

2018 Health Related Behaviors Survey

Deployment Experiences and Health 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 deployment experiences and health 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.

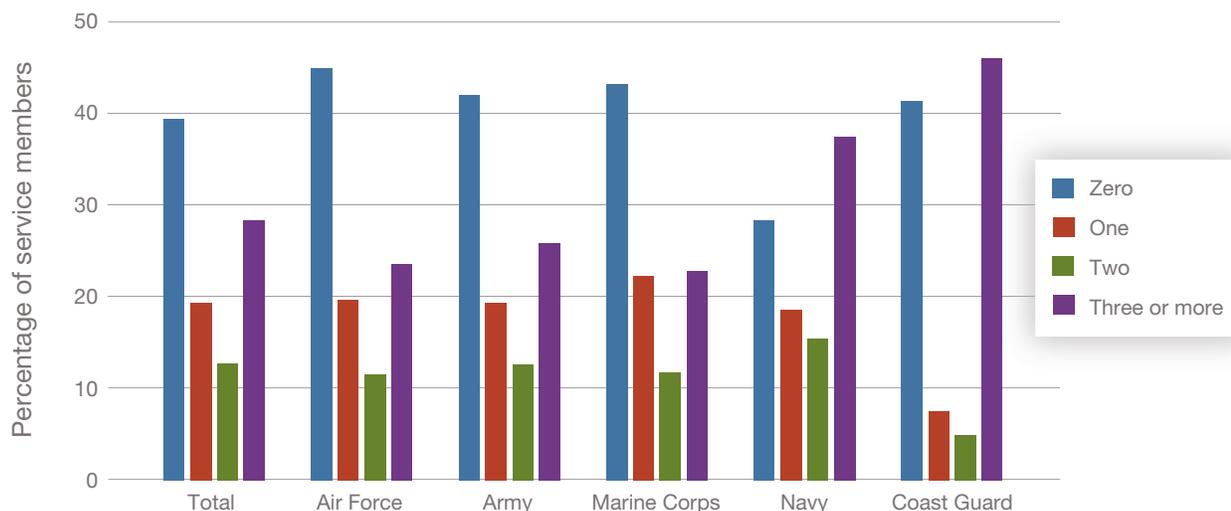
Frequency and Duration of Deployments

The 2018 HRBS included several questions asking respondents about their deployment experiences. These included the number of times respondents had been deployed and length of and experiences on deployments.

Across all services, 60.4 percent (confidence interval [CI]: 59.2–61.7) of respondents reported having had at least one previous deployment, including both combat and noncombat deployments. Navy respondents were most likely to report ever having deployed. Most personnel who had deployed had done so multiple times, with 28.4 percent (CI: 27.5–29.3) having deployed at least three times. Coast Guard personnel were most likely to report having deployed at least three times (Figure 1).

Among those who had deployed, total lifetime duration of deployments varied widely. At one end, 18.1 percent (CI: 16.9–19.3) had deployed for no more than six months; at the other, 11.2 percent (CI: 10.6–11.9) had deployed for more than 48 months. Overall, 50.1 percent (CI: 48.8–51.5) of those who had ever deployed had done so for a total of seven to 24 months. Air Force and Marine Corps personnel were the most likely to report lifetime duration of deployments of no more than six months. Army, Navy, and Coast Guard personnel were the most

FIGURE 1
Lifetime Number of Deployments, by Service Branch



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.

likely to report lifetime duration of deployments of more than 48 months (Figure 2).

Among those who had deployed, 54.3 percent (CI: 52.9–55.7) had not done so in the past year. Air Force personnel were most likely to report not having deployed in the past year.

Combat Deployments

Those who had deployed also differed in their experience with combat deployments. Among all who had deployed, 72.7 percent (CI: 71.3–74.0) had at least one combat deployment. Members of the Coast Guard who had deployed were the least likely to have had a combat deployment, while those of the Air Force and Army were the most likely to have had at least three combat deployments (Figure 3).

Among all who had deployed, 36.2 percent (CI: 34.9–37.5) reported a traumatic combat experience, such as working with landmines, witnessing members of their unit or an ally unit being seriously wounded or killed, or being wounded in combat at some point in their deployments. Army personnel (57.5 percent, CI: 54.5–60.4) were more likely than those of the other services to report any combat trauma exposure. The four most commonly reported traumatic combat experiences were knowing well someone who was killed in combat (22.3 percent, CI: 21.2–23.3), witnessing members of one's own unit or an ally unit being seriously wounded or killed (21.0 percent, CI: 20.0–22.0), witnessing civilians being seriously wounded or killed (18.9 percent, CI: 17.9–19.9), and working with landmines or other unexploded ordnance (10.5 percent, CI: 9.6–11.3).

Deployment and Substance Use

Those who had deployed in the past 12 months (*recent deployers*) differed from those who had not deployed

in that time in their drinking, smoking, and marijuana use. Specifically:

- 39.8 percent (CI: 37.5–42.2) of recent deployers reported binge drinking (consumption of at least five drinks by men or four drinks by women on the same occasion in the past 30 days), compared with 31.8 percent (CI: 30.5–33.2) of non-recent deployers.
- 12.6 percent (CI: 10.9–14.4) of recent deployers reported heavy drinking (binge drinking at least once each week during the past 30 days), compared with 8.7 percent (CI: 7.9–9.6) of non-recent deployers.
- 22.4 percent (CI: 20.2–24.5) of recent deployers reported cigarette smoking in the past 30 days, compared with 16.8 percent (CI: 15.7–18.0) of non-recent deployers.
- 0.7 percent (CI: 0.03–1.4) of recent deployers reported any marijuana or synthetic cannabis use in the past 30 days, compared with 0.2 percent (CI: 0.1–0.3) of non-recent deployers.

Recent deployers and non-recent deployers did not differ significantly in their e-cigarette use; in substance use (excluding marijuana); and in misuse of prescription drugs, stimulants, sedatives, and pain relievers.

Deployment and Mental and Emotional Health

The HRBS asked respondents about a variety of mental health indicators. It assessed overall mental health status using the Kessler-6 (K6), a commonly used measure of nonspecific serious psychological distress. The K6 is designed to distinguish between distress that indicates the presence of a psychiatric disorder that a clinician would recognize and treat and distress that is commonly experienced but not suggestive of a clinical condition. The HRBS also included items to indicate

FIGURE 2
 Lifetime Duration of Deployments Among Those Who Have Deployed, by Service Branch

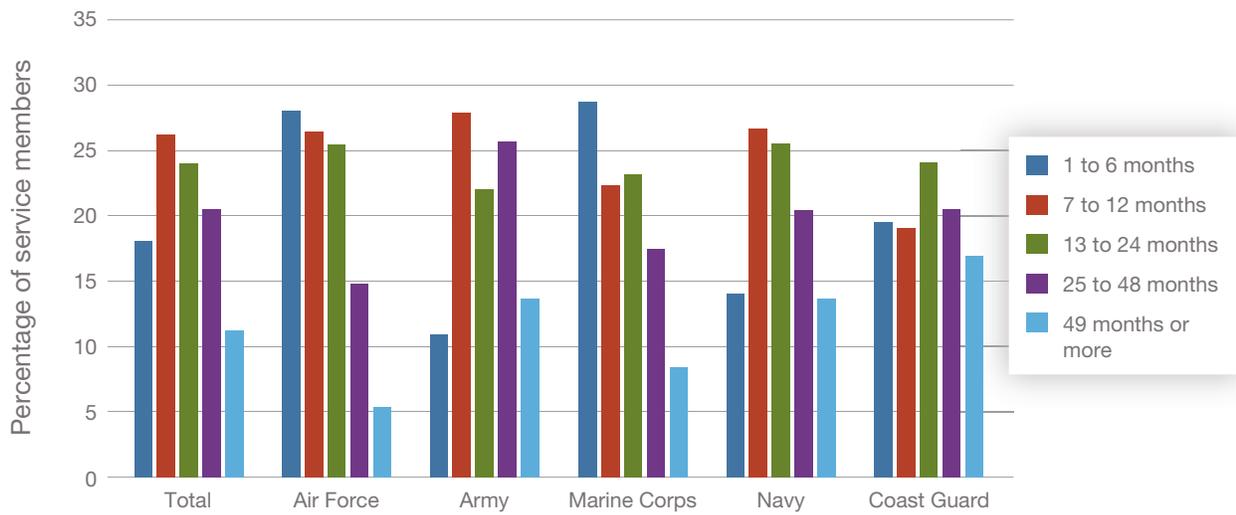
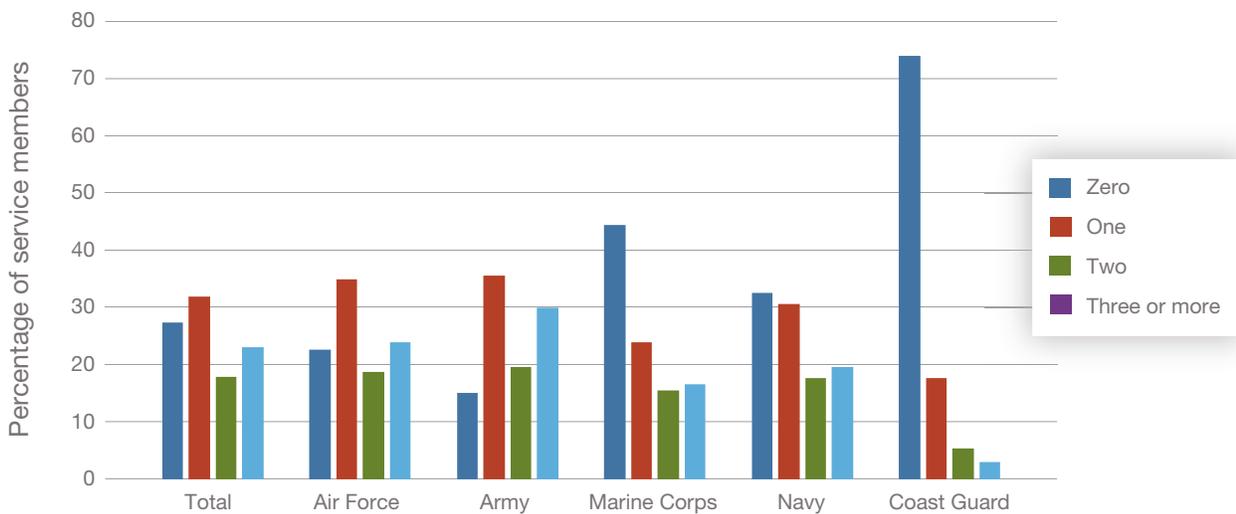


FIGURE 3
 Number of Combat Deployments Among Those Who Have Deployed, by Service Branch



probable posttraumatic stress disorder (PTSD) and items on sleep quality.

Recent deployers (68.3 percent, CI: 66.0–70.6) were less likely than non-recent deployers (71.2 percent, CI: 66.9–72.6) to indicate no to low distress in the past 12 months on the K6. They were also more likely (14.6 percent, CI: 12.8–16.4) than non-recent deployers (12.6 percent, CI: 11.6–13.5) to indicate moderate distress in the past 12 months.

The difference between the two groups in levels of serious distress in the past 12 months, however, was not significant. Furthermore, recent deployers did not differ significantly from non-recent deployers in psychological distress over the past 30 days, probable PTSD, or sleep quality.

Deployment and Physical Health

The HRBS asked whether respondents had any bodily pain symptoms in the past 30 days, asked whether they had any indicators of traumatic brain injury in the past 12 months or postconcussive symptoms in the past 30 days, and asked them to provide self-ratings of health. For all of these, there were no significant differences between recent deployers and others. (For more information on physical health characteristics of the overall force, see the brief on physical health and functional limitations for the active component at www.rand.org/t/RB10116z5.)

Conclusions

The HRBS provides insight on how deployment is associated with active component service members' physical and mental health outcomes and propensity for risk behaviors. Understanding this association is important given that service members often deploy more than once in their careers, and that the negative consequences for health and health behaviors that result from one deployment could impact readiness for future deployments.

Most 2018 HRBS respondents had experienced at least one deployment since joining the military. Exposure to combat trauma was also common. Problematic alcohol use, cigarette smoking, and marijuana use were more common among those who had recently deployed. Use of other drugs and prescription drug misuse was far less common, with no difference between recent deployers and non-recent deployers.

Recent deployers were also less likely to report no psychological distress in the past 12 months and more likely to indicate moderate distress in that time. They were no more than likely than others, however, to indicate severe distress in that time. They also did not differ from others in levels of distress over the past 30 days, probable PTSD, sleep quality, bodily pain symptoms, postconcussive symptoms, or self-ratings of health.

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.

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/RB10116z8. 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