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Substance use and dependence among current reserve and former military members: Cross-sectional findings from the National Survey on Drug Use and Health, 2010-2014

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Abstract

Background: Maladjustment after leaving the military may contribute to poor health outcomes, including increased risk for substance use and dependence.

Aims: We aimed to examine differences in substance use and dependence on the basis of military involvement in a large nationally representative sample.

Methods: Data are from a subset of the 2010–2014 waves of the National Survey on Drug Use and Health (N = 5,608). Our sample included men (81.9%) and women (18.1%) aged 20–49 years who had either separated/retired from the military (n = 4,862) or were a current reserve soldier (n = 746). The sample was 70.8% Non-Hispanic White with a median family income between $50,000 and $74,999.

Results: Those who were separated/retired from the military had a higher odds of past month smoking (adjusted odds ratio [AOR] = 1.73, 95% confidence interval [CI]: 1.27, 2.36; p = 0.001), nonmedical use of prescription painkillers (AOR = 4.07, 95% CI: 1.88, 8.83; p < 0.001), illicit drug use (AOR = 2.75, 95% CI: 1.79, 4.24; p < 0.001), alcohol dependence (AOR = 2.17, 95% CI: 1.20, 3.93; p = 0.011), nicotine dependence (AOR = 2.03, 95% CI: 1.25, 3.28; p = 0.004), and illicit drug dependence (AOR = 5.89; 95% CI: 2.19, 15.85; p = 0.001) compared to current reserve soldiers, controlling for sex, age, race, and income.

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Discussion: Soldiers are leaving the military at an increasing rate and substance use may increase after separation. Across a range of substances, those who are separated/retired from the military have a higher likelihood of substance use/dependence than current reserve soldiers. Care models that assist in the transition from discharge to civilian life should be considered.

Keywords

alcohol; tobacco; prescription painkillers; illicit drugs; military

INTRODUCTION

Veterans represent a substantial proportion of the current United States (US) population, exceeding 21 million in 2014.[1] Over 2.6 million of these veterans served in the post-9/11 era, a group that is expected to increase by 46% by 2019.[2] Approximately 250,000 Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) service members are projected to retire or separate from the military annually,[3] and 76% of these post-9/11 veterans are under the age of 45.[2] A substantial proportion of soldiers leaving the military will be from reserve components; over 137,000 Reserves/Guard soldiers will separate from the military each year.[4] Maladjustment after separation from the military has long been hypothesized to contribute to physical and psychological sequelae.[5] The stressors associated with military service and the transition to civilian life may have substantial implications for behavioral health and are important to consider as this population continues to grow.

The US Armed Forces have a “zero tolerance” policy regarding the use of most substances, which likely contributes to lower rates of illicit drug use among soldiers compared to civilian populations.[6] However, US military personnel report high levels of stress, anxiety, depression, post-traumatic stress disorder, and suicidality,[7] each of which are associated with substance use.[8–12] The prevalence of past month substance use is high among OEF/OIF soldiers; findings from the US Department of Defense Health Behavior Survey indicate that nearly 1 in 4 reports past month heavy drinking and illicit drug use, including nonmedical use of prescription drugs, and nearly 1 in 3 reports past month cigarette smoking.[7]

Existing literature on substance use among current reserve soldiers cannot be generalized to those who have left the military, whose risk for substance use and dependence is unclear. There is a relationship between substance use norms and military involvement; reserve soldiers who have left the military are more approving of substance use than soldiers currently in the military when they also have a traumatic brain injury (TBI).[13] Changing substance use norms after leaving military service may contribute to increased substance use. In a small sample of OEF/OIF veterans, their cigarette smoking, marijuana use, and nonmedical use of prescription painkillers was more prevalent after leaving the military.[14] Further, approximately 11% of OEF/OIF veterans seeking care in the Veterans Health Administration have a substance use disorder diagnosis.[15] Additionally, substance use among veterans is associated with homelessness[16] and suicide.[17]

Despite these findings, the literature regarding substance use and dependence among those who have left the military is limited. Nationally representative data for this population can provide greater insight on this topic compared to smaller, less generalizable samples. The

present study examines differences in the odds of substance use and dependence on the basis of military involvement for 1) past 30 day use of alcohol, smoking, nonmedical use of prescription painkillers, and illicit drug use and 2) alcohol dependence, nicotine dependence, painkiller dependence, and illicit drug dependence, using a large national sample.

METHODS

Data Source

The National Survey on Drug Use and Health (NSDUH) has been administered annually in the United States since 1990 to collect national data on substance use and mental health problems among the non-institutionalized population aged 12 years and older.[18] NSDUH excludes military personnel on active duty, but does include current reserve soldiers and those who have separated or retired from the military, which is the focus of this paper. Data were collected using computer-assisted interviewing at participants' place of residence.

To obtain recent estimates of substance use and dependence in current and former military personnel, data from the 2010, 2011, 2012, 2013, and 2014 waves of the NSDUH were used, representing the most recent data publically available at the time of this publication. Response rates for screening and interviewing exceeded 81% and 71%, respectively, for each wave. Overall sample sizes exceeded 67,000 for each of the study years 2010–2014. The present study (N = 5,608) included a subset of the 2010–2014 waves of the NSDUH. As a secondary analysis using de-identified data, Institutional Review Board approval was not needed for the present work.

Measures

Military Status.

Military status was assessed with the multiple choice question "Are you currently on active duty in the United States' armed forces, in a reserves component, or now separated or retired from either reserves or active duty?" Active duty personnel were excluded from NSDUH and the present study.

Past Month Substance Use.

Past month use was assessed with a series of questions: "How long has it been since you last [used substance]?" for the following: drank an alcoholic beverage, used any prescription pain reliever that was not prescribed for you or that you took only for the experience or feeling it caused, and smoked part or all of a cigarette, used marijuana or hashish, cocaine, "crack," heroin, hallucinogens, LSD, PCP, "Ecstasy," also known as MDMA, and any inhalant for kicks or to get high.[18] Responses for each substance use outcome were dichotomized as yes/no for use in the past month.

Substance Dependence.

The NSDUH uses validated questions that were designed to measure dependence consistent with the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (*DSM-IV).*[19] For alcohol, prescription painkiller, and illicit drug dependence the following symptomology

criteria were used: (1) spent a lot of time engaging in activities related to substance use, (2) used the substance in greater quantities or for a longer time than intended, (3) developed tolerance, (4) made unsuccessful attempts to cut down on use, (5) continued substance use despite physical health or emotional problems associated with substance use, (6) reduced or eliminated participation in other activities because of substance use, and (7) experienced withdrawal symptoms. To screen positive for dependence, participants had to meet 3 of the 7 criteria for substances that include a withdrawal criterion or 3 of the first 6 criteria for substances that do not include a withdrawal criterion. Nicotine dependence was assessed using the Nicotine Dependence Syndrome Scale[20] and the Fagerstrom Test of Nicotine Dependence.[21] Meeting either set of criteria was considered a positive screen for nicotine dependence.[18] Responses for dependence were dichotomized yes/no for each substance.

Covariates.

We included sex, age, race (Non-Hispanic White vs. all others), and income in our adjusted models to control for potential confounding effects. NSDUH data from the full sample shows variability in substance use by sex, age, race, and income across a range of substances.[22] There were also significant differences in the distribution of age, race, and income by military status in our sample.

Analysis

All analyses were performed incorporating the NSDUH sampling weights and controlling for complex clustered sampling using Stata version 14.2 software (Stata Corporation, College Station, TX). Descriptive statistics were used to characterize the sample. Logistic regression models were used to examine the relationship between military status (separated or retired from the military vs. current reserve soldier) and each of the following binary outcomes separately: past month alcohol use, past month smoking, past month nonmedical use of prescription painkillers (NMUPP), and past month illicit drug use, as well as alcohol dependence, nicotine dependence, prescription painkiller dependence, and illicit drug dependence. Adjusted logistic regression models were run separately for each year of data and for all years of data combined. In each of the regression models, current reserve soldiers served as the referent group.

RESULTS

Participants

Our sample included those aged 20–49 who had either separated or retired from the military (n = 4,862) or were a current reserve soldier (n = 746). We restricted the sample to those aged 20–49 years in order to generalize to younger current-era soldiers and veterans who are at the greatest risk for substance use and dependence. The sample was predominantly male and Non-Hispanic White. Additional demographic characteristics of the sample are presented in Table 1.

Descriptive Results

Among the study sample (N = 5,608), the overall prevalence from 2010–2014 of past month use was significantly higher among those separated or retired from the military compared to

current reserve soldiers for smoking (39.1% vs. 32.8%, p = 0.001) and illicit drug use (14.3% vs. 7.4%, p < 0.001). The prevalence from 2010–2014 of substance dependence was also higher among those separated or retired from the military compared to current reserves for nicotine dependence (22.9% vs. 12.9%, p < 0.001) and illicit drug dependence (2.7% vs. 1.1%, p = 0.008). There were no differences between those who had separated or retired from the military compared to current reserve soldiers in the overall prevalence of past month alcohol use (70.7% vs. 74.0%, p = 0.061), past month NMUPP (2.4% vs. 1.3%, p = 0.073), alcohol dependence (5.5% vs. 4.6%, p = 0.312), or painkiller dependence (0.5% vs. 0.2%, p = 0.32) from 2010–2014.

Past Month Use Results

Alcohol.—There were no statistically significant differences in the odds of past month alcohol use among those separated or retired from the military compared to current reserves in all of the individual study waves and when considering all study waves together (Table 2).

Smoking.—The odds of past month smoking was higher among those separated or retired from the military compared to current reserves for the study waves in 2010 (adjusted odds ratio [AOR] = 2.47, 95% confidence interval [CI]: 1.30, 4.66; p = 0.006) and 2013 (AOR = 2.04, 95% CI: 1.05, 3.97; p = 0.036). When considering all study waves together, the overall odds of past month smoking use was higher among those separated or retired from the military compared to current reserves (AOR = 1.73, 95% CI: 1.27, 2.36; p = 0.001) (Table 2).

Nonmedical use of prescription painkillers.—The odds of past month NMUPP was higher among those separated or retired from the military compared to current reserves for the study wave in 2013 (AOR = 6.08, 95% CI: 1.22, 30.32; p = 0.028). When considering waves 2010–2014 together, the overall odds of past month NMUPP was higher among those separated or retired from the military compared to current reserves (AOR = 4.07, 95% CI: 1.88, 8.83; p < 0.001) (Table 2).

Illicit drugs.—The odds of past month illicit drug use was higher among those separated or retired from the military compared to current reserves for the study waves in 2013 (AOR = 9.93, 95% CI: 3.80, 25.94; p < 0.001) and 2014 (AOR = 3.29, 95% CI: 1.37, 7.93; p = 0.009). When considering waves 2010–2014 together, the overall odds of past month illicit drug use was higher among those separated or retired from the military compared to current reserves (AOR = 2.75, 95% CI: 1.79, 4.24; p < 0.001) (Table 2).

Dependence Results

Alcohol.—The odds of alcohol dependence was higher among those separated or retired from the military compared to current reserves for alcohol for the study waves in 2010 (AOR = 3.43, 95% CI: 1.30, 9.03; p = 0.013) and 2011 (AOR = 5.18, 95% CI: 1.50, 17.92; p = 0.010). When considering waves 2010–2014 together, the overall odds of alcohol dependence was higher among those separated or retired from the military compared to current reserves (AOR = 2.17, 95% CI: 1.20, 3.93; p = 0.011) (Table 3).

Nicotine.—The odds of nicotine dependence was higher among those separated or retired from the military compared to current reserves for smoking for the study waves in 2010 (AOR = 2.24, 95% CI: 1.01, 4.99; p = 0.048) and 2013 (AOR = 3.15, 95% CI: 1.33, 7.46; p = 0.010). When considering waves 2010–2014 together, the overall odds of nicotine dependence was higher among those separated or retired from the military compared to current reserves (AOR = 2.03, 95% CI: 1.25, 3.28; p = 0.004) (Table 3).

Painkillers.—There were no statistically significant differences in the odds of painkiller dependence among those separated or retired from the military compared to current reserves in all of the individual study waves and when considering all study waves together (Table 3).

Illicit Drugs.—There were no statistically significant differences in the odds of illicit drug dependence among those separated or retired from the military compared to current reserves in all of the individual study waves, but the overall odds of illicit drug dependence was higher among those separated or retired from the military compared to current reserves when considering all study waves together (AOR = 5.89, CI: 2.19, 15.85; p = 0.001) (Table 3).

DISCUSSION

The findings of the present study demonstrate that across a range of substances, the odds of past month substance use and dependence are higher among those who have separated or retired from the military compared to current reserve soldiers. This relationship held for past month smoking, past month NMUPP, past month illicit drug use, alcohol dependence, illicit drug dependence, and nicotine dependence, even after controlling for sex, age, race, and income. These findings represent substantial gains in knowledge regarding an understudied population and provide evidence that substance use may increase after leaving the military.

Over 38% of the military is comprised of reserve soldiers[23] and the literature suggests that they are disproportionately affected by mental health and substance use problems compared to active duty soldiers.[24–27] However, our findings demonstrate that those who have separated or retired from the military are at an even greater risk for substance use and dependence than current reserve soldiers. Many OEF/OIF veterans report readjustment difficulties after leaving the military,[28] which may contribute to increased substance use. Additionally, post-9/11 veterans are more likely to suffer from service-related disabilities than veterans from all other eras,[2] which may also contribute to self-medication. Data from the Veterans Health Administration indicate that approximately 1 in 10 OEF/OIF veterans has a diagnosed substance use disorder[15] and our findings suggest that substance use may increase after leaving the military.

Despite the low rates of illicit drug use among current reserve soldiers compared to civilian populations,[6] our findings demonstrate that use patterns may change after leaving the military. Variations likely exist in both the availability and cultural expectations of substance use based on military involvement. Veterans may have greater access to and acceptability of substance use compared to their counterparts currently serving in the military. Separation from the military is associated with a greater approval of tobacco use, nonmedical use of prescription painkillers, and illicit drug use among soldiers who have left the military and

have a TBI.[13] A change in substance use norms may contribute to increased substance use and dependence. Further, those who have left the military are no longer subject to strategies by the Department of Defense to identify substance use, including the use of random urinalysis and breathalyzer tests.[29] Limited evidence suggests that leaving the military is associated with an increased likelihood of cigarette smoking, marijuana use, and nonmedical use of prescription painkillers among OEF/OIF veterans.[14]

Increased substance use and dependence among those who have left the military is an important issue to consider, particularly as this segment of the population grows.[2] Most OEF/OIF veterans are interested in receiving services to readjust to civilian life.[28] However, soldiers who use substances are more likely to be administratively discharged from the military,[30] and may be disqualified from receiving Veterans Health Administration care.[31] Further, post-9/11 era veterans are less likely to be enrolled in Veterans Health Administration care and they are less likely to use these services than other wartime veterans.[2]

Although the Veterans Health Administration provides care to millions of veterans each year, many reserve soldiers who have left the military do not qualify for services in this system.[31] Accessing treatment for substance use problems may be difficult for these soldiers. Our findings have implications for community-based care models outside of the Veterans Health Administration that can assist reserve soldiers leaving the military in the transition from discharge to civilian life. Work by Vazan and colleagues[32] demonstrated that current era veterans who received community-based treatment had reductions in substance dependence. Further, our findings highlight the need for routine screening and interventions for substance use among those who have recently left the military.

Limitations & Strengths

The findings of this study should be interpreted within the context of its limitations. Data rely on self-reported measures of substance use; however, measures of dependence were consistent with the DSM-IV.[19] These data are also cross-sectional, so a causal relationship between military status and substance use cannot be established. As a secondary data analysis, the selection of independent, dependent, and control variables were limited to those included in the original NSDUH dataset. As such, we were unable to control for specific military-related factors that might influence substance use such as branch or length of service, reason for military separation, combat experience, or other military trauma. However, the present study also has several notable strengths. To our knowledge, this is the first study examining the odds of substance use *and* dependence on the basis of military involvement in a large nationally representative sample. Additionally, we examined this association across a wide range of substances, providing a greater breadth of information than previous research in this population.

Across a range of substances, those who are separated/retired from the military had a higher odds of substance use/dependence than current reserve soldiers. Approximately 250,000 post-9/11 era service members are projected to leave the military each year[3] and this group is expected to increase by 46% by 2019.[2] Further, these veterans are more likely to suffer from service-related disabilities than other veterans,[2] which may contribute to maladaptive

coping through the use of substances. Given the prevalence of substance use among service members[7] and the projected growth of the veteran population,[3] our findings illuminate an opportunity for intervention. We recommend a focus on community-based care models to supplement existing Veterans Health Administration resources that provide ongoing behavioral health support for reserve soldiers separating or retiring from the military. Longitudinal studies are needed to further explore the role of separating or retiring from the military as it relates to subsequent substance use and dependence.

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Table 1.

Study Sample Characteristics: National Survey on Drug Use and Health, 2010–2014

	Separated/Retired from Military N = 4,862 % (n) or Median	Current Reserve Soldier N = 746 % (n) or Median	*p*-value[a]
Sex			
Male	82.1% (3993)	80.4% (600)	
Female	17.9% (869)	19.6% (146)	0.262
Median Age Category	35–49 Years	24–25 Years	<0.001
Race			
Non-Hispanic White	70.6% (3432)	72.0% (537)	
Non-Hispanic Black	12.9% (627)	11.5% (86)	
Hispanic	8.8% (429)	11.0% (82)	
Other	7.7% (374)	5.5% (41)	0.015
Median Income Category	$50,000 - $74,999	$20,000 - $49,999	<0.001

[a] *p*-values for Pearson's Chi-square test

Table 2.

Adjusted[a] Odds of Past Month Substance Use among Soldiers by Military Status (Separated/Retired from Military vs. Current Reserve), Aged 20–49 Years: National Survey on Drug Use and Health, 2010–2014

	2010 N = 1,160 AOR (95% CI)	2011 N = 1,096 AOR (95% CI)	2012 N = 1,076 AOR (95% CI)	2013 N = 1,017 AOR (95% CI)	2014 N = 1,259 AOR (95% CI)	Overall N = 5,608 AOR (95% CI)
Past Month Alcohol Use	0.75 (0.34, 1.68)	0.86 (0.48, 1.55)	1.38 (0.70, 2.69)	1.14 (0.57, 2.26)	1.22 (0.71, 2.11)	1.03 (0.76, 1.40)
Sex	0.63 (0.36, 1.10)	**0.57* (0.35, 0.95)**	0.82 (0.48, 1.38)	**0.59* (0.36, 0.96)**	1.00 (0.66, 1.52)	**0.71** (0.57, 0.88)**
Age	**0.79** (0.69, 0.91)**	**0.82** (0.71, 0.94)**	**0.76** (0.65, 0.90)**	**0.84* (0.73, 0.97)**	0.89 (0.79, 1.01)	**0.82*** (0.77, 0.87)**
Race	**1.92* (1.09, 3.40)**	1.32 (0.88, 1.98)	**1.62* (1.02, 2.57)**	1.15 (0.78, 1.70)	0.74 (0.53, 1.02)	**1.32** (1.08, 1.60)**
Income	**1.36*** (1.16, 1.61)**	1.11 (0.91, 1.36)	**1.42** (1.14, 1.77)**	**1.27** (1.06, 1.52)**	**1.24* (1.03, 1.50)**	**1.29*** (1.19, 1.41)**
Past Month Smoking	**2.47** (1.30, 4.66)**	1.31 (0.67, 2.57)	1.73 (0.81, 3.72)	**2.04* (1.05, 3.97)**	1.35 (0.70, 2.63)	**1.73** (1.27, 2.36)**
Sex	0.72 (0.43, 1.19)	0.74 (0.42, 1.31)	0.76 (0.46, 1.26)	1.06 (0.57, 1.98)	**0.67* (0.47, 0.97)**	0.80 (0.61, 1.05)
Age	**0.79*** (0.71, 0.89)**	0.89 (0.79, 1.01)	**0.83** (0.73, 0.95)**	0.91 (0.81, 1.04)	0.91 (0.80, 1.03)	**0.87*** (0.82, 0.91)**
Race	**1.71* (1.05, 2.81)**	1.29 (0.88, 1.89)	1.26 (0.84, 1.90)	1.22 (0.73, 2.01)	**1.40* (1.03, 1.91)**	**1.36** (1.13, 1.64)**
Income	**0.66*** (0.56, 0.78)**	**0.65*** (0.53, 0.79)**	**0.65*** (0.56, 0.77)**	**0.59*** (0.48, 0.71)**	**0.70*** (0.59, 0.83)**	**0.65*** (0.60, 0.71)**
Past Month NMUPP	2.72 (0.42, 17.55)	5.95 (0.94, 37.54)	4.20 (0.48, 36.88)	**6.08* (1.22, 30.32)**	2.54 (0.54, 11.83)	**4.07*** (1.88, 8.83)**
Sex	0.59 (0.21, 1.64)	0.71 (0.22, 2.33)	1.60 (0.32, 7.99)	1.88 (0.51, 6.93)	2.70 (0.71, 10.31)	1.36 (0.82, 2.25)
Age	**0.72** (0.57, 0.91)**	**0.67* (0.47, 0.94)**	0.72 (0.50, 1.02)	0.80 (0.56, 1.15)	0.87 (0.67, 1.13)	**0.74*** (0.64, 0.86)**
Race	1.01 (0.31, 3.30)	1.03 (0.33, 3.22)	0.54 (0.12, 2.41)	2.93 (0.52, 16.45)	3.87 (0.69, 21.75)	1.18 (0.59, 2.37)
Income	0.94 (0.53, 1.66)	0.81 (0.48, 1.36)	1.16 (0.57, 2.38)	0.94 (0.55, 1.60)	**0.52** (0.35, 0.77)**	0.90 (0.69, 1.17)
Past Month Illicit Drug Use	3.27 (0.93, 11.48)	1.75 (0.64, 4.83)	1.43 (0.61, 3.33)	**9.93*** (3.80, 25.94)**	**3.29** (1.37, 7.93)**	**2.75*** (1.79, 4.24)**
Sex	**0.24*** (0.14, 0.40)**	0.59 (0.25, 1.39)	0.77 (0.36, 1.66)	0.87 (0.41, 1.86)	0.68 (0.31, 1.49)	**0.62** (0.44, 0.87)**
Age	**0.73*** (0.61, 0.86)**	**0.81* (0.69, 0.96)**	0.88 (0.73, 1.07)	**0.72** (0.60, 0.86)**	**0.81* (0.69, 0.95)**	**0.79*** (0.73, 0.86)**
Race	1.12 (0.60, 2.11)	1.05 (0.61, 1.81)	0.84 (0.48, 1.48)	0.80 (0.45, 1.43)	1.03 (0.65, 1.64)	0.96 (0.74, 1.25)
Income	**0.65** (0.48, 0.88)**	**0.72** (0.56, 0.92)**	**0.60*** (0.46, 0.79)**	**0.66** (0.51, 0.85)**	**0.70** (0.57, 0.86)**	**0.66*** (0.60, 0.74)**

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

[a] Adjusted for sex, age, race, and income

NMUPP = nonmedical use of prescription painkillers

Reference Categories: military status = current reserve soldier, sex = male, age = 35–49 years, race = Other than Non-Hispanic White, income = $75,000+

AOR > 1.00 = the case group has a higher odds of the outcome than the referent group, controlling for the other covariates

AOR < 1.00 = the case group has a lower odds of the outcome than the referent group(s), controlling for the other covariates

Table 3.

Adjusted[a] Odds of Substance Dependence among Soldiers by Military Status (Separated/Retired from Military vs. Current Reserve), Aged 20–49 Years: National Survey on Drug Use and Health, 2010–2014

	2010 N = 1,160 AOR (95% CI)	2011 N = 1,096 AOR (95% CI)	2012 N = 1,076 AOR (95% CI)	2013 N = 1,017 AOR (95% CI)	2014 N = 1,259 AOR (95% CI)	Overall N = 5,608 AOR (95% CI)
Alcohol Dependence	**3.43* (1.30, 9.03)**	**5.18* (1.50, 17.92)**	0.97 (0.28, 3.40)	1.77 (0.56, 5.66)	2.11 (0.25, 17.54)	**2.17* (1.20, 3.93)**
Sex	**0.30* (0.12, 0.76)**	0.18 (0.03, 1.00)	1.14 (0.42, 3.12)	**0.31* (0.11, 0.89)**	0.66 (0.37, 1.18)	**0.45*** (0.29, 0.70)**
Age	**0.72** (0.59, 0.89)**	0.91 (0.70, 1.17)	0.94 (0.67, 1.30)	0.94 (0.72, 1.23)	0.95 (0.69, 1.30)	**0.88* (0.78, 0.99)**
Race	1.89 (0.87, 4.09)	0.89 (0.41, 1.96)	2.02 (0.74, 5.55)	1.01 (0.42, 2.43)	0.78 (0.33, 1.86)	1.13 (0.75, 1.71)
Income	0.83 (0.57, 1.24)	**0.72* (0.53, 0.98)**	**0.56*** (0.41, 0.76)**	**0.63* (0.43, 0.91)**	0.83 (0.59, 1.16)	**0.72*** (0.61, 0.83)**
Nicotine Dependence	**2.24* (1.01, 4.99)**	1.69 (0.64, 4.50)	1.61 (0.54, 4.78)	**3.15* (1.33, 7.46)**	1.98 (0.79, 4.92)	**2.03** (1.25, 3.28)**
Sex	0.86 (0.48, 1.55)	0.82 (0.40, 1.65)	0.97 (0.55, 1.70)	1.60 (0.91, 2.82)	**0.47* (0.26, 0.85)**	0.91 (0.71, 1.17)
Age	0.90 (0.78, 1.02)	1.11 (0.96, 1.28)	1.06 (0.91, 1.24)	1.07 (0.90, 1.28)	0.98 (0.83, 1.15)	1.02 (0.96, 1.08)
Race	**2.55** (1.49, 4.36)**	1.56 (0.90, 2.69)	1.46 (0.89, 2.39)	**2.94** (1.54, 5.62)**	**1.63** (1.15, 2.31)**	**1.85*** (1.43, 2.41)**
Income	**0.60*** (0.51, 0.71)**	**0.65*** (0.52, 0.82)**	**0.66*** (0.53, 0.82)**	**0.51*** (0.42, 0.62)**	**0.67*** (0.55, 0.81)**	**0.62*** (0.56, 0.68)**
Painkiller Dependence	Not Applicable[b]	Not Applicable[b]	1.79 (0.16, 19.95)	Not Applicable[b]	2.00 (0.25, 15.96)	4.36 (0.85, 22.35)
Sex	Not Applicable[b]	Not Applicable[b]	3.67 (0.63, 21.53)	Not Applicable[b]	Not Applicable[c]	1.10 (0.39, 3.11)
Age	Not Applicable[b]	Not Applicable[b]	**0.76** (0.64, 0.90)**	Not Applicable[b]	**0.65*** (0.52, 0.80)**	**0.70*** (0.63, 0.78)**
Race	Not Applicable[b]	Not Applicable[b]	0.39 (0.08, 1.86)	Not Applicable[b]	1.61 (0.19, 13.55)	1.12 (0.46, 2.72)
Income	Not Applicable[b]	Not Applicable[b]	0.70 (0.36, 1.35)	Not Applicable[b]	0.95 (0.37, 2.46)	0.80 (0.48, 1.34)
Illicit Drug Dependence	Not Applicable[b]	Not Applicable[b]	2.37 (0.46, 12.25)	3.07 (0.76, 12.37)	4.72 (0.87, 25.69)	**5.89** (2.19, 15.85)**
Sex	Not Applicable[b]	Not Applicable[b]	0.80 (0.13, 4.88)	3.19 (0.93, 10.95)	**0.04** (0.00, 0.28)**	0.67 (0.32, 1.40)
Age	Not Applicable[b]	Not Applicable[b]	0.90 (0.65, 1.24)	0.84 (0.63, 1.13)	0.72 (0.51, 1.00)	**0.83* (0.70, 0.98)**
Race	Not Applicable[b]	Not Applicable[b]	0.53 (0.21, 1.32)	2.20 (0.66, 7.35)	**0.31* (0.11, 0.87)**	0.64 (0.38, 1.10)
Income	Not Applicable[b]	Not Applicable[b]	0.63 (0.39, 1.04)	0.61 (0.37, 1.01)	0.77 (0.48, 1.25)	**0.58*** (0.44, 0.78)**

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

[a] Adjusted for sex, age, race, and income

[b] No current reserve soldiers met criteria for dependence

[c] No variability in sex for painkiller dependence in 2014

Reference Categories: military status = current reserve soldier, sex = male, age = 35–49 years, race = Other than Non-Hispanic White, income = $75,000+

AOR > 1.00 = the case group has a higher odds of the outcome than the referent group, controlling for the other covariates

AOR < 1.00 = the case group has a lower odds of the outcome than the referent group(s), controlling for the other covariates