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Association between Women Veterans' Experiences with VA Outpatient Healthcare and Designation as a Women's Health Provider in Primary Care Clinics

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Abstract

Background—Women Veterans comprise a small percentage of VA healthcare users. Prior research on women Veterans' experiences with primary care has focused on VA site differences and not individual provider characteristics. In 2010, the VA established policy requiring the provision of comprehensive women's healthcare by designated women's health providers (DWHPs). Little is known about the quality of healthcare delivered by DWHPs and women Veterans' experience with care from these providers.

Methods—Secondary data were obtained from the VA Survey of Healthcare Experience of Patients (SHEP) using the Consumer Assessment of Healthcare Providers and Systems (CAHPS) patient-centered medical home (PCMH) survey from March 2012 through February 2013, a survey designed to measure patient experience with care and the DWHPs Assessment of Workforce Capacity (DAWC) that discerns between DWHPs versus non-DWHPs.

Findings—Of the 28,994 surveys mailed to women Veterans, 24,789 were seen by primary care providers and 8,151 women responded to the survey (response rate 32%). A total of 3,147 providers were evaluated by the SHEP-CAHPS-PCMH survey (40%; n=1,267 were DWHPs). In a multivariable model, patients seen by DWHPs (RR=1.02 95% CI=1.01–1.04) reported higher overall experiences with care compared to patients seen by non-DWHPs.

Conclusions—The main finding is that women Veterans' overall experiences with outpatient healthcare are slightly better for those receiving care from DWHPs compared to those receiving care from non-DWHPs. Our findings have important policy implications for how to continue to improve women Veterans' experiences. Our work provides support to increase access to DWHPs at VA primary care clinics.

Keywords

women; veterans; experiences with care; primary care

Introduction

Women are still a minority in the Department of Veterans Affairs (VA), currently accounting for only 6% of VA users (Frayne, 2012). However, the number of women Veterans using the VA healthcare system has doubled in the past decade (Frayne, 2012). In FY10, 42% of women Veteran patients were 18–44 years old, 45% were 45–64 years old, and 13% were 65+ years old (Frayne, 2012). Women Veterans have health care needs distinctive from their male counterparts (Friedman, 2011) and this difference highlights the need to assure capacity for clinical services necessary for women in their reproductive years and to assure that healthcare providers' knowledge and skills are up to date in women's health (Frayne, 2012). Little is known about the women Veterans' experiences with care from VA providers.

In 2008, the VA Under Secretary for Health convened a task force to evaluate the provision of primary care to women veterans. This task force found that care for Women veterans was often fragmented and that quality of care for men exceeded that of women in many measures (Report of the Under Secretary for Health Workgroup: Provision of Primary Care to Women Veterans, 2008). Based on this report, VA implemented a policy in 2010 for the provision of Comprehensive Women's Health (including care for acute and chronic disease, preventive care and gender specific care) from a designated women's health provider (DWHPs) at all sites of care (VHA Handbook 1330.01). Per VA policy, DWHPs are primary care providers who are proficient and interested in women's health and who are preferentially assigned women Veterans. It is recommended that at least 10% of their panel be female, but if this is not possible, then alternative methods such as continued medical education training must be utilized to maintain proficiency in women's health (VHA Handbook 1330.01). DWHPs are likely to be more aware of female-specific healthcare needs based on their efforts to maintain clinical proficiency in women's health. DWHPs may practice in Comprehensive Women's Clinics or in mixed gender primary care clinics. Little is known about the quality of healthcare delivered by DWHPs.

The VA is actively engaged in collecting data on various aspects Veterans' experiences with VA care through the Survey of Healthcare Experiences of Patients (SHEP) under the Office of Informatics and Analytics. In FY2009, the SHEP transitioned to questionnaires based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS), the industry standard among instruments widely used in the public and private health care settings

(Shaller, 2013). In 2012, the VA added patient-centered medical home (PCMH) survey items to SHEP-CAHPS.

Prior assessments using FY2010 and FY2011 CAHPS data indicate that men and women Veterans have similar ratings of their experiences with outpatient care (Wright, 2012). The few exceptions were that women had lower scores for their experiences ‘getting care quickly’ and ‘getting needed care’ compared to men (Wright, 2012). In previous studies, Veterans’ experience with health care was explained less by gender and more by the younger age of women as a group (Wright 2006). Prior research has found that women Veterans prefer comprehensive primary care that includes the provision of routine gynecologic care compared to traditional primary care clinics (Bean-Mayberry, 2006; Mattocks, 2011; Mengeling, 2011; Washington, 2011). In a national survey of women Veterans, women rated the care they received at VA sites adopting primary care models tailored to women higher than care they received at other sites (Washington, 2011).

The purpose of this paper is to take research to the next level and to use the SHEP-CAHPS survey data to examine whether women Veterans’ experiences with care are better for patients seen by DWHPs compared to those seen by non-DWHPs. Patient experiences are a measure of the quality of health care provided. A secondary aim is to examine whether composite scores regarding six specific quality aspects of healthcare were better for DWHPs compared to non-DWHPs.

Methods

Overview

Using a cross-sectional study design, secondary data were obtained from the VA Survey of Healthcare Experience of Patients (SHEP) using the Consumer Assessment of Healthcare Providers and Systems (CAHPS) with patient-centered medical home (PCMH) items from March 2012 through February 2013, and a DWHPs Assessment of Workforce Capacity (DAWC) facility survey that discerned between DWHPs and non-DWHPs. The study was approved by the Human Studies Subcommittee at the West Haven Connecticut VA Medical Center.

We assessed women Veterans’ experiences with VA primary care providers who had seen any women Veterans during the study time period. As DWHPs were intended to engender greater interest and competency in women’s health issues, our hypothesis is that women Veterans will perceive these values and that the scores of overall patient experience among women Veterans seen by DWHPs will be higher than those of women Veterans seen by non-DWHPs.

Conceptual Model

The conceptual framework for this study was adapted from the Donabedian Model (Donabedian, 1988; Coyle and Battles, 1999). This model describes the influence of antecedents (patient characteristics), the structure of care (organizational factors and provider characteristics) and process of care (the acts of healthcare delivery such as length of time patient worked with provider) on quality of care (patients’ ratings of their overall

experience with the provider). Based on these constructs, we examined the links between provider characteristics (DWHPs versus non-DWHPs) and patient satisfaction with medical care, while controlling for antecedents, structure and process.

Data Sources

The Fiscal Year 2012 Designated Women's Health Provider: Assessment of Workforce Capacity (FY12 DAWC) Survey was used to identify DWHPs and was conducted by VA Women's Health Services in the Fall of 2012. In this assessment, Women Veteran Program Managers (WVPMs) at each VA Health Care System were asked to identify the DWHPs at all of the sites in their facility. WVPMs are administrative (and often clinical) personnel at VA medical centers who assist WVs with accessing and coordinating care across VA departments and services. WVPMs are knowledgeable about the DWHPs at their facility, and they work closely with primary care providers "to ensure that the needs of women Veterans are met in a comprehensive manner" (VHA Handbook 1330.01). In the FY12 DAWC, the definition of a DWHP was taken from VHA Handbook 1330.01. Specifically, a DWHP was defined as a "primary care provider who is interested and proficient in women's health" and is "preferentially assigned women Veterans within their primary care patient panels" (VHA Handbook 1330.01). VHA Handbook 1330.01 specifies that DWHPs should maintain at least 10% women in their VA primary care panel or have other means of maintaining proficiency in place. However, due to low numbers of women at some sites and because some women may not want to switch providers if they are already assigned to a non-DWHP, not all DWHPs met the criteria of 10% women in their primary care panel. The FY12 DAWC had instructions for WVPMs to include "providers your facility considers to be [DWHPs]," regardless of the number of women in their panels. For example, some DWHPs had extensive experience in women's health outside of VA, and therefore they may have been exempted from the DWHP requirement of having at least 10% women in their VA primary care patient panels. However, across Health Care Systems, DWHPs were providers who were preferentially assigned women patients, who had background experience or training in women's health, and who were often listed in the VA primary care provider database with a "women's health" designation.

The FY12 DAWC was mandatory, and 100% of the WVPMs completed the assessment. WVPMs were asked to select the DWHPs from a list of the primary care providers at their facility (generated from the VA Primary Care Management Module) and to add any DWHPs that were missing from the list. WVPMs could select the response of "Yes" if they believed that a listed provider was a DWHP. A "Possible" response indicated that the WVPM thought this person *might* be a DWHP, but that the WVPM was unsure. WVPMs selected the "Possible" response only 4.4% of the time; therefore, in the current paper, we collapsed across the "Yes" and "Possible" responses.

The FY12 DAWC was completed by WVPMs at 140 Health Care Systems located across the 21 Veterans integrated service networks (VISNs) or geographic regions in VA. These Health Care Systems included a total of 148 Medical Centers and 743 community-based outpatient clinics (CBOCs) which provided primary care. The 4 Medical Centers and the 20

CBOCs not providing primary care were not considered in FY12 DAWC. At least one DWHP was located at each of the 140 Health Care Systems.

Provider characteristics were obtained from the Veterans Health Administration Corporate Data Warehouse (CDW), a national repository of data from VHA clinical and administrative systems. Variables included provider age, sex, provider class (MD, Nurse Practitioner (NP), Physician Assistant (PA)), full-time percentage, total patient panel and proportion of panel by gender, and an indicator of whether the provider regularly works in a VA women's clinic. Provider information was added by linking the de-identified provider number to the provider or clinician identified in the first question of the SHEP-CAHPS-PCMH survey.

Patient characteristics were obtained from SHEP-CAHPS-PCMH survey and include age, education level, self-reported health status and self-reported mental health status were measured by a single item question anchored from poor to excellent (Ware, 1996), length of time patient in provider's panel, and self-reported frequency of seeing provider in the last 12 months. For both self-reported health and mental health variables, the scales were reversed (1–5 best) for ease of interpretation. Patient race (white and non-white) was obtained from self-reported race and ethnicity questions in the SHEP survey.

In March 2012, the CAHPS Patient Centered Medical Home (PCMH) survey was implemented as part of the SHEP inventory of survey instruments to support the assessment of the VA's Patient Aligned Care Team (PACT, i.e., the VA modification of PCMH) program. The PACT initiative uses a team-based approach for delivering primary care that is high quality, accessible, comprehensive, coordinated, and patient-centered (Wright, 2012; Hayes, 2013). Our main outcome measure is the PCMH reporting measure based on a single-survey item which asks patients to evaluate their primary care experience during the past 12 months: "Overall rating of satisfaction with provider" on a scale of 0–10 (0=worst possible provider and 10=best provider possible) (Anderson 2007). Because this outcome is measured on the women Veteran patients of both DWHPs and non-DWHPs, it is an appropriate measure of their experience with their provider. Our secondary outcomes were the CAHPS PCMH composites used for evaluation include Access, Communication, Comprehensiveness, Self-Management Support, Shared Decision Making (Providers discuss medications), and Office Staff (CAHPS survey, 2011). Composites are comprised of two to six survey questions focused on one specific aspect of quality of healthcare received from the identified provider in the last 12 months and have response scales of "Never, Sometimes, Usually, Always", "Yes, No", or "Not at all, A little, Some, A lot". Individual survey item scores were calculated to represent the percent of responses in the "Top-box" or highest scores (i.e., *Always, Yes, A lot*). Composites are scored by taking the average score of the individual questions.

Statistical Analysis

Using a chi-square statistic, we verified that the response rate from patients of DWHPs was not significantly different from that of patients cared for by non-DWHPs. We then calculated and compared descriptive statistics for providers and their responding women Veteran patients by their providers DWHP status utilizing t-tests for continuous measures, Wilcoxon Rank-Sum tests for non-normally distributed continuous measures, and chi-square

statistics for categorical data. We plotted the mean percent of highest-scored, i.e., positive, responses among the six composite score categories of the CAHPS-PCMH survey with their 95% confidence intervals by DWHP status. In preparation for multivariable modeling of the overall satisfaction outcome, we first analyzed the correlations between DWHP designation and provider and patient characteristics using non-parametric Spearman's rank-order correlations. When the correlation coefficient was greater than 0.4, denoting potential collinearity, we chose the factor that was most explanatory, as determined by the likelihood ratio statistics for Type 3 analysis (Van Ness, 2007). This procedure avoids over-fitting the multivariable models and having biased estimates. For this reason the percent of female patients in the provider's panel as well as provider employment in a women's clinic, both of which had high correlation coefficients with DWHP status, were not included in the multivariable model. Because our primary outcome (overall patient experience) is measured on a count scale from 0 to 10, and because its variance was greater than the mean, we chose the negative-binomial distribution for the multivariable model. This model included adjustment for the following patient and provider characteristics: patient's age, race, education, self-rated health status, and self-rated mental health status, provider gender, and the length of time patient has seen the provider. Providers were assigned a separate random unique identification number so that they could be anonymously linked to SHEP-CAHPS-PCMH survey data allowing multivariable models to be adjusted for the nesting of patients within providers using a generalized linear model. We also tested two clinically relevant interactions involving DWHP status, specifically its interactions with provider gender and provider class. Because neither interaction was significant, they were not included in the final multivariable model. For all analyses, a type I error of 5% (two-sided) was used to test for statistical significance using SAS v9.2 (©SAS Institute Inc., Cary, NC, USA).

Results

Of the 24,789 surveys that the VA mailed out to women Veterans and seen by MD, NP or PA primary care providers during the study period, 8,151 were returned (response rate= 32%). See Figure 1: Flow diagram. Overall, 3,147 providers were evaluated using SHEP-CAHPS-PCMH survey. The provider breakdown is 40% (n=1,267) DWHPs and 60% (n=1,880) non-DWHPs. Women Veterans cared for by DWHPs were no more likely to complete the SHEP-CAHPS-PCMH survey than were non-DWHPs' patients (31.9 vs. 32.9% respectively, p-value = 0.074).

Table 1 presents the characteristics of the 3,147 providers and 8,151 patients by DWHP status. Compared to non-DWHPs, DWHPs were more likely to be younger, female, less likely to be MDs and more likely to be NPs. DWHPs had a higher percentage of female patients in their primary care panels and were more likely to work in a women's clinic. Compared to women Veterans seeing non-DWHPs, women Veterans seeing DWHPs were younger, reported better health status and reported more years with the same provider (all p-values <0.001). Women Veterans rate their overall experiences with DWHPs higher than non-DWHPs in the outpatient setting (8.6 vs. 8.3; p-value<0.001).

Figure 2 presents the CAHPS-PCMH scores for women Veteran experiences for the six outpatient composites: Access (42.1 vs. 37.7); Communication (74.1 vs. 71.0); Shared

decision making (provider discuss medications) (61.6 vs. 58.8); Self-management support (56.0 vs. 50.3); Comprehensiveness (67.4 vs. 62.0); and Office Staff (66.0 vs. 64.4). With the exception of Office Staff, all of the composite scores were significantly better for DWHPs than for non-DWHPs ($P < 0.01$). Although these composite comparisons are unadjusted, the consistently higher ratings for DWHPs across these six areas are supportive of the statistically significant positive association with overall experience with outpatient care reported in the multivariable model.

Table 2 provides the primary results from the adjusted model of factors associated with overall experience with outpatient care. Patients seeing DWHPs have significantly better overall experience with outpatient care ($RR=1.02$ 95% $CI=1.01-1.04$) compared to non-DWHPs. Patients seeing NPs have significantly better overall experience with outpatient care ($RR=1.03$ 95% $CI=1.01-1.04$) compared to MDs. The following patient characteristics were positively associated with better overall experience with outpatient care: increasing age ($p < 0.001$), increasing length of time seeing provider ($p < 0.001$), better self-reported health status ($p < 0.01$), better mental health status ($p < 0.01$), and nonwhite race ($p=0.01$). We also note that provider gender was not significantly associated with better overall experience with outpatient care ($p = 0.57$). The two interactions with DWHP designation that were tested, i.e., with provider gender and provider class, were left out of the multivariable model because of their non-significance.

Discussion

The main finding is that women Veterans' experiences with outpatient healthcare are slightly better for DWHPs compared to non-DWHPs. Using an adaptation of the Donabedian Model, we attempted to account for antecedents, structure of care, and process of care known to influence quality of care. We found that differences in patient experiences between DWHPs and non-DWHPs in the raw scores were not mitigated after adjusting for patient demographic and clinical characteristics and other provider characteristics.

In addition to the DWHP status, we found provider class, e.g. NPs versus MDs, to be a factor associated with Veterans' better overall experience with outpatient care. Previous studies have examined differences in patient experiences with care by provider type (NP, PA, and MD) in predominantly male populations. Budzi et al found that Veteran patients were more satisfied with care by NPs compared to PAs and MDs, and these authors highlighted that NPs focus on health promotion, health education, attentiveness, and counseling (Budzi, 2010). Another non-VA study found older patients (>65 years) were more satisfied with NPs (Cipher, 2006). Although more research is needed to adjust for time spent with patient and the complexity of the patients cared for by these providers, this may represent an important finding for VA, the largest single provider of healthcare in the U.S., in its mission to care for women Veterans. In order to address the potential scarcity of primary care providers in the future, the VA may need to consider hiring more NPs.

Prior research on women indicates that variation in patient experience with their care may be related to provider gender and use of women's health clinics (Bean-Mayberry, 2003; Bean-Mayberry, 2006). After adjustment for DWHPs and provider class, we did not find provider

gender to be independently associated with experiences with care. Because of the high correlations between DWHPs and employment in a women's health clinic and with percent of female patients in the provider's clinic, we were unable to test the independent associations of these two factors in our analyses.

In our study, increasing age of the women Veteran is a significant factor associated with better experiences with outpatient care. Many older women Veterans have alternative options to VA care (Shen, 2003) and may continue to use VA services because they are satisfied with the care they receive. More than half of new women Veterans using care are under age 45 growing from 57% in FY03 to 64% in FY09 (Friedman, 2011). Wright et al suggested that the 21st century VA needs to become more responsive to younger Veterans of both genders (Wright, 2012).

Compared to men, women in the active duty military have higher proportions of racial and ethnic minorities (Patten and Parker, 2013), and our finding of non-white race associated with better experiences with care is important in this Veteran subgroup who are younger and more often non-white than the average male Veteran. This finding should promote further inquiry as it adds to the literature on factors associated with the presence or absence of racial/ethnic disparities (Saha, 2007; Quinones, 2011).

Self-reported health and mental health status were also associated with women Veterans' experiences with care. Our findings are similar to those of previous studies that have shown better self-reported health status and mental health status to be associated with greater satisfaction with healthcare in both veteran and non-veteran women (Crow 2002; Washington 2006; Henderson 2005; Ren, 2001; Hall 1993). Previous studies found women Veterans with any mental health diagnosis had higher prevalences of reproductive and physical diagnoses compared to women without mental health diagnoses (Cohen, 2012). Women Veterans with more physical and mental illness may feel like they do not have options to obtain their care elsewhere and are therefore restricted to seeking this care at the VA. Health status remained an important characteristic associated with Veterans' experience with their care adjusting for DWHP status. As noted by Kimerling et al, women veterans with histories of sexual trauma will benefit from greater attention to provider-patient communication, including communication across multiple providers (Kimerling, 2011).

In our study, 60% of women Veterans received care from DWHPs. According to results from the FY12 DAWC, only 40% of DWHPs had at least 10% women patients in their primary care panel, so other factors (e.g., women's health training, completing the VA Mini-Residency in Women's Health, prior clinical experience, precepting with an experienced clinician) may have contributed to determining which providers were considered DWHPs. Future studies may be able to examine the importance of these individual components of training and experience on patients' overall experience with outpatient care.

Our findings are limited to existing metrics that are based on SHEP-CAHPS-PCMH surveys. There are other measured or unmeasured factors that may reflect women's experiences with care such as distance traveled to a facility and availability of parking. One limitation of the SHEP-CAHPS-PCMH survey is that the questions are not specific to

women's health needs or their gender-specific experiences within the VA healthcare system. Also, mail-based surveys yield less positive evaluations of care compared with other survey modalities (Elliott, 2009). Another limitation is that we used age of provider as a surrogate for provider experience. An additional limitation is that, because of its very high positive correlation with DWHP status, we did not directly adjust for employment at a women's clinic. We do not have facility or organizational characteristics such as facility size, location, and organizational culture (Meterko, 2004). Finally, these cross-sectional data do not allow us to determine a causal relationship.

Implications for Practice and/or Policy

Our findings have important policy implications for how to continue to improve women Veterans' experiences. Our work provides support to increase access to DWHPs at VA primary care clinics. A next step is to compare patient perception of quality with the actual quality of care received using quality metrics available from VA External Peer Review Program by type of provider (DWHPs vs. Non-DWHPs).

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References

- Anderson RT, Weisman CS, Camacho F, Scholle SH, Henderson JT, Farmer DF. Women's satisfaction with their on-going primary health care services: A consideration of visit-specific and period assessments. *Health Services Research*. 2007; 42:663–681. [PubMed: 17362212]
- Bean-Mayberry BA, Chang CH, McNeil MA, Whittle J, Hayes PM, Scholle SH. Patient satisfaction in women's clinics versus traditional primary care clinics in the veterans administration. *Journal of General Internal Medicine*. 2003; 18:S175–S181.
- Bean-Mayberry BA, Chang CH, McNeil MA, Scholle SH. Ensuring high-quality primary care for women: predictors of success. *Women's Health Issues*. 2006; 16:22–29. [PubMed: 16487921]
- Budzi D, Lurie S, Singh K, Hooker R. Veterans' perceptions of care by nurse practitioners, physician assistants, and physicians: A comparison from satisfaction surveys. *Journal of the American Academy of Nurse Practitioners*. 2010; 22:170–176. [PubMed: 20236402]
- CAHPS Clinician and Group Surveys and Instructions. 2011. https://cahps.ahrq.gov/clinician_group/cgsurvey/aboutpatientcenteredmedicalhomeitemset.pdf
- Cipher DJ, Hooker RS, Sekscenski E. Are older patients satisfied with physician assistants and nurse practitioners? *J of the American Academy of Physician Assistants*. 2006; 19:36–44.
- Cohen BE, Maguen S, Bertenthal D, Shi Y, Jacoby V, Seal KH. Reproductive and other health outcomes in Iraq and Afghanistan women veterans using VA health care: association with mental health diagnoses. *Women's Health Issues*. 2012; 22:e461–e471. [PubMed: 22944901]
- Coyle YM, Battles JB. Using antecedents of medical care to develop valid quality of care measures. *International Journal for Quality in Health Care*. 1999; 11:5–12. [PubMed: 10411284]
- Crow R, Gage H, Hampson S, Hart J, Kimber A, Storey L, et al. The measurement of satisfaction with healthcare: implications for practice from a systematic review of the literature. *Health Technol Assessment*. 2002; 32:45–51.
- Donabedian A. The quality of care. How can it be assessed? *JAMA*. 1988; 250:1743–1748. [PubMed: 3045356]

- Elliott MN, Zaslavsky AM, Goldstein E, et al. Effects of survey mode, patient mix, and nonresponse on CAHPS hospital survey scores. *Health Services Research*. 2009; 44:501–18. [PubMed: 19317857]
- Frayne, S.; Phibbs, C.; Friedman, S., et al. Sourcebook: Women Veterans in the Veterans Health Administration. Volume 2. Sociodemographics and Use of VHA and Non-VA Care (Fee). Washington, D.C: Women's Health Evaluation Initiative (WHEI), Women's Health Services, Veterans Health Administration, Department of Veterans Affairs; 2012. Available at: http://www.womenshealth.va.gov/WOMENSHEALTH/docs/SourcebookVol2_508c_FINAL.pdf Accessed September 2013
- Friedman SA, Ciaran SP, Schmitt SK, Hayes PM, Herrera L, Frayne SM. New women veterans in the VHA: a longitudinal profile. *Women's Health Issues*. 2011; 21:S103–S111. [PubMed: 21724129]
- Hall JA, Milburn MA, Epstein AM. A causal model of health status and satisfaction with medical care. *Medical Care*. 1993; 31:84–94. [PubMed: 8417273]
- Hayes PM. Improving health of veterans through research collaborations. *Journal of General Internal Medicine*. 2013; 28:S495–S497. [PubMed: 23807054]
- Henderson JT, Weisman CS. Women's patterns of provider use across the lifespan and satisfaction with primary care coordination and comprehensiveness. *Medical Care*. 2005; 43:826–833. [PubMed: 16034297]
- Kimerling R, Pavao J, Valdez C, Mark H, Hyun JK, Saweikis M. Military sexual trauma and patient perceptions of veteran health administration health care quality. *Women's Health Issues*. 2011; 21:S145–S151. [PubMed: 21724134]
- Mattocks KM, Nikolajski C, Haskell S, Brandt S, McCall-Hosenfeld J, Yano E, Pham T, Borrero S. Women veterans' reproductive health preferences and experiences: A focus group analysis. *Women's Health Issues*. 2011; 21:124–129. [PubMed: 21353978]
- Mengeling MA, Sadler AG, Torner J, Booth BM. Evolving comprehensive VA women's health care: patient characteristics, needs, and preferences. *Women's Health Issues*. 2011; 21:S120–S129. [PubMed: 21724131]
- Meterko M, Mohr DC, Young GJ. Teamwork, culture and patient satisfaction in hospitals. *Medical Care*. 2004; 42:492–498. [PubMed: 15083111]
- Patten, E.; Parker, K. Women in the US Military: Growing Share, Distinctive Profile. *Pew Social and Demographic Trends*. 2011. <http://www.pewsocialtrends.org/files/2011/12/women-in-the-military.pdf> Accessed December 18 2013
- Quinones, AR.; O'Neil, M.; Saha, S.; Freeman, M.; Henry, SR.; Kansagara, D. Interventions to Improve Minority Health Care and Reduce Racial and Ethnic Disparities. Washington (DC): Department of Veterans Affairs (US); 2011. VA Evidence-based Synthesis Program Reports[Internet]
- Ren XS, Kazis L, Lee A, Rogers W, Pendergrass A. Health status and satisfaction with health care: a longitudinal study among patients served by the Veterans health Administration. *Am J Med Quality*. 2001; 16:166–173.
- Report of the Under Secretary for Health Workgroup: Provision of Primary Care to Women Veterans. Washington (DC): US Department of Veterans Affairs, Office of Public Health and Environmental Hazards, Women Veterans Health Strategic Health Care Group; 2008.
- Saha, S.; Freeman, M.; Toure, J., et al. Racial and Ethnic Disparities in the VA Healthcare System: A Systematic Review. Washington (DC): Department of Veterans Affairs (US); 2007. [Internet]EXECUTIVE SUMMARY. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK49225/>
- Shaller, D.; Ricketts, J.; Hornbostel, M. The CAHPS Database: 2012 CAHPS Clinician and Group Survey Database. Westat; Rockville MD: 2013. AHRQ Contract No: HHS290201300003CAHRQ No. 14-0018-EF October 2013
- Shen Y, Hendricks A, Zhang S, Kazis LE. VHA enrollees' health care coverage and use of care. *Medical Care Research and Review*. 2003; 60:253–267. [PubMed: 12800686]
- Van Ness PH, Murphy TE, Araujo KLB, Pisani MA, Allore HG. The use of missingness-screens in clinical epidemiological research has implications in model fitting. *Journal of Clinical Epidemiology*. 2007; 60:1239–1245. [PubMed: 17998078]

- Veterans Health Administration. Health Care Services for Women Veterans (VHA Handbook 1330.01). Washington DC: Department of Veterans Affairs; 2010. p. 2010
- Ware JE, Kosinski M, Keller SD. A 12-item short-form health survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care*. 1996; 34:220–233. [PubMed: 8628042]
- Washington DL, Yano EM, Simon B, Sun S. To use or not to use- what influences why women veterans chose VA healthcare. *Journal of General Internal Medicine*. 2006; 21:S11–S18. [PubMed: 16637939]
- Washington DL, Bean-Mayberry B, Mitchell MN, Riopelle D, Yano EM. Tailoring VA primary care to women veterans: association with patient-rated quality and satisfaction. *Women's Health Issues*. 2011; 21:S112–S119. [PubMed: 21724130]
- Wright SM, Craig T, Campbell S, Schaefer J, Humble C. Patient satisfaction of female and male users of the Veterans Health Administration services. *Journal of General Internal Medicine*. 2006; 21:S26–32. [PubMed: 16637941]
- Wright, SM.; Schaefer, J.; Reyes-Harvey, E.; Francis, J. Comparing the care of men and women veterans in the Department of Veterans Affairs. Office of Informatics & Analytics; 2012. http://www.womenshealth.va.gov/WOMENSHEALTH/docs/OIA-BRCO_GenderHealthCareReport.pdf

Figure 1.

Flow Diagram: VA Survey of Healthcare Experience of Patients (SHEP) to identify women Veterans ratings of designated women's health providers (DWHPs) or non-DWHPs.

Figure 2.
Composite scales by designated women's health provider (DWHP) status: VA Survey of Healthcare Experience of Patients (SHEP) among women Veterans.

Table 1

Characteristics of Providers and Patients: VA Survey of Healthcare Experience of Patients (SHEP) among women Veterans

Provider Characteristics (N = 3,147)				
	DWHP n = 1,267	Non-DWHP n = 1,880	Missing n (%)	p-value *
Age, mean (SD)	51.4 (9.0)	53.4 (9.5)	775 (25)	<0.001
Gender, n (%)			573 (18)	<0.001
Female	837 (80.7)	757 (49.2)		
Male	200 (19.3)	780 (50.8)		
Provider Class, n (%)			0 (0)	<0.001
Medical Doctor	785 (62.0)	1,472 (78.3)		
Nurse Practitioner	394 (31.1)	294 (15.6)		
Physician's Assistant	88 (7.0)	114 (6.1)		
Full-Time Proportion, mean (SD)	0.7 (0.4)	0.7 (0.3)	272 (9)	0.006
Total Patient Panel, mean (SD)	1,274.6 (764.8)	1,342.7 (672.4)	8 (0)	0.009
Female	232.1 (328.7)	74.9 (81.4)		<0.001
Male	1,042.5 (769.1)	1,267.7 (647.6)		<0.001
% Female, median (IQR)	9.0 (5.3–20.7)	4.6 (2.9–7.3)		<0.001
Scheduled in Women's Clinics	914 (72.1)	113 (6.0)	0 (0)	<0.001
Scheduled in Non-women's Clinics	626 (49.4)	1,800 (95.7)	0 (0)	<0.001
Responding Patient Characteristics (N = 8,151)				
Assigned to Provider:	DWHP n = 4,807	Non-DWHP n = 3,344	Missing n (%)	p-value *
Age in years, mean (SD)	55.4 (13.6)	57.2 (14.7)	0 (0)	<0.001
Age Category, n (%)				<0.001
18–24 years	34 (0.7)	12 (0.4)		
25–34 years	365 (7.6)	219 (6.6)		
35–44 years	506 (10.5)	366 (11.0)		
45–54 years	1,314 (27.3)	841 (25.2)		
55–64 years	1,611 (33.5)	1,065 (31.9)		
65–74 years	587 (12.2)	430 (12.9)		
75+ years	390 (8.1)	409 (12.2)		
Race, n (%)			284 (4)	0.100
White	3,453 (74.4)	2,346 (72.7)		
Non-White	1,187 (25.6)	879 (27.3)		
Education, n (%)			69 (0)	0.265
8 th grade or less	2 (0.0)	3 (0.1)		
Some HS	23 (0.5)	16 (0.5)		
HS or GED	753 (15.8)	581 (17.6)		
Some college	2,454 (51.5)	1,631 (49.3)		

Provider Characteristics (N = 3,147)				
	DWHP n = 1,267	Non-DWHP n = 1,880	Missing n (%)	p-value*
College graduate	743 (15.6)	517 (15.6)		
More than college degree	794 (16.6)	563 (17.0)		
Self-reported Health Status, n (%)			139 (2)	<0.001
Excellent	311 (6.6)	192 (5.8)		
Very Good	1,018 (21.6)	663 (20.2)		
Good	1,867 (39.5)	1,232 (37.5)		
Fair	1,263 (26.7)	927 (28.2)		
Poor	264 (5.6)	273 (8.3)		
Self-reported Mental Health Status, n (%)			147 (2)	0.014
Excellent	680 (14.4)	500 (15.2)		
Very Good	1,059 (22.5)	758 (23.1)		
Good	1,423 (30.2)	898 (27.3)		
Fair	1,176 (24.9)	813 (24.7)		
Poor	378 (8.0)	317 (9.6)		
How long have you been going to this provider?, n (%)			167 (2)	<0.001
< 6 months	661(14.0)	487 (14.9)		
6 months – < 1 year	619(13.2)	348 (10.6)		
1 year – < 3 years	1,640 (34.9)	981 (30.0)		
3 years – < 5 years	907 (19.3)	641 (19.6)		
5+ years	878 (18.7)	820 (25.0)		
In the last 12 months, how many times did you visit this provider to get care for yourself?, n (%)			220 (3)	<0.001
0	41 (0.9)	57 (1.8)		
1	995 (21.2)	798(24.7)		
2	1,293 (27.6)	943 (29.1)		
3	1,019 (21.7)	587 (18.1)		
4	616 (13.1)	398 (12.3)		
5–9	575 (12.2)	360 (11.1)		
10+	154 (3.3)	93 (2.9)		

* t-test for continuous, χ^2 for categorical measures, Wilcoxon Rank-Sum Test for percent female (panel).

Abbreviations: IQR = Interquartile range.

Providers who are in the recognized provider classes (MD, NP, PA), had active privileges during the survey period (2012–2013), and who have seen at least one woman patient.

Table 2

Multivariable analysis of risk factors associated with Overall Patient Satisfaction: VA Survey of Healthcare Experience of Patients (SHEP).

Factor	Reference Level	Relative Risk (95% CI)	p-value*
DWHP	Non-DWHP	1.02 (1.01 – 1.04)	< 0.01
Provider Class			
NP	MD	1.03 (1.01 – 1.04)	< 0.01
PA	MD	1.02 (0.99 – 1.04)	0.15
Provider Gender			
Female	Male	1.00 (0.99 – 1.02)	0.57
Patient Age Category (years)			
25–34	18–24	1.01 (0.94 – 1.10)	0.74
35–44	18–24	1.05 (0.98 – 1.14)	0.19
45–54	18–24	1.07 (0.99 – 1.15)	0.08
55–64	18–24	1.09 (1.01 – 1.17)	0.03
65–74	18–24	1.10 (1.02 – 1.19)	0.01
75 and older	18–24	1.12 (1.03 – 1.20)	< 0.01
Patient Race			
Non-white	White	1.02 (1.00 – 1.03)	0.01
Patient Education			
Greater than high school	High school or less	0.99 (0.98 – 1.01)	0.27
Patient self-rated health (1(Poor) – 5(Excellent))		1.03 (1.03 – 1.04)	< 0.01
Patient self-rated mental health (1(Poor) – 5(Excellent))		1.01 (1.01 – 1.02)	< 0.01
Length of time patient has worked with Provider			
5 years or more	Less than 6 months	1.14 (1.11 – 1.17)	< 0.01
3–5 years	Less than 6 months	1.10 (1.07 – 1.12)	< 0.01
1–3 years	Less than 6 months	1.06 (1.03 – 1.09)	< 0.01
6 months – 1 year	Less than 6 months	1.03 (1.00 – 1.06)	0.03

* p-values calculated for a multivariable model with a negative binomial distribution of values on a scale from 0 – 10 (best) that adjusts for the clustering of patients within specific providers.

Abbreviations: CI = confidence interval; DWHP = designated women's health provider; MD = medical doctor; NP = nurse practitioner; PA = physician's assistant.