RESEARCH BRIEF

2018 Health Related Behaviors Survey

Mental and Emotional Health Among the Reserve 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 reserve component.

This brief reviews results for mental and emotional health. 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.

Mental Health Status

The HRBS assessed overall mental health status using the Kessler 6 Mental Health Scale (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 medical condition. Respondents were asked about their level of distress over the past 30 days and during the worst month that they had experienced in the past year. Researchers calculated K6 scores and classified respondents with a score of 13 or higher as having serious psychological distress, following accepted practice in the field.

The HRBS found that 10.7 percent (confidence interval [CI]: 9.9–11.5) of all reserve component service members reported serious psychological distress in the past year, and 6.5 percent (CI: 5.8–7.1) reported it in the past 30 days (Figure 1). By comparison, the National Survey of Drug Use and Health (NSDUH) found that 10.8 percent of U.S. adults 18 years or older had serious psychological distress in the past year; the NSDUH and other similar studies using the K6 estimated that 2.9 to 5.2 percent of U.S. adults had serious psychological distress in the past 30 days.[1]

[1] Center for Behavioral Health Statistics and Quality, *National-Level Comparisons of Mental Health Estimates from the National Survey on Drug Use and Health (NSDUH) and Other Data Sources: NSDUH Methodological Report*, Rockville, Md.: Substance Abuse and Mental Health Services

Although most individuals who experience traumatic events do not develop posttraumatic stress disorder (PTSD), individuals who do develop PTSD experience significant functional impairments and have greater medical morbidity and riskier health behaviors than the general population.

Exposure to traumatic events, combat in particular, is a well-known hazard of military service. PTSD can contribute to military attrition, absenteeism, and misconduct. The 2018 HRBS measured PTSD with a brief screening measure that asked respondents whether they had experienced a traumatic event in their lifetimes and, if so, whether they had experienced symptoms characteristic of PTSD in the past 30 days. Responses to the screening measure were used to identify respondents with probable PTSD, meaning that there was a high likelihood of them having PTSD based on endorsement of hallmark symptoms. This does not mean that a clinician made or would make a formal PTSD diagnosis.

The HRBS found that 10.5 percent (CI: 9.8–11.1) of reserve component service members reported symptoms that aligned with probable PTSD in the past 30 days. This was higher than estimates of probable PTSD in the past year for the general population (3.5 percent[2]).

Administration, 2018 (https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHC2MentalHealthEst2018.pdf).

[2] Ronald Kessler, Patricia Berglund, Meyer Glantz, Doreen S. Koretz, Kathleen Merikangas, Ellen E. Walters, and Alan Zaslavsky, "Estimating the Prevalence and Correlates of Serious Mental Illness in Community Epidemiological Surveys," in R. W. Manderscheid and M. J. Henderson, eds., *Mental Health, United States, 2002*, Rockville, Md.: U.S. Department of Health and Human Services, 2004, pp. 155–164.

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 reserve component included 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 survey was 9.4 percent, yielding a final analytic sample for the reserve component 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 reserve component population, they weighted responses to account for the oversampling of service members in certain strata. This research brief reports point estimates and 95-percent CIs.*

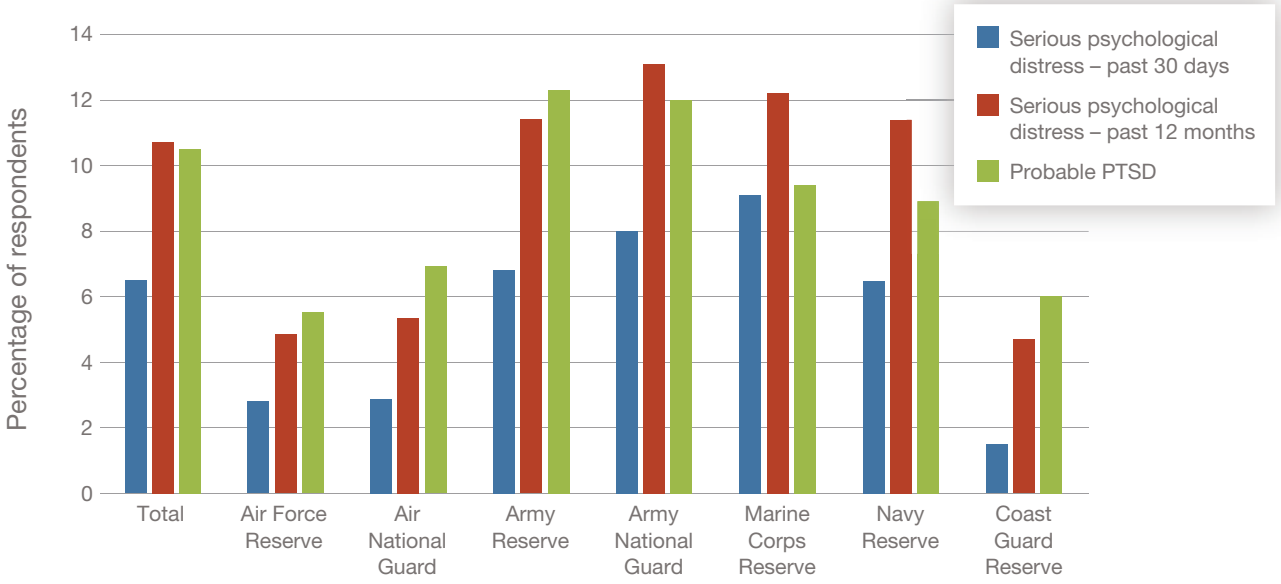
RAND researchers tested differences in each outcome across levels of key factors or by subgroups—service branch, pay grade, gender, race/ethnicity, and age group—using a two-stage procedure based on a Rao-Scott chi-square test for overall differences across levels within a single factor and, if the overall 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 reserve component final report at www.rand.org/t/rr4228.

This brief is one of eight on the reserve 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 active 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

Serious Psychological Distress and Posttraumatic Stress Disorder, by Service Branch



Anger and Aggression

Anger and aggression are frequently reported among combat veterans. Angry or aggressive behavior can result in military personnel physically harming themselves or others, can lead to domestic violence and other illegal acts, and can adversely affect military readiness.

The 2018 HRBS asked respondents how often in the past 30 days they had gotten angry at someone and yelled or shouted; gotten angry with someone and kicked, slammed, or punched something; made a violent threat; or fought or hit someone. Overall, 46.9 percent (CI: 45.7–48.1) of reservists reported at least one of these four behaviors in the past 30 days, and 6.2 percent (CI: 5.6–6.8) reported one or more of these behaviors occurring at least five times in the past 30 days.

Unwanted Sexual Contact

The experience of a sexual assault has potentially severe consequences for the victim as well as for society. Negative consequences for victims can include immediate physical harm from the assault itself, increased risks of sexually transmitted illnesses, pregnancy, and mental health problems, such as PTSD and chronic physical health problems.

The 2018 HRBS found that, among all reserve component service members, 7.8 percent (CI: 7.3–8.3) indicated that they had experienced any unwanted sexual contact since joining the military, and 1.6 percent (CI: 1.2–1.9) indicated that they had experienced any unwanted sexual contact in the past 12 months. Women indicated experiencing substantially higher rates of unwanted sexual contact than men did. Specifically, 24.0 percent (CI: 22.5–25.6) of women in the reserves indicated that they had experienced unwanted sexual contact since joining the military, and 4.6 percent (CI: 3.5–5.6) indicated that they had experienced it in the past 12 months. Among men in the reserves, 3.6 percent (CI: 3.1–4.2) indicated experiencing unwanted sexual contact since joining the military, and 0.8 percent (CI: 0.5–1.1) indicated that they had experienced it in the past 12 months. It is important to keep in mind that the Workplace and Gender Relations Survey of Reserve Component Members (WGRR) and the HRBS measure different constructs. The WGRR measures *sexual assault*. The HRBS measures *unwanted sexual contact*, which is a broader construct. The HRBS defined *unwanted sexual contact* as "times when someone has touched you in a sexual way, had sex with you, or attempted to have sex with you when you did not consent or could not consent. By sexual contact we mean any sexual touching as well as oral, anal or vaginal penetration." Thus, results are not comparable across the two surveys.

Physical Assault

Physical assault is associated with a range of negative consequences, including PTSD and other psychological problems. Reducing physical assaults from 21.3 per 1,000 population to 19.2 per 1,000 is an HP2020 objective.

The HRBS indicates that 3.8 percent (CI: 3.4–4.2) of reservists responded that they had experienced a physical assault since joining the military, and 0.7 percent (CI: 0.5–0.9) indicated experiencing a physical assault in the past 12 months. In 2016, 1.7 percent of individuals age 12 and older reported experiencing a physical assault in the past year.[3]

Suicidality

Suicide rates have increased in most U.S. states in recent years. In 2017, there were 14.0 suicide deaths per 100,000 population;[4] reducing this rate to 10.2 per 100,000 is an HP2020 objective. Reports of increased rates of suicide among military personnel have garnered considerable attention and have spurred significant investments into research and prevention efforts. Assessing service members' experiences with suicidal ideation and behaviors is critical for informing these efforts.

The 2018 HRBS found that, in the past 12 months, 6.0 percent (CI: 5.4–6.6) of all reserve component members endorsed thoughts of suicide, 2.0 percent (CI: 1.6–2.4) reported suicide plans, and 0.9 percent (CI: 0.6–1.3) reported a suicide attempt (Figure 2). These rates are higher than those for the general population. The 2018 NSDUH found that, among all adults 18 or older, 4.3 percent endorsed thoughts of suicide, 1.3 percent endorsed suicide plans, and 0.6 percent reported a suicide attempt.

Problematic Gambling

Many forms of gambling have become increasingly accessible and legal in the United States. The widening availability of gambling raises concerns about problem gambling that results in adverse consequences for an individual and *gambling disorder*, a psychiatric disorder characterized by loss of control over gambling behavior and serious functional impairments. Both problem gambling and gambling disorder are associated with other problem behaviors and adverse life events. Concern with problem gambling and gambling disorder in the military has been raised by evidence that service members are at high risk.

The 2018 HRBS assessed problem gambling with the Lie-Bet questionnaire. This questionnaire asked respondents whether in the past 12 months they have "had to lie to people important to you about how much you gambled" or they have "ever felt the need to bet more and more money." Those answering "yes" to either of these questions are considered to have problem gambling. The HBRS found that 1.7 percent (CI: 1.4–2.1) of reserve component members had problem gambling. This is lower than an estimate of 2.3 percent for problem gambling among U.S. civilians in the early 2000s.[5]

Mental Health Services

There is longstanding concern for both military and civilian populations about low levels of use of mental health services among individuals who need them. Accordingly, the HRBS asked respondents about their use of mental health services, perceived unmet need for mental health services, and barriers to mental health care.

Overall, 21.0 percent (CI: 20.1–21.9) of reserve component members reported using any mental health services in the past 12 months (Figure 3). This was higher than comparable rates for the general population; in the 2018 NSDUH, 15.2 percent of those 18 to 25 years of age and 16.1 percent of those 26 to 49 years of age reported receiving mental health services. Those who used mental health services reported an average number of 9.7 visits (CI: 9.0–10.5) in the past year.

[3] Rachel E. Morgan and Grace Kena, *Criminal Victimization, 2016: Revised*, Washington, D.C.: Bureau of Justice Statistics, October 24, 2018 (http://www.bjs.gov/index.cfm?ty=pbdetail&iid=6427).

[4] Sally C. Curtin and Holly Hedegaard, "Suicide Rates for Females and Males by Race and Ethnicity: United States, 1999 and 2017," *NCHS Health E-Stat*, 2019 (https://www.cdc.gov/nchs/data/hestat/suicide/rates_1999_2017.htm).

[5] R. C. Kessler, I. Hwang, R. LaBrie, M. Petukhova, N. A. Sampson, K. C. Winters, and H. J. Shaffer, "DSM-IV Pathological Gambling in the National Comorbidity Survey Replication," *Psychological Medicine*, Vol. 38, No. 9, September 2008, pp. 1351–1360.

FIGURE 2

Suicide Ideation, Plans, and Attempts in Past 12 Months, by Service Branch

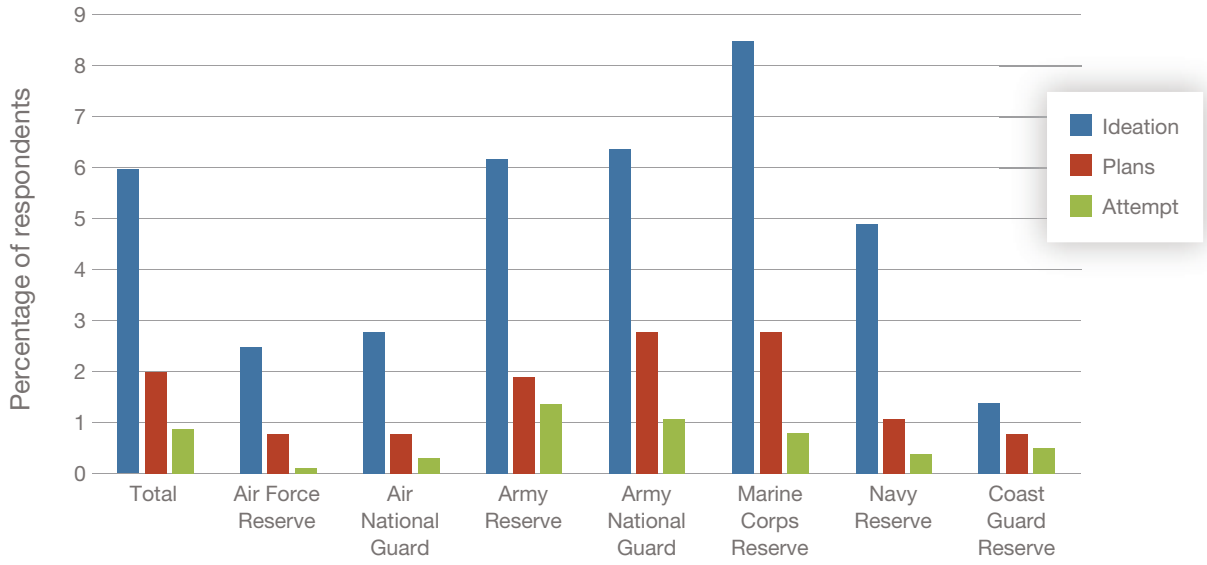
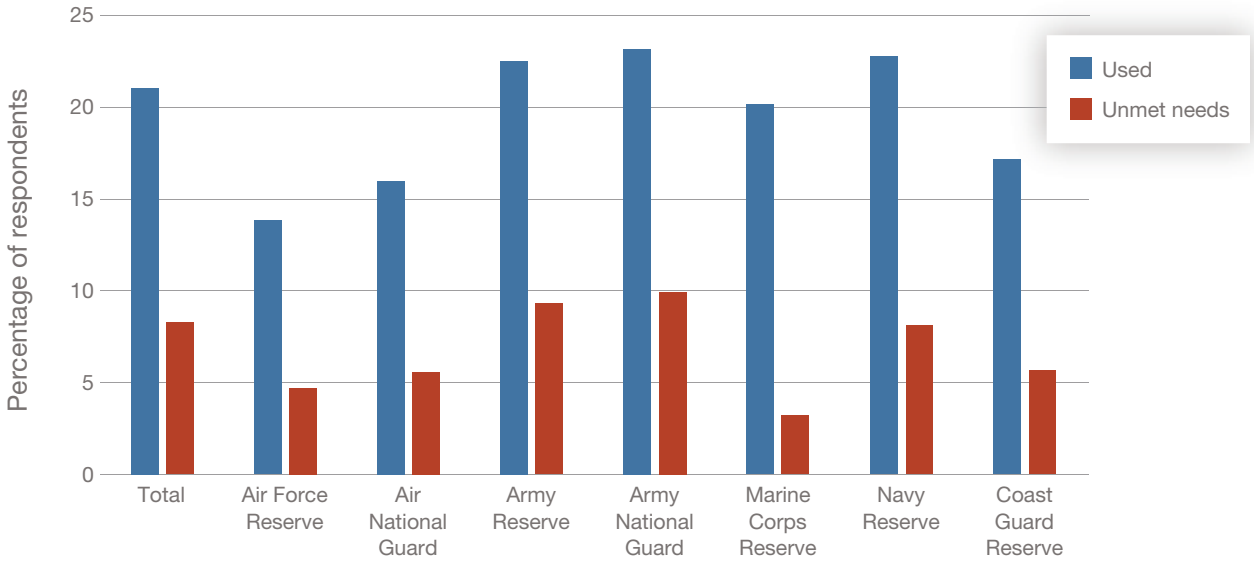


FIGURE 3

Use of and Unmet Need for Mental Health Services in the Past 12 Months, by Service Branch



Among all respondents, 4.6 percent (CI: 4.1–5.0) reported unmet need for mental health treatment in the past 12 months. Respondents with perceived unmet need included those receiving no care as well as those who received some care but indicated that they needed more or different care than they received.

The HRBS asked two groups of respondents why they did not seek mental health treatment. The first group was those who indicated a perceived need for treatment that they did not receive. The second was those who scored 8 or above on the K6 scale, indicating at least moderate distress, but who also did not receive mental health treatment. The most common reason cited by these two groups of respondents for not seeking mental health care was not thinking it was needed; 55.8 percent (CI: 51.6–60.0) gave this reason. This is consistent with research on civilian populations suggesting that low perceived need is the most common reason that people with mental health problems do not seek care.

Several other commonly cited reasons for not seeking mental health care—"It would have harmed my career," "Members of my unit might have less confidence in me," "My supervisor/unit leadership might have a negative opinion of me or treat me differently"—relate to potential adverse professional consequences of seeking care. The HRBS asked participants whether they thought seeking counseling or mental health treatment through the military would damage their military career. Overall, 29.9 percent (CI: 28.8–30.9) responded that it would.

Comparisons with the Active Component

To compare HRBS results for the active and reserve components, RAND researchers constructed regression models that controlled for demographic characteristics of the respondents. Significant differences that they identified for reservists relative to active component members included

- lower likelihood of serious psychological distress and PTSD
- lower likelihood of any recent angry or aggressive behavior, unwanted sexual contact, and physical assault
- lower likelihood of suicidal thoughts, plans, and attempts
- lower likelihood of mental health service use or perceived unmet need for mental health services.

Conclusions and Policy Implications

The 2018 HRBS indicates that symptoms of psychological distress were common among service members. If untreated, these symptoms could persist and lead to significant functional impairments with implications for service member well-being and force readiness. DoD already invests considerable resources in surveillance of service member mental health and programs to mitigate the negative impacts of mental health conditions on service member well-being. DoD, the services, and the Coast Guard should continue their efforts to monitor, understand, and support service member mental health.

Suicide ideation is higher among reservists than it is among the general population. The military has made a substantial investment in seeking to understand and prevent suicide among service members; additional efforts should determine whether different prevention strategies might be needed for different subgroups of service members (e.g., by level of risk). DoD, the services, and the Coast Guard should also gather should more information on early precursors to suicide to improve prevention efforts.

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 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/RB10117z4. 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.
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This brief was updated in July 2026 to correct a coding error that impacted calculations of the prevalence of probable PTSD.

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