RESEARCH BRIEF

2018 Health Related Behaviors Survey

Comparing the Active and Reserve Components

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 compares results for the active component and the reserve component in five domains: health promotion and disease prevention, substance use, mental and emotional health, physical health and functioning, and sexual behavior and health. Because making direct comparisons between the two components is not advised, RAND researchers employed a regression model that allowed them to compare the two components. It is important to note that this method cannot account for all differences in surveys between the two components, though a number of important military and demographic characteristics (e.g., service branch, pay grade, age, marital status) were included in the model. Rather than focusing on actual numbers, this brief identifies areas where the reserve component does better or worse or is comparable to the active component.

The reserve component supplements the efforts of the active component. As such, its members must be ready at all times for active duty. This requirement raises an important issue for policymakers: How ready are reserve component members to perform active duty? What health behaviors and outcomes could have negative impacts on readiness? And how do those behaviors and outcomes compare with those of the active component force?

This brief summarizes some answers to these questions. Using the HRBS, it compares results for the active component and the reserve component across several domains using a statistical procedure to control for demographic difference between the two components.

Table 1 summarizes comparisons of the active component and the reserve component. It uses a "stoplight" approach to summarize comparisons. Green indicates areas where the reserve component did better than the active component, red indicates areas where the reserve component did worse, and orange indicates that there was no difference. Note that "better" could mean significantly higher or lower prevalence rates, depending on the outcome.[1]

[1] For example, significantly more reserve component members than active component members reported meeting

Finally, a few cells are shaded in blue. These are outcomes for which the prevalence rate in the reserve component was significantly smaller than in the active component, but it is unclear whether this is "better." Such outcomes are primarily related to use of mental health services (e.g., total number of mental health care visits).

The remainder of this brief summarizes differences in each of the five domains.

Health Promotion and Disease Prevention

Significantly more reserve component service members reported obese body weight and significantly fewer met HP2020 goals for medium and high activity levels as compared with active component members.[2] At the same time, reservists were more likely to meet HP2020 goals for strength training. They were also more likely to meet HP2020 goals for quantity of sleep and to report higher-quality sleep than their active component peers. They were less likely to use medications to help them sleep. Use of energy drinks to stay awake was significantly lower among reservists than among active component members, while use of caffeinated beverages, prescription medications, and over-the-counter medications to stay awake was essentially the same for both components.

Substance Use

Reserve component service members reported significantly less binge and heavy drinking and fewer negative consequences associated with drinking than their active component peers. They were also less likely to view the military culture as supportive of drinking. Further, fewer used tobacco products, including traditional cigarettes, e-cigarettes, and smokeless tobacco. Although they were less likely to use prescription drugs (i.e., stimulants, sedatives, and pain relievers) than active component members were, reservists were more likely to report using illicit drugs, especially marijuana. There was no difference between the two components in misuse of prescription drugs.

Healthy People 2020 (HP2020) goals for sleep, and so the corresponding cell in the table is shaded green. At the same time, significantly fewer reserve component members than active component members reported a lack of energy due to poor sleep, and so the corresponding cell in the table is also shaded green.

[2] HP2020 objectives are established by the U.S. Department of Health and Human Services for the general U.S. population. For further information, see www.healthypeople.gov.

Methods

RAND fielded the 2018 HRBS among active component and reserve component U.S. military service members between October 2018 and March 2019. The survey of the active component included members in the Air Force, Army, Marine Corps, Navy, and Coast Guard. The survey of the reserve component included members in five reserve branches—Air Force, Army, Marine Corps, Navy, and Coast Guard—and two National Guard branches—Air National Guard and Army National Guard. 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 active component survey was 9.6 percent, yielding an analytic sample of 17,166 responses. The overall weighted response rate for the reserve component survey was 9.4 percent, yielding an analytic sample of 16,475 responses. To address missing data, RAND researchers used imputation, a statistical procedure that uses available data to predict missing values. To represent the population in each component, RAND researchers weighted responses to account for the oversampling of service members in certain strata.

In addition to this brief, a series of eight briefs summarizes results for the active component, and another series of eight briefs summarizes results for the reserve component. In both of those series, one brief presents an overview of all findings and policy implications, while the other seven briefs correspond to different chapters in the full report for each component.

TABLE 1

Significant Differences Between the Active and Reserve Components for Select Outcomes

Health Promotion and Disease Prevention	Substance Use	Mental and Emotional Health	Physical Health and Functioning	Sexual Behavior and Health
Obesity (HP2020 goal)	Binge drinking	Past-month and past-year serious psychological distress	Physician-diagnosed chronic conditions: high blood pressure; back pain; bone, joint, or muscle injury (including arthritis)	2+ sex partners in past year
Normal weight (HP2020 goal)	Heavy drinking	Probable posttraumatic stress disorder (PTSD)	Physician-diagnosed chronic conditions: diabetes, high cholesterol, asthma, angina or coronary heart disease, heart attack	New-partner sex without condom use past year
Medium activity level (HP2020 goal)	Any alcohol consequences	Any angry or aggressive behavior in past 30 days	No medical condition diagnosed in past year	Condom use during most-recent vaginal sex
High activity level (HP2020 goal)	Risky drinking and driving behavior	Unwanted sexual contact in past 12 months and since joining the military	Physical conditions: stomach or bowel problems, back pain, arm/leg/joint pain, headaches, chest pain or shortness of breath, tired or low energy	Sexually transmitted infection (STI) in past year
Strength training 3+ days per week	Any productivity loss due to drinking	Physically assaulted in past 12 months and since joining the military	Physical conditions: dizziness	No contraceptive use at most-recent sex
Less than one hour of screen time per day	Military culture supportive of drinking	Past-year gambling problem	Any bodily pain (including headache)	Used highly effective contraceptive at most-recent sex
Routine annual physical exam	Current cigarette smoker	Past-year suicidal thoughts, suicide plans, and suicide attempts	Any bodily pain (excluding headache)	Used moderately or most effective birth control method at last sex (women 20–44 years old)
Hours of sleep (HP2020 goal)	Current e-cigarette use	Perceived unmet need for mental health services	High physical symptom severity	Human immunodeficiency virus (HIV) test in past year
Very good and fairly good self-rated sleep quality	Current smokeless tobacco user	Past-year mental health care service utilization	Excellent and very good self-rated health	High risk for HIV
Moderate to severe lack of energy due to poor sleep	Any past-12-month and past-30-day drug use (including marijuana)	Total mental health visits in past year	Absenteeism	High risk for HIV tested in past year
Frequent use of medication to sleep (3+ times per week)	Any past-12-month and past-30-day drug use (excluding marijuana)	Use of medication for mental health problem in past year	Presenteeism	Unintended pregnancy in past year
Frequent use of other caffeinated beverages (e.g., tea, coffee), over-the counter medications, and prescription medications to stay awake (3+ times per week)	Any prescription drug use (including stimulants, sedatives, and pain relievers)	Perceived career-related stigma associated with mental health care service utilization		Contraceptive counseling prior to deployment
	Any prescription drug misuse (including stimulants, sedatives, and pain relievers)			Able to get preferred birth control before and while deployed

Mental and Emotional Health

The prevalence of many mental health problems was lower among reserve component service members than among active component members. This included past-30-day and past-year serious psychological distress, past-30-day PTSD, and past-30-day angry and aggressive behavior, as well as having suicidal thoughts, making suicide plans, and attempting suicide in the past year. Reservists were also less likely than active component members to report having been physically assaulted, both in the past year and since joining the military. Significantly fewer reserve component members than active component members reported using mental health care services, but it is not clear whether this was a positive or negative difference. That said, significantly fewer reservists indicated an unmet need for mental health care treatment.

Physical Health and Functional Limitations

Significantly fewer reserve component members than active component members reported several common chronic physical health conditions diagnosed by a physician, including high blood pressure, back pain, and bone, joint, and muscle injuries (including arthritis). Reservists were also less likely to report experiencing pain, severe physical symptoms, and health-related absenteeism from work or presenteeism (i.e., experiencing reduced productivity at work). Reservists were more likely than active component members to report having "very good" or "excellent" health and less likely to report having "poor" health.

Sexual Behavior and Health

Significantly fewer reserve component members than active component members engaged in a number of risky sexual behaviors. These included having two or more partners in the past year, not using a condom with a new partner in the past year, and not using a condom at most-recent vaginal sex. Perhaps as a result, they were also less likely to report having an STI in the past year. Reservists, however, were significantly less likely than active component members to use highly effective contraception at last sex and to use moderately or most effective methods of birth control (among women between the ages of 20 and 44). Reservists were less likely than active component members to be considered at high risk for HIV, but, among those at high risk, they were significantly less likely to have been tested in the past year. Rates of unintended pregnancy, receipt of predeployment contraceptive counseling, and ability to get one's preferred method of birth control before or during deployment did not differ significantly between the reserve component and the active component.

Limitations

The response rates for both the active component and reserve component surveys are 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.

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), and *2018 Department of Defense Health Related Behaviors Survey (HRBS): Results for the Reserve 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-4228-OSD, 2021 (available at www.rand.org/t/RR4228). To view this brief online, visit www.rand.org/t/RB10126. 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.