

2018 Health Related Behaviors Survey

Substance Use Among the Active Component

The Health Related Behaviors Survey (HRBS) is the U.S. Department of Defense's (DoD's) flagship survey for understanding the health, health-related behaviors, and well-being of service members. Fielded periodically for more than 30 years, the HRBS includes content areas that might affect military readiness or the ability to meet the demands of military life. The Defense Health Agency asked the RAND Corporation to revise and field the 2018 HRBS among members of both the active component and the reserve component. This brief discusses findings for the active component.

In this brief, results for substance use, particularly use of alcohol, tobacco and nicotine products, and illicit and prescription drugs, are reviewed. Some results are also compared with Healthy People 2020 (HP2020) objectives established by the U.S. Department of Health and Human Services for the general U.S. population. Because the military differs notably from the general population (for example, service members are more likely to be young and male than is the general population), these comparisons are offered only as a benchmark of interest.

Alcohol

Heavy drinking is a leading preventable cause of death both in the United States and worldwide and has been linked to numerous problems, such as substance use disorders, occupational problems, relationship difficulties, and poor physical and mental health.

The 2018 HRBS measured *binge drinking* (defined as consuming five or more drinks on the same occasion for men and four or more drinks for women at least once in the past 30 days) and *heavy drinking* (defined as reporting binge drinking at least one day each week in the past 30 days).

The survey found that

- 34.0 percent (confidence interval [CI]: 32.9–35.2) of active component service members reported binge drinking in the past 30 days. In the most recent comparable U.S. population estimate from the National Survey on Drug Use and Health (NSDUH), 26.5 percent of adults 18 or older reported binge drinking in the past 30 days.¹ Some of the disparity between the military and general population

¹ Substance Abuse and Mental Health Services Administration, *Results from the 2018 National Survey on Drug Use and Health: Detailed Tables*, Rockville, Md.: Center for Behavioral Health Statistics and Quality, 2019 (<https://www.samhsa.gov/data/report/2018-nsduh-detailed-tables>).

is likely due to the high percentage of men and young adults in the armed forces; both groups are more likely to binge-drink than others in the U.S. population. The HP2020 target for the general population is for no more than 24.4 percent of adults to engage in binge drinking.

- 9.8 percent (CI: 9.0–10.6) of active component service members reported heavy drinking. The most recent comparable estimate from the NSDUH for the U.S. adult population found that 8.9 percent were heavy drinkers.
- Binge and heavy drinking were lower in the Air Force than they were in other services (Figure 1).

In the 2018 HRBS, 6.2 percent (CI: 5.6–6.9) of active component service members reported serious consequences (e.g., finding it harder to handle problems, receiving military punishment, being arrested, hitting a spouse or significant other, getting into a fight) from drinking in the past 12 months. In addition, 4.9 percent (CI: 4.3–5.5) reported risky drinking and driving—that is, driving when having had too much to drink or being a passenger with a driver who had

too much to drink—in the past 12 months. Finally, 5.7 percent (CI: 5.1–6.3) reported productivity loss from drinking in the past 12 months.

The 2018 HRBS asked service members about their perceptions of military alcohol culture—that is, whether respondents found it hard to “fit in” with their command if they did not drink, believed that drinking was part of being in one’s unit, believed that everyone was encouraged to drink at social events, or believed that leaders were tolerant of drunkenness when personnel were off-duty. Altogether, 28.2 percent (CI: 27.1–29.4) of active component service members agreed with at least one of these statements that military culture supports drinking, though Coast Guard respondents were least likely to agree.

Methods

RAND fielded the 2018 HRBS among active component and reserve component U.S. military service members in the Air Force, Army, Marine Corps, Navy, and Coast Guard between October 2018 and March 2019. The 2018 HRBS was a web-based confidential survey, which allowed researchers to target reminders to nonresponders and to reduce survey burden by linking responses to administrative data.

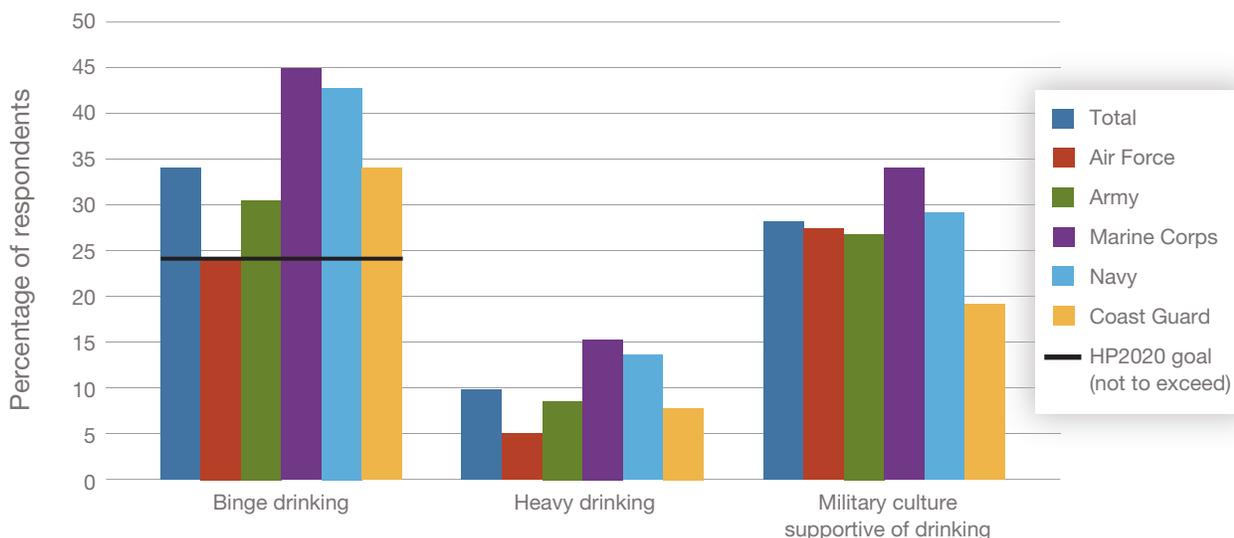
The sampling frame used a random sampling strategy stratified by service branch, pay grade, and gender. The overall weighted response rate for the survey was 9.6 percent, yielding a final analytic sample of 17,166 responses. Imputation was used to address missing data, a statistical procedure that uses the available data to predict missing values. To represent the active component population, RAND researchers weighted responses to account for the oversampling of service members in certain strata. In this research brief, point estimates and 95-percent CIs are reported.*

RAND researchers tested differences in each outcome across levels of key factors or by subgroups—service branch, pay grade, gender, race/ethnicity, and age group—using a two-stage procedure based on a Rao-Scott chi-square test for overall differences across levels within a single factor and, if the overall test was statistically significant, two-sample *t*-tests that explored all possible pairwise comparisons between levels of the factors (for example, men versus women). Readers interested in these differences should consult the full 2018 HRBS active component final report at www.rand.org/t/rr4222.

This brief is one of eight on the active component; this brief and six of the other seven each correspond to a different chapter in the full report, with the eighth presenting an overview of all findings and policy implications. A similar series of eight briefs discusses findings for the reserve component.

* CIs provide a range in which the true population value is expected to fall. They account for sampling variability when calculating point estimates but do not account for problems with question wording, response bias, or other methodological issues that, if present in the HRBS, might bias point estimates.

FIGURE 1
Alcohol Use and Views on Alcohol Culture, by Service Branch



Tobacco and Nicotine Products

Tobacco is the single-most preventable cause of disease and death in the United States.² Although rates of smoking have decreased over the past decade, smoking remains the cause of six in seven lung cancer deaths, one in three of all cancer deaths, and more than three in four cases of chronic obstructive pulmonary disease.³ Although use of smokeless tobacco receives less attention, it has been associated with increased risk of cancer and stroke. Traditional tobacco products are not the only concern; the use of e-cigarettes has increased rapidly in recent years, with mounting evidence that their use may increase risk of cardiovascular and lung disease. These products are typically used more by young adults, who make up a large proportion of the active component.

² National Center for Chronic Disease Prevention and Health Promotion Office on Smoking and Health, *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General*, Atlanta, Ga.: Centers for Disease Control and Prevention, 2014 (https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf); T. W. Wang, K. Asman, A. S. Gentzke, K. A. Cullen, E. Holder-Hayes, C. Reyes-Guzman, A. Jamal, L. Neff, and B. A. King, “Tobacco Product Use Among Adults—United States, 2017,” *MMWR: Morbidity and Mortality Weekly Report*, Vol. 67, No. 44, November 9, 2018, pp. 1225–1232.

³ National Center for Chronic Disease Prevention and Health Promotion Office on Smoking and Health, 2014; Wang et al., 2018.

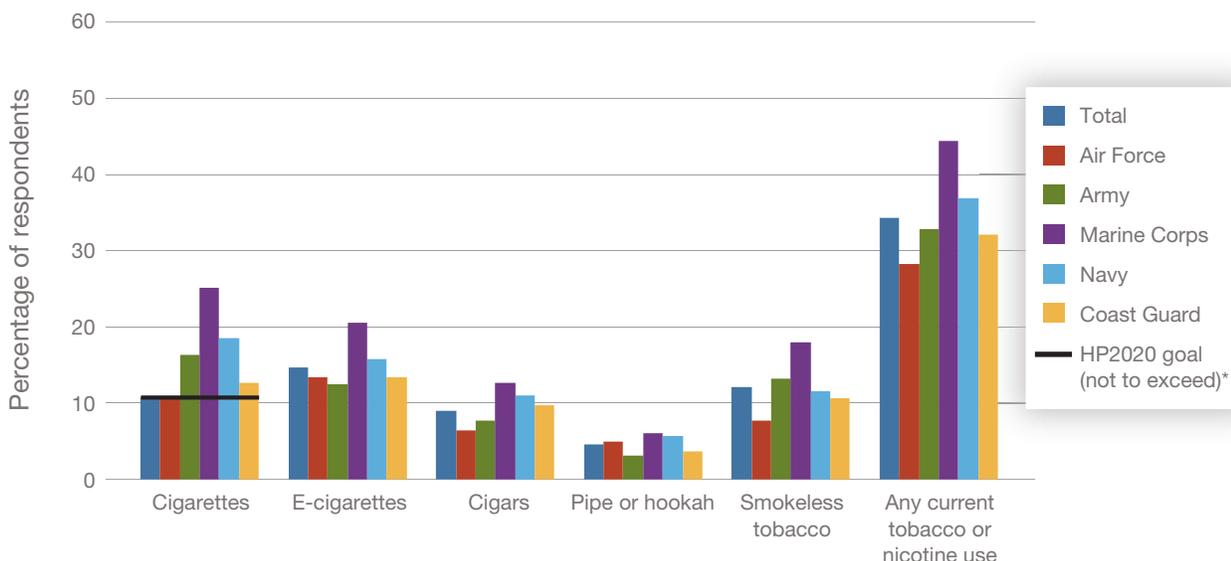
Findings from the 2018 HRBS include the following (Figure 2):

- 18.4 percent (CI: 17.3–19.4) of active component service members reported being current cigarette smokers, with the Marine Corps reporting significantly higher use than the other services. HP2020 set a target of 12.0 percent for cigarette smoking among U.S. adults; in 2017, 14.1 percent of U.S. adults reported currently smoking cigarettes.⁴
- 16.2 percent (CI: 15.2–17.3) of active component service members currently used e-cigarettes, with the Marine Corps reporting significantly higher use than the other services. The 2017 Behavioral Risk Factor Surveillance System suggests that 4.6 percent of U.S. adults are current e-cigarette smokers.⁵ Among reasons cited by active component service members for using e-cigarettes were a perception that they were healthier than smoking cigarettes (33.3 percent; CI: 30.2–36.4), as a means to help quit smoking cigarettes (30.8 percent; CI: 27.8–33.7), and to use in places where cigarette smoking is not allowed (28.0 percent; CI: 25.1–31.0).

⁴ Wang et al., 2018.

⁵ Centers for Disease Control and Prevention, “BRFSS Prevalence & Trends Data,” February 4, 2020 (<https://www.cdc.gov/brfss/brfssprevalence/>).

FIGURE 2
Tobacco and Nicotine Use, by Service Branch



* HP2020 goals for cigars and smokeless tobacco are each less than 0.5 percent. HP2020 does not have goals for e-cigarette or pipe or hookah use.

- 10.0 percent (CI: 9.2–10.7) of active component service members currently used cigars, and 5.2 percent (CI: 4.6–5.7) currently smoked pipes or hookahs. HP2020 set a target of 0.3 percent for cigar smoking, and 3.8 percent of U.S. adults currently smoke cigars.⁶ HP2020 did not set a target for pipe or hookah use, which 1.0 percent of U.S. adults currently use to smoke tobacco.
- 13.4 percent (CI: 12.4–14.3) of active component service members currently use smokeless tobacco, with the Marine Corps reporting significantly higher use than the other services and the Air Force reporting significantly lower use than the other services. HP2020 set a target of 0.2 percent for use of smokeless tobacco among adults; in 2017, 2.1 percent of U.S. adults reported currently using smokeless tobacco.⁷
- Altogether, 37.8 percent (CI: 36.6–39.0) of active component service members reported any current tobacco or nicotine use, with the Marine Corps reporting significantly higher use than the other services.

Among current smokers in the 2018 HRBS, 46.5 percent (CI: 43.2–49.7) reported attempting to quit smoking in the past 12 months.

Marijuana and Drug Use

The 2018 HRBS measured use among service members in the past 12 months and past 30 days for several types of drugs: marijuana or hashish, synthetic cannabis, inhalants to get high, synthetic stimulants, nonprescription cough or cold medicine, nonprescription anabolic steroids, and drugs other than marijuana and synthetic cannabis (these included cocaine [including crack], lysergic acid diethylamide [LSD], phencyclidine [PCP], 3,4-methylenedioxy-methamphetamine [MDMA, commonly called ecstasy], methamphetamine, heroin, and gamma hydroxybutyrate [GHB]). Findings include the following:

- 1.3 percent (CI: 0.9–1.7) of active component service members reported any drug use (primarily marijuana) in the past 12 months; 0.5 percent (CI: 0.3–0.7) reported any drug use in the past 30 days.
- 0.9 percent (CI: 0.6–1.3) of active component service members reported marijuana or synthetic cannabis use in the past 12 months;

⁶ Wang et al., 2018.

⁷ Wang et al., 2018.

- 0.4 percent (CI: 0.1–0.6) reported such use in the past 30 days.
- 0.8 percent (CI: 0.5–1.2) of active component service members reported any drug use excluding marijuana and synthetic cannabis in the past 12 months; 0.3 percent (CI: 0.1–0.4) reported such use in the past 30 days.
- 0.4 percent (CI: 0.3–0.6) of active component service members reported nonprescription cough or cold medicine use to get high in the past 12 months.
- 0.2 percent (CI: 0.0–0.3) of active component service members reported nonprescription anabolic steroid use in the past 12 months.

- 2.7 percent (CI: 2.3–3.1) of active component service members reported using prescription stimulants in the past 12 months. Use was lower in the Coast Guard than in any other service. In the 2018 NSDUH, 6.5 percent of U.S. adults reported using stimulants in the past 12 months.
- 6.7 percent (CI: 6.1–7.2) of active component service members reported using prescription sedatives in the past 12 months. In the 2018 NSDUH, 18.1 percent of U.S. adults reported using sedatives in the past 12 months.
- 12.1 percent (CI: 11.3–12.8) of active component service members reported using prescription pain relievers in the past 12 months. In the 2018 NSDUH, 33.1 percent of U.S. adults reported using prescription sedatives in the past 12 months.⁸

Prescription Drug Use

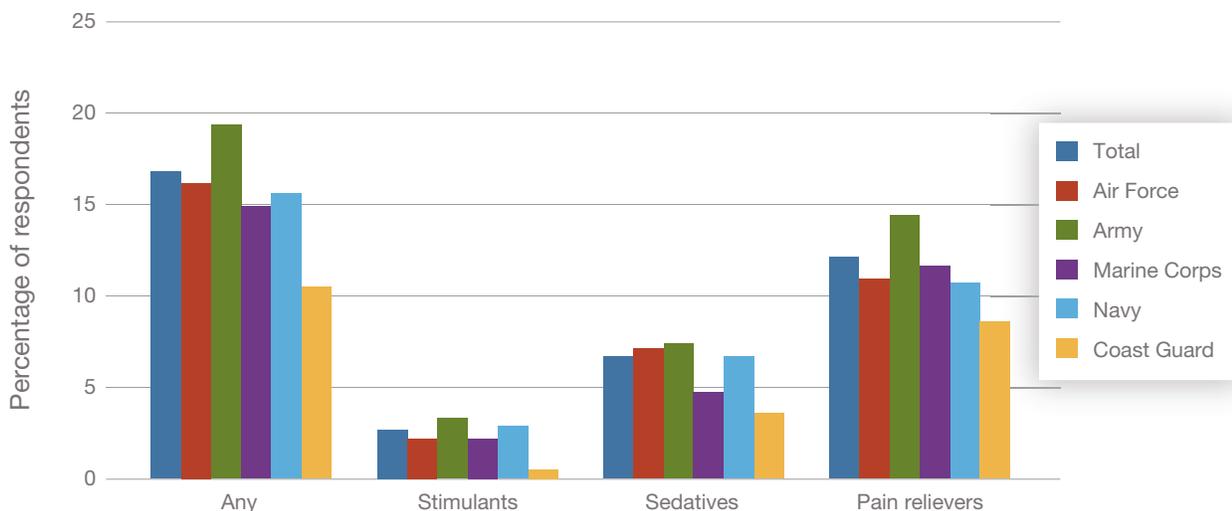
The 2018 HRBS asked respondents about three types of prescription medication. These were stimulants or attention enhancers (e.g., Adderall, amphetamines, Ritalin, prescription diet pills), sedatives (e.g., Ambien, Valium, Xanax, Rohypnol, phenobarbital, ketamine), and pain relievers (e.g., OxyContin/Oxycodone, Percocet, codeine, methadone, hydrocodone, Vicodin). Findings include the following (Figure 3):

- 16.8 percent (CI: 15.9–17.6) of active component service members reported any prescription drug use in the past 12 months. Use was lower in the Coast Guard than in any other service.

The 2018 HRBS also asked respondents about any misuse of prescription stimulants, sedatives, or pain relievers. Misuse is use of a prescription drug in any way not directed by a doctor. This could include use without a prescription of one’s own or use in greater amounts, more often, or for longer than prescribed. Across all services, 1.4 percent (CI: 1.0–1.7) reported any prescription drug misuse. Among the three types of prescriptions asked in the survey, misuse was highest for prescription pain relievers, at 0.9 percent (CI: 0.7–1.2).

⁸ Substance Abuse and Mental Health Services Administration, 2019.

FIGURE 3
Prescription Drug Use, by Service Branch



Conclusions and Policy Implications⁹

More than one-third of service members reported binge drinking in the past 30 days, and nearly one in ten were heavy drinkers. Prevention and intervention efforts could be targeted toward at-risk groups, but more than one in four service members reported that military culture was supportive of drinking. This indicates that prevention and intervention efforts would likely need to address military culture at a systemic level. DoD and the Coast Guard must better understand the culture and climate surrounding alcohol use and then take steps to shift the culture away from excessive use.

More than one in three service members reported tobacco or nicotine use in some form. Reducing this level of use is a high priority given its long-term health consequences. Intervention and prevention approaches will likely need to be informed by current evidence-based approaches used with civilians and target beliefs related to e-cigarettes as a replacement to traditional combustible cigarettes.

The rate of prescription drug use and misuse is low, especially compared with other substances. Nevertheless, given the potential for greater misuse, monitoring of prescription drug availability in the military is warranted. This might include monitoring the most common sources of prescription drugs among service members, as well as monitoring prescribing practices among military prescribers.

Limitations

The response rate is considered low for survey research. Although low response rates do not automatically mean that survey data are biased, they do increase the possibility of bias. As with any self-report survey, social desirability bias is a possibility, especially for sensitive questions and topics. For some groups that make up a small percentage of the overall DoD population, survey estimates might be imprecise and should be interpreted with caution.

⁹ Additional implications and recommendations can be found in the full report at www.rand.org/t/RR4222.

This brief describes research conducted in the Forces and Resources Policy Center of the RAND National Defense Research Institute and documented in *2018 Department of Defense Health Related Behaviors Survey (HRBS): Results for the Active Component*, by Sarah O. Meadows, Charles C. Engel, Rebecca L. Collins, Robin L. Beckman, Joshua Breslau, Erika Litvin Bloom, Michael Stephen Dunbar, Mary Lou Gilbert, David Grant, Jennifer Hawes-Dawson, Stephanie Brooks Holliday, Sarah MacCarthy, Eric R. Pedersen, Michael W. Robbins, Adam J. Rose, Jamie Ryan, Terry L. Schell, and Molly M. Simmons, RR-4222-OSD, 2021 (available at www.rand.org/t/RR4222). To view this brief online, visit www.rand.org/t/RB10116z3. The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark.

Limited Print and Electronic Distribution Rights: This document and trademark(s) contained herein are protected by law. This representation of RAND intellectual property is provided for noncommercial use only. Unauthorized posting of this publication online is prohibited. Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please visit www.rand.org/pubs/permissions.

© 2021 RAND Corporation