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National Prevalence and Correlates of Alcohol Misuse in Women Veterans

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ABSTRACT

Our goal was to estimate the prevalence and correlates of alcohol misuse in women veterans and to assess the associations between alcohol misuse and mental health (MH) care utilization in a group comprising both Veterans Health Administration (VA) healthcare system users and non-users. We assessed alcohol misuse using survey-based AUDIT-C scores. The prevalence of alcohol misuse was 27% in VA users and 32% in non-users. Prevalence rates were higher for VA users who were younger, served in OEF/OIF, or had combat exposure and for VA non-users who screened positive for posttraumatic stress disorder or sexual assault in the military. In contrast to VA users, VA non-users with alcohol misuse had a low prevalence of past-year MH care despite having indications of MH care need. Our results on alcohol misuse prevalence, its correlates, and its association with MH care may aid program planning and resource allocation in VA and non-VA settings.

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1. Introduction

Alcohol misuse, defined as drinking above recommended limits, is a health concern in military and veteran populations (IOM (Institute of Medicine), 2012; Office of Applied Studies, 2005). Although most research on alcohol misuse in U.S. veterans has focused on men, a number of recent studies have highlighted it as a health issue for *women* veterans (Bradley et al., 2012; Calhoun, Elter, Jones, Kudler, & Straits-Troster, 2008; Chavez, Williams, Lapham, & Bradley, 2012; Denneson, Lasarev, Dickinson, & Dobscha, 2011; Eisen et al., 2012; Grossbard et al., 2013; Grossbard, Hawkins, et al., 2013; Harris, Bradley, Bowe, Henderson, & Moos, 2010; Hawkins, Lapham, Kivlahan, & Bradley, 2010; Hoggatt et al., 2015; Williams et al., 2014). This research attention comes at a time when women's roles in the military are expanding, and their representation in the veteran population is rapidly increasing. Women represent about 8% of the veteran population, a figure expected to grow to 14% by 2033, and are one of the fastest growing segments of the Veterans Health Administration (VA) patient population (Frayne et al., 2010; Yano et al., 2010). However, the majority of women veterans still seek medical care outside the VA (National Center for Veterans Analysis and Statistics, 2011; Washington, Yano, Simon, & Sun, 2006). In non-VA healthcare settings, routine alcohol screening may not be the norm (Friedmann, McCullough, Chin, & Saitz, 2000), and women's veteran status may not be apparent. There may therefore be additional challenges in identifying and treating alcohol misuse in women veterans who are VA non-users. Information on the prevalence of alcohol misuse in women veterans, and the identification of subgroups in which the prevalence is particularly high, can be critical for program planning, quality improvement efforts, and resource allocation in both VA and non-VA settings.

As summarized in a recent systematic review of the literature (Hoggatt et al., 2015), to date there has been no epidemiologic description of alcohol misuse in women veterans. In particular, no studies have assessed alcohol misuse in a population-based group of women veterans, reported prevalence estimates separately for VA users and non-users, or described the health correlates of alcohol misuse in the general population of women veterans. Most studies of alcohol misuse in women veterans have focused exclusively on VA patients and have presented a wide range of prevalence estimates, up to 37% in recent returnees, depending on the method of assessment and specific population studied. Even less is known about the health correlates of alcohol misuse in women veterans, although studies of other types of unhealthy alcohol use have noted a co-occurrence with mental health conditions or a history of sexual assault in the military (SAIM) or military sexual

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trauma (MST, which refers to repeated threatening forms of sexual harassment or sexual assault sustained during military service) (Hankin et al., 1999; Maguen et al., 2012; Scott et al., 2013; Seelig et al., 2012). These findings raise questions of whether women veterans with alcohol misuse, particularly those who do not use VA care, are receiving mental health care commensurate with their need. In VA, veterans receive routine annual screening for alcohol misuse, posttraumatic stress disorder (PTSD), and depression. In addition, mental health services have been integrated into VA primary care (Wray, Szymanski, Kearney, & McCarthy, 2012). Both policies may facilitate identification of women with alcohol misuse and referral for mental health care as needed. However, for women who do not use VA healthcare, the practices regarding alcohol screening and referral to mental health care are more variable, and as a result VA non-users with alcohol misuse may not be receiving the mental health care they need.

To better deliver care to women veterans with alcohol misuse, providers and planners need information on the prevalence of alcohol misuse (overall and in high-risk subgroups), the mental health correlates of alcohol misuse among women veterans, and possible gaps in mental health care. The present analysis adds to the literature on women veterans and alcohol misuse in these three key areas. First, we use a unique dataset to derive nationally-representative estimates of the prevalence of alcohol misuse among women veterans (overall and separately for VA users and non-users). We also report prevalence estimates for subgroups defined by demographic, military, and health characteristics, including women who served in Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) and women screening positive for mental health conditions or a history of SAIM. Second, we assess correlates of alcohol misuse in VA users and non-users, including indicators of mental health care need (mental health conditions and SAIM) and receipt of mental health care. Finally, we estimate and compare the receipt (or prevalence) of past-year mental health care for women veterans with and without alcohol misuse, accounting for demographics, indicators of mental health care need, and allowing for differences between VA users and non-users.

2. Materials and methods

For this analysis we used data from the National Survey of Women Veterans (NSWV). The NSWV was a cross-sectional national telephone survey conducted between 2008 and 2009 to support evidence-based VA strategic planning for programs and services for women veterans (Washington, Bean-Mayberry, Hamilton, Cordasco, & Yano, 2013; Washington, Bean-Mayberry, Mitchell, Riopelle, & Yano, 2011; Washington, Bean-Mayberry, Riopelle, & Yano, 2011; Washington, Davis, Der-Martirosian, & Yano, 2013; Washington, Sun, & Canning, 2010). Researchers constructed the sampling frame by cross-linking Veterans Health Administration, Veterans Benefits Administration, and Department of Defense databases, collectively identifying more than 50% of the 1.8 million 2008–2009 U.S. women veterans (Washington et al., 2010). Eligible women were veterans of the regular armed forces or members of the National Guards or Reserves who had been called to active duty. Researchers identified potential participants using a population-based, stratified random sample of women veterans, with sampling strata defined based on VA ambulatory care use and period of military service using previously described methods (Washington, Bean-Mayberry, Riopelle, & Yano, 2011; Washington et al., 2010).

Survey respondents represented all geographic regions and Veterans Integrated Service Networks (VISN). Each randomly-sampled veteran was mailed an information packet with an opt-out card. Study interviewers contacted potential respondents to screen for study eligibility prior to obtaining consent and conducting a computer-assisted telephone interview. To be included, respondents must not have been currently serving on active military duty, employed by the VA, or residing in a nursing home or other institution. The NSWV enrolled 3611 women veterans (86% of those screened and eligible, of whom 1993 were VA users and 1618 VA non-users). We included a total of 3585 women veterans with non-missing Alcohol Use Disorders Identification Test Consumption (AUDIT-C) total scores in this analysis. This study was approved by the Institutional Review Board of the VA Greater Los Angeles Healthcare System, and the survey was also approved by the U.S. Office of Management and Budget.

2.1. Measures

We assessed alcohol use with the 3-item AUDIT-C questionnaire, which assesses the quantity and frequency of average alcohol consumption and the frequency of binge drinking episodes in the prior 12 months. The AUDIT-C has been validated for use in medical settings as a screen for identifying alcohol misuse among women veterans (Bradley et al., 2003), other veteran and non-veteran clinical populations, and the general U.S. population (Bradley et al., 2007; Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998; Dawson, Grant, Stinson, & Zhou, 2005; Frank et al., 2008). The AUDIT-C used in the present study had a gender-specific threshold for binge drinking episodes (4 or more drinks per occasion). This modified AUDIT-C was previously demonstrated to have higher sensitivity for detecting alcohol misuse among women veterans than the standard AUDIT-C (which uses a threshold of 6 or more drinks) (Bradley et al., 2003). Because higher AUDIT-C scores are associated with increasing severity of alcohol misuse (Bradley et al., 2004; Rubinsky, Dawson, Williams, Kivlahan, & Bradley, 2013; Rubinsky, Kivlahan, Volk, Maynard, & Bradley, 2010), we analyzed four ordered categories of AUDIT-C scores: no alcohol use (score: 0), low-level alcohol use (score: 1–2), mild alcohol misuse (score: 3–4), and moderate-to-severe alcohol misuse (score: 5–12). These categories were selected to reflect the suggested gender-specific threshold for alcohol misuse [a score of 3 or greater on the AUDIT-C; (Bradley et al., 2003)], and to reflect the threshold at which the VA incentivizes follow-up with a performance measure and electronic clinical decision support [AUDIT-C $\geq$5; (Lapham et al., 2012)]. Moderate (score: 5–7) and severe (score: 8–12) alcohol misuse categories were combined due to the limited number of individuals in the severe misuse category.

We defined two categories for VA user status: VA user (combining VA-only and dual VA/non-VA users) and VA non-users (combining women who reported using only non-VA care with those having no ambulatory care in the prior 12 months). For demographic variables, we categorized age and race/ethnicity and dichotomized annual household income ($\leq$$30,000 vs. not) and marital status (currently married vs. not). We categorized three eras of military service (pre-Vietnam, Vietnam-pre OEF/OIF, and OEF/OIF) and defined a binary indicator for combat exposure based on women's self-report. For self-reported overall health status, study participants were asked: "In general, would you say your health is…" with 5 possible responses ranging from poor to excellent, and this item was dichotomized (poor or fair health vs. good, very good, or excellent). SF-12 physical component (PCS) and SF-12 mental component (MCS) scores were constructed from all 12 items, with each question weighted using the standard SF-12 scoring algorithm (Ware, Kosinski, & Keller, 1996). Scores on the SF-12 PCS and MCS were scaled so that 50 corresponded to the median, and scores $\leq$50 on the PCS and MCS indicated worse physical and mental health status, respectively. We dichotomized use of ambulatory care in the prior 12 months as any use of ambulatory care vs. none.

The survey included questions to measure multiple mental health conditions and military stressors that may indicate a need for mental health care. Generalized anxiety disorder (GAD) was assessed with two questions: "Over the last 2 weeks, how often have you been bothered by the following problems? (a) Feeling nervous, anxious, or on edge? (b) Not being able to stop or control worrying?" (Kroenke, Spitzer, Williams, Monahan, & Lowe, 2007). For both items a 4-point Likert scale response categories varied from "not at all" to "nearly every day". Both question items were combined and a value of $\geq$3 was considered positive for GAD, a criterion described in the validation study for this tool (Kroenke et al., 2007). Depression symptoms were