RESEARCH BRIEF

2018 Health Related Behaviors Survey

Sexual Orientation and 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 sexual orientation and health. Some of the 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.

Sexual Orientation

The health issues and needs of lesbian, gay, and bisexual (LGB) individuals differ somewhat from those of their peers. In the general U.S. population, LGB adults are more likely than their heterosexual peers to smoke cigarettes, binge drink and drink heavily, use marijuana and other illicit drugs, misuse opioids, and suffer from a variety of chronic health conditions.[1] Sexual minorities are also more likely

[1] D. T. Duncan, S. Zweig, H. R. Hambrick, and J. J. Palamar, "Sexual Orientation Disparities in Prescription Opioid Misuse Among U.S. Adults," *American Journal of Preventive Medicine*, Vol. 56, No. 1, January 2019, pp. 17–26; K. I. Fredriksen-Goldsen, C. Shin, A. E. Bryan, J. Goldsen, and H. J. Kim, "Health Equity and Aging of Bisexual Older Adults: Pathways of Risk and Resilience," *The Journals of Gerontology Series B, Psychological Sciences and Social Sciences*, Vol. 72, No. 3, May 1, 2017, pp. 468–478; G. Gonzales and C. Henning Smith, "Health Disparities by Sexual Orientation: Results and Implications from the Behavioral Risk Factor Surveillance System," *Journal of Community Health*, Vol. 42, No. 6, December 2017, pp. 1163–1172; G. Gonzales, J. Prezedworski, and C. Henning Smith, "Comparison of Health and Health Risk Factors Between Lesbian, Gay, and Bisexual Adults and Heterosexual Adults in the United States: Results from the National Health Interview Survey," *JAMA Internal Medicine*, Vol. 176, No. 9, September 1, 2016, pp. 1344–1351; M. S. Schuler, C. E. Rice, R. J. Evans-Polce, and R. L. Collins, "Disparities in Substance Use Behaviors and Disorders Among Adult Sexual Minorities by Age, Gender, and Sexual Identity," *Drug and Alcohol Dependence*, Vol. 189, August 1, 2018, pp. 139–146; M. S. Schuler, B. D. Stein, and R. L. Collins, "Differences in Substance Use Disparities Across Age Groups in a National Cross-Sectional Survey of Lesbian, Gay, and Bisexual Adults," *LGBT Health*, Vol. 6, No. 2, 2019, pp. 68–76.

to have mental health issues[2] and more likely to access mental health services,[3] though they are less likely to access routine health care.[4] Such disparities among LGB individuals could affect military readiness.

The HRBS asked respondents about their sexual activity with same-sex partners in the past 12 months and their sexual identity. Overall, 2.8 percent (confidence interval [CI]: 2.3–3.3) of men and 9.8 percent (CI: 8.6–11.0) of women reported having one or more same-sex partners in the past 12 months. Furthermore, 1.7 percent (CI: 1.4–2.1) of men and 7.2 percent (CI: 6.2–8.2) of women in the HRBS identified as gay or lesbian, and 2.0 percent (CI: 1.6–2.5) of men and 8.2 percent (CI: 7.0–9.4) of women in the HRBS identified as bisexual.

Across all the services, 6.1 percent (CI: 5.6–6.7) of individuals describe themselves as lesbian, gay, or

[2] Grace Medley, Rachel N. Lipari, Jonaki Bose, Devon S. Cribb, Larry A. Kroutil, and Gretchen McHenry, "Sexual Orientation and Estimates of Adult Substance Use and Mental Health: Results from the 2015 National Survey on Drug Use and Health," *NSDUH Data Review*, October 2016 (https://www.samhsa.gov/data/sites/default/files/NSDUH-SexualOrientation-2015/NSDUH-SexualOrientation-2015/NSDUH-SexualOrientation-2015.htm); Brian W. Ward, James M. Dahlhamer, Adena M. Galinsky, and Sarah S. Joestl, "Sexual Orientation and Health Among U.S. Adults: National Health Interview Survey, 2013," *National Health Statistics Reports*, No. 77, July 15, 2014 (https://www.cdc.gov/nchs/data/nhsr/nhsr077.pdf).

[3] Susan D. Cochran, Vickie M. Mays, and J. Greer Sullivan, "Prevalence of Mental Disorders, Psychological Distress, and Mental Health Services Use Among Lesbian, Gay, and Bisexual Adults in the United States," *Journal of Consulting and Clinical Psychology*, Vol. 71, No. 1, February 2003, pp. 53–61.

[4] Institute of Medicine, *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*, Washington, D.C.: The National Academies Press, 2011 (https://www.nap.edu/catalog/13128/the-health-of-lesbian-gay-bisexual-and-transgender-people-building).

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.

bisexual. There were few significant differences between the services in this percentage, but the difference between men and women was substantial: 3.8 percent (CI: 3.2–4.4) of men and 15.4 percent (CI: 13.9–16.9) of women were LGB.

LGB Health Promotion and Disease Prevention

Among LGB service members, 67.0 percent (CI: 62.3–71.8) reported a routine checkup in the past 12 months. This was significantly different from the 71.9 percent (CI: 70.7–73.1) of non-LGB service members who reported a routine checkup in the past 12 months. LGB service members were similar to non-LGB service members in their levels of moderate or vigorous physical activity in the past 30 days.

A significantly smaller percentage of LGB service members were classified as overweight or obese (54.6 percent, CI: 49.8–59.4) compared with non-LGB service members (66.1 percent, CI: 64.9–67.3). A significantly smaller percentage of LGB service members (68.8 percent, CI: 64.4–73.2) reported good or fairly good sleep quality in the past 30 days than did non-LGB service members (75.2 percent, CI: 74.1–76.2).

Substance Use

A significantly larger percentage of LGB personnel reported recent binge drinking (that is, consumption of at least five drinks for men or at least four drinks for women on the same occasion at least once in the past 30 days) and heavy drinking (that is, binge drinking at least once each week during the past 30 days) than non-LGB personnel (Table 1). Similarly, a significantly larger percentage of LGB personnel reported recent or current cigarette or e-cigarette use, but a significantly smaller percentage reported smokeless tobacco use. Significantly greater percentages of LGB personnel reported illicit drug use and use of prescription pain relievers.

LGB Mental Health and Mental Health Services Use

The HRBS asked respondents about a variety of mental health indicators and indicators of mental health service use. All of the mental and emotional health problems examined were more common among LGB service members than among non-LGB personnel, although, for most indicators, only a small percentage of LGB personnel indicated a problem.

Use of all forms of mental health services tested was also more common among LGB personnel. Nonetheless, significantly more LGB personnel reported a perceived unmet need for mental health services in the past 12 months, as well as a belief that mental health treatment would damage one's military career. Table 2 presents more details on mental and emotional health indicators by LGB status.

TABLE 1

Substance Use by LGB Identity

	LGB	Non-LGB
Binge drinking, past 30 days	37.5% (CI: 32.7–42.2)	28.4% (CI: 27.3–29.5)
Heavy drinking, past 30 days	12.0% (CI: 8.4–15.6)	7.1% (CI: 6.5–7.8)
Cigarette smoking, past 30 days	21.5% (CI: 16.9–26.1)	12.8% (CI: 11.9–13.7)
E-cigarette use, past 30 days	19.2% (CI: 15.0–23.4)	9.3% (CI: 8.5–10.1)
Smokeless tobacco use, past 30 days	5.6% (CI: 3.0–8.2)	11.3% (CI: 10.5–12.2)
Any drug use, past 12 months	9.3% (CI: 5.9–12.6)	2.3% (CI: 1.8–2.8)
Used prescription pain relievers, past 12 months	11.0% (CI: 8.0–14.1)	8.1% (CI 7.5–8.7)

TABLE 2

Mental and Emotional Health and Mental Health Services Use by LGB Identity

	LGB	Non-LGB
Serious psychological distress, past 12 months	23.7% (CI: 19.3–28.1)	9.9% (CI: 9.1–10.7)
Probable posttraumatic stress disorder	17.7% (CI: 13.8–21.6)	10.0% (CI: 9.3–10.6)
Suicidal thoughts, past 12 months	17.7% (CI: 13.6–21.8)	5.2% (CI: 4.6–5.8)
Suicide attempt, past 12 months	2.4% (CI: 0.4–4.4)	0.8% (CI: 0.5–1.1)
Any angry or aggressive behavior, past 30 days	52.7% (CI: 47.9–57.5)	46.5% (CI: 45.3–47.7)
Any mental health service use, past 12 months	36.9% (CI: 32.1–41.7)	20.0% (CI: 19.0–20.9)
Saw mental health care specialist, past 12 months	26.0% (CI: 21.5–30.5)	12.7% (CI: 11.9–13.4)
Saw general medical provider for a mental health problem, past 12 months	23.6% (CI: 19.1–28.1)	11.9% (CI: 11.2–12.7)
Used medication for a mental health problem, past 12 months	16.1% (CI: 12.0–20.3)	7.7% (CI: 7.1–8.2)
Perceived unmet need for mental health services, past 12 months	10.8% (CI: 7.6–14.1)	4.1% (CI: 3.7–4.6)
Believe mental health treatment would damage military career	39.0% (CI: 34.2–43.7)	29.3% (CI: 28.2–30.4)

LGB Physical Health

The HRBS asked whether respondents had been told by a physician or health professional during the past 12 months that they have high blood pressure, diabetes, high cholesterol, asthma, back pain, or musculoskeletal injury. For all of these but asthma, there were no significant differences between LGB personnel and non-LGB personnel. (For more information on the physical health characteristics of the overall reserve component, see the brief on physical health and functional limitations for the reserve component at www.rand.org/t/rb10117z5.)

LGB Unwanted Sexual Contact and Physical Abuse

In the general U.S. population, a larger percentage of LGB individuals than non-LGB individuals indicate that they have experienced past sexual and physical abuse.[5] This is also the case in the U.S. military.[6] In the reserve component, a larger percentage of LGB service members than non-LGB service members indicated experiencing unwanted sexual contact since joining the military and in the past 12 months. A larger percentage also indicated that they had been physically assaulted

[5] S. L. Katz-Wise and J. S. Hyde, "Victimization Experiences of Lesbians, Gay, and Bisexual Individuals: A Meta-Analysis," *Journal of Sex Research*, Vol. 49, No. 2–3, 2012, pp. 142–167; M. L. Walters, J. Chen, and M. J. Breiding, *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Findings on Victimization by Sexual Orientation*, Atlanta, Ga.: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2013.

[6] Lisa Davis, Amanda Grifka, Kristin Williams, and Margaret Coffey, eds., *2016 Workplace and Gender Relations Survey of Active Duty Members: Overview Report*, Office of People Analytics: Alexandria, Va., OPA Report 2016-050, May 2017; and Rachel A. Breslin, Lisa Davis, Kimberly Hylton, Ariel Hill, William Klauberg, Mark Petsuky, and Ashlea Klahr, *2018 Workplace and Gender Relations Survey of Active Duty Members: Overview Report*, Office of People Analytics: Alexandria, Va., May 2019.

since joining the military and in the past 12 months (Figure 1).

LGB Sexual and Reproductive Health

Sexual and reproductive health are influenced by key behaviors, such as numbers of sexual partners and use of other contraception. RAND researchers looked at how sexual and reproductive health indicators varied by LGB status, as well as by outcomes such as diagnoses of sexually transmitted infection (STI), regular testing for human immunodeficiency virus (HIV) infection, and unintended pregnancies, which can affect individual health and readiness. Table 3 presents these findings. A significantly larger percentage of LGB service members reported having had multiple sex partners in the past 12 months, as well as having had sex with a new partner without condom use. Also, a significantly larger percentage of LGB service members reported having an STI in the past 12 months and having had an HIV test in the past six months. No significant differences were found for HIV testing in the past 12 months, no use of birth control at last vaginal sex in the past 12 months, and unintended pregnancy in the past 12 months.

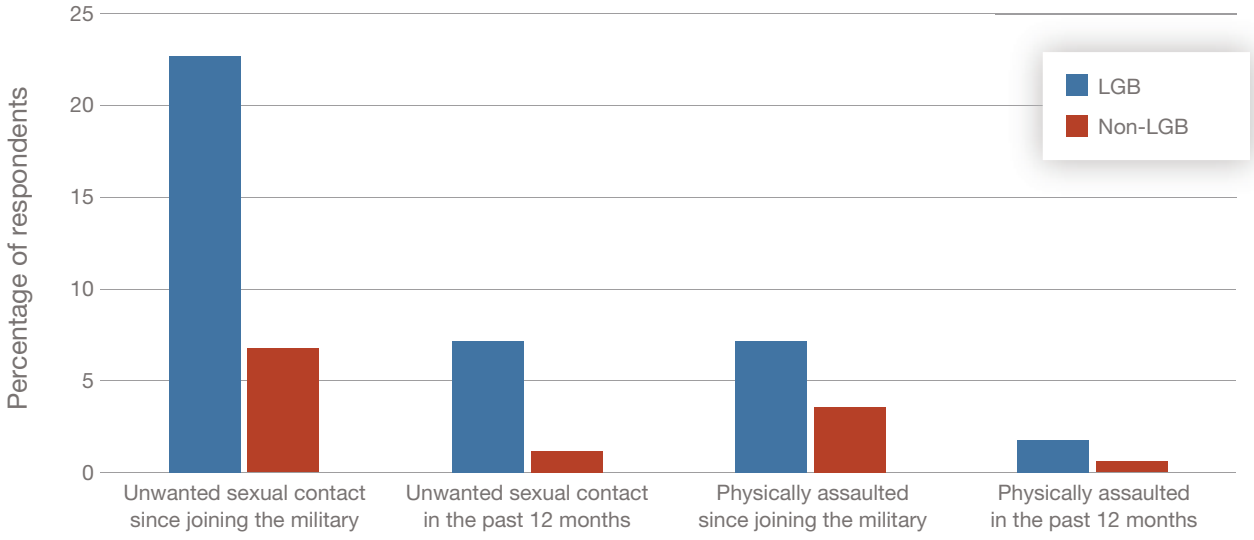
Comparisons with the Active Component

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 LGB reservists relative to LGB active component members included

- lower likelihood of moderate and vigorous physical activity
- greater likelihood of at least seven hours of sleep daily and higher sleep quality
- greater likelihood of past-year illicit drug use
- lower likelihood of seeing a mental health care specialist in the past 12 months
- lower likelihood of unwanted sexual contact since joining the military
- lower likelihood of multiple sex partners and of an STI in the past 12 months.

FIGURE 1

Unwanted Sexual Contact and Physical Abuse, by LGB Identity



NOTES: For unwanted sexual contact, the exact question wording in the 2018 HRBS is "The next question is about unwanted sexual contact, meaning 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. Since joining the military, have you ever experienced unwanted sexual contact?" and "Did this unwanted sexual contact occur in the past 12 months?" The HRBS items are not directly comparable with existing civilian or military surveys, including the Workplace and Gender Relations Survey of Active Duty Members and the Workplace and Gender Relations Survey of Reserve Component Members.

TABLE 3

Sexual and Reproductive Health by LGB Identity

	LGB	Non-LGB
New partner without condom use, past 12 months	39.4% (CI: 34.6–44.2)	32.7% (CI: 31.6–33.9)
Two or more sex partners, past 12 months	33.5% (CI: 28.8–38.3)	14.7% (CI: 13.7–15.7)
STI, past 12 months	6.2% (CI: 3.9–8.5)	1.6% (CI: 1.3–1.8)
HIV test, past 6 months	45.5% (CI: 40.7–50.3)	38.0% (CI: 36.8–39.2)

Conclusions and Policy Implications

LGB personnel make up about 6 percent of reserve component service members. LGB service members more commonly indicated substance use, risky sex behaviors, unwanted sexual contact, and physical assault than did their non-LGB peers.

Broadly targeted health promotion efforts by DoD, the services, and Coast Guard should include LGB-specific considerations, as appropriate, recognizing that LGB individuals are part of the service. Addressing LGB health disparities is unlikely to require the development of programs or policies targeted specifically to this group, with only a few exceptions. However, overemphasis on the higher rates of mental and sexual health issues among LGB personnel could increase the stigma associated with LGB status, exacerbating these disparities and marginalizing those affected.

Education of health care providers in the Military Health System (MHS) could help reduce sexual health disparities between LGB and non-LGB personnel. For example, it is unclear whether MHS personnel are aware that most LGB reservists are bisexual. Incorrect assumptions about service member sexual orientation based on the sex of their current sexual partners could lead to incomplete or incorrect counseling regarding use of condoms and other contraceptives and for STI testing. Providers should be aware that nearly one in six servicewomen identify as LGB. Adaptation of patient screening and counseling protocols and clinic forms might also be appropriate to recognize the presence of LGB personnel among MHS patients.

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/RB10117z7. 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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