



Research paper

Retrospective age-of-onset and projected lifetime prevalence of psychiatric disorders among U.S. Army National Guard soldiers



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ABSTRACT

Background: The study of military-related mental health has been disproportionately focused on current symptomology rather than potentially more informative life course mental health. Indeed, no study has assessed age-of-onset and projected lifetime prevalence of disorders among reservists.

Methods: Age-of-onset and projected lifetime DSM-IV anxiety, mood, and substance use disorders were assessed in 671 Ohio Army National Guard soldiers aged 17–60 years. Between 2008 and 2012, face-to-face clinical assessments and surveys were conducted using the Structured Clinical Interview for DSM-IV and Clinician-Administered PTSD Scale.

Results: Lifetime prevalence of psychiatric disorders was 61%. Alcohol abuse/dependence (44%) and major depressive disorder (23%) were the most common disorders. The majority (64%) of participants reported disorders antedating enlistment. Median age-of-onset varied with anxiety disorders – particularly phobias and OCD – having the earliest (median = 15 years) and mood disorders the latest median age-of-onset (median = 21 years).

Limitations: The study was limited by both the retrospective investigation of age-of-onset and the location of our sample. As our sample may not represent the general military population, our findings need to be confirmed in additional samples.

Conclusions: Each psychiatric disorder exhibited a distinct age-of-onset pattern, such that phobias and OCD onset earliest, substance use disorders onset during a short interval from late-adolescence to early-adulthood, and mood disorders onset the latest. Our finding that the majority of participants reported disorders antedating enlistment suggests that an assessment of lifetime psychopathology is essential to understanding the mental health burden of both current and former military personnel.

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1. Introduction

It is estimated that nearly one in five United States (US) military service members are experiencing a psychiatric disorder at any given time (Riddle et al., 2007). While nearly all military studies ask questions of service members about their military experiences and beyond, much of the scientific writing in this area has omitted

discussion of pre-military experiences and how they might shape “military mental health”. This potential set of omitted variables that might be of consequence here emerges readily from a life course perspective on the production of mental health.

Psychiatric epidemiology has been revolutionized by the development of a life course approach for examining physical and social exposure across the life span on adult disease risk (Koenen et al., 2014; Kuh et al., 2003). Just 4 decades ago psychiatric disorder age-of-onset was a controversial and uncertain topic (Rutter, 1972), while now we understand that the majority of psychiatric disorders first onset prior to age 15 (Kessler et al., 2007; Kim-Cohen et al., 2003). The importance of employing a life course

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perspective when examining psychiatric disorders among service members is hinted at in examples from recent literature. For example, Gallaway et al. (2013) documented that soldiers granted enlistment waivers for pre-military concerns (e.g., alcohol or drugs problems,) from 2003 to 2008 were significantly more likely to test positive for an illicit substance, be screened for admission to an alcohol/drug abuse program, and attrite from the Army for behavioral misconduct. Further, several studies have documented that about half of military suicides are among service members that have never deployed (LeardMann et al., 2013; Schoenbaum et al., 2014), that most of the suicidal behaviors during military service have had pre-enlistment onset (Nock et al., 2014), and that exposure to child abuse prior to military service is associated with suicidal behaviors during military service (Afifi et al., 2016). Nonetheless, military studies continue to primarily examine recent exposures, lending to the paucity of literature into life course factors among military personnel.

The focus on deployment experiences as the cause of psychiatric disorders among service members, rather than on the life course patterns of psychiatric disorders (e.g., pre-military psychiatric disorders, age-of-onset) that might be more central to the production of the health indicators of interest, has limited our understanding about the course of psychiatric disorders both prior to and during military service. Furthermore, understanding the life course patterns of mental illness among service members can change the narrative about the etiology of psychiatric disorders during military service, such that military experiences might be exacerbating earlier symptomology, rather than first incident disorders. However, our understanding of early life, pre-military, mental illness remains limited.

Mental illness is a major health concern in the US armed forces, particularly among the Reserves and National Guard (reserve component) (Cohen et al., 2015). Investigations to date have indicated that the reserve component suffers a greater burden of psychiatric disorders compared to the active component (Cohen et al., 2015; Iowa Persian Gulf Study Group, 1997; Milliken et al., 2007; Thomas et al., 2010). Prior to 2001, the National Guard had largely supported individual states during times of emergency; however, in the aftermath of the Vietnam War, the Total Force Policy was adopted to treat the 2 components (i.e., active-duty and reserve component) as a single operational force. As a result, during the height of mobilization in Operation Enduring Freedom and Operation Iraqi Freedom and (OEF/OIF) the reserve component forces constituted about 40% of deployed service members in combat operations. This reliance on the reserve component is not idiosyncratic to OEF/OIF; it is part of the Department of Defense's long-term strategic vision to increase the size, roles, and responsibilities of the reserve component moving forward (Department of Defense, 2011; Department of Defense, 2008). Nonetheless, there is a paucity of research addressing the mental health of reservists (Cohen et al., 2015).

In this study we used face-to-face clinical assessment using gold-standard instruments to document the age-of-onset and projected lifetime prevalence of psychiatric disorders in a representative sample of Ohio Army National Guard soldiers. Thus the first aim of this study was to investigate the lifetime prevalence and age-of-onset of DSM-IV psychiatric disorders using the Structured Clinical Interview for DSM-IV (SCID) and Clinician-Administered PTSD Scale (CAPS). The second aim was to use the lifetime prevalence of psychiatric disorders, and their respective age-of-onset, to determine the probability of disorder onset at each year of life from age 0–50 years. The third aim was to compare the psychiatric disorder age-of-onset to respondents' date of enlistment to determine the prevalence of disorders that onset prior to initiating military service. We hypothesized that substance use disorders and PTSD would be the most prevalent psychiatric

disorders. Secondly, we expected substance use disorders to onset prior to military service, particularly during late-adolescents to early-adulthood (e.g., 16–24). Third, we expected PTSD, the sentinel trauma-related psychiatric disorder, to onset primarily after respondents enlisted into military service.

2. Methods

2.1. Participants

We used data from an in-depth clinical cohort study, nested within the Ohio Army National Guard (OHARNG) Mental Health Initiative (MHI). The OHARNG MHI is a representative longitudinal cohort study examining risk and resilience factors among OHARNG members (Calabrese et al., 2011). To examine the validity of the telephone survey mental health screening tools, we randomly selected 500 respondents from the baseline OHARNG MHI telephone survey sample. In addition, we randomly selected an additional 171 recently enlisted OHARNG to the clinical validation subsample in 2011 ($n=105$) and 2012 ($n=171$) to increase both the analytical power and provide data on the most recent cohort of OHARNG.

For the purpose of the current study, we used baseline data from the in-depth clinical cohort of the OHARNG MHI study. The clinical cohort was predominantly white (87%), male (87%), and single-never married (51%) (Table 1). The median age of the sample was 26 years (standard deviation: 9.6 years) and ranged from 17 to 60 years. In addition, most respondents were enlisted rank (E1–E9; 90%) and had deployed one or more times (55%). Overall, the clinical cohort was similar to the target population (i.e., Ohio National Guard service members) on all demographic and military characteristics.

2.2. Procedures

Study trained clinicians completed face-to-face clinical interviews in private locations (e.g., private library room) with 671 participants from June 2008 to February 2012. Study staff performed monthly inter-rater reliability for the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and Clinician-Administered PTSD Scale (CAPS) to assure that the interviewers were standardized in their diagnostic assessment methods and interviewing techniques; results revealed moderate to excellent inter-rater agreement (> 0.9) and Free-Marginal Multirater Kappas (> 0.85). A comprehensive description of OHARNG Mental Health Initiative sampling strategy and recruitment has been previously published (Prescott et al., 2014). The study was approved by the local institutional review boards and written informed consent was obtained from all participants.

2.3. Measures

The diagnostic interview included both the CAPS (Blake et al., 2000) and the SCID (First et al., 2002, 1996). First, the CAPS was administered twice to assess both lifetime and current PTSD symptoms based on the individuals' self-selected "worst deployment related trauma" and then again for their "worst not related to deployment" (Breslau et al., 1998). Posttraumatic stress disorder diagnosis was based on DSM-IV criteria using the frequency ≥ 1 and intensity ≥ 2 methods (Blake et al., 2000), which is considered the gold standard for identifying PTSD cases for lifetime PTSD diagnosis (Weathers et al., 2001); compared to the SCID, the CAPS has been found to have a test-retest reliability (kappa) of 0.73, 84% sensitivity, and 90% specificity (Weathers et al., 2001). Respondents meeting diagnostic criteria on either the CAPS

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