



Original article

Evolving Comprehensive VA Women's Health Care: Patient Characteristics, Needs, and Preferences

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A B S T R A C T

Background: Assessment of women veterans' health needs and preferences and their care environment have been identified as a priority research need by the national Veterans Affairs (VA) Women's Health research agenda. Our objective was to identify women veterans' health care preferences and perceptions associated with sole or dual VA health care use.

Methods: This cross-sectional study of 1,002 VA-enrolled Midwestern veterans was performed by computer-assisted telephone interviews.

Results: Sole and dual (both VA and non-VA) users of VA care were more likely to have served in a combat area, have a current diagnosis of posttraumatic stress disorder, and poorer physical health scores than non-VA users. Non-VA users were more likely to be married and have private health insurance. Sole VA users were more likely to want a choice of a male or female health care provider. Both sole and dual VA users believed that the VA provides adequate privacy and safety during outpatient examinations compared with non-users. Urban women veterans were more likely to endorse specific environment of care preferences such as gender-specific waiting areas compared with rural veterans.

Conclusion: Care preferences were similar regardless of VA use; however, perceptions of VA care varied. Women using VA care solely had the most positive perceptions of VA care, followed by dual users then non-VA users. Rural women were similar to urban veterans, but were less likely to endorse specific care preferences. Considering these differences with regard to need and access can inform VA policy and initiatives on improving access to and use of VA care among women veterans in urban and rural areas.

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Introduction

The Veterans Health Administration is responding to the unique health care needs of its rapidly growing population of women veterans by establishing a national model of

comprehensive women's health care (Hayes, 2008; Seelig, Yano, Bean-Mayberry, Lanto, & Washington, 2008; Yano et al., 2009; Yano, Goldzweig, Canelo, & Washington, 2006). The current influx of women veterans into the U.S. Department of Veterans Affairs (VA) is relatively younger (VA, 2007) and increasingly Reserves or National Guard (RNG) veterans who have higher rates of combat than women traditionally seen in the VA (La Bash, Vogt, King, & King, 2009; Street, Vogt, & Dutra, 2009) and elevated rates of sexual trauma compared with civilian women (Campbell & Raja, 2005; Coyle, Wolan, & Van Horn, 1996; Frayne et al., 1999; Lang et al., 2003; Sadler, Booth, Cook & Doebbeling, 2003; Sadler, Booth, Mengeling, & Doebbeling, 2004; Schultz, Bell, Naugle, & Polusny, 2006; Stein et al., 2004; Suris, Lind, Kashner, Borman, & Petty, 2004). Women represent 14% of the enlisted and 16% of the officer active duty population (Office

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of the Under Secretary of Defense, 2008). In 10 years, the percentage of veterans who are female is projected to increase from 7.7% to 10% (Office for Policy and Planning, 2008). Among Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF)-era veterans, women comprise 11% of veterans (Office of Public Health and Environmental Hazards & Women Veterans Health Strategic Health Care Group, 2008). OEF/OIF era women veterans are enrolling in VA care (43%) and using VA care (29%; Kang, 2008). Unfortunately, there is limited research to date on OEF/OIF era women veterans, their health status, treatment needs, or preferences.

Research to determine women Veteran's health care needs, use of VA care, and potential barriers is underway (Goldzweig, Balekian, Rolon, Yano, & Shekelle, 2006). Frayne et al. (2006) conducted a secondary data analysis of a national sample of men and women VA users and found that women, similar to their male counterparts, had a heavy burden of physical and mental illness. Washington, Yano, Simon, and Sun (2006) found women veterans' choice of health care provider depended on affordability, perceived quality of care, and convenience. Women who used VA care cited affordability, whereas those who used non-VA care commonly cited having insurance that covers health care outside the VA. The biggest deterrent to VA care was lack of information about the VA; however, women's health clinics may foster VA use. Vogt et al. (2006) identified barriers to care that included problems with ease of use and the availability of women-specific services. Although serving as a foundation for better understanding women veterans' needs and use, comparable research among younger women veterans is lacking.

RNG veterans return to private sector occupations and therefore may be more likely to have private insurance and thus use the VA for health care differently than regular military veterans. For example, it may be that RNG veterans choose VA for some of their health care needs, but not others. Prior research has indicated poorer health outcomes for dual VA and private care users (Wolinsky et al., 2006). Optimal health care is needed because this new cohort of women veterans has been shown to have high rates of depression, posttraumatic stress disorder (PTSD), and other mental health concerns, as well as poorer physical health (Tanielian & Jaycox, 2008). This study builds on previous research and expands it by investigating the relative importance of women veterans' perceptions, needs, and backgrounds with regard to their decisions to use or not use VA care within a sample of younger women (ages 20-52), both Active Component (AC) and RNG veterans, across service eras including OEF/OIF, some with deployment experiences.

The national VA Women's Health Research Agenda identified "assessments of women veterans' needs and preferences for health services and their care environment, [and] gender-specific barriers to access" as a priority research area (Yano et al., 2006, p. S99). We are learning more about women veterans' treatment needs and care preferences, but how these combine to impact VA care use is unknown. Presenting a dichotomy of VA use ignores a substantial subpopulation of veterans who seek care both within and outside the VA. Specifically, it is of interest to investigate which VA services are being used by those who use the VA for some, but not all of their care, in particular gynecologic and mental health services, both components of comprehensive women's primary care.

Our study sample reflects the most current population of enrolled women veterans, and potential new users of VA care, by including OEF/OIF-era veterans, with and without combat exposures, and with AC and/or RNG service. Care preferences

generally and perceptions of VA care specifically may differ for OEF/OIF era veterans by trauma exposures and by service type (i.e., AC or RNG). The objectives of this study were, therefore, to determine the following among younger women veterans.

1. Whether women veterans' health care preferences and perceptions are associated with VA health care use.
2. The relative strength of the association between preferences and perceptions and VA health care use in women who differ in sociodemographic and military factors, mental health comorbidities and trauma exposures.
3. Whether dual users of VA care are more or less likely to use VA for mental health and/or gender-specific health care.

Materials and Methods

Sample and Sources of Data

This study was a cross-sectional survey of 1,002 women 52 years of age or younger who had enrolled at two Midwestern Veterans Affairs Medical Centers or outlying clinics within the 5 years preceding study interviews (July 2005 through August 2008). Women veterans enrolled after June 2005 and before the study completion were periodically identified and added to the cohort using the VistA System (Veterans Health Information System & Technology Architecture). VA enrollment could have been initiated to receive health care, complete a disability claim, enroll in a registry, or in response to veteran outreach.

An introductory letter and consents with postage-paid, pre-addressed return envelopes were sent to potential subjects. Within 2 weeks after receiving the introductory letter, eligible subjects who did not initiate contact were recruited into the study by telephone. An Institutional Review Board approved protocol allowed a maximum of eight call attempts to reach the subject during varying times and days of the week over a 2-week period. The mail and phone protocols were repeated for potential subjects and continued until contact was made or subjects were deemed unreachable. When address or phone problems occurred, effort was taken to find current contact information for unreachable subjects using directory assistance, Internet white pages, the VA's Computerized Record System, and Accrurint (2009; a confidential Lexis Nexis research tool). Sixty-nine percent (1,670/2,414) of the sample were located and invited to participate in the study (Figure 1). One thousand fifty-five subjects consented to participate, resulting in a response rate of 63%. One thousand four completed the interview; however, two did not know if they had used VA care in the last 5 years and were excluded from the analyses. All results are based on a sample size of 1,002. The study was approved by the University of Iowa Institutional Review Board.

For reasons related to the original study of gynecologic health, women were screened before interview to exclude those 1) aware of in utero diethylstilbestrol exposure, 2) currently receiving immunosuppressants, or 3) older than age 52 years. In utero diethylstilbestrol exposure and immunosuppressants are recognized risk factors for cervical dysplasia and genital malignancies. Restriction of participants' age to 52 years or less reduced the occurrence of natural menopause.

The mailed introductory letter provided a toll-free number so that potential subjects could have questions addressed, schedule interviews, or refuse participation. Women refusing participation were asked why they refused and to answer three questions

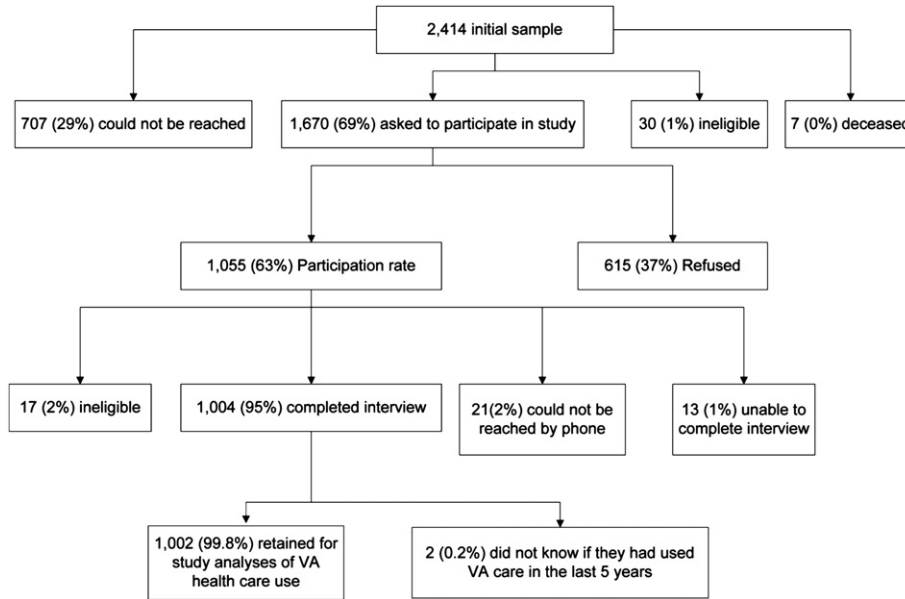


Figure 1. Study sample of women veterans (20–52 years old) enrolled* at two Midwestern Veterans Affairs Medical Centers or their outlying clinics July 2005 through August 2008. *VA enrollment could have been initiated to receive health care, complete a disability claim, enroll in a registry, or in response to veteran outreach.

related to the original purpose of the study (gynecologic health) to allow comparison with participants: 1) "In general, would you say your health is: excellent, very good, good, fair, or poor?" 2) "Have you ever been told you have had an abnormal Pap smear?" and 3) "In the last year, approximately how many times have you seen a doctor or health care provider for gynecologic health issues?" Of the 615 refusers, 391 consented to answering the follow-up questions. No significant differences were found between participants and refusers with regard to average age (38.3 vs. 37.9 years), self-report of very good or excellent health (43.5% vs. 45.1%), number of gynecologic visits in last year (2.1 vs. 1.7), or ever being told by a provider they had an abnormal Pap test (56.9% vs. 51.2%). The most frequently identified reasons for refusing participation were being too busy (36%), lack of interest (33%), and not wishing to discuss gynecologic care because the topic was too personal (7%).

After return of signed consents and meeting inclusion criteria, participants completed a computer-assisted telephone interview. The computer-assisted telephone interview assessed demographics, lifetime sexual assault (LSA), gynecologic diagnoses and procedures, and health risk behaviors including smoking, substance use, and substance use consequences. The average interview took 1 hour 16 minutes and the majority of subjects (89%) completed it in one call. Subjects who completed the interview were reimbursed \$30.00 for their participation.

Measures

The primary outcome for this study was level of reliance on VA health care: All, some, or none. Medical care was clarified to include mental health and gynecologic/reproductive care but not dental care. Respondents that had used the VA for some or none of their health care were asked if they had received women's health care (e.g., gynecologic or reproductive care) or mental health care somewhere other than the VA.

The underlying theoretical model was based on Anderson's modified approach to health care use (Aday & Andersen, 1974;

Andersen, 1995), a conceptual framework developed to define and measure equitable access to health care by modeling people's use of health services as a function of their predisposition to use services, factors that enable or impede use, and their need for care. Independent variables were grouped into three categories: Patient demographics and military history (predisposing), participant health care preferences and perceptions of VA health care (enabling), and patient current health care needs (need). Patient demographics included self-reported age, race, education level, employment, marital status, household income, and health insurance. Previous military characteristics included service AC, RNG, or both AC and RNG; rank; active duty duration; and era of service. Veterans eras of service were determined by self-reported entry date and length of service and were categorized by most recent service era. Traumas included combat exposure and LSA. Current health care needs included PTSD, depression, anxiety, substance use disorders, head injuries, chronic health problems, and measures of physical and mental health. All data, except for rural status, was obtained through self-report. Rurality was obtained from national VA enrollment data that classifies veteran residence as urban, rural, or highly rural (VHA Planning System Support Group, 2011).

The Health Survey Short Form-12 Version 1 (SF-12) assessed physical (PCS) and mental (MCS) health functional impairment (scores ranging from 0 to 100, nationally normed $M = 50$, $SD = 10$, with lower scores indicating more impairment). PCS and MCS scores have been shown to have adequate reliability and validity against health criteria (Ware, Kosinski, & Keller, 1996).

The 17-item self-report Posttraumatic Symptom Scale (Foa, Riggs, Dancu, & Rothbaum, 1993) was used to assess the presence and severity of *Diagnostic and Statistical Manual of Mental Disorders* 4th edition (DSM-IV TR; American Psychiatric Association, 2010) criteria B to D for PTSD. The DSM-IV part A criteria of lifetime traumatic events were augmented with combat-related traumatic exposures and asked of those serving in combat. The time frame for symptoms was the most recent 2-week period. Follow-up questions were queried regarding

duration (criteria E) and effects of symptoms on daily functioning (criteria F).

Depression was measured using the Composite International Diagnostic Interview—Short Form (CIDI-SF), which provides a screening diagnosis of major depressive disorder based on the American Psychiatric Association's DSM-IV TR (American Psychiatric Association, 2010). The CIDI-SF for major depressive episode has a sensitivity of 89.6%, specificity of 93.9%, positive predictive value of 76.7%, and negative predictive value of 86.9% (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998).

LSA was assessed using the legal definition adopted by The American Medical Association and The American College of Obstetricians and Gynecologists, and commonly used in sexual violence research (American Medical Association, 1995; American College of Obstetricians and Gynecologists, 2000). If a respondent reported LSA, the interview included specific questions related to occurrence in different periods of life, including adolescence before the age of 18, between the age of 18 and entrance into the military, during the military, and post-military.

Women's preferences for health care and their perceptions of VA health care facilities were queried using a 5-point Likert scale for preferences (not needed, not important, somewhat important, very important, must have) and perceptions (strongly agree, agree, not sure, disagree, strongly disagree).

Analyses

Bivariate analyses were conducted first to assess predictors of VA care utilization in isolation. Significant chi square values ($p < .10$) in the bivariate analyses were carried forward to the next stage of modeling, in addition to the Medicaid or Medicare insurance variable where a suppressor effect was identified; that is, the association between VA use and Medicaid/Medicare was enhanced when other variables were statistically controlled for.

Our primary aim was to identify the independent contributions of enabling variables (women's health care preferences and VA health care perceptions) on VA health care use when adjusting for predisposing (demographics, military characteristics) and need (trauma exposures and current health status) variables. Statistical and conceptual methods guided model development (Bartolucci & Fraser, 1977; Harrell, Lee, Califf, Pryor, & Rosati, 1984). To identify the most strongly associated variables with VA use among similarly categorized variables within our conceptual framework, variable selection was carried out with a series of multinomial logistic regression models: [1] Predisposing; [2] need; [3] enabling; and [4] predisposing, need, and

enabling variables. Significant variables in models [1] through [3] were entered into a final model [4]. The final model included variables with significant odds ratios in each of the three previous models ($p < .05$).

Missing categorical data resulted in the listwise exclusion of only 1.5% of participants in multinomial logistic analyses. Analyses were two-tailed, performed with SAS 9.1 software (SAS, Inc., Chicago, IL).

Results

Participants were 1,002 women veterans ranging in age from 20 to 52 years, with a median age of 40 years ($M = 38.3$; $SD = 8.8$). The majority were Caucasian (80%), which reflects the Midwestern cohort from which this sample was selected. The majority (85%) reported at least some college or technical training. A little over half (52%) were currently employed. Annual household incomes ranged from \$0 (no income) to \$1 million, with a median income of \$35,000. One fifth of the sample reported incomes less than \$20,000. Over 80% reported having health insurance. Those with incomes less than \$20,000 were more likely to report not having any health insurance ($p < .0001$). Approximately one third (32%) received all of their care at a VA, 56% received some, and 12% received no VA care in the past 5 years (Table 1).

The sample was split between rural (55%) and urban (45%) veterans. Highly rural veterans ($n = 4$) were grouped with rural veterans. Rural veterans were more likely to be White (86% vs. 72%; $p < .0001$), married (50% vs. 35%; $p < .0001$), and have a household income greater than \$20,000 per year (81% vs. 77%; $p < .05$). There were no differences by rurality for any of the other demographic characteristics listed in Table 3, including use of VA health care in the past 5 years, military characteristics, sexual assault (SA) history, or health status.

This sample was composed of women who had served solely in the AC (60%, $n = 597$), solely the RNG (12%; $n = 124$), and both AC and RNG (28%; $n = 281$). Approximately one third of the sample served during the OEF/OIF (37%; $n = 370$), Persian Gulf (30%; $n = 300$), and Post Viet Nam (33%; $n = 332$) eras of service. Participants were from all five branches (Air Force, Army, Coast Guard, Marines, and Navy) with the majority of both AC and RNG serving in the Army (AC, $n = 450$; RNG, $n = 315$), Navy (AC, $n = 215$; RNG, $n = 56$), and Air Force (AC, $n = 169$; RNG, $n = 42$; responses were not necessarily mutually exclusive among branches or between service types). The majority (94%) of the sample were enlisted service personnel with a median of 4 years

Table 1
Women Veterans' Health Care Preferences and Perceptions of VA Health Care Facilities

	Health Care Received at a VA in the Past 5 Years				
	Total	All	Some	None	<i>p</i>
Preferences: It is important ^a to have					
Separate waiting areas just for women	21.4	22.9	21.1	18.1	.54
A female 'chaperone' in the room during a physical examination	63.4	66.9	61.1	64.7	.22
The primary care provider perform your annual Pap smear and gynecologic examination.	61.6	62.5	62.0	56.9	.54
Health care services specific to women's needs (e.g., gynecology, urogynecology).	96.2	96.0	97.0	93.1	.13
A choice of being treated by a male or female health care provider.	64.3	71.2	62.2	55.2	.002
Perceptions: Percent who agree [†] with the following statements					
VA health care facilities serve the needs of men and women veterans equally well.	60.9	64.1	61.8	47.4	<.0001
Women can feel safe from sexual harassment at the VA medical center or clinics.	79.2	83.3	79.8	65.5	.0006
VA outpatient care services provide adequate privacy during examinations.	88.0	94.1	89.3	64.7	<.0001

^a Percentages are reported for those who responded 'somewhat important', 'very important' and 'must have.'

[†] Percentages are reported for those who responded 'strongly agree' and 'agree.'

Table 2
Multinomial Logistic Regression Models for VA Health Care Use

Women Veterans Reported Use of VA Health Care in the Last 5 Years ^a	Predisposing Model	Need Model	Enabling Model	Final Model
	Adjusted Odds Ratios (95% CI)			
All				
Age, yrs (ref 20-29)				
30-39	.84 (.38-1.84)			
40-49	1.98 (.83-4.73)			
White	.71 (.39-1.31)			
Education (ref high school)				
Some college or technical training	.98 (.50-1.90)			
Completed college or greater	1.08 (.50-2.35)			
Employed	.74 (.44-1.22)			
Marital status (ref single)				
Married	.35 (.18-.66)			.35 (.18-.68)
Divorced	.76 (.37-1.54)			.82 (.39-1.73)
Household Income <\$20,000	.72 (.37-1.38)			
Health insurance				
Private health insurance	.18 (.11-.30)			.19 (.11-.32)
TRICARE or CHAMP VA	.35 (.18-.71)			.51 (.25-1.01)
Medicaid or Medicare	.43 (.19-.96)			.36 (.16-.82)
Service (ref reserve or RNG only)				
AC only	1.22 (.50-3.00)			
Both AC and RNG	1.46 (.60-3.56)			
Enlisted	4.57 (1.46-14.27)			4.25 (1.41-12.79)
Exit Era (ref OEF/OIF)				
Persian Gulf	2.22 (1.12-4.38)			2.15 (1.16-3.97)
Post Vietnam	1.69 (.75-3.81)			2.91 (1.52-5.59)
RNG active duty duration	.98 (.95-1.00)			
Trauma history				
Served in a combat area	1.35 (.80-2.28)			1.99 (1.11-3.57)
SA not during military service	1.58 (.99-2.51)			
SA during military service	1.30 (.78-2.18)			
Health status				
PTSD		2.02 (1.03-3.96)		2.69 (1.34-5.40)
Depression		1.17 (.66-2.08)		
Anxiety		1.28 (.73-2.24)		
Substance use disorder		1.48 (.91-2.41)		
Head injury		.88 (.55-1.39)		
≥1 chronic health problem		1.49 (.89-2.51)		
SF-12 PCS		.95 (.92-.98)		.94 (.91-.98)
Preferences and perceptions				
A choice of being treated by a male or female health care provider.			2.27 (1.44-3.60)	2.03 (1.23-3.33)
Women can feel safe from sexual harassment at the VA.			1.40 (.80-2.46)	
VA outpatient care services provide adequate privacy during examinations.			7.06 (3.63-13.74)	9.38 (4.78-18.40)
VA health care facilities serve the needs of men and women veterans equally well.			1.25 (.77-2.02)	
Some				
Age, yrs (ref 20-29)				
30-39	.84 (.43-1.62)			
40-49	1.33 (.63-2.80)			
White	.90 (.51-1.60)			
Education (ref High school)				
Some college or technical training	1.20 (.65-2.23)			
Completed college or greater	1.61 (.79-3.28)			
Employed	.85 (.54-1.33)			
Marital status (ref single)				
Married	.76 (.43-1.34)			.73 (.40-1.31)
Divorced	1.11 (.57-2.16)			1.08 (.54-2.18)
Household income <\$20,000	.76 (.41-1.41)			
Health insurance				
Private health insurance	.52 (.33-.83)			.55 (.34-.88)
TRICARE or CHAMP VA	.84 (.48-1.46)			1.12 (.64-1.97)
Medicaid or Medicare	.79 (.38-1.66)			.61 (.28-1.32)
Service (ref reserve RNG only)				
AC only	.53 (.25-1.12)			
Both AC and RNG	.59 (.29-1.23)			
Enlisted	3.36 (1.49-7.56)			
Exit Era (ref OEF/OIF)				
Persian Gulf		1.05 (.59-1.87)		.93 (.54-1.60)

(continued on next page)

Table 2 (continued)

Women Veterans Reported Use of VA Health Care in the Last 5 Years*	Predisposing Model	Need Model	Enabling Model	Final Model
Adjusted Odds Ratios (95% CI)				
Post Vietnam		1.04 (.51–2.12)		1.31 (.74–2.35)
RNG active duty duration		.98 (.96–1.00)		
Trauma history				
Served in a combat area		1.79 (1.11–2.90)		2.06 (1.23–3.45)
SA not during military service		1.19 (.77–1.85)		
SA during military service		1.12 (.68–1.82)		
Health status				
PTSD		2.04 (1.07–3.90)		2.41 (1.24–4.65)
Depression		1.34 (.78–2.31)		
Anxiety		.88 (.51–1.51)		
Substance use disorder		1.13 (.71–1.80)		
Head injury		.68 (.44–1.05)		
≥1 chronic health problem		1.31 (.79–2.15)		
SF-12 PCS		.96 (.93–.99)		.95 (.92–.98)
Preferences and perceptions				
A choice of being treated by a male or female health care provider.			1.48 (.97–2.25)	1.46 (.94–2.26)
Women can feel safe from sexual harassment at the VA.			1.21 (.72–2.01)	
VA outpatient care services provide adequate privacy during examinations.			3.89 (2.28–6.64)	5.63 (3.38–9.38)
VA health care facilities serve the needs of men and women veterans equally well.			1.22 (.78–1.91)	

Abbreviations: AC, Active Component; CI, confidence interval; MCS, Mental Component Score; OEF/OIF, Operation Enduring Freedom/Operation Iraqi Freedom; PCS, Physical Component Score; RNG, Reserve/National Guard; SA, sexual assault.

* The reference category is: None, no health care received at a VA facility within the last 5 years.

of active military service. Twenty-nine percent reported serving in a military combat area or war zone.

Sixty-two percent ($n = 620$) of participants reported attempted and/or completed LSA. LSA occurrences were grouped by whether or not the SA occurred during military service (Table 3). Almost one third (30%) reported a SA during military service. Half of all women reported experiencing an attempted or completed SA outside of their military service. The percentages for each time period reported in Table 3 are not mutually exclusive; women may have experienced SA both during and outside of military service. Women who had experienced a SA were more likely to report using the VA for all or some of their health care needs.

Current rates of PTSD (25%), depression (30%), anxiety (26%), lifetime substance use disorders (34%), head injuries (34%), and chronic health problems (31%) were high in this sample. Typically, those using the VA for all their health care had the highest proportions of each illness, followed by those using the VA for some of their health care. Those not using the VA for any care tended to have the lowest percentages of each of the issues. This is true for all but those reporting a head injury. Of those who reported a head injury, skull fracture, or concussion during their lifetime, over half (56%) had lost consciousness.

In general, women's care preferences did not differ significantly by level of VA use (Table 1). All women (96%) said that having women-specific health care services such as gynecology and urogynecology was important. Another large majority believe having a female chaperone in the room during a physical examination (63%), having their primary care provider perform their annual Pap smear and gynecologic examination (62%), and having a choice of a male or female provider (64%) were important to have. Of these, only the option of having a choice of male or female provider broke out differently by VA use. Those who use the VA solely for their health care were more likely to place importance on provider choice (71%) than dual users (62%) or non-VA users (55%).

There were several differences in preferences between rural and urban veterans. Rural women were less likely to report a need for separate waiting areas just for women (18% vs. 26%; $p < .01$), to want a female "chaperone" in the room during a physical examination (60% vs. 66%; $p < .05$), or the option of being treated by a male or female health care provider (61% vs. 69%; $p < .01$). None of the other preferences or perceptions listed in Table 1 were significant by rurality.

Women who use the VA solely for their care tended to have more positive views of the service and safety provided to female VA users. Almost all (94%) of these sole VA users agreed with the statement that "VA outpatient care services provide adequate privacy during examinations," a noticeable contrast to the agreement reported by non-VA users (65%). Sole VA users were more likely to agree with the statement "Women can feel safe from sexual harassment at the VA medical center or clinics" than non-users (79% and 66%, respectively). When asked if they agree or disagree with the statement that "VA health care facilities serve the needs of men and women veterans equally well," the entire sample showed lower agreement (61%), with sole VA users more likely to agree (64%) than non-VA users (47%). Agreement rates for dual users were between those of sole VA users and non-VA users (Table 1).

Ninety-six percent of the participants had a gynecologic examination within the past 5 years, regardless of VA use. Among those who used the VA for some of their care ($n = 563$), 20% sought gynecologic care at the VA only, 36% sought care outside the VA only, and 38% sought women's health care both at the VA and outside the VA. More dual users tended to seek non-VA care than VA care for gynecologic care (76% vs. 58%). Dual users were less likely to seek gynecologic care outside the VA than non-VA users (76% vs. 87%; $p < .01$), although the rate was still high for dual users. Among dual users only, 30% reported seeking mental health care outside the VA. Among dual users with PTSD, depression, or anxiety ($n = 271$), 76% reported seeking gynecologic care outside

Table 3
Women Veterans: Sample Characteristics of by VA Health Care Use

Variable	Care Received at a VA in the Past 5 Years				p
	Total (n = 1,002)	All (n = 323)	Some (n = 563)	None (n = 116)	
Demographics					<.001
Age, yrs (%)					
20-29	22.5	16.4	25.4	25.0	
30-39	26.5	22.9	27.2	33.6	
40-52	51.0	60.7	47.4	41.4	
White (%)	79.9	75.2	81.7	84.5	.03
Education (%)					.03
High school graduate	15.2	18.9	13.0	15.5	
Some college or technical training	56.5	58.5	55.9	53.5	
College graduate or more	28.3	22.6	31.1	31.0	
Employed (%)	51.5	47.4	52.2	59.5	.07
Current marital status (%)					<.001
Single	23.0	26.6	21.3	20.7	
Married	43.9	30.7	48.7	57.8	
Divorced	33.1	42.7	30.0	21.6	
Annual household income <\$20,000 (%)	20.3	25.7	18.1	15.5	<.01
Rural or highly rural residence (%)	55.2	53.3	56.3	55.7	.54
Insurance (%)					
Any health care insurance	83.8	77.7	86.8	86.2	<.01
Private health insurance	47.6	29.1	52.6	70.0	<.001
Tricare or VA CHAMP insurance	17.0	8.7	20.4	23.3	<.001
Medicaid or Medicare	11.0	11.2	11.2	9.5	.86
Military characteristics					<.001
Service (%)					
AC	59.6	64.4	57.6	56.0	
RNG	12.4	15.9	15.8	13.8	
Both AC and RNG	28.0	29.7	26.6	30.2	
Enlisted (%)	95.4	98.1	95.4	87.8	<.001
Active duty duration, mean (median)	5.3 (4)	5.3 (4)	5.4 (4)	5.1 (4)	.845
AC (yrs)	5.0 (4)	5.1 (4)	5.1 (4)	4.7 (4)	.703
RNG (mos)	3.5 (0)	2.2 (0)	3.9 (0)	5.5 (0)	.003
Exit era (%)					<.001
OEF/OIF	36.9	25.1	42.1	44.8	
Persian Gulf	29.9	33.4	27.9	30.2	
Post Vietnam	33.1	41.5	30.0	25.0	
Trauma history (%)					
Served in a combat area	29.5	25.1	33.4	23.3	<.01
Lifetime SA	61.8	70.0	58.4	55.2	<.001
SA not during military service	50.2	58.2	47.3	42.2	<.001
SA during military service	32.4	38.7	30.6	24.1	<.01
Health status					
PTSD (%)	24.7	29.4	24.5	12.1	<.001
Depression (%)	30.3	34.7	29.7	21.6	.03
Anxiety (%)	26.1	33.0	23.3	20.7	<.01
Substance use disorder (%)	34.4	40.9	32.2	27.6	<.01
Head injury (%)	34.1	38.7	31.3	35.3	.08
≥1 chronic health problem (%)	30.9	35.3	30.2	22.4	.03
SF-12 PCS, mean	41.1	40.5	41.1	43.1	<.01
SF-12 MCS, mean	46.7	46.2	46.9	47.0	.48

Abbreviations: AC, Active Component; MCS, Mental Component Score; OEF/OIF, Operation Enduring Freedom/Operation Iraqi Freedom; PCS, Physical Component Score; RNG, Reserve/National Guard; SA, sexual assault.

the VA compared with 42% who reported seeking mental health care outside the VA.

Multinomial Logistic Regression Results

The aim of preliminary multinomial logistic regression analyses was to identify the most parsimonious model for the association between VA health care use and women's preferences and perceptions accounting for demographic and military characteristics, trauma exposures, and current health. VA health care use was categorized by all (sole), some (dual), and no (none) VA health care in the last 5 years. The reference category was no VA health care use. Sole VA users were less likely to be married or to

have insurance but more likely to be enlisted rank and to have served in an era before OEF/OIF.

Trauma exposure and current health variables that demonstrated significant bivariate associations with VA use were entered into a second model. Variables that emerged as significant included combat exposure, PTSD diagnosis, and poorer physical health (PCS-12). Although those who use the VA for all their health care were more likely to have experienced a SA (70%) compared with non-VA users (55%), SA was not significant when taken into context with the other trauma and health variables. Those who had combat exposure were most likely to be dual users. The mean SF-12 physical component scores were lower for all VA users and remained significant in the context of the other trauma and health factors.

The last preliminary model looked at the associations between VA health care use and 1) women veteran preferences regarding different aspects of women's health care generally, and 2) perceptions of VA care. The only preference that differed by VA use was having a choice of a male or female health care provider. VA users were significantly more likely to believe that this was important and this preference remained significant when included in a model with perceptions of VA care. Although all perception questions had significant bivariate associations with VA use, only the statement regarding adequate privacy during VA outpatient services remained significant. VA users (sole and dual) were more likely to agree that the VA provides adequate privacy than non-VA users.

The significant variables in models [1] through [3] were entered into a final model (Table 2). Notable differences remained when sole and dual VA users were compared with the reference group of no VA use. Sole VA users compared with non-VA users were less likely to be married or to have insurance, particularly private insurance, and to have served in an era before OEF/OIF. Sole and dual VA users were more likely to have been enlisted rank, have served in a combat area, have a current PTSD diagnosis, and have poorer physical health scores. When all these background variables were taken into account, sole VA users were still significantly more likely to endorse the importance of having a choice of a male or female health care provider and sole and dual VA users believe that the VA provides adequate privacy during outpatient examinations compared with non-VA users.

Discussion

Our findings demonstrate that among younger women veterans (20–52 years), preferences about their care environment and their perceptions about VA care facilities are associated with VA use, even when taking into account potential confounders such as predisposing (e.g., insurance) and health care need factors. Current sole and dual VA users, within this group, tended to be older, non-White, divorced or single, have greater financial constraints owing to factors such as unemployment, low household incomes, and lack of insurance compared with the non-VA users. Sole VA users were more likely to have served in an era before OEF/OIF. Sole and dual VA users were more likely to have combat exposure, poorer physical health, with greater percentages reporting PTSD. The association between the perception that the VA offers privacy and safety and the use of services is notable. Veterans not using the VA were less likely to report that women can feel safe from sexual harassment or that adequate privacy is provided during outpatient examinations in the VA.

Women veteran VA user characteristics are consistent with other studies that have shown women veterans are more likely to use VA care if they have a history of military SA (Kelly et al., 2008; Stein et al., 2004; Zinzow, Grubaugh Frueh, & Magruder, 2008), have comorbid medical and mental illness (Dobie et al., 2006; Frayne, Skinner, Sullivan, & Freund, 2007; Mojtabai, Rosenheck, Wyatt, & Susser, 2003) and do not have private insurance coverage (Shen, Hendricks, Wang, Gardner, & Kazis, 2008; Washington et al., 2006). Regardless of VA health care use, veterans expressed the need for health care services specific to women's needs. This is consistent with other research findings that environment of care concerns do represent a potential barrier to using VA care (Washington, Kleimann, Michelini, Kleimann, & Canning, 2007). Greater patient satisfaction has

been associated with being able to see the same provider across visits, continuity of care, having access to women's clinics, and gynecological care (Bean-Mayberry, Chang, McNeil, & Hudson Scholle, 2006; Desai, Stefanovics, & Rosenheck, 2005; Fan, Burman, McDonnell, & Fihn, 2005). Environment of care studies have consistently shown that women want their health care to focus on quality and sensitivity to women's health issues. Our study expands the previous work by identifying specific environment of care concerns and the relative strength of these concerns related to VA use in the context of need and diverse Veteran characteristics (e.g., younger age, AC and RNG, combat deployed).

A further strength of our research was including sole VA users, non-users, and dual users as well as recent use of different care types, such as mental health and gender-specific care (e.g., gynecology). Our findings indicate that dual users are more likely to seek care outside the VA for gender-specific care but to use the VA for mental health needs. Dual users' perceptions of VA care, particularly the importance of privacy, safety, and choice of provider gender, fell between exclusive VA users and non-users. Consequently, these specific factors may not only be associated with VA use or avoidance, but may also reflect how women choose what services they access and where they access them.

More than half of our sample came from rural areas. Therefore, we are able to make a unique contribution to the literature by reporting on the similarities and differences between urban and rural women veterans use of VA care, perceptions of VA care, and health care preferences. No differences were found in use or perceptions of VA care. However, urban women were more likely to place more importance on specific preferences for care, such as separate waiting rooms for men and women and the choice of a male or female health care provider, than rural women veterans. Clinicians must be aware that urban and rural veterans differ in their care preferences.

A potential limitation of this study is non-response bias. Although considerable effort was undertaken to locate women who had out-of-date contact information, there were still a number of women (29%) who were never reached. Within our study population of enrolled veterans, every woman veteran had an equal chance to be selected for this study. However, no stratification was used for sampling and no attrition weights were applied in the analyses.

Most information collected in this study was self-reported and required responders to recall information on VA use within the past 5 years. Memory failure, telescoping of events into or out of the reference period (specific details forgotten, partial memory failure in which events are misplaced in time), and decreased willingness to report victimization because of knowledge that a more detailed interview would follow (time-in-sample bias) all could have affected findings. However, validation of participant's self-report of having had a Pap test at a VA showed 90.6% agreement between participant's self-report of having had a Pap test at a VA within the past 5 years and chart review findings, therefore providing an alternate validation of VA use.

Our sample was selected from a Midwestern cohort and this may limit the generalizability of our findings. However, this limitation is balanced by the unique contribution of having more than half of our sample come from rural areas. Because our study focused on women veterans aged 20 to 52 years, our results are not generalizable to older women veterans. However, both the younger ages and the mix of AC and RNG service members better represent the evolving women veteran population and potential new VA users. One of the limitations of this study was not asking

whether women veterans were aware that the VA provides gender-specific care. It is unclear from our data if those who reported not using the VA for gynecologic care knew this type of care is available from the VA.

Women veterans represent a unique population served by VA health care, and this study provides perspectives on the fastest growing segment of new users, namely younger combat-exposed women, both AC and RNG, who have enrolled in the VA system. Our findings indicate that these women have preferences common to other military/veteran cohorts regarding the delivery of their VA health care: They want access to care specific to women's needs (e.g., gynecology), to be able to choose the gender of their provider, for their primary care provider to offer gynecologic care (as opposed to go to another clinic), and to have a female "chaperone" in the room during physical examinations. Current VA care users have more positive perceptions of their VA care with regard to privacy and safety than non-VA users. However, non-VA users tend to represent a younger, married cohort, who are more likely to have options for health care through employment and insurance and less likely to have current mental health concerns (such as PTSD and depression). Considering these differences with regard to need and access would inform VA policy initiatives on improving access to and use of VA care among women veterans in urban and rural areas.

The VA has made a concentrated effort to identify gaps in women's VA access and quality of care and has mandated changes in how women access and receive their care (Yano et al., 2006; Yano, Washington, Goldzweig, Caffrey, & Turner, 2003; Washington, Caffrey, Goldzweig, Simon, & Yano, 2003). Changes in VA care for women include access to comprehensive care, appointment of Women Veterans Program Managers to evaluate and implement changes to continue to improve the quality, and ensuring privacy and providing female chaperones during examinations (VA, 2010). Of note is that women in our study who used VA care, solely or dually, strongly agreed that adequate privacy was provided during examinations (94% and 89%, respectively). Establishing comprehensive health care for women veterans is an evolving process as the users themselves are presenting new challenges to the VA to provide care for a population encompassing women of childbearing age and varied military and trauma exposures. Our study augments existing research by characterizing the needs and preferences of younger women veterans than previously studied.

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