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Substance use over the military–veteran life course: An analysis of a sample of OEF/OIF veterans returning to low-income predominately minority communities

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HIGHLIGHTS

- Substance use varied substantially over the military–veteran career.
- Respondent driven sampling (RDS) was used to obtain unbiased estimates.
- In the military, alcohol was the drug of choice, nearly half were heavy drinkers.
- While deployed and after separation 6%–7% misused prescription opioids.
- After separation, many returned to marijuana use, most stopped heavy drinking.

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ABSTRACT

This paper presents an overview of substance use patterns of recent veterans returning to low-income predominately minority communities over four periods of the military–veteran career. Respondent driven sampling (RDS) was used so that unbiased estimates could be obtained for the characteristics of the target population. The majority of participants had used marijuana but no other illegal drugs. In the military, marijuana use was substantially lower and alcohol was the drug of choice; the majority were binge drinkers and nearly half were heavy drinkers. While deployed, alcohol and marijuana use were both lower, though some participants (6%) initiated the misuse of prescription painkillers. After separating from the military and returning to civilian life, heavy drinking was much lower, marijuana use increased, and some veterans misused prescription painkillers (7%). Further research based on these data will examine these distinct periods of substance use, contexts of use, related substance and mental health problems, treatment use and avoidance, and civilian reintegration.

1. Introduction

Substance use, excessive use, misuse and its attendant problems have presented health risks for many while serving in the military and after separation as a veteran. Substance misuse while in the military has important implications for combat readiness and for the assurance of clear and reasoned decision making in critical situations where lives are at stake. Substance use as a veteran may be associated with substance use disorders (SUDs) and other possibly related mental health problems including Post-Traumatic Stress Disorder (PTSD) and depression (Bray & Hourani, 2007; Bray et al., 2006; Heltemes, Dougherty, MacGregor, & Galarneau, 2011; Institute of Medicine, 2012; Jacobson et al., 2008). The continued misuse of substances may be associated with reintegration problems such as family distress, employment problems, and criminal behavior with legal consequences (Bohnert et al., 2011; NIDA, 2011; U.S. Army, 2012).

This paper examines substance use across the military–veteran career for one group who may be of particularly high risk, formerly enlisted veterans who served in Operation Enduring Freedom (OEF) or Operation Iraqi Freedom (OIF) who returned to low-income predominately minority communities between 2008 and 2012. Presumably many of these veterans came from these communities where the risk of substance misuse is high and therefore may be at the forefront of substance use related problems. The analysis examines this population's substance use during four distinct periods: before entering the military, while in the military but not deployed, while deployed, and since returning to civilian life. An awareness of the substances used and misused at each stage would help support development of appropriately targeted military and veteran substance misuse programs. Variation in

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substance use over time would suggest how substance use can change with availability and cultural expectations.

The list of substances examined in this study was similar to those included in the National Survey on Drug Use and Health (NSDUH) and included alcohol, cigarettes, marijuana, powder cocaine, MDMA, heroin, opium, methamphetamine and the use of several classes of drugs for non-medical purposes including any hallucinogens, stimulants, sedatives, tranquilizers, and prescription painkillers. These represent some of the most common drugs and categories of drugs that are used recreationally without a doctor's prescription. The intent was to see which substances emerged as the most commonly used in each period and the prevalence of use within the high risk population studied. For this analysis, use before entering the military was included as a baseline to identify the extent of any substance use prior to entering the military and whether there was a shift upon entering the military.

We first hypothesized that before entering the military, marijuana use would be widespread. Prior research has documented that the popularity of various drugs rise and then fall over time forming distinct drug epidemics (Bennett & Golub, 2012). The timing of these epidemics can vary across locations. In New York City, the Heroin Injection Epidemic peaked in the 1960s and early 1970s. The Crack Epidemic peaked in the late 1980s and early 1990s. Marijuana has been the drug of choice among youths and young adults since 1992 who constitute the majority of the current veteran study sample (Golub & Johnson, 2001; Golub, Johnson, Dunlap, & Sifaneck, 2004).

Next we hypothesized that alcohol use would predominate while in the military, but not when deployed. During the 1970s, the Department of Defense (DoD) embarked on a series of programs to eliminate illegal drug use in the military in response to widespread use during the Vietnam War Era (Bray, Marsden, Herbold, & Peterson, 1992; Department of Defense, 2013). These policies have included drug testing of potential recruits and existing service members. According to the DoD Worldwide Surveys of Health Related Behaviors, illegal drug use in the military declined to negligible levels since the levels identified in 1980 when the survey started (Bray & Hourani, 2007). However, alcohol use is still widespread. Heavy alcohol use (defined as five or more drinks per occasion on five or more occasions in the past 30 days) in the military declined modestly from 21% in 1980 to 15% in 1998, but increased back to 18% by 2007 which Bray and Hourani (2007) attributed in part to experiences of war and combat in Afghanistan and Iraq. Rates of binge drinking, heavy alcohol use, and alcohol-related problems have been shown to be higher among those exposed to combat (Jacobson et al., 2008).

In our third hypothesis, we anticipated that while deployed, prescription painkiller misuse would be widespread. While on deployment access to alcohol can be limited. Many of the prescription drugs available as medical supplies while on deployment such as painkillers have psychoactive properties and could be potentially used for recreational purposes. Accordingly, we hypothesized that prescription painkillers such as OxyContin and Vicodin would be misused regularly. The 2008 Department of Defense Health Behavior Survey reported that between 2002 and 2005, prescription drug misuse (especially painkillers) doubled among U.S. military personnel and almost tripled between 2005 and 2008 (Bray et al., 2009; Institute of Medicine, 2012; NIDA, 2011). These rising rates of prescription drug misuse among OEF/OIF veterans have been implicated in adverse health consequences (Institute of Medicine, 2012; U.S. Army, 2010; Wu, Lang, Hasson, Linder, & Clark, 2010).

Lastly, we hypothesized that after returning to civilian life, alcohol use would be widespread, marijuana use would be widespread, prescription painkiller use would continue, and heroin and possibly injection drug use would also be common. It was hypothesized that civilian reintegration in urban low-income predominately minority neighborhoods would be associated with extensive substance use and misuse given widespread availability of drugs, established habits and a less regulated lifestyle than in the military. It was hypothesized that veterans would use marijuana which is commonplace in the community while continuing their use of alcohol and painkillers as were common in the military. Historically, the challenges of military service have led many returning veterans to heavy use of alcohol and illegal drugs (Bennett & Golub, 2012; Bergen-Cico, 2011; Courtwright, 2001). It was further hypothesized that many OEF/OIF veterans would become heroin users because heroin provides a similar effect as prescription painkillers and is cheaper and widely available on the streets, while prescription painkillers are becoming increasingly harder to obtain due to more restrictive protocols regarding prescriptions and refills. This creates the potential for some veterans to turn to diverted prescription drugs or heroin to maintain their pain management regimen, particularly those individuals who were prescribed strong opioids while in the military (Harocopos, Goldsamt, Kobrak, Jost, & Clatts, 2009; Neaigus et al., 2006; Sherman, Smith, Laney, & Strathdee, 2002). Facing restricted access and elevated prices for prescription painkillers on the street could lead some veterans to shift to heroin and possibly injecting heroin as a more cost-effective way to reduce pain and/or obtain a psychoactive effect (Inciardi, Surratt, Cicero, & Beard, 2009).

2. Methods

2.1. Study design and participants

Data for this study came from the *Veteran Reintegration, Mental Health, and Substance Abuse in the Inner-City Project* sponsored by the National Institute on Alcohol Abuse and Alcoholism. This study is examining the experiences of 269 OEF/OIF veterans recruited between February 2011 and April 2012 in low-income predominately minority sections of New York City. All participants had been enlisted, and were required to have been discharged within the past two years although a few had been discharged for a few months beyond a strict two-year cutoff. Participants had separated from the military between August 2008 and March 2012. Potential participants completed an informed consent procedure in which the benefits and possible risks of participation were discussed prior to an interview. Potential participants were asked to show their DD214 to verify their military service. This unique identifier was also used to assure that participants were not included in the study more than once. Interviews were held in person in a mutually convenient private location. All recruitment, interview and data management procedures were approved by the project's Institutional Review Board.

Recent veterans living in low-income neighborhoods, including many who use illegal drugs, are often underrepresented in studies that use conventional survey methodology because they may lack a stable address or phone number or may be less likely to present at mainstream institutions such as the Veterans Administration (VA) whose enrollment registers are often used in studies as a sampling frame. To circumvent this problem, we employed Respondent Driven Sampling (RDS). RDS is a network-based sampling approach that advances the convenience of snowball sampling by using a mathematical correction procedure that can correct for the bias inherent in the snowball sampling method (Heckathorn, 1997, 2011). The snowball sampling method starts with a few members of the target population, known as seeds, who are then asked to recruit other members of the target population in their social networks that are called referrals. The referrals provided by the initial seeds are referred to as wave 1. The wave 1 referrals then recruit more respondents (wave 2) and so forth. As the process continues, the number of recruits can potentially snowball, i.e., increase exponentially. Through this process, the researcher uses the respondents' own networks to efficiently access members of the target population. In this study, participants were paid $40 for completing the interview and an additional $20 incentive for each referral they provided who completed an interview.

Heckathorn (2011) provides a concise chronology of the development and advances in RDS estimation procedures. Snowball sampling