Published in final edited form as:

Sex Health. 2015 June ; 12(3): 272–275. doi:10.1071/SH14211.

A Comparison of Self-Reported Sexual Risk Behaviors between U.S. Civilian and Active Duty Military Women

Shauna Stahlman, PhD, MPH¹, Marjan Javanbakht, PhD, MPH¹, Susan Cochran, PhD, MS¹, Steven Shoptaw, PhD⁴, Alison B. Hamilton, PhD, MPH^{2,3}, and Pamina M. Gorbach, DrPH¹

¹Department of Epidemiology, Fielding School of Public Health, University of California, Los Angeles; Los Angeles CA, 90095-1772

²Department of Psychiatry and Biobehavioral Sciences, University of California, Los Angeles; Los Angeles CA, 90095-1772

³VA Greater Los Angeles Healthcare System, Los Angeles, CA

⁴Department of Family Medicine, University of California, Los Angeles; Los Angeles CA, 90095-1772

Abstract

Women in the military report a high prevalence of sexual risk behaviors, such as binge drinking and new or multiple sexual partnerships. However, demographical differences pose challenges to making comparisons with civilians. We used two public-use datasets to compare prevalence of sexual risk behaviors between sexually active military and civilian women, after adjusting for demographic factors. We found that women in the military reported a higher prevalence of binge drinking and new/multiple sexual partners as compared with civilians, which suggests that military women are truly a high-risk group and the military environment may at least partially facilitate these risk behaviors.

Introduction

Women in the active duty U.S. military are exposed to an environment where a high prevalence of sexual risk behaviors such as binge drinking and multiple sexual partnerships exist (1–3), which may contribute to risk for sexually transmitted infections (STIs) (4–6). In addition, a large proportion of active duty women are at a higher risk for STIs due to their demographic characteristics such as being of a younger age, unmarried, and of Black race/ethnicity (7), which are risk factors for STI acquisition in the general population (8). It is currently unclear whether differences in prevalence of risk behaviors are due to military social and environmental factors or because most women in the military represent the demographic at risk. Adjustment for demographic factors may enhance comparative analyses and provide insight into the level of risk practiced and experienced by women in the military.

Corresponding author: Shauna Stahlman, PhD, MPH, University of California Los Angeles, Department of Epidemiology, Box 951772, Los Angeles, CA 90095-1772, Phone: 310-206-3901, Fax: 310-825-7387, sstahlman@ucla.edu.

Conflicts of Interest: None declared.

Methods

Study Population and Design

We used data from the 2007–2010 National Health and Nutrition Examination Survey (NHANES) (9) and the 2008 Department of Defense Survey of Health Related Behaviors among Active Duty Military Personnel (HRBS) (10). Variable measures used for comparison between datasets are provided in the appendix. The final study samples consisted of 1,410 sexually active women aged 20–49 years in the NHANES and 6,314 sexually active women aged 20–49 years in the HRBS. We defined sexually active as having reported at least one sexual partner within the past 12 months.

Statistical Analysis

Population prevalence estimates and 95% confidence intervals for reported sexual risk behaviors were calculated separately for the military and civilian samples. Prevalence estimates for sexual risk behaviors within NHANES were then adjusted to account for the military population proportions of age category, race/ethnicity, education level, and marital status using direct standardization. SAS software version 9.2® (SAS Inc., Cary, NC) survey procedures were used to weight the measures.

Results

More military as compared with civilian women reported in the past 12 months any episode of binge drinking, as well as new and multiple sexual partners (Table 1). The average number of alcoholic drinks per day and frequency of drinking were similar across samples. However, fewer civilian women reported any illicit substance use in the past 12 months.

Discussion

Previous studies have suggested a high prevalence of binge drinking among military personnel (10, 11) and that the military cultural environment promotes binge drinking for women, potentially as a method to fit in with male colleagues (12). Military women in our study also reported higher numbers of sexual partners and new sexual partners as compared with civilian women. One possible explanation is the widespread availability of potential sex partners and easy access to alcohol (13, 14). However, it is also possible that individuals who practice risky behaviors may be self-selecting into the military (15).

There are several limitations of this study to consider. Comparisons between data sets must be done with caution as differences in phrasing of questions and different survey methodology can lead to different types of responses. In addition, military personnel tend to be recruited from the Southern and Western U.S. (16); however, we were unable to adjust for this in our estimates. Further, both surveys are based on cross-sectional and self-reported measures of sensitive topics such as substance use. This could lead to underreporting because respondents may be unwilling to share sensitive information out of fear of disciplinary consequences for disclosing such information, particularly in a military setting.

Our analysis highlights the increased prevalence of binge drinking and new/multiple sexual partnerships among military as compared with civilian women by using standardized estimates. Further research is needed to identify the most appropriate intervention methods for a military setting.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Source of Funding: Dr. Gorbach and Dr. Shoptaw were supported by funds from the NIMH research grant P30 MH58107.

References

1. Goyal V, Mattocks KM, Sadler AG. High-risk behavior and sexually transmitted infections among U.S. active duty servicewomen and veterans. *Journal of women's health* (2002). 2012; 21(11):1155–1169. Epub 2012/09/22.
2. O'Rourke K, Richman A, Roddy M, Custer M. Does pregnancy/paternity intention predict contraception use? A study among US soldiers who have completed initial entry training. *The journal of family planning and reproductive health care / Faculty of Family Planning & Reproductive Health Care, Royal College of Obstetricians & Gynaecologists*. 2008; 34(3):165–168. Epub 2008/06/26.
3. Hwang LY, Shafer MA, Pollack LM, Chang YJ, Boyer CB. Sexual behaviors after universal screening of sexually transmitted infections in healthy young women. *Obstet Gynecol*. 2007; 109(1):105–113. Epub 2007/01/02. [PubMed: 17197595]
4. Gaydos CA, Howell MR, Pare B, Clark KL, Ellis DA, Hendrix RM, et al. Chlamydia trachomatis infections in female military recruits. *N Engl J Med*. 1998; 339(11):739–744. Epub 1998/09/10. [PubMed: 9731090]
5. Boyer CB, Pollack LM, Becnel J, Shafer MA. Relationships among sociodemographic markers, behavioral risk, and sexually transmitted infections in U.S. female Marine Corps recruits. *Military medicine*. 2008; 173(11):1078–1084. Epub 2008/12/06. [PubMed: 19055182]
6. Stahlman S, Javanbakht M, Cochran S, Hamilton AB, Shoptaw S, Gorbach PM. Self-Reported Sexually Transmitted Infections and Sexual Risk Behaviors in the US Military: How Sex Influences Risk. *Sex Transm Dis*. 2014; 41(6):359–364. Epub 2014/05/16. [PubMed: 24825331]
7. 2012 Demographics Profile of the Military Community, Department of Defense. Office of the Deputy Under Secretary of Defense; 2014 Apr 3. Available from: http://www.militaryonesource.mil/footer?content_id=267470.
8. Datta SD, Torrone E, Kruszon-Moran D, Berman S, Johnson R, Satterwhite CL, et al. Chlamydia trachomatis Trends in the United States Among Persons 14 to 39 Years of Age, 1999–2008. *Sexually Transmitted Diseases*. 2012; 39(2):92–96. [PubMed: 22249296]
9. Centers for Disease Control and Prevention. National Center for Health Statistics. Continuous NHANES Sample Design. [webpage]. [updated May 7, 2013October 9, 2013]; Available from: <http://www.cdc.gov/nchs/tutorials/nhanes/surveydesign/SampleDesign/intro.htm>
10. Bray RM, Pemberton MR, Hourani LL, Witt M, Olmsted KLR, Brown JM, et al. 2008 Department of Defense Survey of Health Related Behaviors Among Active Duty Military Personnel. RTI International, 2009. 2009 Sep. Report No.
11. Bray RM, Pemberton MR, Lane ME, Hourani LL, Mattiko MJ, Babeu LA. Substance use and mental health trends among U.S. military active duty personnel: key findings from the 2008 DoD Health Behavior Survey. *Military medicine*. 2010; 175(6):390–399. Epub 2010/06/25. [PubMed: 20572470]

12. Duke MR, Ames GM. Challenges of contraceptive use and pregnancy prevention among women in the US Navy. *Qualitative Health Research*. 2008; 18(2):244–253. [PubMed: 18216343]
13. Adimora AA, Schoenbach VJ, Taylor EM, Khan MR, Schwartz RJ. Concurrent partnerships, nonmonogamous partners, and substance use among women in the United States. *American journal of public health*. 2011; 101(1):128–136. Epub 2010/08/21. [PubMed: 20724694]
14. Lindgren KP, Pantalone DW, Lewis MA, George WH. College students' perceptions about alcohol and consensual sexual behavior: alcohol leads to sex. *Journal of drug education*. 2009; 39(1):1–21. Epub 2009/11/05. [PubMed: 19886159]
15. Barry AE, Stelfox ML, Hanik B, Tennant BL, Whiteman SD, Varnes J, et al. Examining the association between binge drinking and propensity to join the military. *Military medicine*. 2013; 178(1):37–42. Epub 2013/01/30. [PubMed: 23356117]
16. National Priorities Project. Military Recruitment 2010. [website]. [updated June 30, 2011May 11, 2013]; Available from: <http://nationalpriorities.org/analysis/2011/military-recruitment-2010/>.

Table 1

Prevalence of sexual risk behaviors among women in the NHANES and HRBS data sets

	2007–2010 NHANES ^a (n=1,410)			2008 HRBS ^b (n=6,314)		
	n	%	% (adjusted ^c)	n	%	95% CI
<i>Drinker, past 12 months</i>	1096	81.7	83.3	5199	82.6	(81.0, 84.2)
<i>Binge drinking, past 12 months</i>	398	31.3	35.9	2702	45.3	(42.8, 47.8) *
<i>Avg. no. of drinks per day, among drinkers</i>						
1–2	676	64.5	61.1	3157	62.5	(59.7, 65.3)
3–4	289	25	26.4	1119	23.8	(22.1, 25.5)
5–6	96	7.3	8.3	421	9.1	(7.9, 10.2)
7–9	22	2.2	2.7	160	3	(2.2, 3.8)
10+	14	1	1.5	81	1.7	(1.2, 2.1)
<i>How often drink alcohol, among drinkers</i>						
Monthly or less	494	41.9	43.8	1761	40.8	(38.6, 43.0)
2–4 times per month	332	31	31.5	1399	32.8	(30.6, 35.0)
2–3 times per week	180	19.4	20.4	856	19.3	(17.4, 21.2)
4 or more times per week	74	7.7	4.4	322	7.1	(6.3, 8.0)
<i>Illicit substance use, past 12 months</i>						
Marijuana	231	16.5	23	198	3.1	(2.0, 4.2)
Cocaine/heroin/meth	33	2.3	3.4	79	1.3	(0.9, 1.7)
<i>No. sexual partners, past 12 months</i>						
One partner	1165	83.7	77.1	4573	70.7	(68.3, 73.1)
2+ partners	245	16.3	22.9	1741	29.3	(26.9, 31.7) *
<i>Any new sexual partners, past 12 months</i>	115	14.6	21.1	2230	38.7	(36.6, 40.9) *

n's are unweighted; percentages are weighted to population estimates

* 95% confidence intervals for the prevalence do not overlap

^a Includes sexually active women aged 20–49 years; excluding unemployed women (n=790), women who were HIV positive (n=4), military veterans (n=31), and women aged 20–30 years with a military-disqualifying health condition including asthma or bronchitis, arthritis, congestive heart failure, emphysema, or a cancer/malignancy (n=51).^b Includes sexually active women aged 20–49 years

NHANES prevalence estimates are standardized to the military population with respect to age, race/ethnicity, education, and marital status

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript