

**The State of Women Veterans' Health Research: Results of a Systematic Literature Review  
Evidence Tables**

<b>Table 6b. Health behaviors, promotion and epidemiology: <i>Health Behaviors</i></b>						
<b>Author</b>	<b>Women Veteran Specific?</b>	<b>Sample characteristics</b>	<b>Sample size [N]</b>	<b>Design</b>	<b>Main measures</b>	<b>Description</b>
Hankin, 1999 (39)	Yes	National sample of women veterans using VA outpatient services between 7/94 and 7/95 – VA Women's Health Project ( <i>same sample and study as #114</i> )	3632	Observ. Study- Assess risk or prognosis	History of sexual assault while in the military; current symptoms of depression and alcohol abuse (TWEAK); use of current mental health care	Evaluated the prevalence of military sexual assault history in women veterans and its association with depression and alcohol abuse. 23% of women reported a history of sexual assault while in the military. The prevalence of current depression was 3 times higher and the prevalence of current alcohol abuse was 2 times higher among those reporting military sexual assault versus those without this experience.
McKinney, 1997 (161)	Yes	1987 National Medical Expenditure Survey (NMES)	133 female veterans and 12,063 female non-veterans; 3239 male veterans and 6543 male non-veterans	Observ. Study- Assess risk or prognosis	Smoking behavior; military era; demographic characteristics	Compared smoking behaviors between veterans and non-veterans. All veterans were 29% more likely to have smoked five or more packs of cigarettes in their lifetime and 26% more likely to be current smokers than non-veterans. Women veterans were 37% more likely to have smoked five or more packs in their lifetime but were not significantly more likely to be current smokers than women non-veterans.

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Striegel, 1999 (154)	Yes	National sample of hospitalized female and male veterans, FY 1996	24,041 women and 466,590 men	Observ. Study- Assess risk or prognosis	Discharge diagnoses for eating disorders as well as other comorbidities; demographic characteristics	Evaluated prevalence rates of eating disorders and associated psychiatric comorbidity. 0.3% of female veterans discharged in FY '96 and 0.02% of male veterans discharged in FY '96 were diagnosed with a current eating disorder. Women with eating disorders were significantly more likely to have comorbid substance, mood, anxiety, adjustment and personality disorders. Men with eating disorders were significantly more likely to have organic mental, substance, schizophrenia/psychotic and mood disorders. Women had a greater mean number of comorbid disorders.
Davis, 2003 (152)	Yes	Sample of women veterans who had received care from the VA Puget Sound Health Care System between 10/1/96 and 1/1/98	1257 women veterans	Observ. Study- Assess risk and prognosis	Demographic characteristics; substance abuse; cigarette smoking; drinking patterns; mental health symptoms including PTSD	Evaluated the prevalence of substance abuse and psychiatric disorders in the sample of women veterans. 29.1% reported past year cigarette use and 31.1% reported drinking problems. 59% of women under 35 screened positive for smoking, problem drinking or drug abuse. Screening positive for a psychiatric condition was associated with substance use.

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Calhoun, 2001 (162)	Yes	Sample of women veterans receiving care at the Durham VA Medical Center Women Veteran Comprehensive Medical Center – the “Women Veteran Cohort”; surveys mailed in 11/97	409 women veterans	Observ. Study- Assess risk or prognosis	Sociodemographic characteristics; health risk behaviors including lack of exercise, tobacco/alcohol/caffeine use, BMI; hostility scale	Evaluated the relationship between hostility and health risk behaviors in women. After adjusting for demographic factors, self-reported hostility was significantly associated with current tobacco use and high levels of caffeine use. Among women who drink, hostility was significantly associated with the number of drinks consumed in the past week.
Davis, 2002 (163)	Yes	Women receiving addiction treatment at a VA outpatient treatment program (1997-2000) or at a community residential outpatient treatment program (1999-2000)	76 women veterans; 308 community participants	Observ. Study- Assess risk or prognosis	Demographic characteristics; comorbid issues and patients' perceived treatment needs	Evaluated differences in comorbid issues and perceived treatment needs for women in two outpatient substance abuse treatment programs. Women in both programs had high rates of psychiatric and medical comorbidity. Women in the VA treatment program had higher rates of medical problems, while women in the community sample had higher rates of alcohol and family problems.

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Lang, 2003 (139)	Yes	Sample of all women seen in the VA San Diego Healthcare System primary care clinic in 1998	221 women veterans	All Other Observational	Demographic variables; traumatic exposure; PTSD symptomatology; alcohol use screening (CAGE); other health behavior questions	Evaluated the association of sexual traumatization with health behaviors. Women who had been assaulted were more likely than those who had not been assaulted to be smokers and to screen positive on the CAGE though there were no differences in alcohol use during pregnancy, driving while intoxicated or seatbelt use. Sexually assaulted women were more likely to have risky sexual behaviors though they were also more likely have had had a pap smear in the past 5 years and to perform monthly self-breast exams. Assaulted women were more likely to have had an abnormal pap smear.
Bradley, 2003 (109)	Yes	Sample of women receiving care at the VA Puget Sound Health Care System between 10/1/96 and 1/1/99	393 women veterans	All Other Observational	Health questionnaire including alcohol screening (standard and sex-specific AUDIT screens), health status, mental health, eating habits, breast pain and physical activity; clinical interview	Evaluated the validity of the AUDIT alcohol screen in women veterans. 22.6% of the women met interview criteria for past-year hazardous drinking and/or active alcohol abuse or dependence. Standard and sex-specific AUDIT-Cs had a sensitivity of 0.81 and 0.84, respectively, and a specificity of 0.91 and 0.92, respectively.

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Bradley, 2001 (90)	Yes	Sample of all female veterans who received care from the VA Puget Sound Health Care System between 10/1/96 and 1/1/98	1243 women veterans	Observ. Study – Assess risk and prognosis	Alcohol use including binge drinking and alcohol-related problems; psychiatric symptoms	Evaluated the prevalence and associated risk of binge drinking in a population of women veterans. 25% of respondents reported binge drinking and these women tended to be younger, unmarried, and with less education. In regression analyses, binge drinkers were significantly more likely to screen positive for panic disorder. Binge drinkers also had higher rates of health problems including STDs, hepatitis or cirrhosis, injuries and domestic violence. Smoking, drug use and having multiple sexual partners increased with the frequency of binge drinking.
Bush, 2003 (110)	Yes	Sample of women receiving care at the VA Puget Sound Health Care System between 10/1/96 and 1/1/99	393 women veterans	All Other Observational	Clinical interview about alcohol and associated mental health disorders; AUDIT screen; TWEAK Questionnaire	Evaluated the performance of the TWEAK, an alcohol screening instrument, in women veterans. After interview, 9.9% of women met criteria for active DSM-IV alcohol abuse or dependence and 22.7% for hazardous drinking and/or alcohol abuse or dependence. The TWEAK had low sensitivities in the range of 0.44. The AUDI-C had higher sensitivities than the TWEAK at most specificities.

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Walker, 1995 (164)	Yes	All women veterans discharged from VA medical centers in FY 1991 with a diagnosis of a substance use disorder	1698 women veterans	Descriptive Study	Demographic characteristics; prevalence rates of substance use and psychiatric and medical disorders; rehospitalization rates	Evaluated the prevalence of different types of substance use disorders as well as other psychiatric and medical disorders among women with a discharge diagnosis of substance use versus those without. Alcohol and cocaine use disorders were the most prevalent substance use disorders. Women with substance use were more frequently diagnosed with personality disorders, depression and PTSD, as well as with skin, subcutaneous, infectious and digestive diseases. 44% of women discharged with a substance use diagnosis in the first 6 months of FY '91 were rehospitalized in the same year.
Whitlock, 1995 (75)	Yes	Women veterans receiving care from the Pettis VAMC Preventive Medicine Women's Clinic in the 3 years prior to the study (5/91)	409 women veterans	Observ. Study- Assess risk and prognosis	Demographic variables; cardiovascular risk factors; depressive symptoms; smoking variables;	Evaluated the smoking characteristics of female veterans. 32.5% of the sample were current smokers. More than 1/3 of ever-smokers started smoking in the military. Current smokers had higher depression scores than former or never smokers. Predictors of cessation included increasing age and number of quit attempts. Older age at initiation and number of years of regular tobacco use were inversely associated with cessation.

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Batain, 2001 (165)	Yes	Sample of women veterans receiving care at the Durham VA Medical Center Women Veteran Comprehensive Medical Center – the “Women Veteran Cohort”; restricted to those women working outside the home - surveys mailed in 11/97	275 women veterans	Observ. Study- Assess risk or prognosis	Sociodemographic characteristics; health risk behaviors including lack of exercise, tobacco/alcohol/caffeine use, BMI; home and work strain scale	Evaluated predictors of tobacco use. Significant and positive independent predictors of current cigarette smoking included non-married status, lower educational level, not being obese and having higher work strain.
Eitzen, 1997 (166)	Yes	Convenience sample of single women presenting to the Fort Jackson, South Carolina Army base for basic training	594 military women	Observ. Study- Assess knowledge, attitudes, or beliefs	Sexual risk behaviors survey; demographic characteristics; STD prevention methods used; alcohol use	Examined the sexually related behaviors of a sample of unmarried Army recruits. 87% of the sample engaged in vaginal sex with anywhere from one (10%) to 21 (6.6%) partners. 41% used condoms erratically. African Americans were more likely to consistently use condoms and those using alcohol were less likely to do so. White recruits were 1.3 times more likely to have had a greater number of different sex partners. 50.1% of recruits reported receiving a regular pelvic examination and 47% did not perceive themselves at risk for contracting an STD.