to sexual trauma among substance-abusing female veterans. Likewise, as compared to women veterans who did not screen positive for PTSD, those who did were more likely to endorse needing to cut down on drug use or using more than intended (Dobie et al., 2004). Among women veterans in VA care diagnosed with SUDs (N=15,653), 73% were also diagnosed with a comorbid psychiatric disorder (Oliva et al., 2012).

Despite higher rates of depression among female than male veterans (Curry et al., 2013; Luxton et al., 2010; Tanielian and Jaycox, 2008) and women experiencing more non-military traumas throughout the lifespan (Freedly et al., 2010; Sadler et al., 2004), rates of SUDs are higher among civilian men and male veterans (Iverson et al., 2011; Maguen et al., 2010; Substance Abuse and Mental Health Services Administration [SAMHSA], 2013; Westermeyer et al., 2009). Thus, risk for drug use conferred by trauma exposure and posttraumatic and depressive symptoms may be greater for male than female veterans. These observed differences point to the importance of broadening the field's understanding of the role of gender in the relationships among trauma exposure, mental health symptoms, and drug abuse.

Although few studies have examined protective factors related to drug abuse among veterans, among civilians, marriage is protective against various health risks (Roxburgh, 2009; Scott et al., 2010), including drug use (Lo et al., 2012). Furthermore, Scott et al. (2010) found that the protective effect of marriage against risk of drug use was stronger for women than men. In addition, drug use peaks between 18 and 20 and declines thereafter (e.g., SAMHSA, 2014). For these reasons, we examined whether marriage and older age reduced risk for drug abuse symptoms among male and female current-era veterans.

The purpose of the present study was to examine how trauma exposure, PTSS, depressive symptoms are related to drug abuse symptoms among veterans, and to examine whether gender affects the associations among these variables. First, we hypothesized that non-combat related traumatic experiences (before, during, and after military service) and combat exposure would each have direct effects on PTSS, depressive symptoms, and drug abuse symptoms (direct effects model). Second, we hypothesized that PTSS and depressive symptoms would mediate the relationship between trauma exposure and drug abuse symptoms (indirect effects). Finally, we explored whether these associations differed for men and women veterans (multi-group model).

2. Method

2.1. Participants and procedure

This study involved secondary analysis of data collected by the Mid-Atlantic Mental Illness Research, Education, and Clinical Center (VISN 6 MIRECC) Post-Deployment Mental Health (PDMH) Study. To be included in the VISN 6 MIRECC Study, participants must have served in the military after September 11, 2001. Participants were recruited via mailings, advertisements, and referrals. Because active duty members are frequently and randomly screened for substance use, in the present study, we examined only data from veterans and excluded active duty service members. Thus, data were excluded from 242 active duty participants. Data were collected July, 2005–March, 2014 among four VA healthcare facilities in the mid-Atlantic region; 59.5% of participants were VA users. After the study was explained in detail and any questions were answered, the subject signed an informed consent. Self-report data was collected on site (at one of the four VAMCs in a private office) using paper-and-pencil and web-based questionnaires. The design was cross-sectional, thus, it is not possible to establish temporal ordering. The study was IRB approved.

There were 2304 veterans (1851 [80.3%] men; 453 [19.7%] women). Mean age of participants was 37.1 years (SD = 10.1, Range = 19–68). Fifty-nine percent indicated deployment to war-zones in Iraq and/or Afghanistan. A total of 72.9% of participants reported current or past era combat exposure. Of those who had deployed to a war-zone, 94% of men and 88% of women reported at least some combat exposure with most reporting light to medium levels. See Table 1 for sample descriptive statistics.

2.2. Measures

2.2.1. Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2000). The 23-item TLEQ assesses history of traumatic event exposure. Events are scored on a seven-point scale with responses ranging from *never*, *once*, *twice*, *3 times*, *4 times*, *5 times*, *more than 5 times* to indicate frequency of event exposure. We adapted the TLEQ to indicate whether each trauma was experienced (a) before the military, (b) during the military, and/or (c) after the military (Clancy et al., 2006; Dedert et al., 2009); thus, three scores were derived reflecting the mean number of trauma experiences that occurred for each time-period (pre-military, during the military, and post-military). Consistent with previous work (Kelley et al., 2013) and with DSM-IV diagnostic

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