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Race/ethnicity and gender differences in mental health diagnoses among Iraq and Afghanistan veterans

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ABSTRACT

Veterans who served in Operation Enduring Freedom (OEF; predominantly in Afghanistan) and Operations Iraqi Freedom and New Dawn (OIF and OND; predominantly in Iraq) and are enrolled in the VA are comprised of a growing cohort of women and higher proportions of racial/ethnic minorities than civilians. To compare rates of mental health disorders by race/ethnicity and gender for this diverse cohort, we conducted a retrospective analysis of existing records from OEF/OIF/OND veterans who were seen at the VA 10/7/01-8/1/2013 (N=792,663). We found that race/ethnicity was related to diagnoses of mental health disorders. Asian/Pacific Islanders (A/PIs) were diagnosed with all disorders at lower rates than whites, and American Indian/Alaska Native (AI/AN) males were diagnosed with most disorders at higher rates than white males. Research is needed to identify contributing factors to differential rates of diagnoses based on race/ethnicity and gender. A/PIs and AI/ANs have unique patterns of mental health diagnoses indicating they should be considered separately to present a comprehensive picture of veteran mental health.

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1. Introduction

Among veterans who served in Operation Enduring Freedom (OEF; predominantly in Afghanistan) and Operations Iraqi Freedom and New Dawn (OIF and OND; predominantly in Iraq) and accessed VA health care, 45% of women and 28% of men were members of racial/ethnic minority groups (Maguen et al., 2010). Thus, there are proportionately more racial/ethnic minorities among OEF/OIF/OND veterans than in civilian populations (Humes et al., 2011). Given growing numbers of racial/ethnic minority veterans and OEF/OIF/OND veterans who will become the largest veteran cohort over the next 30 years (Department of Veterans Affairs, 2013), identifying health disparities among OEF/OIF/OND veterans is critical. Because 56% of all OEF/OIF/OND veterans who accessed VA health care between 2002 and 2014 received a mental health diagnosis, the second most common problem among this group (Department of Veterans Affairs, 2014), clarification of associations between race/ethnicity and diagnosis of mental health disorders is important. Moreover, because female OEF/OIF/OND veterans are one of the fastest growing cohorts among veterans (Manning, 2013), gender must also be considered.

Epidemiological studies in non-veteran populations have revealed that prevalence rates of mental health disorders vary by racial/ethnic group in the U.S. The most consistent findings are that compared to non-Hispanic whites, African Americans tend to have lower rates of major depressive disorder (Williams et al., 2007), Hispanics/Latinos tend to have higher rates of PTSD (Pole et al., 2008), (Native) American Indians tend to have higher rates of alcohol use disorders (Hasin et al., 2007), and Asian/Pacific Islanders (A/PIs) tend to have lower rates of most mental health diagnoses (Asnaani et al., 2010; Woodward et al., 2012). However, these findings should be interpreted with caution due to the paucity of research examining racial/ethnic minorities, particularly with A/PIs and American Indians (Pole et al., 2008; Tsai and Kong, 2012; Wheatlin et al., 2013).

Until more recently, veteran race/ethnicity has most often been categorized as black, Hispanic, white, and “other” due to missing race/ethnicity data in the VA healthcare system (Seal et al., 2007, 2009; Williams et al., 2012). Based on these categorizations, studies have found little variation in mental health diagnostic rates between black, Hispanic, white, and “other” veterans (Seal et al., 2007). However, these categories omit two understudied populations: A/PI and American Indian/Alaska Native (AI/AN) veterans. Based on epidemiological study findings (Asnaani et al., 2010; Hasin et al., 2007; Woodward et al., 2012), combining A/PI and AI/AN veterans into a single category likely obscures differences in mental health diagnoses. Moreover, it continues to overlook

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historically understudied populations (Tsai and Kong, 2012; Wheatlin et al., 2013). Prior to OEF/OIF/OND, studying diagnoses of mental health disorders among A/PI and AI/AN veterans was challenging due to large amounts of missing race/ethnicity data in VA databases. However, with the OEF/OIF/OND Roster database, these groups are now identifiable, but this work has yet to be conducted.

Although overall mental health diagnostic patterns (Seal et al., 2007, 2009) and gender effects (Maguen et al., 2010) have been examined separately among OEF/OIF/OND veterans, no studies have examined more specific categories of race/ethnicity *and* gender in relation to mental health disorder diagnoses. Given that mental health symptom expression can differ across race/ethnicity (Matkin et al., 1996; Hinton et al., 2009) and the existence of gendered expectations of emotional expression (Barrett and Bliss-Moreau, 2009), we might expect differences in mental health diagnoses when considering race/ethnicity and gender. Consistent with this expectation, among civilian populations, the prevalence of certain mental health disorder diagnoses such as alcohol use disorders (Grant et al., 2004) differ when including race/ethnicity and gender, but rarely are both factors considered in the same study.

Given that OEF/OIF/OND veterans are commonly diagnosed with mental health disorders (Department of Veteran Affairs, 2014) and have pronounced racial/ethnic diversity and a rapidly growing cohort of women, we examined how race/ethnicity and gender are associated with diagnoses of mental health disorders among OEF/OIF/OND veterans enrolled in VA healthcare. In this national sample, our aims were to identify: (1) differential rates of mental health disorder diagnoses by race/ethnicity, distinguishing A/PI and AI/AN veterans, and (2) racial/ethnic differences in diagnoses, among male veterans and female veterans, separately.

2. Methods

2.1. Study population

The study population was identified using the VA national OEF/OIF/OND Roster, an accruing database of veterans who have returned from recent military service in Iraq and Afghanistan and have enrolled in the VA healthcare system. We also examined existing medical records in the VA National Patient Care Database (NPCD) from 805,121 OEF/OIF/OND veterans who attended their first VA healthcare appointment between October 7, 2001 and August 1, 2012 (after their most recent deployment) and were followed for at least one year in VA (study end date was August 1, 2013), meaning they had at least 12 months to be active in the VA. Veterans who were missing data on key covariates (gender, age, marital status, or military characteristics) were excluded ($n=12,458$). The final study population consisted of 792,663 OEF/OIF/OND veterans who had accessed the VA. The study was approved by the Committee on Human Research at University of California at San Francisco and the San Francisco VA Medical Center.

2.2. Data source and extraction

The OEF/OIF/OND Roster contains basic self-report demographic and military service information. The OEF/OIF/OND Roster database (current as of May 2012) was linked to the VA NPCD, which provides VA race/ethnicity data, clinic visit dates, and associated *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)* diagnostic codes.

2.3. Main outcome measures

2.3.1. Dependent variables

Mental health diagnoses included PTSD (309.81), depression (293.83, 296.20–296.25, 296.30–296.35, 300.4, and 311), other anxiety disorders (300.00–300.09, 300.20–300.29, and 300.3), adjustment disorders (308, 309.0–309.9, excluding 309.81), alcohol use disorders (305.00–305.03 and 303), and drug use disorders (305.20–305.93 and 304). Veterans were also categorized by whether they had none, one, or two or more mental health diagnoses. To increase the reliability of diagnoses, each disorder was required to be diagnosed on at least two separate occasions in order to be included in these analyses, i.e., veterans with single diagnoses were excluded from analyses. To guard against possible ascertainment bias, we verified that the prevalence of diagnoses made only once did not differ substantially by racial/ethnic group (see Supplemental Table 1 for the number of excluded veterans with single diagnoses by race/ethnicity).

2.3.2. Independent variables

Multiple steps were taken to minimize the amount of missing race/ethnicity data—the independent variable for the current study. Overall, we first analyzed race and ethnicity data in the VA NPCD and OEF/OIF/OND Roster separately and then merged these data. Specifically, this involved appending race and ethnicity data collected at all inpatient and outpatient encounters in the VA NPCD for veterans who were also in the OEF/OIF/OND Roster and then distilling the multiple records of race and ethnicity per veteran into one record per veteran to derive our independent variable.

As of 2003, in the VA NPCD, race and ethnicity were self-reported by patients with multiple race values allowed per clinical encounter and the following standardized race values: AI/AN, Asian, black or African American, Native Hawaiian or other PI, white, unknown by patient, or declined to answer. Ethnicity was recorded separately as either “Hispanic or Latino” or “not Hispanic or Latino.” From the VA NPCD, we derived a new race variable, which we referred to as “new VA race,” by combining Asian and Native Hawaiian or other PI into a single category (A/PI) and assigning those who reported multiple standardized race values to a new “multiracial” category, as recommended by VA Health Services Research and Development. The “new VA race” variable took the following values: AI/AN, A/PI, black, white, multiracial, or unknown. We then combined the separate ethnicity and “new VA race” variables to create a new composite variable, which we refer to as “race/ethnicity,” that takes the following values: AI/AN, A/PI, black, Hispanic, multiracial, white, or unknown. These racial/ethnic categories have been used in previous VA studies (Spoont et al., 2009).

In the OEF/OIF/OND Roster, veterans chose one of five race values: black, Hispanic, other, unknown, or white. Ethnicity was recorded separately, and each veteran chose one of 43 categories (see Supplemental material). We derived a “new Roster ethnicity” variable from the Roster that paralleled the VA ethnicity variable and a “new Roster Race” variable that paralleled the “new VA race” variable. We mapped the Roster data onto the “new VA race” and VA ethnicity values for two reasons: (1) the VA uses a single nationally approved race standardization, whereas the Roster uses an undisclosed and evolving methodology for populating the racial and ethnic fields and (2) we wanted to be able to measure concordance between the two sources. We then combined these recoded “new Roster race” and “new Roster ethnicity” variables to create a single new composite variable, which we refer to as “race/ethnicity,” parallel to that of the VA data (see Supplementary material for complete coding algorithm).

Finally, we merged the VA and Roster “race/ethnicity” variables.