

UCLA

UCLA Electronic Theses and Dissertations

Title

Gender Sensitivity in Primary Care: Three Studies

Permalink

<https://escholarship.org/uc/item/5k188735>

Author

Than, Claire

Publication Date

2019

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

Gender Sensitivity in Primary Care: Three Studies

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Health Policy and Management

by

Claire Than

2019

@ Copyright by

Claire Than

2019

ABSTRACT OF THE DISSERTATION

Gender Sensitivity in Primary Care: Three Studies

by

Claire Than

Doctor of Philosophy in Health Policy and Management

University of California, Los Angeles, 2019

Professor Jack Needleman, Chair

Sensitivity to gender differences in health and healthcare needs influence gender equality in health and access to care. One of the barriers to enhancing gender sensitivity of the healthcare workforce has been related to the under-representation of women in either the workforce or patient population. This dissertation tried to understand workforce gender sensitivity when female patients are a minority group in a healthcare organization. The three studies in this dissertation focused on the Department of Veterans Affairs (VA) healthcare system where only 8% of patients are women Veterans. Because the VA has historically been designed to care for male Veterans, there are general concerns that the majority of VA workforce may not be ready to care for women Veterans or sensitive to the care needs of women Veterans. This dissertation used VA primary care provider (PCP) and staff surveys and VA administrative data from a cluster randomized controlled trial of an evidence-based quality improvement (EBQI) strategy for implementation of VA Women's Health Patient-Aligned Care Teams (WH-PACTs). The objectives of this dissertation were to understand the VA workforce gender sensitivity, the

impact of the EBQI initiative on the workforce gender sensitivity, and the relationship between the workforce gender sensitivity and primary care discontinuance among women Veterans. This dissertation is divided into three studies.

The first study examined the individual characteristics associated with gender sensitivity four years after the VA began PACT implementation in 2010. The VA PACT policy recommended tailoring PACT to meet the primary care needs of women Veterans through the implementation of WH-PACTs. To support WH-PACTs, the policy also recommends increasing the primary care workforce who are skilled in women's health by training current employees and hiring additional qualified providers and staff. Tailoring practices from male-centric care to female-oriented care may depend, in part, on the gender-sensitive attitudes of the workforce. This study evaluated gender sensitivity within the context of the PACT policy. Using cross-sectional surveys, PCP and staff gender sensitivity was measured using a validated 10-item gender sensitivity measure. A total of 256 PCPs and staff responded (39% response rate). Using linear regression weighted for survey non-response, the results indicated that the volume of women Veterans seen locally, individual practice experience with caring for women patients, working in WH-PACTs compared to general PACTs, communication quality within clinics, and years worked at VA were significantly associated with gender sensitivity. However, each characteristic associated with gender sensitivity varied statistically between PCPs and staff.

The second study evaluated whether participation in facilitated quality improvement (e.g., EBQI), compared to self-directed QI, for WH-PACT implementation would influence gender-sensitive attitudes of the primary care workforce. Twelve VA medical centers (VAMCs) were randomized into eight EBQI sites and four control sites. The eight EBQI sites received a combination of multilevel stakeholder engagement, leadership support, QI training, formative

feedback, and practice facilitation on their local QI initiatives for WH-PACT implementation. The four control sites implemented WH-PACTs on their own. Using the same validated 10-item gender sensitivity measure, PCP and staff gender sensitivity was assessed at baseline (N=256, 37% response rate) and 24-month (N=222, 29% response rate). The difference-in-differences analysis showed that the EBQI sites improved gender sensitivity over time compared to the control sites, possibly because EBQI reduced challenges associated with QI and in-turn increased interest in QI for female patients among providers and staff.

The third study assessed the relationship between the provider and staff gender sensitivity and women Veterans discontinuing from VA primary care within three years. PCPs and staff from 12 VAMCs who participated in the 2014 cross-sectional surveys (N=256) were linked to women Veterans who visited them at the same VA for primary care (N=9,958). The dependent variable was the absence of VA primary care visits among women Veterans within three years after their last primary care visit. Controlling for provider, staff, and women Veteran characteristics, multivariate logistic regression indicated that poor PCP and staff gender sensitivity was associated with women Veterans discontinuing primary care within three years.

These findings can inform policymakers as well as VA and non-VA healthcare systems transforming practices to improve care for female patients and enhancing gender sensitivity of the healthcare workforce important to closing the gender gap in health quality and outcomes.

This dissertation of Claire Than is approved.

Elizabeth M. Yano

Donna L. Washington

Emmeline Chuang

Jack Needleman, Committee Chair

University of California, Los Angeles

2019

DEDICATION

This dissertation is dedicated to my family and the Burmese community who have given me the inspiration to stay true to myself and the strength to go above and beyond in my endeavors.

TABLE OF CONTENTS

Chapter 1 – Introduction.....	1
Chapter 2 – Understanding Gender Sensitivity of the Health Care Workforce at Veterans Health Administration.....	10
Abstract.....	11
Background.....	12
Methods.....	14
Results.....	18
Discussion.....	20
Chapter 3 – Improving Workforce Gender Sensitivity: Results from a Cluster Randomized Controlled Trial of Evidence-Based Quality Improvement for Women’s Health Patient-Aligned Care Team Implementation.....	34
Abstract.....	34
Background.....	36
Methods.....	39
Results.....	44
Discussion.....	45
Chapter 4 – Gender-Sensitive Primary Care is Associated with Care Continuance Among Female Patients	56
Abstract	56
Background.....	58
Methods.....	60
Results.....	67
Discussion.....	69
Chapter 5 – Conclusions.....	87
References.....	91

LIST OF TABLES

Table 2.1: Characteristics of primary care providers and staff.....27

Table 2.2: Gender sensitivity item-level responses by primary care providers and staff.....28

Table 2.3: Gender sensitivity score by the number of women’s health trainings and years of experience..... 29

Table 2.4: Multivariate Regression for Predictors of Primary Care Provider and Staff Gender Sensitivity.....30

Appendix Table 2.1: Gender Sensitivity Score by the Type of Women’s Health Training Completed..... 31

Appendix Table 2.2: Predicted Change in Gender Sensitivity Score by the Type of Women’s Health Training, Adjusted for Baseline Characteristics.....33

Table 3.1: Site-Specific Quality Improvement Projects Conducted During the Evidence-Based Quality Improvement Trial on Women’s Health Patient-Aligned Care Team Implementation.....51

Table 3.2: Characteristics of Survey Participants..... 52

Table 3.3: Regression outputs for predicted change in gender sensitivity score by Women’s Health Patient-Aligned Care Teams (WH-PACTs) and general PACTs, coefficients (95% Confidence Intervals)..... 53

Table 4.1: Baseline Women Veteran Patient Characteristics and Their Exposure Scales to Primary Care Provider- and Staff-level Characteristics, by the Type of Patient-Aligned Care Teams (PACTs) Where They Were Seen for Primary Care at Baseline.....76

Table 4.2: Pattern of Primary Care Discontinuance Within Three Years.....79

Table 4.3: Subgroups of women Veteran patients based on their history of primary care visits in the past one to five years prior to their last primary care visit between 2013 and 2014, and the proportion who discontinued primary care within three years for each subgroup.81

Appendix Table 4.1: Methods Used to Generate Patient Exposure to Gender Sensitivity of Primary Care Providers and Staff Who Participated in the Cross-Sectional Surveys82

Appendix Table 4.2: Comparison of Methods Used to Generate the Gender Sensitivity Scale in Appendix Table 182

Appendix Table 4.3: Survey Items Used to Measure Provider and Staff Team Functioning.....83

Appendix Table 4.4: Survey Items Used to Measure Provider and Staff Perception of Barriers to Comprehensive Primary Care for Women Patients 84

Appendix Table 4.5: Survey Items Used to Measure Provider and Staff Communication Within Clinic..... 85

Appendix Table 4.6: Survey Items Used to Measure Provider and Staff Perception of Leadership Support for Change86

LIST OF FIGURES

Figure 1.1: Adaptation of the Donabedian Model for the Study of Gender Sensitivity Among Primary Care Workforce in the Department of Veterans Affairs (VA).....	3
Figure 3.1a: Predicted Change in Gender Sensitivity Score for the Overall Sample, Adjusting for Nonresponse Weights and Characteristics Described in Table 3.2.....	54
Figure 3.1b: Predicted Change in Gender Sensitivity Score for the WH-PACT Sample, Adjusting for Nonresponse Weights and Characteristics Described in Table 3.2.....	54
Figure 3.2c: Predicted Change in Gender Sensitivity Score for the PACT Sample, Adjusting for Nonresponse Weights and Characteristics in Described in Table 3.2.....	55
Figure 4.1 Study cohort selection	74
Figure 4.2 Baseline and follow-up primary visit measure timeline	75
Figure 4.3 Primary Care Discontinuance Within Three Years by the Type of PACT.....	79
Figure 4.4: Adjusted Odds of Gender Sensitivity for Discontinuance of Primary Care Among Women Veteran Patients in the Department of Veterans Affairs	80
Figure 4.5: Adjusted Odds of Gender Sensitivity for Primary Care Discontinuance Within Three Years Among Women Veteran Patients, by Subgroup Based on Their History of Prior Primary Care Visit in the Past One to Five Years	82

LIST OF ACRONYMS

Acronym	Definition
VA	The Department of Veterans Affairs
PC	Primary Care
WH	Women's Health
PCP	Primary Care Provider
LPN	Licensed Practical Nurse
LVN	Licensed Vocational Nurse
PACT	Patient-Aligned Care Teams
WH-PACT	Women's Health Patient-Aligned Care Teams
QI	Quality Improvement
EBQI	Evidence-Based Quality Improvement
CDW	Corporate Data Warehouse

ACKNOWLEDGEMENTS

I credit this dissertation to each member of my committee. To my committee chair, Dr. Jack Needleman, thank you for showing me how to answer a research question thoroughly and critically. You once told me, “Make the data speak for you. You cannot let the data speak for itself.” I have followed your advice and this dissertation is a testament. To my advisor, Dr. Elizabeth Yano, thank you for your unwavering support, wisdom, and encouragement. The path to completing this dissertation was only possible with your generosity with data, time, and kindness. To my committee member, Dr. Emmeline Chuang, thank you for showing me the art to write better. My writing has come very far with your help and inputs. To my committee member, Dr. Donna Washington, thank you for supporting me with your expertise in medicine and mathematics. You have taught me many creative approaches to examining data and how to translate the findings into the real world. To all the members of my committee, you have taught me to be confident and fearless in asking important questions and answering what I know. Above all, you have taught me to be humbled and respectful in this profession. Thank you for everything you have done for me to grow professionally.

I also want to thank Dr. Danielle Rose for her help throughout my dissertation journey. You have listened to my ideas and given assistance in data management and understanding the findings from the literature. Your constant optimism helped me through the time when I needed the most. I also want to thank the staff at the Center for the Study of Healthcare Innovation, Implementation and Policy at the VA Greater Los Angeles. While many of you have helped me one way or another throughout this journey, the following few deserves credit for going the extra mile: Ismelda Canelo, Anneka Oishi, and Dr. Jacqueline J. Fickel.

I want to acknowledge the following financial supporter throughout my doctoral study:
The University of California Los Angeles through a T32 predoctoral award (AHRQ Grant #T32HS000046). Funding for part of the work done in this dissertation was also provided by the VA Health Services Research & Development (VA HSR&D) Service Directed Research (SDR) (SDR 12-012, Women's Health Research Network). The data for this dissertation came from a project funded by the VA HSR&D Service Women Veterans Healthcare CREATE project on Implementation of Women's Health Patient Aligned Care Teams (Project # CRE-12-026), a cluster randomized trial registered in ClinicalTrials.gov #NCT02039856.

I am also grateful for the love and support from my friends and my family: the Thans, Shas, Hums, Myos, and Tans. Thank you for being there wholeheartedly when I simply needed someone to talk to from time to time and respite from my busy schedule. Thank you for keeping me grounded and showing me what it means to be loved and cared for.

VITA

Education

- 2010 M.P.H. (Biostatistics/Epidemiology)
University of Southern California, Los Angeles, CA
- 2006 B.S. (Biochemistry)
University of California, Davis, CA

Employment

- 2016 – Present Statistician
Center for the Study of Healthcare Innovation, Implementation & Policy
Health Services Research & Development
Veterans Affairs Greater Los Angeles Healthcare System
Sepulveda, CA
- 2011 – 2014 Research Health Science Specialist
Center for Innovation to Implementation
Health Services Research & Development
Veterans Affairs Palo Alto Health Care System
Palo Alto, CA

Teaching Experiences:

- Spring 2018 Teaching Assistant
Practices of Evaluation of Health Services: Theory and Methodology
(HPM 422)
Department of Health Policy and Management, Fielding School of Public
Health
University of California, Los Angeles
- Fall 2009 Teaching Assistant
Principles of Biostatistics (PM510)
Keck School of Medicine of USC
University of Southern California, Los Angeles
- Fall 2009 Teaching Assistant
Comparative Health Care Systems (PM 509)
Keck School of Medicine of USC
University of Southern California, Los Angeles

Publications:

1. Turakhia MP, Ziegler PD, Schmitt SK, Chang Y, Fan J, **Than CT**, Keung EK, and Singer DE. Atrial Fibrillation Burden and Short-Term Risk of Stroke. *Circ Arrhythmia Electrophysiol.* July 14, 2015. doi: 10.1161/CIRCEP.114.003057
2. Ullal AJ, **Than CT**, Fan J, Schmitt S, Perino AC, Kaiser DW, Heidenreich PA, Frayne SM, Phibbs, CS, Turakhia MP. Amiodarone and Risk of Death in Contemporary Patients with Atrial Fibrillation: Findings from the TREAT-AF Study. *Am Heart J.* Am Heart J. 2015.
3. Turakhia MP, Ullal AJ, Hoang DD, **Than CT**, Miller JD, Friday KJ, Perez MV, Freeman JV, Wang PJ, Heidenreich PA. Feasibility of Extended Ambulatory ECG Monitoring to Identify Silent Atrial Fibrillation in High-Risk Patients: the Screening Study for Undiagnosed Atrial Fibrillation (STUDY-AF). *Clin Cardiol.* May 2015; 38(5): 285-92. DOI: 10.1002/clc.22387.
4. Turakhia MP, Santangeli P, Winkelmayer WC, Xu X, Ullal AJ, **Than CT**, Schmitt S, Holmes TH, Frayne SM, Phibbs CS, Yang F, Hoang DD, Ho PM, Heidenreich PA. Increased mortality associated with digoxin in contemporary patients with atrial fibrillation: Findings from the treat-af study. *J Am Coll Cardiol.* 2014;64:660-668
5. Turakhia MP, Hoang DD, Xu X, Frayne SM, Schmitt S, Yang F, Phibbs C, **Than CT**, Wang PJ, Heidenreich P. Differences and trends in stroke prevention anticoagulation in primary care versus cardiology specialty management of new atrial fibrillation: the TREAT-AF study. *Am Heart J.* 2013 Jan;165(1):93-101.e1. doi: 10.1016/j.ahj.2012.10.010.
6. Turakhia MP, Santangeli P, Winkelmayer WC, Xu X, Ullal AJ, **Than CT**, Schmitt S, Holmes TH, Frayne S, Phibbs CS, Yang F, Hoang DD, Heidenreich PA. Increased mortality associated with digoxin in contemporary patients with atrial fibrillation: findings from the TREAT-AF study. *J Am Coll Cardiol.* 2014 Aug 19; 64(7): 660-8. Doi: 10.1016/j.jacc.2014.03.060

CHAPTER 1: INTRODUCTION

Gender-sensitive care refers to the care that reflects understanding and consideration of gender differences in care needs. [1] [2] [3] [4] [5] The differences between women and men include biological differences in gender-specific needs, health symptoms or treatment responses, behavioral differences in how they seek help and engage in activities that are harmful or beneficial to health, and social differences in which expectations of one gender to engage in certain activities is higher than another (e.g., women are commonly the sole caretaker of children and family). The failure to recognize these gender differences and incorporate them into action can contribute to gender disparities in health. [2] [6] Despite the increasing importance of gender-sensitive care in reducing inequalities in care between women and men, gender-sensitive care has not been widely adopted. [1] [5] A growing body of literature identifying barriers to adopting gender-sensitive care indicates that poor gender sensitivity among healthcare professionals is a barrier that can hamper interpersonal connection with patients and an understanding of their care needs. [1] [7] [8] However, only a few studies conducted over a decade ago have informed our understanding of factors that influence gender sensitivity of the healthcare workforce, including physicians, nurses, and other staff. [4] [9] This dissertation adds to the literature by studying additional characteristics associated with workforce gender sensitivity using data from the most recent years and aims to inform policies related to adopting gender-sensitive care.

Research objectives

The objectives of this dissertation were to 1) understand the gender sensitivity of the current VA primary care providers (PCPs) and staff (Chapter 2), 2) evaluate an evidence-based quality improvement strategy used in tailoring practices to improve care for women patients and

its impact on enhancing PCP and staff gender sensitivity (Chapter 3), and 3) explore the relationship between PCP and staff gender sensitivity and women Veterans' continuity of primary care services at the VA (Chapter 4).

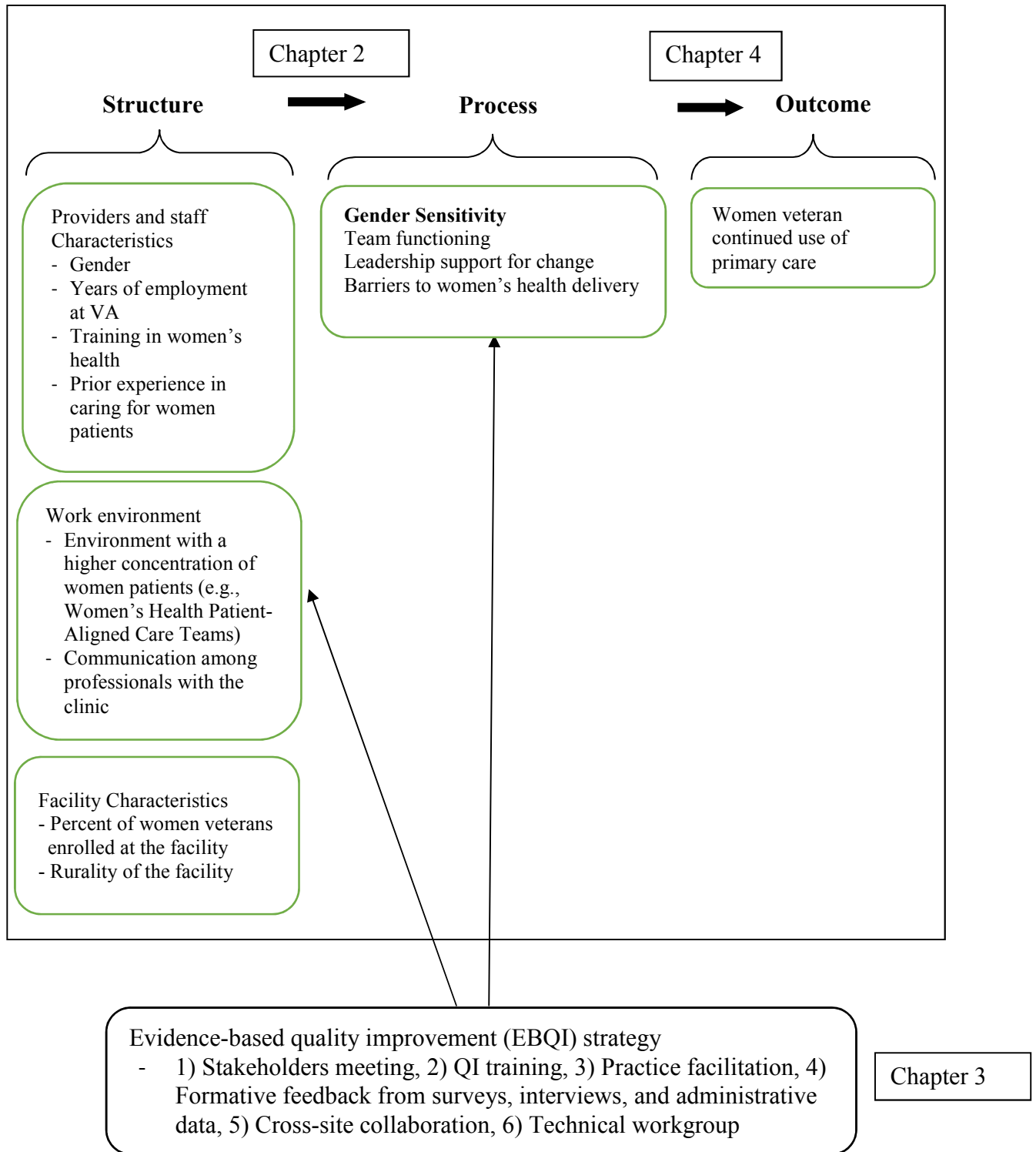
Data sources

This dissertation drew upon three sources of data. The first was cross-sectional surveys of primary care providers and staff from two time points (2014 and 2016) from the EBQI trial on WH-PACT implementation. These providers and staff were from 12 VA medical centers (VAMCs) participated in the trial. The trial is registered with ClinicalTrial.gov (NCT02039856). The second was from the VA Corporate Data Warehouse (CDW), which stores women Veteran patients' demographics, health profiles, and outpatient visits. The third source was the VA Support Service Center (VSSC) database used to identify the rurality of clinic location (urban vs. rural) and percentage of women Veterans enrolled at the level of VA medical centers.

The conceptual model for studying gender sensitivity

The conceptual framework for this dissertation was informed by the Donabedian Model, [10] which was adapted to understand gender sensitivity as a process in how the care is delivered (Figure 1.1). Donabedian asserts that structure influences processes and good processes in-turn influence better outcomes. In this study, structures that influence gender sensitivity include characteristics at the level of organization, clinic, and individual provider and staff. If the care is gender-sensitive (i.e., process), then patients are anticipated to feel respected and welcome and be willing to continue to use services (i.e., outcome). Gender sensitivity is assumed as a mutable character that can be improved with quality improvement efforts.

Figure 1.1: Adaptation of the Donabedian Model for the Study of Gender Sensitivity Among Primary Care Workforce in the Department of Veterans Affairs (VA)



Structural influence on gender sensitivity

One of the barriers to gender sensitivity has been attributed to healthcare organizational culture in which women are under-represented. [11] [12] While under-representation of women in an organization's workforce presents a barrier in improving gender-sensitive culture, [11] [12, 13], under-representation of women in the patient population also raises implications for healthcare workforce gender sensitivity. One specific example is the Department of Veterans Affairs (VA) healthcare system where patients are predominately male Veterans (92%) with comparatively a small number of women Veterans (8%). [14] For VA providers and staff who have worked in the VA for many years and are accustomed to providing care for male Veterans, they have little or no experience in women's health and would less likely to be sensitive to women Veterans' care needs. [15-17] With about 200 VA medical centers and over 1,000 outpatient sites providing care to Veterans across the country, provider and staff experiences in caring for women Veterans can vary by location (rural vs. urban) of the clinic and the number of women Veterans seen at their local clinics. [18] The assumption is that the more providers and staff encountered women Veteran patients, the more likely they would gain experience in caring for women Veterans and be more sensitive to their patient care needs.

Women Veterans are the fastest-growing group among Veterans [19] and to meet their growing care demand, VA has taken proactive efforts in improving women's health services, e.g., increased training in women's health, and hiring additional providers and staff who are proficient in women's health. [20] Prior studies on gender-tailored training have shown that these training can improve the gender sensitivity of providers. [3] [7, 21] Although the VA hiring policy is gender-neutral and focuses instead on proficiency, early studies have reported that employee gender plays a role in awareness of gender differences. For example, female

employees tend to be more sympathetic and gender-sensitive towards female patients compared to male employees. [4] [22]

In addition, alongside its nationwide implementation of patient-centered medical homes through the Patient-Aligned Care Team (PACT) initiative, [23] VA recommends implementation of Women's Health PACTs (WH-PACTs) that will provide gender-sensitive comprehensive primary care for women Veterans. To help maintain provider and staff proficiency in women's health and ensure that women Veterans receive high quality gender-sensitive comprehensive primary care services, VA also recommends consolidation of Women Veterans into WH-PACTs led by primary care providers (PCPs) with training and experience in women's health. [24] However, women Veterans can continue to receive comprehensive primary care from PCPs of their choice, e.g., PCPs in general PACTs. [24]

The PACT initiative shifts away from individual clinician-directed care and establishes team-based care, in which each PACT teamlet (i.e., PCP, nurse care manager, medical assistant (LVP/LPN), and clerk) is collectively responsible for providing preventive and chronic care services for a panel of patients. [25] Early experiences of medical home transformation show that provider-patient relationships can be disrupted and in-turn reduce patients' satisfaction. [26] However, good communication among team members can preserve patients' experiences. [26] Since positive communication is envisioned under the PACT model via brief daily meetings ("huddles"), [25] the degree of positive communication could influence conversation exchanges on gender issues and the likelihood of greater gender-sensitive attitudes among providers and staff.

Chapter 2 examines and reports the findings on the relationship between these structural characteristics and gender sensitivity using cross-sectional surveys of PCPs and staff.

An Evidence-based quality improvement (EBQI) strategy for WH-PACT implementation

Despite the potentials and enthusiasm to improve care and reduce cost with PACT, [27] [28] there are many challenges. In the VA, where central leadership dictated change for PACT, support and commitment of leaders at other levels (e.g., Veterans Integrated Service Networks [VISN] or regions, medical centers, and primary care and women's health clinics) for change aligning with PACT goals are important for successful PACT implementation at the local level. The PACT researchers have identified some of the challenges in how leaders support organizational changes, including clear communication across departments and with clinical teams, adequate staffing, available training resources, and flexibility for teams to adjust to new roles and make changes in the context of their patient needs. [29] [30] Even among enthusiastic clinical teams, early evaluations of PACT implementation reported providers and staff expressing the need for guidance and training on how to implement the PACT model in the context of their clinic priorities and resources. [31] [32] VA put in place metrics to monitor PACT performance (e.g., patient access, continuity, and care coordination). [23] However, the metrics were centrally directed without training and largely focus on provider performance rather than team-based performance. [33]

These challenges extend to all PACTs, including WH-PACT. Unlike general PACTs, WH-PACTs face additional challenges because women Veterans account for a small proportion of patients and the degree of challenges faced by WH-PACT sites varies by the levels of women's health proficiency among providers and staff and resources across primary care clinics and women's health clinics. [16] In addition, the PACT model does not include accommodations on how the care should be delivered for women Veterans to meet PACT goals or how to improve

the gender sensitivity of clinical staff so that the care is provided in a gender-sensitive environment per VA guidelines on WH-PACT. [16] Measurement of success for WH-PACT implementation is also difficult as PACT metrics do not report patient quality and outcomes by gender at the local clinic level.

While several quality improvement strategies for primary care transformation have been tested in prior patient-centered medical home demonstration projects (i.e., practice facilitation, [34] learning collaborative, [35] and LEAN [36]), there is often little or no help for local clinical teams on how to choose and act on a strategy that makes sense to their unique characteristics and circumstances. Evidence-based quality improvement (EBQI) strategies are used to translate and implement quality improvement (QI) research evidence into routine clinical practice. [37] [38] [39] EBQI incorporates research-clinical partnerships in which implementation researchers assist clinical teams in adapting structures and processes for care improvement for their patients. EBQI also addresses the challenges described above because in EBQI researchers work with VA leaders at all levels to align support and commitment for change, and train and guide clinical teams in QI using practice facilitation and performance feedback as the clinics adopt VA policies into practice. [40]

Application of EBQI to VA WH-PACT implementation had been spearheaded by Yano and colleagues. [41] The study randomized eight VA sites to receive EBQI and four sites to control (self-directed to implement WH-PACT based on VA PACT and women's health guidelines). To summarize the EBQI project, health services researchers facilitated the process of implementation while clinical teams reimagined and redesigned practices tailored to women Veterans within the context of VA strategic directives (e.g., VA Handbooks 1101.10 for PACT and 1330.01 for women's health). Researchers also helped ensure that change efforts by clinical

teams were within the quality improvement priorities of leaders, were aligned with PACT goals, and were based on prior evidence on characteristics associated with improving women's health. Overall, EBQI sites engaged in six main activities: 1) inter-disciplinary stakeholder meetings (e.g., stakeholders included VISN leaders, medical center directors, primary care and women's health leaders, providers, staff, and other VA partners) to set PACT QI priorities for women Veterans within the context of national VA policies and prior evidence on women's health, 2) QI training for clinical teams to select site-specific QI projects based on QI priorities set by stakeholders, 3) formative feedback from interviews, surveys and administrative data, 4) ongoing practice facilitation to support EBQI clinical teams with troubleshooting and progress review on their selected QI projects, 5) monthly across-site collaboration for sharing QI experiences and spreading successful QI strategies across EBQI sites, and 6) technical workgroups of clinical and research experts in stakeholder-prioritized QI areas (e.g., workgroups for improving gender awareness and sensitivity, or trauma-sensitive primary care).

EBQI facilitated the transformation of existing male-centric care practices to deliver gender-sensitive primary care to women Veterans while engaging both leaders and frontline clinical teams in identifying and addressing implementation issues. The theory of planned behavior suggests that individual behavior (e.g., participation in discussion or activities for QI for women's health) is influenced by attitudes (e.g., gender sensitivity) towards the behavior.

[42] Drawing on the concepts from the theory, **Chapter 3** evaluates the degree to which EBQI affected the gender sensitivity of PCPs and staff.

Influence of gender sensitivity on patients' discontinuance from primary care services

Being sensitive to patients' needs and concerns influences how well a provider relates to and connects with her/his patients. [43] This may influence patients' perceptions of their experiences with the provider. Patient satisfaction with the provider has been shown as an important factor influencing patient decision to stay with a healthcare organization in managed care settings. [44] [45] Within the VA, studies have found that women Veterans' decision to start and continue the use of VA services is associated with their perception of how well their providers are sensitive to their care needs. [46] [47] While these studies were done at the time when the care was clinician-directed, no studies have validated this association in team-based care after the 2010 VA PACT initiative. Assessment of the association between gender sensitivity and outcome would need to account for other characteristics pertaining to PACT, such as team functioning, communication with other providers and staff, leadership support for change for PACT implementation, and barriers related to the delivery of women's health services. Adjusting for these characteristics in the PACT environment, **Chapter 4** examines the association between provider and staff gender sensitivity and women Veteran discontinuance of VA primary care.

Chapter 2: Understanding Gender Sensitivity of the Health Care Workforce at Veterans Health Administration

Abstract

Background: Gender sensitivity of providers and staff has assumed increasing importance in closing historical gender disparities in healthcare quality and outcomes. The Department of Veterans Affairs (VA) has implemented several initiatives intended to improve the gender sensitivity of its healthcare workforce. The current study examines practice- and individual-level characteristics associated with the gender sensitivity of primary care providers and staff.

Methods: We surveyed primary care providers (PCPs) and staff (nurses, medical assistants, and clerks) at 12 VA medical centers (VAMCs) (N=256 of 649; response rate 39%). Gender sensitivity was measured using a 10-item scale adapted from the Gender Awareness Inventory-VA. We used weighted multivariate regression with maximum likelihood estimation to identify individual- and practice-level characteristics associated with the gender sensitivity of PCPs and staff.

Results: PCPs and staff had similar gender sensitivity but differed in most characteristics associated with that gender sensitivity. Among PCPs, women's health training and positive communication with others in the clinic were associated with higher gender sensitivity. For staff, prior work experience caring for women, working in Women's Health Patient-Aligned Care Teams (WH-PACTs), and rural location were associated with higher gender sensitivity, while more years of VA service was associated with lower gender sensitivity. Working at VAMCs with a higher volume of women veteran patients was associated with greater gender sensitivity for both PCPs and staff.

Conclusion: Women's health training and experience in working with other women's health professionals are strongly correlated with greater gender sensitivity in the clinical workforce.

Background

Women Veterans have traditionally accounted for a small percentage of patients receiving care within the Department of Veterans Affairs (VA) healthcare system (<10%) [48]. However, as the number of women Veterans seeking care at the VA has grown, their experiences have highlighted gender-based disparities in access to and experience with VA care [14, 49]. The VA has taken multiple steps to create a more equitable, high-quality care environment for women Veterans, including policies recommending that all women Veterans receive comprehensive primary care from a Women's Health Patient-Aligned Care Team (WH-PACT) led by primary care providers (PCPs) with training and/or experience in women's health [24]. These changes have successfully reduced some gender disparities in care [50]; however, disparities in quality of care still persist, particularly for chronic disease management (e.g., diabetes and hypertension) [50, 51], continuity of care [52], inpatient services [50], and patient experience of care [53].

Persistent gender gaps have been attributed at least in part to the VA workforce's readiness to care for women Veterans [16], and in particular to the fact that women Veterans' numerical minority status means that many providers and staff have little or no experience in providing care for women [16, 54-56]. To maintain women's health proficiency for providers, VA policy recommends that PCPs in WH-PACTs should have either 100 women Veterans in their primary care panel, three years of prior experience working in women's health, and/or recent training in women's health (e.g., completion of VA's women's health mini-residency, women's health fellowship, or preceptorship with an experienced women's health provider) [24]. VA guidelines also recommend that WH-PACT staff have "knowledge and skills to provide care to women Veterans," but provide little specificity as to how this will be achieved

[24]. A recent review of VA care for women Veterans found that in practice, adherence to these proficiency standards varies significantly across VA and that on average, only 44% of PCPs in WH-PACTs had documentation of proficiency in the care of women [57].

Low gender sensitivity among VA employees can contribute not only to gender disparities in care quality and access [58] but to attrition of women Veterans from VA care [47]. Conversely, higher gender sensitivity has been found to be associated with increased provider and staff confidence in delivering a gender-sensitive comprehensive primary care for women patients [59].

Understanding and improving the gender sensitivity of the VA workforce is critical to efforts to improve women Veterans' experiences with VA care. However, the few prior studies that have examined gender sensitivity were conducted prior to the implementation of recent VA policy initiatives intended to improve the gender sensitivity of its workforce [9, 21], e.g., training existing providers in women's health and hiring new providers who already have this expertise [20].

The goal of the present study was to identify individual- and practice-level characteristics associated with the gender sensitivity of VA PCPs and staff. Informed by prior conceptual framework on gender-sensitive care (deKleijn, Lagro-Janssen, Canelo, & Yano, 2015) and research on gender sensitivity [4, 21] we hypothesized that individual-level characteristics such as female gender, role (e.g., PCP vs. staff), years of service in VA, training, and prior experience in WH would be associated with higher gender sensitivity [4, 21]. We also hypothesized that practice-level characteristics, such as being part of a primary care team designated specifically for care of women Veterans (WH-PACT) versus PC-PACT, quality of communication within the

clinic, the proportion of women Veterans seen locally, and rurality of the clinic would be associated with gender sensitivity.

Material and Methods

Sample

We surveyed PCPs and staff at 12 VA Medical Centers implementing WH-PACTs [41]. Primary care settings included both general primary care clinics with care for women integrated with care for men, and women's health clinics for primary care. PCPs included physicians, nurse practitioners, and physician assistants. Staff included nurse care managers (RN), medical assistants/medical technicians (LPN/LVN), and clerks. We excluded PCPs and staff in PACTs for geriatrics, infectious disease, home-based care, homelessness, post-deployment health, renal or dialysis, serious mental illness, and spinal cord injuries and disorders (VA Handbook 1101.10). We surveyed 280 PCPs and 369 staff, who were identified using VA's primary care panel management databases (e.g., VA Corporate Data Warehouse and VA Support Service Center). We contracted with RAND for survey administration, which was carried out online and through the mail between September 8, 2014 and June 18, 2015. Survey development has been described elsewhere [59, 60]. We received 256 survey responses (94 PCPs and 162 staff). Our analysis included 91 PCPs (33% response rate) and 151 staff (41% response rate) who answered the gender sensitivity questions. There were no differences between respondents and non-respondents by gender or type of profession. However, we found that staff with no experience caring for women patients did not answer all the gender-sensitivity questions. The VA and RAND Institutional Review Boards approved the study.

Gender sensitivity measure

Gender sensitivity was assessed using 10 items adapted from the previously validated Gender Awareness Inventory-VA [4, 61]. Survey items were modified and pretested with eight PCPs using cognitive interviewing techniques. Their feedback was incorporated into the final survey instrument. Respondents were asked to respond on a 5-point Likert scale, with 1 being “strongly disagree” and 5 “strongly agree,” of the following items: 1) The VA should not be expected to provide special health services for women, 2) It would bother me to see a woman breastfeed in the clinic, 3) Having a special room for women to breastfeed would be a good clinic policy, 4) Sometimes I wish VA primary care clinics had only male patients, 5) It is nice to have female patients at VA primary clinics, 6) Special women’s clinics should be at all VA health facilities, 7) Having female patients at VA primary care clinics makes things too difficult, 8) Compared to men, women expect too much courtesy from clinic staff, 9) Female patients care too much about the way the clinic looks, and 10) Having female patients makes this a better clinic. We reverse coded the six negatively worded items (items 1, 2, 4, 7, 8, and 9) and then created a single composite score based on respondents’ average responses to all ten items (Cronbach’s alpha=0.78). The composite score ranged from 1 to 5 with higher scores reflecting greater gender sensitivity. The score was a continuous variable slightly skewed to the left. Since transformations of the score did not improve the data distribution, we analyzed using the untransformed composite score for ease of interpretation.

Women’s health training, experience, and individual employee characteristics

Women’s health training was coded as a binary (yes or no) variable and defined differently for PCPs and staff. For PCPs, women’s health training was defined as self-reported

completion of or attendance at any of the following: 1) VA women's health mini-residency, 2) Veterans Integrated Service Network (VISN)-sponsored mini-residency, 3) VA women's health conferences or training in person or audio/video-presentations, such as VA's eHealth University, 4) women's health or gynecology SCAN-ECHO (Specialty Care Access Network-Extension for Community) [62] – a virtual program that trains and supports PCPs with specialist consultation on patient cases, 5) non-VA women's health conferences, 6) preceptorship with experienced WH-PCPs on a regularly-scheduled basis or 7) family practice or internal medicine residency, or women's health fellowship within the past 3 years.

Among staff, WH training was defined as completion of or attendance at one of the following: 1) shadowed an experienced women's health provider/staff on a regularly-scheduled basis, 2) VA women's health conferences or training in person or via audio/video-presentations, 3) women's health or gynecology SCAN-ECHO, 4) non-VA women's health conferences, or 5) other relevant trainings in women's health.

We constructed dichotomous variables for individual gender, and for prior women's health experience. We defined prior women's health experience as having cared for at least 50% women patients in a panel for at least 3 years (yes vs no) because information on prior panel size was not available and the current percentage of women patients in a panel was highly correlated with working in WH-PACT. We measured an individual's length of service at the VA in years.

Practice characteristics

We asked individuals to indicate whether they were working in WH-PACTs at the time of the survey and included it as a binary variable (1=WH-PACTs and 0=PC-PACTs). We measured communication with other clinical care professionals in clinics using five items

responded on a 5-point Likert scale from 1 “strongly disagree” to 5 “strongly agree.” Sample items included “Our staff and clinicians have constructive work relationships,” and, “In this clinic, co-workers from different clinical or administrative backgrounds frequently interact to solve quality of care problems.” We formed a composite score for communication by taking the average of individual responses to the five items (Cronbach’s alpha=0.80), where higher scores reflected more positive communication. We used the VA Support Service Center (VSSC) database to identify the rurality of clinic location (urban vs. rural) and the percentage of women Veterans enrolled at each participating VAMC.

Data analysis

We evaluated sample characteristics combined and separately by PCPs and staff. To compare gender sensitivity by the number of women’s health training, we recoded WH training as the incremental number of the training individuals completed and their gender sensitivity score at each level. We also conducted sensitivity analyses in which we examined the relationship between each individual type of women’s health training and gender sensitivity (see Appendix).

To identify the association between individual- and practice-level characteristics and gender sensitivity, we used multivariate linear regression with full information maximum likelihood estimation (FIMLE) [63]. We checked for multicollinearity and verified that variance inflation factors for independent variables were below three. Because we had a relatively small sample size and about 10% cases with observed values for the dependent variable had missing data on one or more predictors, FIMLE allowed us to retain all cases with observed values (i.e., cases with missing data on some of the independent variables were not deleted). We used

FIMLE for our analysis, instead of alternate linear regression approaches, because 1) multiple imputations resulted in imputations of only 3 to 4 cases for about 25 missing cases of predictors, and 2) linear regression limited to complete cases showed similar coefficient estimates as FIMLE.

We conducted sensitivity analysis including other providers and staff in the broader medical neighborhood for WH-PACTs and PC-PACTs. They included social workers, dietitians, psychiatrists, psychologists, pharmacists, and nutritionists. These providers and staff support several PACTs at the same time and are less likely to engage in daily communication occurring between PCPs and core PACT teamlet staff. The surveys included 126 individuals from the broader medical neighborhood. Because there were 29 respondents (23% response rate), we conducted sensitivity analyses in combination with the 151 core PACT teamlet staff respondents and reported our findings descriptively.

All analyses were weighted for non-response weights, the inverse predicted probabilities of response by the type of clinic (primary care vs women's health), position (e.g., physicians, nurse practitioner, physician assistant, registered nurse, medical assistant, and clerk), and gender, so the estimates were representative of PCPs and staff in PC-PACTs and WH-PACTs at the 12 participating VAMCs. We used Stata version 13.1 for all analyses.

Results

Overall, PCPs and staff (nurses, medical assistants, and clerks) were predominantly female (74.0%) and had an average of 14.9 years of service at VA (Table 2.1). Similar proportions of PCPs and staff worked in WH-PACTs (41.0% vs 39.5%), and PCPs and staff reported similar average communication scores. Among the PCPs in WH-PACTs, 81.2%

reported having had at least one women's health training while the remaining reported prior women's health experience for at least 3 years (results not reported in table). Among the staff in WH-PACTs, 43.0% reported completion of at least one women's health training, 19.6% reported no training activity but had prior women's health experiences for at least 3 years, and 37.4% reported neither a women's health training nor women's health experience (results not reported in table).

Responses to gender sensitivity items revealed mostly positive views (Table 2.2). The overall mean gender sensitivity score was high, 4.04 out of 5 (standard deviation (SD) 0.6), with the mean scores of 4.10 (SD 0.50) for PCPs and 4.00 (SD 0.66) for staff (Table 2.3). On average, gender sensitivity scores were higher with a greater number of women's health training and experience.

In multivariate regression analyses, gender sensitivity did not vary by gender for either PCPs or staff (Table 2.4). In analyses of PCPs and staff combined, prior experience in caring for women patients, working in WH-PACTs (vs. PC-PACTs), more positive communication within clinics, and working at VAMCs with higher volume women Veterans were significantly associated with higher gender sensitivity. However, individuals with more years at VA had lower gender sensitivity. When analyzed separately, the factors associated with gender sensitivity were different for PCPs and staff, except for working at VAMCs with a higher volume of women Veterans. Among PCPs, having had at least one women's health training and more positive communication within the clinic were associated with higher gender sensitivity. Among staff, prior experience in caring for women patients, working in WH-PACTs, and working in a rural area was significantly associated with higher gender sensitivity. However, staff with more years in VA had significantly lower gender sensitivity. To test whether the association of tenure in VA

on gender sensitivity was moderated by working in WH-PACTs, we evaluated the interaction between years of service in VA and working in WH-PACT while controlling for all other variables. The interaction coefficient was negative and significant for staff, but not significant for PCPs (results not reported in table). A scatterplot confirmed that the negative association between years of service and gender sensitivity was more apparent among staff in WH-PACTs than staff in PC-PACTs. When we examined staff with or without at least three years' prior experience in women's health or women's health training, we found that the negative interaction term between years in VA and WH-PACT was significant only for staff without at least three years' prior experience in women's health or women's health training.

When examined by the specific type of WH training received, PCPs and staff who completed the training had generally higher gender sensitivity (Appendix Table 2.1). For PCPs, the association between the specific training and gender sensitivity was not significant after adjusting for covariates (Appendix Table 2.2). For staff, participation in the women's health or gynecology SCAH-ECHO sessions was significantly associated with gender sensitivity after adjusting for covariates (Appendix Table 2.2).

Sensitivity analysis combining 29 staff from the broader medical neighborhood with the 151 core PACT teamlet staff showed similar associations in the regression model compared to the model limiting to the 151 PACT teamlet staff. One exception was that the volume of women Veterans at VAMCs no longer predicted gender sensitivity (results not reported in table).

Discussion

VA has implemented policies with aims to improve overall care experiences for women Veterans, but no studies have evaluated correlates of gender sensitivity since these policies were

enacted. Using a representative sample of the primary care workforce at 12 VA facilities, we examined factors within the current care and policy environments that were associated with the gender sensitivity of primary care providers and staff. We found that the volume of women Veterans seen locally, individual practice experience with caring for women patients, working in WH-PACTs, communication quality within clinics, and years worked at VA were significantly associated with gender sensitivity. However, the magnitude and statistical significance of associations with gender sensitivity of each variable included in the analysis differed between PCPs and staff.

For PCPs, the positive association between women's health training and gender sensitivity highlights the importance of VA's investment in training for providers with the goal of improving cultural competency[24]. The finding that the local volume of women Veterans was associated with gender sensitivity underscores the importance of having a sufficient number of women Veteran patients in the VA care environment independent of WH-PACT or women's health training/experience. Smaller sites of care, including community-based outpatient clinics, may require alternative care arrangements to offset small patient volumes [64]. These may include telehealth arrangements with more experienced women's health providers, more active preceptorship at a distance, and/or engagement with non-VA community providers with ample exposure to women patients, or other novel approaches [65].

In addition, providers' perception of positive communication within clinics was associated with higher gender sensitivity. The relationship between communication and attitudes has been documented in social studies more broadly [66]. The more individuals in a clinic come together to solve problems and have constructive work relationships, the more likely that individuals will share their opinions through conversation. In the context of WH-PACT, caring

for women Veterans in a clinic may have created opportunities for repeated communication about women's health and women Veterans that contribute to increasingly consensual opinions about and approaches to care delivery for women Veterans [1]. VA has already created an environment for enhanced communication through team-based care, where PCPs in all PACTs are expected to communicate with staff in the teamlet and from the broader medical neighborhood (e.g. pharmacy, social work, etc.) for care coordination and have discussions regarding the care needed for patients [67] [31]. Studies of PCPs' experiences with PACT implementation found that having a good communication relationship with other providers and staff can influence whether delivery of women's health comprehensive care succeeds [54, 55]. Efforts to support such communication in the context of team-building are likely to be positive adjuncts to other efforts to enhance gender sensitivity and women's primary care delivery.

Among staff, at least three prior years of experience caring for women patients and working in WH-PACTs were associated with higher gender sensitivity. Participation in women's health or gynecology SCAN-ECHO sessions was also associated with higher gender sensitivity. SCAN-ECHO sessions are the only training modality that combines consultation with specialists regarding specific clinical cases with didactic women's health education. [20] These results highlight the importance of hands-on experiences for staff whose job positions required different types of training. One in four staff were clerks and medical assistants who generally had fewer women's health training than nurses. Perhaps unsurprisingly, the local volume of women Veterans was also related to enhanced gender sensitivity among staff. Since many VA facilities have a relatively low volume of women Veterans (5 out of 12 participating VAMCs had <7% women Veterans enrolled), staff may have limited opportunities to gain hands-on experience working with women Veterans, particularly if not part of a WH-PACT.

On the other hand, staff with more years of service at VA had lower gender sensitivity, indicating higher gender sensitivity among newer staff compared to staff with longer tenures. The differences may be due to different expectations about serving women Veterans. Longer-term staff were hired when even fewer women received care in the VA, whereas newer staff were likely to receive information about women Veterans and their use of VA services during orientation. We verified that staff with more years of service at VA had similar WH training and experience compared to staff with fewer years of service. Additional analyses showed a positive association between working in WH-PACTs and gender sensitivity diminished for staff with longer tenure in VA if they had not had a women's health training or experience. The findings highlight the fact that simply working in a women's health environment does not automatically increase gender sensitivity among staff and that having training or experience in caring for women patients carries greater importance for enhancing gender sensitivity. Training that is specifically geared toward increasing staff and provider gender sensitivity should be evaluated.

[6]

The finding that working in rural VA facilities was associated with greater gender sensitivity is noteworthy. Rural VA facilities had a smaller volume of women Veterans seen than urban VA facilities. PCPs and staff in rural and urban facilities had similar results for reported women's health training, women's health experience, and other characteristics, except that communication scores were higher among PCPs and staff in rural than urban facilities. Differences between rural and urban facilities may have present in other attributes, such as staffing, team effectiveness, or leadership commitment to enhancing access to women's health services, and/or other local resources not captured in the survey [54, 55, 64]. In general, rural practices are less likely to have sufficient women Veteran volume to warrant the establishment of

women's health clinics [68], but rural providers and staff are likely to spend more time with patients as they have smaller caseloads [64]. Since smaller rural sites may have fewer resources in general (e.g., less specialty care), their clinical workforce may take on multiple roles and work more closely with each other [69-71]. The affinity among the rural workforce and their patients may have reinforced a more positive communication environment and shared positive gender attitudes toward women patients. Future investigation on facilitators of or barriers to promoting gender sensitivity and WH-PACTs should explore other possible drivers of rural and urban differences in VA facilities or clinics.

Limitations

Our study has notable limitations, and thus results should be interpreted with key caveats. First, our sample had a low response rate of VA PCPs and staff, which may under-represent the views and experiences of the larger primary care workforce. The response rate in our study is nonetheless consistent with other studies of the VA primary care workforce [72]. Although we weighted our analyses to represent PCPs and staff at a geographically diverse group of 12 VA facilities, results may vary for VA facilities with different volumes and mixes of women Veterans, providers, and staff, as well as different types of care arrangements in other parts of the country. Second, our analyses are based on only a single point in time, so we cannot make causal inferences. Third, our results are limited to PCPs and staff in WH-PACTs and PC-PACTs and cannot be generalizable to providers and staff in other specialty PACTs (e.g., geriatrics or home-based care). Future research should explore factors related to gender sensitivity among these providers and staff. Fourth, staff who did not have any prior WH experience did not respond to all the gender sensitivity questions, and analyses could be biased toward greater gender sensitivity than the sensitivity in the population of this study. Lastly, providers and staff

who liked to care for women patients might have self-selected to complete women's health training or work in WH-PACTs, which could have biased the findings toward greater gender sensitivity.

Policy Implications

Strengthening gender sensitivity and a culture of care that is more accepting and understanding of the health needs of women Veterans is important in reducing barriers to care related to how women Veterans treated and respected in the VA and improving their overall care experiences [15, 16]. Our findings illustrate that WH training, opportunities to work with women Veterans, and communication with other health professionals in the clinic are associated with higher levels of gender sensitivity. VA has already taken proactive steps in addressing some of these elements. Efforts to effectively recruit and train the primary care and women's health workforce are also underway as part of building capacity for comprehensive WH services [20]. However, availability and completion of training may vary by location and between PCPs and staff. Unlike the provisions for PCPs in WH-PACTs based on training and experience, staff working in WH-PACTs are not currently required to have specific women's health related experience or training. Ensuring protected time to attend relevant training and leadership support and participation in training can promote training uptake [9]. In addition, opportunities to work with other women's health professionals and participate in clinical case discussions may be beneficial in increasing sensitivity for staff. Both training and hands-on experiences should be evaluated for their effectiveness in enhancing workforce gender sensitivity.

Lastly, gender sensitivity is not just an issue in VA [1]. The lessons from the VA about the value of training, working in women's health-oriented and gender-sensitive care settings, and more positive and supportive professional communication within and across care teams have

implications for other clinical settings treating women. Limited attention to issues of gender sensitivity among providers and staff outside the VA creates missed opportunities for evidence-based changes capable of reducing gender gaps at all levels.

Table 2.1: Characteristics of primary care providers and staff

	Primary care		
	All (N=242) ¹	Providers (N=91)	Staff (N=151)
	%	%	%
WH training/ experience			
Had ≥1 WH training	36.7	50.4	27.5
Had experience in practice with at least 50% women patients in past 3 years	32.1	38.4	27.9
Individual Characteristics			
Years of service at VA, mean (SD)	14.9 (11.7)	13.2 (12.1)	17.3 (10.7)
Female	74.0	58.8	84.2
Practice Characteristics			
WH PACT member	40.1	41.0	39.5
Communication across discipline in clinic, mean (SD) ^a	3.4 (0.8)	3.4 (0.8)	3.4 (0.8)
Clinic location in rural area	11.3	10.3	12.0
% Women Veterans at VAMC, mean (SD)	7.4 (2.4)	7.9 (2.4)	7.1 (2.4)

Abbreviations: VA, Department of Veterans Affairs; WH, women's health; WH-PACT, Women's Health Patient-Aligned Care Team; VAMC, VA medical center; SD, standard deviation.

^a Communication score ranges from 1 to 5 where a higher score indicates more positive communication with others within the clinic.

¹ Fourteen respondents (3 primary care providers and 11 staff) who did not respond to all the gender sensitivity questions were excluded. Primary care providers included physicians, nurse practitioners, and physician assistants. Staff included care managers, medical assistants, medical technicians, and clerks.

Table 2.2: Gender sensitivity item-level responses by primary care providers and staff

	Primary care		
	All (N=242) ¹	Providers (N=91)	Staff (N=151)
	%	%	%
1. The VA should not be expected to provide special health services for women. (disagree/strongly disagree)	85	91	81
2. It would bother me to see a woman breastfeed in the clinic. (disagree/strongly disagree)	80	90	73
3. Having a special room for women to breastfeed would be a good clinic policy. (agree/strongly agree)	79	82	77
4. Sometimes I wish VA primary care clinics had only male patients. (disagree/strongly disagree)	75	77	74
5. It is nice to have female patients at VA primary clinic (agree/strongly agree)	73	75	72
6. Special women's clinics should be at all VA health facilities. (agree/strongly agree)	74	72	76
7. Having female patients at VA primary care clinics makes things too difficult. (disagree/strongly disagree)	69	60	75
8. Compared to men, women expect too much courtesy from clinic staff. (disagree/strongly disagree)	69	77	63
9. Female patients care too much about the way the clinic looks. (disagree/strongly disagree)	64	76	56
10. Having female patients makes this a better clinic. (agree/strongly agree)	53	59	48

Note: The response options for gender sensitivity questions are: “strongly agree”, “agree”, “neither agree nor disagree”, “disagree”, and “strongly disagree”. The numbers reported are total percentages of respondents who selected the options in the parenthesis.

¹ Fourteen respondents (3 primary care providers and 11 staff) who did not respond to all the gender sensitivity questions were excluded. Primary care providers included physicians, nurse practitioners, and physician assistants. Staff included care managers, medical assistants, medical technicians, and clerks.

Table 2.3: Gender sensitivity score by the number of women’s health trainings and years of experience.

	Primary care					
	All (N=242) ¹		Providers (N=91)		Staff (N=151)	
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
Overall score	242	4.04 (0.60)	91	4.10 (0.50)	151	4.00 (0.66)
Number of women’s health trainings						
0	152	3.94 (0.60)	44	3.93 (0.50)	108	3.94 (0.65)
1	47	4.17 (0.59)	19	4.24 (0.44)	28	4.11 (0.70)
2	23	4.24 (0.56)	15	4.15(0.52)	8	4.40 (0.61)
3	12	4.11 (0.35)	7	4.23(0.31)	5	3.92 (0.31)
4	6	4.46 (0.37)	5	4.53 (0.36)	1	4.1 (0)
5	2	4.95 (0.05)	1	4.90 (0)	1	5.0 (0)
Had experience \geq 3 years in practice with 50% or more women patients						
0	164	3.97 (0.61)	56	4.05 (0.54)	108	3.93 (0.64)
1	78	4.18 (0.55)	35	4.17 (0.43)	43	4.20 (0.64)

Note: Means and standard deviations (SDs) present gender sensitivity composite score, ranging from 1 to 5 where higher scores indicate greater gender sensitivity.

¹ Fourteen respondents (3 primary care providers and 11 staff) who did not respond to all the gender sensitivity questions were excluded. Primary care providers included physicians, nurse practitioners, and physician assistants. Staff included care managers, medical assistants, medical technicians, and clerks.

Table 2.4: Multivariate Regression for Predictors of Primary Care Provider and Staff Gender Sensitivity

	Primary Care		
	All (N=242) ¹	Providers (N=91)	Staff (N=151)
	Beta (SE)	Beta (SE)	Beta (SE)
Intercept	3.31 (0.24) ***	2.94 (0.36) ***	3.52 (0.31) ***
PCPs (vs. staff)	0.01 (0.08)		
Women's health training/experience			
Had ≥1 women's health training	0.16 (0.08)	0.28 (0.12) *	0.17 (0.11)
Had experience in practice with at least 50% women patients in past 3 years	0.19 (0.08) *	0.11 (0.10)	0.26 (0.11) *
Practice/ individual characteristics			
Female	-0.08 (0.10)	0.12 (0.13)	-0.26 (0.17)
Years of service at VA	-0.008 (0.003) **	-0.002 (0.005)	-0.009 (0.004) *
WH-PACT (vs. PC-PACT)	0.24 (0.08) **	0.04 (0.12)	0.33 (0.10) **
Communication across discipline within clinic	0.09 (0.04) *	0.11 (0.05) *	0.08 (0.07)
Clinic location in rural area	0.17 (0.11)	0.16 (0.21)	0.21 (0.11) *
% women Veterans at VAMC	0.05 (0.01) ***	0.07 (0.02) ***	0.04 (0.02) *

Abbreviations: VA, Department of Veterans Affairs; PCP, primary care providers; WH-PACT, women's health Patient-Aligned Care Team; VAMC, VA medical center; SE, standard error.

Note: The regressions used maximum likelihood estimation.

¹ Fourteen respondents (3 primary care providers and 11 staff) who did not respond to all the gender sensitivity questions were excluded. Primary care providers included physicians, nurse practitioners, and physician assistants. Staff included care managers, medical assistants, medical technicians, and clerks.

*p<0.05, **p<0.01, ***p<0.001

Appendix Table 2.1: Gender Sensitivity Score by the Type of Women’s Health Training Completed

	Training Completed		Training Not Completed	
	N	Mean (95%CI)	N	Mean (95% CI)
Primary care providers¹				
VA Women's Health Mini-Residency	30	4.24 (4.07 - 4.42) *	61	4.02 (3.89 - 4.16)
VISN-sponsored mini-residency without hands-on component	8	4.37 (4.05 - 4.69)	83	4.06 (3.95 - 4.19)
Regular attendance at VA Women's Health conferences (e.g. in person or audio/video-conferences such as MyVeHu or VA's eHealth University)	17	4.12 (4.20 - 4.63) **	74	4.03 (3.91 - 4.14)
Participation in one or more Women's Health and/or Gynecology SCAN-ECHO sessions (i.e., clinical videotelehealth case presentations, electronic consults)	11	4.06 (3.84 - 4.27)	80	4.10 (3.98- 4.22)
Women's Health conference outside of the VA	18	4.39 (4.21 - 4.57) **	73	4.03 (3.90 - 4.16)
Preceptorship with an experienced Women's Health primary care provider on a regular-scheduled basis)	4	4.46 (3.81 - 5.11)	87	4.08 (3.97 - 4.19)
Completion of a family practice or internal medicine residency, or Women's Health fellowship within the past 3 years	9	4.32 (4.05 - 4.59)	82	4.07 (3.96 - 4.19)
Any ≥1 women’s health training reported above	47	4.26 (4.12 – 4.39) **	44	3.93 (3.77 – 4.09)
	Training Completed		Training Not Completed	
	N	Mean (95% CI)	N	Mean (95% CI)
Primary care staff¹				
Shadowing an experienced women's health care provider/staff on a regularly-scheduled basis	22	4.08 (3.83 - 4.33)	129	3.99 (3.88 - 4.10)
Regular attendance at VA Women's Health conferences (e.g., in person or audio/video-conferences such as MyVeHu or VA's eHealth University)	15	4.11 (3.83 - 4.38)	136	3.99 (3.88 - 4.10)

Participation in one or more Women's Health and/or Gynecology SCAN-ECHO sessions (i.e., clinical videotelehealth case presentations, electronic consults)	15	4.40 (4.10 - 4.70) **	136	3.96 (3.85 - 4.07)
Had ≥ 1 women's health training reported above	43	4.17 (3.97 - 4.36) *	108	3.94 (3.82 - 4.06)

Abbreviations: VA, Department of Veterans Affairs; VISN, Veterans Integrated Service Network; SCAN-ECHO, Specialty Care Access Network-Extension for Community; CI, Confidence Interval.

Note: Means and 95% confidence interval (CI) present weighted gender sensitivity composite scores, ranging from 1 to 5 where higher scores indicate greater gender sensitivity.

¹ Fourteen respondents (3 provider care providers and 11 staff) who did not respond to all the gender sensitivity questions were excluded. Primary care providers included physicians, nurse practitioners, and physician assistants. Staff included care managers, medical assistants, medical technicians, and clerks.

Tests compare the scores between training completers and non-completers, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix Table 2.2: Predicted Change in Gender Sensitivity Score by the Type of Women’s Health Training, Adjusted for Baseline Characteristics

Women’s Health Trainings	Primary Care	
	Providers (N=91) ¹	Staff (N=151) ¹
	Beta (SE)	Beta (SE)
A) VA Women's Health Mini-Residency	0.11 (0.10)	
B) VISN-sponsored mini-residency without hands-on component	0.12 (0.16)	
C) Regular attendance at VA Women's Health conferences (e.g. in person or audio/video-conferences such as MyVeHu or VA's eHealth University)	0.26 (0.15)	-0.03 (0.14)
D) Participation in one or more Women's Health and/or Gynecology SCAN-ECHO sessions (i.e., clinical videotelehealth case presentations, electronic consults)	-0.04 (0.14)	0.36 (0.15) *
E) Women's Health conference outside of the VA	0.09 (0.12)	
F) Preceptorship with an experienced Women's Health primary care provider on a regular-scheduled basis	0.15 (0.32)	
G) Completion of a family practice or internal medicine residency, or Women's Health fellowship within the past 3 years	0.14 (0.13)	
H) Shadowing an experienced women's health care provider/staff on a regularly-scheduled basis		-0.07 (0.13)
I) Had ≥1 women’s health training	0.28 (0.12) *	0.17 (0.11)

Abbreviations: VA, Department of Veterans Affairs; VISN, Veterans Integrated Service Network; SCAN-ECHO, Specialty Care Access Network-Extension for Community; CI, Confidence Interval.

Note: The regressions used maximum likelihood estimation adjusted for the baseline characteristics: having had at least 3 years of work experience caring for >50% women patients in past 3 years, gender, years of service at VA, working in WH-PACT (vs. PACT), communication across discipline within clinic, clinic location in rural area (vs. urban), and % of women Veterans at VA.

¹ Fourteen respondents (3 primary care providers and 11 staff) who did not respond to all the gender sensitivity questions were excluded. Primary care providers included physicians, nurse practitioners, and physician assistants. Staff included care managers, medical assistants, medical technicians, and clerks.

*p<0.05, **p<0.01, ***p<0.001

Chapter 3: Improving Workforce Gender Sensitivity: Results from a Cluster Randomized Controlled Trial of Evidence-Based Quality Improvement for Women’s Health Patient-Aligned Care Team Implementation

Abstract

Background: Women Veterans make up the fastest-growing cohort among Veterans. To provide high-quality gender-sensitive comprehensive primary care for them, the Department of Veterans Affairs (VA) recommends that its medical home model be adapted to women Veterans (i.e., creation of Women’s Health Patient-Aligned Care Teams [WH-PACTs]) through the 2010 PACT initiative. However, the PACT policy does not specify how local practices should be restructured or tailored to female patients in an environment that has been designed for a predominantly male patient population. We used an evidence-based quality improvement (EBQI) approach to help local practices tailor PACT to women’s needs. Restructuring practices from male-oriented to female-oriented care may depend, in part, on the gender-sensitive attitudes of the workforce. In this study, we evaluated the degree to which EBQI improved the gender sensitivity of the primary care workforce in WH-PACTs and general PACTs where women Veterans can receive comprehensive primary care.

Methods: Twelve VA medical centers were randomized into eight EBQI sites and four control sites. The EBQI sites participated in six activities for tailoring practices to meet the care needs of women Veterans during WH-PACT implementation: 1) stakeholder meetings, 2) QI training, 3) formative feedback from surveys, interviews, and administrative data, 4) ongoing practice facilitation, 5) across-site collaboration, 6) support from technical workgroups. The four control sites received the VA guidelines on PACT and WH and implemented WH-PACT on their own.

Gender sensitivity was measured using 10 survey items adapted from the Gender Awareness Inventory-VA. The analysis included 256 primary care providers (PCPs) and staff in WH-PACTs and general PACTs from baseline surveys (37% response rate) and 222 from 24-month surveys (29% response rate). We used a difference-in-differences analysis to evaluate EBQI impact on gender sensitivity of the overall sample and by WH-PACTs and general PACTs, adjusting for individual and practice characteristics.

Results: Overall, PCPs and staff in EBQI sites showed improvement in gender sensitivity over time compared to control sites. After controlling for individual and practice characteristics, gender sensitivity was maintained in general PACTs over time in EBQI sites but decreased in control sites. However, gender sensitivity increased in WH-PACTs over time in both EBQI and control sites.

Conclusion: Providing gender-sensitive comprehensive care for female patients is dependent on the clinical workforce's sensitivity to their needs. EBQI can enhance workforce gender sensitivity while facilitating overall organizational change.

Background

Women Veterans make up the fastest-growing group of Veterans and are estimated to grow from 8% to 16% by 2040. [19] The Department of Veterans Affairs (VA) has taken proactive steps in meeting their care needs that these efforts have resulted in reduction of gender disparities between women and male Veterans for many quality measures (e.g., patient safety, patient experience, and quality of chronic and preventive care) compared to non-VA healthcare organizations. [73] [74] However, gender disparities remain because women Veterans continue to perform poorer in management of chronic conditions (e.g., diabetes and hypertension), getting needed care, or perceived responsiveness of hospital staff to their needs. [75] Related to these disparities are challenges in organizing or delivering women's health and gender-sensitive services. For example, almost all VA facilities provide primary care services to women Veterans in one or more of three models: 1) physically separated women's health clinics, 2) mixed gender primary care clinics, or 3) women's health clinics within or adjacent to general primary care clinic areas. [24] Facilities have varying levels of resources and providers have varying levels of women's health expertise that providers often face challenges to provide a full spectrum of comprehensive primary care services for both women's health and general primary care. [76] Additional challenges are related to individual providers or staff being sensitive and respectful to women Veterans. Prior studies on factors associated with women Veterans missing or delaying care or leaving VA care have identified provider sensitivity and feeling welcome at VA as significant factors. [77] [46] [47]

In 2010, VA restructured its primary care delivery to team-based care and initiated nationwide implementation of VA's patient-centered medical homes through the Patient-Aligned Care Teams (PACT) initiative. [23] In each PACT teamlet, a PCP manages a panel of patients

with the support of three staff who are registered nurse (care manager), licensed vocational nurse or licensed practical nurse (medical assistant), and clerk, and additional staff from the larger medical neighborhood (i.e., social workers, pharmacists, dietitians, and mental health specialists). The PACT policy also envisioned building high-functioning teams through communication and recommends that members of teamlets meet daily through “huddles” for patient care planning or problem-solving. [23]

With goals to address the gender gap in quality of care and provide gender-sensitive comprehensive primary care for women Veterans, the PACT policy recommended consolidating women Veterans into Women’s Health PACTs (WH-PACTs) headed by primary care providers (PCPs) trained or experienced in women’s health. [25] The VA women’s health policy outlines specific requirements for training and experiences needed by PCPs and staff working in WH-PACTs. [24] However, women Veterans have an option to receive care from PCPs of their choice, such as PCPs in general PACTs.

As part of the PACT initiative, VA has also funded studies to understand challenges and identify best practices in various aspects of PACT implementation.[28] Example challenges that have been identified include engaged leadership with clear communication across departments and clinics, ensuring adequate resources and training of all staff, and support clinical teams during the process of change for PACT implementation. [29] [30] Even among enthusiastic staff, the pressure for change can lead to fatigue and burnout, but shared decision making among team members and adequate staffing in PACTs can lower burnout. [78] PACT performance metrics (e.g., patient access, continuity, and care coordination) are often reported without training for staff and are sometimes directed towards providers instead of reflecting team-based care. [33] For clinics tailoring PACT for women Veterans they face additional challenges. [16]

For example, getting feedback on processes of WH-PACT implementation is difficult because most PACT metrics are not reported by patient gender. Restructuring existing practices to transform male patient-oriented to female patient-oriented care may be stressful without shared gender-sensitive attitudes (e.g., empathetic of women Veterans' care needs) in the clinics.

Quality improvement (QI) strategies can help clinical staff in adjusting local structures and processes to meet PACT goals while addressing many of the current challenges in serving women Veterans. Prior studies on non-VA patient-centered medical home used QI strategies, such as LEAN, [36] practice facilitation, [34] and learning collaborative. [35] However, these QI strategies are most effective when both leadership and local teams are involved in the process and continuously adapting to local needs and resources. [34] [79]

Evidence-based quality improvement (EBQI) strategies incorporate improvement priorities of leaders and evidence-based innovations by local clinical teams with the support of health services researchers. [80] EBQI has been used to translate research evidence into practice for implementing collaborative care for depression in VA primary care clinics [80] and community-based outpatient clinics, [81] smoking cessation program, [38] and gender-sensitive training. [9] In this study, we used EBQI in helping leaders and local teams to restructure and redesign practices to implement WH-PACT. [41] As part of EBQI activities, researchers helped network and facility (executive) leaders in identifying improvement priorities for women's health informed by VA guidelines, research findings on barriers and facilitators in improving care for women Veterans, and data on women Veteran population and their care experiences. At the local level, researchers trained frontline clinical teams on the use of patient data and formative feedback before the teams designed and implemented QI initiatives for improving primary care for women Veterans. Leadership priorities, local clinic resources, and patient needs

guided clinical teams' QI initiatives. Throughout the QI processes, EBQI clinical teams received on-going practice facilitation and formative feedback from health services researchers and participated in monthly across-site collaboration calls for sharing best practices.

Primary care frontline teams are likely to feel and perform better when they participate in QI initiatives that affect their work. [79] Given that the implementation of QI is complex and time-consuming, teams that received support and guidance are more likely to feel interested and less burdened in implementing or adopting innovations. [82] It is within this context that we evaluated the impact of EBQI on improving the gender sensitivity of the primary care workforce during WH-PACT implementation. We hypothesized that participation in facilitated QI (i.e., EBQI), compared to self-directed QI (i.e., control), that maximizes fit to the local culture and circumstances would influence the local teams' interest in improving care for women Veterans and consequently their gender sensitivity. We compared EBQI's influence on gender sensitivity of the overall sample and of providers and staff in WH-PACTs and general PACTs where women Veterans can receive primary care.

Methods

Study Design and Setting

We randomized eight VA medical centers (VAMCs) to EBQI and four VAMCs to control in an unbalanced 2:1 ratio within each of four VA geographic regions (i.e., Veterans Integrated Service Networks [VISNs]). The details of the cluster randomized controlled trial have been described elsewhere by the Principal Investigator. [41] The Institutional Review Boards of VA and RAND approved the study. The study is registered with ClinicalTrial.gov (NCT02039856).

Exposure to Evidence-Based Quality Improvement Method

Eight EBQI sites conducted six QI activities to facilitate the implementation of WH-PACTs for more than two years. 1) Researchers convened meetings with stakeholders (e.g., regional directors, facility directors, chiefs of staff, and Women Veteran Program Managers) to identify quality improvement priorities for women Veterans based on prior evidence on improved women's health care and in the context of VA PACT and WH policies. 2) Researchers provided one-day in-person QI training to nominated champions from local sites, reviewed leadership priorities by region and site, and facilitated discussion with local champions identifying problems and barriers for women's health care at their sites. At the end of the training session, each site proposed QI initiatives that were evidence-based from research findings and clinical experiences from practitioners. Table 3.1 briefly describes the QI projects carried out by the EBQI sites. 3) Researchers regularly informed clinical teams from EBQI sites with findings from surveys, interviews, and VA quality measures (e.g., performance on guideline-concordant care) 4) Researchers also provided continuous practice facilitation for QI projects, including troubleshooting and having implementation experts review QI progress. 5) EBQI clinical teams participated in monthly calls with other EBQI clinical teams within their VISN to share effective QI innovations across sites. 6) Additional technical support from experts on QI project-specific areas was made available for clinical teams. Examples included workgroups with clinical and research experts for care coordination and trauma-sensitive primary care.

The four control sites (one for each participating VISN) received VA guidelines on PACT and women's health that were available for all VA facilities.

Study Sample and Data Collection

We surveyed primary care providers (PCPs) and staff in WH-PACTs and general PACTs from the participating 12 VAMCs at baseline and 24-month via mail and online. PCPs included physicians, nurse practitioners, and physician assistants. Staff included nurses (RNs), medical assistants (LPNs or LVNs), clerks, pharmacists, social workers, dietitians, and mental health specialists. We excluded providers and staff in PACTs for geriatrics, infectious disease, home-based care, homelessness, post-deployment health, renal or dialysis, serious mental illness, and spinal cord injuries and disorders (VHA Handbook 1101.10). The eligible sample included 775 providers and staff at baseline (520 from EBQI sites and 255 from control sites) and 869 at 24-month (565 from EBQI sites and 304 from control sites).

Gender Sensitivity Measure

We used a 10-item gender sensitivity measure adapted from the previously validated Gender Awareness Inventory-VA. [4, 61] We pretested the survey items with eight PCPs using cognitive interviewing techniques and incorporated their feedback in the final surveys. Survey item responses were on a 5-point Likert scale, from 1 being “strongly disagree” to 5 “strongly agree” for the following items: 1) The VA should not be expected to provide special health services for women, 2) It would bother me to see a woman breastfeed in the clinic, 3) Having a special room for women to breastfeed would be a good clinic policy, 4) Sometimes I wish VA primary care clinics had only male patients, 5) it is nice to have female patients at VA primary care clinics, 6) Special women’s clinics should be at all VA health facilities, 7) Having female patients at VA primary care clinics makes things too difficult, 8) Compared to men, women

expect too much courtesy from clinic staff, 9) Female patients care too much about the way the clinic looks, and 10) Having female patients makes this a better clinic. We reverse coded the six negatively worded items (items 1, 2, 4, 7, 8, and 9) and then created a single composite score per participant by averaging responses to all ten items (Cronbach's $\alpha=0.78$). The composite score ranged from 1 to 5 with higher scores reflecting greater gender sensitivity. The score was a continuous variable slightly skewed to the left (baseline mean 4.04, SD 0.59). Since standard transformations of the score did not improve the data distribution, we reported the results using the untransformed composite score for ease of interpretation.

Type of PACT

We surveyed PCPs and staff about their PACT association: "Are you currently a member of a PACT teamlet for women patients?" We categorized responses into WH-PACT=1 if yes and WH-PACT=0 if no (i.e., general PACTs).

Covariates

We controlled for completion of WH training, which was measured separately for PCPs and staff and coded as a binary variable (Yes/No). For PCPs, we asked if they had completed at least one training in the following areas: 1) VA WH mini-residency, 2) Veterans Integrated Service Network (VISN)-sponsored mini-residency, 3) VA women's health conferences in person or audio/video-presentations, such as VA's eHealth University, 4) women's health or Gynecology SCAN-ECHO (Specialty Care Access Network-Extension for Community) sessions [83] – a virtual program that trains and supports PCPs with specialist consultation on patient cases, 5) non-VA women's health conferences, 6) preceptorship with an experienced women's health primary care provider on a regularly-scheduled basis or 7) family practice or internal medicine residency, or women's health fellowship within the past 3 years. For staff, we asked if

they had completed at least one of the following: 1) shadowed an experienced women's health provider or staff on a regularly-scheduled basis, 2) VA women's health conferences in person or via audio or video-presentations, 3) women's health or Gynecology SCAN-ECHO sessions, 4) non-VA women's health conferences, or 5) other relevant trainings in women's health.

We also controlled for individual communication with other professionals within their clinics. We asked them to respond on a 5-point scale (from 1 "strongly disagree" to 5 "strongly agree") the following five items: 1) Our staff and clinicians have constructive work relationships, 2) In this clinic, co-workers from different clinical or administrative backgrounds frequently interact to solve quality of care problems, 3) The staff and clinicians in this clinic operate as real teams, 4) In this clinic, when I have a conflict with a co-worker from a different clinical or administrative discipline, I can access help to resolve the problem, 5) There is often tension between people in this clinic. We reverse-coded item 5 and generated a composite score by averaging all responses (Cronbach's $\alpha=0.80$), which ranged from 1 to 5. A higher score denoted higher positive communication.

Additional controlled variables included individual gender and years worked at VA. To control for site variability, we included the site rurality (rural=0, urban=1) and percent of WVs enrolled at each site reported by the VA Support Service Center (VSSC).

Analysis

Analyses included all PCPs and staff who completed the surveys at each wave and were adjusted using nonresponse weights for generalizability to the PCP and staff population at the 12 sites. The weights were inverse predicted probabilities of participating in the survey and calculated separately for each wave. Baseline weights were based on gender, type of clinic (primary care vs women's health), and position title (e.g. physician, nurse, medical assistant,

clerk). Weights for the 24-month survey were based on gender, full-time equivalence, and position title. In addition, we created new weights for 102 PCPs and staff who participated in baseline and 24-month. We carried forward their baseline nonresponse weights and multiplied them with weights for attrition from baseline to 24-month. The attrition weights were inverse predicted probabilities based on gender, job satisfaction, and tenure at VA.

We compared characteristics between EBQI and control groups at baseline and 24-month using the chi-squared test for categorical variables and t-test for continuous variables. We conducted a difference-in-differences analysis in the form of linear regression using the entire analytical sample and separately by general PACT and WH-PACT. We included the main effects of survey wave, EBQI vs control groups, and their interaction, controlling for covariates and individual clustering. We did not adjust for site clustering since the interclass correlation coefficient was 0.04. We conducted sensitivity analysis restricted to the 102 PCPs and staff who participated in both waves and reported the findings descriptively.

Results

The response rates were 37.2% at baseline (37.3% in EBQI and 36.9% in control) and 28.5% at 24-months (26.7% in EBQI, 31.9% in control). EBQI sites had more PCPs and staff working in WH-PACTs and in urban areas compared to control sites (Table 3.2). The remaining characteristics were statistically similar between EBQI and control sites at both waves.

Figures 3.1a-3.1c illustrate the change in the adjusted gender sensitivity scores over time between EBQI and control sites. Overall, EBQI sites improved gender sensitivity over time compared to control sites (Figure 3.1a). Among WH-PACTs, gender sensitivity improved over time for both EBQI and control sites; however, EBQI sites were able to maintain consistently

higher gender sensitivity over time than control sites (Figure 3.1b). Among PACTs, gender sensitivity increased in EBQI sites over time, while it decreased for control sites (Figure 3.1c).

Table 3.3 shows the absolute differences in gender sensitivity scores between EBQI and control groups over time, after adjusting for covariates. Overall, gender sensitivity scores of PCPs and staff in the EBQI group were significantly higher (by 0.37 points) than the control group, approximately 60% of a standard deviation. PCPs and staff in general PACTs in the EBQI group had a greater increase in the scores (0.52 points higher) than the control group, equivalent to the effect size of 88% of a standard deviation. On the other hand, gender sensitivity increased among PCPs and staff in WH-PACTs for both EBQI and control groups; the adjusted difference over time between EBQI and control groups was not statistically significant. The remaining coefficients across three models showed that female providers and staff on average scored lower on gender sensitivity than their male counterparts, but their sensitivity improved with women's health training with the exception of those in WH-PACTs. Individuals with additional years working in the VA had predicted lower gender sensitivity. More positive communication with other professionals within clinics and a higher percentage of women Veterans seen at local sites were associated with higher gender sensitivity. Working in rural sites versus urban sites was not significantly associated with gender sensitivity. Sensitivity analyses of survey participants in both waves (N=102) showed similar point estimates with a wider confidence interval (results not shown in tables).

Discussion

The growing population of women Veterans has propelled establishment of VA policies related to the transformation of its health care system into one that is gender-sensitive, respectful, and understanding to women Veterans' care needs. The 2010 VA PACT initiative aims to

accomplish this by recommending consolidation of women Veterans into WH-PACTs where they can receive gender-sensitive comprehensive primary care in a single visit. However, achieving the transformation to WH-PACTs is challenging because VA practices are historically designed to provide care for male patients. We used an EBQI strategy to facilitate the process of tailoring PACT to the primary care needs of women Veterans, aligning leaders' improvement priorities for women's health with local clinical teams' innovations for care improvement for women Veterans, as well as providing training, and facilitating QI processes throughout 2 years of implementation. We evaluated the degree to which EBQI made an impact on the gender sensitivity of PCPs and staff. We found that EBQI was associated with improving PCP and staff gender sensitivity over time.

This association was primarily due to the fact that EBQI sites were able to maintain gender sensitivity of general PACTs while the control sites had significant reductions in gender sensitivity of their general PACTs over time. Understanding of these trends among general PACTs can be viewed in the context of challenges in adapting PACT to meet the primary care needs of women Veterans. The control sites offered a view into the self-directed implementation of WH-PACTs. Per the PACT policy, WH-PACTs can be in one or more of three care models: 1) physically separated women's health clinics, 2) gender-integrated general primary care clinics, and 3) women's health clinics within or adjacent to general primary care clinics. Although the VA PACT policy recommends that women Veterans are consolidated into WH-PACTs, women Veterans can continue to see the provider of their choice or stay with the provider with whom they have established a clinical relationship. [24] These providers may or may not have the requisite women's health training and can be working in general PACTs located in either model 2 or 3 in general primary care clinics. The lack of training has been identified as a barrier among

providers to the delivery of comprehensive primary care services for women Veterans. [55] In regard to the primary care teamlet staff (nurses, medical assistants, and clerks), they usually work on multiple teamlets in addition to WH-PACTs and general PACTs, taking multiple responsibilities and supporting multiple providers across the three models of care at the same time. [54] Qualitative interviews have revealed that sharing staff leads to staff shortages and in turn leads to burnout among many teamlets. [78] In addition, providers and staff who care for women Veterans are often burdened with providing both gender-specific and general primary care in limited spaces, with limited resources, and with little time to reflect on care improvement. [54] [55] It is possible that these barriers lead to burnout among providers and staff that may undermine motivation to engage in care improvement activities for WH-PACT implementation. [79] Under these circumstances, providers and staff in general PACTs may feel that women Veterans should be transferred to WH-PACTs rather than feeling interested in quality improvement efforts for women Veterans. Consequently, their gender sensitivity towards women Veterans would have declined over time.

On the other hand, the opposite is true for general PACTs in the EBQI sites. Their gender sensitivity was maintained over time. The technical guidance received from EBQI may have provided a feeling of reward and interest to be part of QI initiatives for women Veterans. Those in general PACTs who shared space and staff resources with WH-PACTs would have benefitted from QIs because many of the site-selected QIs focused on adapting existing practices to meet the primary care needs of women Veterans. As staff participated in working out the details for QIs for WH-PACTs, those in general PACTs could have received certain benefits in retrospect when their staff conveyed knowledge about women Veterans and what QI initiatives tried to achieve. In addition, providers and staff shared their experiences and best practices with

other EBQI sites within their VISN in monthly multi-stakeholder meetings. This cross-site collaboration could have led to their local work gaining visibility by other EBQI sites and may have had a ripple effect on QI initiatives throughout the 2-year implementation phase. It is possible that repeated communication about women's health and primary care for women Veterans within and across sites may have resulted in maintaining gender sensitivity of the general PACTs in the EBQI sites over time. Our results also showed that greater communication was associated with higher gender sensitivity. Our findings resonated with the findings from the studies of barriers to WH-PACT implementation that positive communication influences successful implementation. [55]

In contrast to general PACTs, gender sensitivity of WH-PACTs in both EBQI and control sites improved over time. This is consistent with our finding in Chapter 2 that more experience in caring for women Veterans is associated with greater sensitivity towards the need of women Veterans. Although both groups saw improvement, the EBQI sites maintained a higher level of gender sensitivity over time. In general, we think that EBQI helped alleviate the burden of QI processes, increased higher interest in QI for women Veterans, and in turn maintained a higher-level gender sensitivity among the EBQI WH-PACTs compared to the control arm.

Our study has limitations. First, the results may differ for other VA facilities with different compositions of provider, staff, and patients than those participated in this trial. Second, low survey response rates in our study may weaken the representativeness of our findings to the population at the study sites. We had worked to address this limitation by adjusting our analyses for non-response. However, our survey response rates were consistent with the recent findings on declining survey response rates among the health care workforce with increasing clinical responsibilities. [84] [85] While prior VA studies of PACTs had overcome

the issue of low response rate with monetary incentives [86], we did not provide monetary incentives for survey participation. Our low response rate may also be due to unintended survey burdens among PCPs and staff since there were other competing surveys assessing PACT implementation as part of the five PACT demonstration laboratories launched at the beginning of 2010 for 5 years. [23] Fourth, our measure of gender sensitivity focused on the practice-level care needs of women Veterans (e.g., “Special women’s clinics should be at all VA health facilities”). The measure did not include how well providers and staff communicate with women Veterans about their health or treatment plans, which are important for patient willingness to continue to use services and adhere to healthy behaviors advocated by their providers and staff. [87] The next chapter (Chapter 4) evaluated whether the current measure of gender sensitivity reflects a good level of sensitivity and is associated with patient decision to continue to use services.

Balancing these limitations, our study has several strengths. This was the first study to provide evidence that improving healthcare delivery that is sensitive to the needs of minority patients is possible when quality improvement is systematic, involving leadership, frontline clinical teams, and implementation experts. In EBQI, local clinical teams chose to work within the national guidelines and the overarching quality improvement goals for minority patients identified by their organizational leaders. Healthcare systems are often faced with challenges to address the needs of evolving patient populations. In the VA, the women Veteran population will continue to grow, and their health care needs will continue to change as they age and as more women join the military and then discharge to become Veterans later on. As such, PACT teams will need to continue to adapt their practices and attitudes toward tailoring care to meet women Veterans’ needs. In this study, EBQI offered practical tools with which local clinical

teams can identify problems, design solutions, partner with key stakeholders in process improvement, measure progress, and share results with their peers, that are within research evidence and organizational priorities.

The VA MISSION Act of 2018 aims to improve access to care for Veterans and allows them to seek care in community clinics outside the VA when they need it. Its implications related to VA's effort to ensure that women Veterans receive gender-sensitive comprehensive primary care through WH-PACTs in a single visit are unknown. Currently, one in three women Veterans utilizes non-VA services. [14] Continuous monitoring of their experiences and quality of care is essential in ensuring women Veterans receive high-quality care. For example, monitoring can include gender sensitivity of non-VA providers and staff, patient ratings of the gender sensitivity of care they receive, and whether care provision meets their needs and preferences when seeking care at community clinics. [55]

Our study provides an important contribution to the understanding of a medical workforce's gender sensitivity and the effectiveness of a comprehensive evidence-based approach to changing provider and staff attitudes toward minority patients' care needs. EBQI offers a model for local intervention to improve care culture in healthcare systems.

Table 3.1: Site-Specific Quality Improvement Projects Conducted During the Evidence-Based Quality Improvement Trial on Women’s Health Patient-Aligned Care Team Implementation

Site	QI projects
Site 1	Improve team functioning and staff burnout by a structured daily huddle Train medical residents in trauma-sensitive care for Women Veterans during primary care visits
Site 2	Improve team functioning and communication through virtual huddles Develop a process for enhanced management of cardiovascular diseases and diabetes for Women Veterans
Site 3	Improve primary care and women’s health visit scheduling for Women Veterans Enhance mental health services integrated with primary care and women’s health services for Women Veterans
Site 4	Improve prescribing practices for medications for Women Veterans who are in reproductive age Standardize scheduling process for new and established Women Veteran patients
Site 5	Improve mammography screening and care coordination Establish a task force to end harassment in the facility
Site 6	Improve reporting of screening for sexually transmitted infections Improve mammogram screening and care coordination
Site 7	Improve follow-up care for patients with abnormal cervical cancer screening results
Site 8	Improve follow-up care and coordination for patients with abnormal mammography screening results Improve gender-sensitive culture that is safe and welcoming for Women Veterans Reduce stranger harassment experienced by women Veterans

Table 3.2: Characteristics of Survey Participants

	Baseline (N=256)		24month (N=222)	
	EBQI (N=176)	Control (N=80)	EBQI (N=137)	Control (N=85)
WH-PACT member, %	59.8	35.4*	57.4	45.6
PCPs (vs. staff), %	44.4	36.2	45.0	36.2
Female, %	72.0	68.9	68.6	73.9
Had ≥ 1 WH training, %	43.0	35.0	44.0	42.0
Years worked at VA, mean (SD)	15.1 (12.2)	14.2 (9.9)	16.3 (10.6)	18.1 (12.0)
Communication score, mean (SD)	3.4 (0.8)	3.4 (0.8)	3.6 (0.7)	3.7 (0.7)
Worked in rural area, %	5.6	14.0**	6.1	9.5
% Women Veterans enrolled at VAMC, mean (SD)	7.8 (3.0)	7.3 (1.1)	8.1 (3.2)	7.5 (1.2)

^a Test of equality between EBQI and control. * $p < 0.10$, ** $p < 0.05$

Table 3.3: Regression outputs for predicted change in gender sensitivity score by Women’s Health Patient-Aligned Care Teams (WH-PACTs) and general PACTs, coefficients (95% Confidence Intervals)

	Combined	WH-PACTs	PACTs
Difference-in-Differences (EBQI vs. Control from Baseline to 24-month)	0.37 (0.16, 0.59)	0.17 (-0.16, 0.49)	0.52 (0.21, 0.82)
EBQI (Ref: Control)	-0.21 (-0.41, -0.01)	-0.03 (-0.33, 0.27)	-0.33 (-0.56, -0.09)
24month (Ref: Baseline)	-0.24 (-0.42, -0.05)	-0.004(-0.30,0.29)	-0.41 (-0.65, 0.18)
WH-PACT (Ref: PACT)	0.28 (0.12, 0.44)		
PCPs (Ref: staff)	0.04 (-0.09, 0.17)	0.01 (-0.16, 0.18)	0.08 (-0.12, 0.29)
Female (Ref: Male)	-0.10 (-0.27, 0.07)	-0.01 (-0.24, 0.22)	-0.18 (-0.38, 0.02)
WH training (Ref: no WH training)	0.13 (-0.01, 0.27)	-0.06 (-0.11, 0.23)	0.21 (-0.02, 0.44)
Years worked at VA	-0.01 (-0.01, -0.001)	-0.01 (-0.02, -0.002)	-0.004 (-0.01, 0.003)
Communication score	0.06 (-0.02, 0.14)	0.04 (-0.07, 0.14)	0.10 (-0.03, 0.23)
Worked in rural area (Ref: urban are)	0.05 (-0.20, 0.29)	0.18 (-0.10, 0.46)	-0.13 (-0.49, 0.22)
% of Women Veterans enrolled at VAMC	0.03 (0.01, 0.05)	0.04 (0.01, 0.06)	0.02 (-0.01, 0.06)
Intercept	3.78 (3.37, 4.19)	3.93 (3.32, 4.53)	3.78 (3.16, 4.39)

Note: The models are adjusted for non-response weights and clustering within individuals. Abbreviations: EBQI, evidence-based quality improvement; Ref, reference group; WH-PACT, Women’ Health Patient-Aligned Care Teams; PACT, Patient-Aligned Care Teams; PCPs, primary care providers; WH, women’s health; VAMC, Department of Veterans Affairs Medical Centers.

Figure 3.1a: Predicted Change in Gender Sensitivity Score for the Overall Sample, Adjusting for Nonresponse Weights and Characteristics Described in Table 3.2

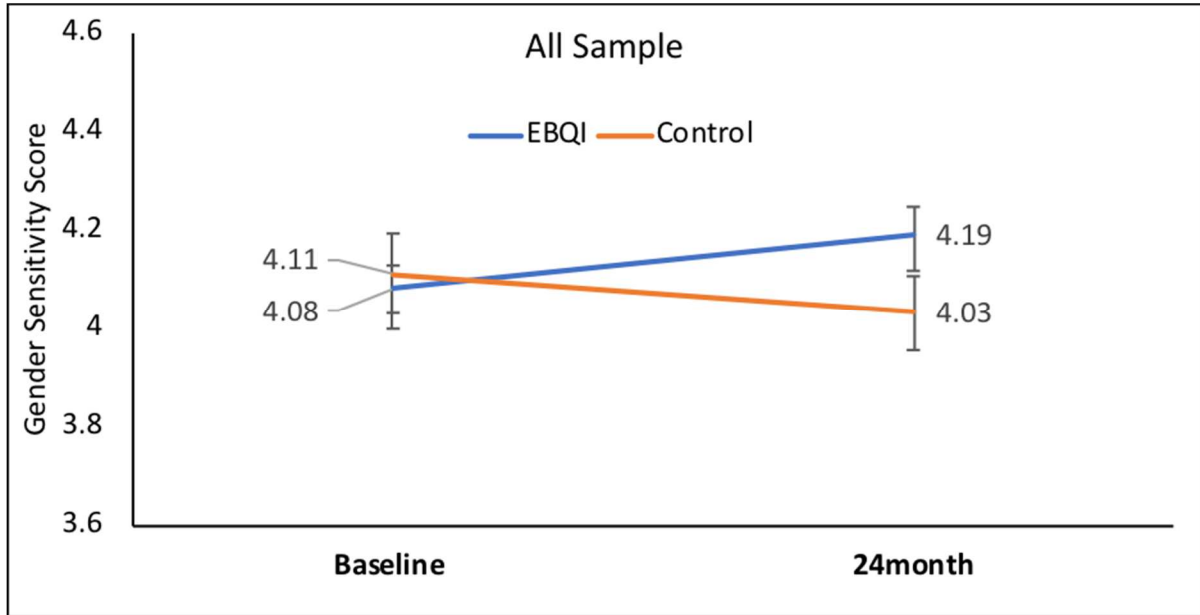


Figure 3.1b: Predicted Change in Gender Sensitivity Score for the WH-PACT Sample, Adjusting for Nonresponse Weights and Characteristics Described in Table 3.2

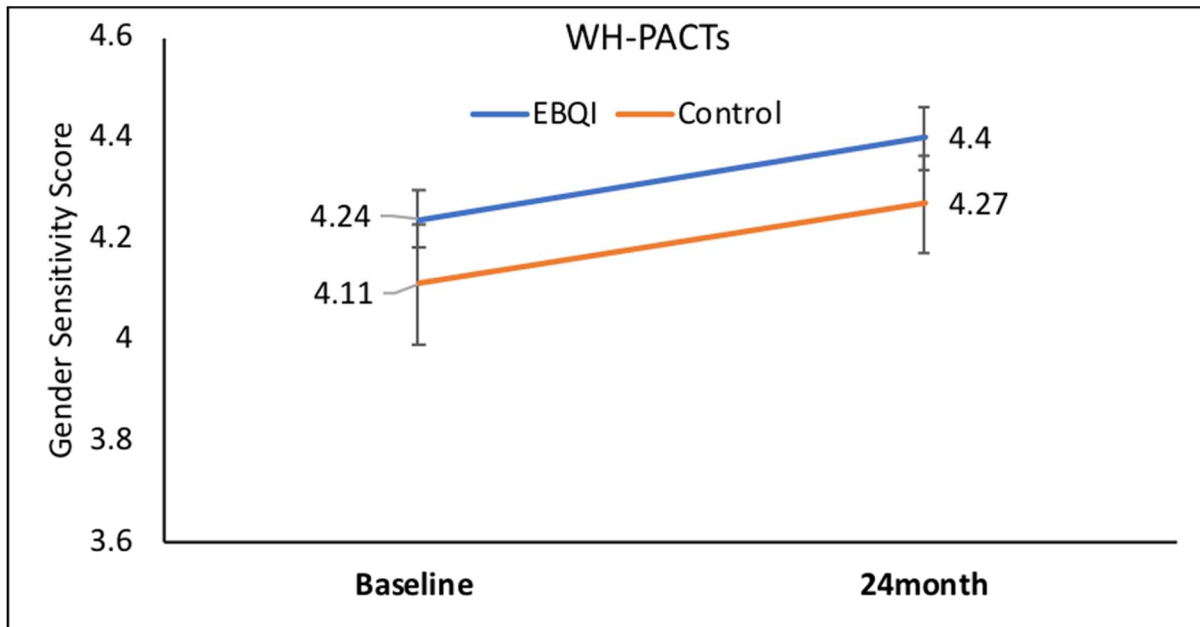
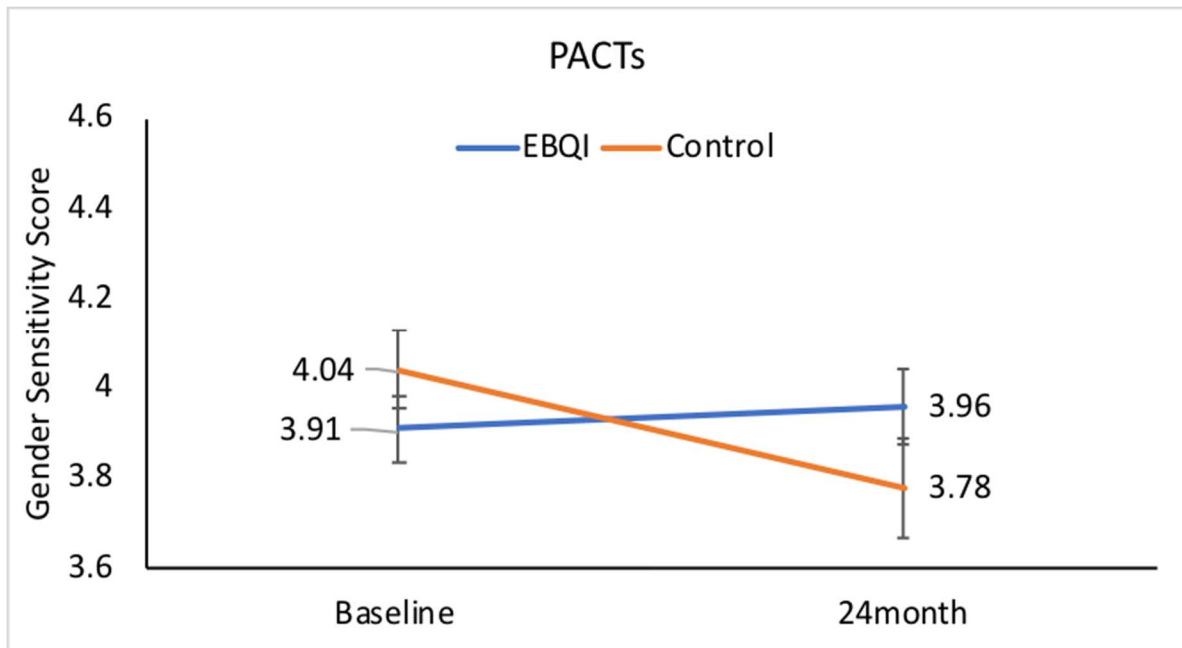


Figure 3.1c: Predicted Change in Gender Sensitivity Score for the PACT Sample, Adjusting for Nonresponse Weights and Characteristics in Described in Table 3.2



Chapter 4: Gender-Sensitive Primary Care is Associated with Lower Care Discontinuance Among Female Patients

Abstract

Background: Despite being the fastest-growing group of Veterans, women Veterans make up only 8% of healthcare users in the Department of Veterans Affairs (VA). Prior studies on their experiences with care in the VA have highlighted that barriers to care experienced by women Veterans may be related to poor workforce gender sensitivity to their care needs. Early evidence shows that about 25% of them discontinue VA care within three years of initial VA use and that the workforce gender sensitivity may be contributing to their discontinuance of VA services. To reduce barriers with a focus on care continuity, VA recommends women Veterans receive gender-sensitive comprehensive primary care from women's health providers in Women's Health Patient-Aligned Care Teams (WH-PACTs) or general PACTs. Within this PACT context, we examined whether primary care workforce gender sensitivity was associated with women Veterans discontinuing from VA primary care within three years.

Methods: We used 2014 cross-sectional surveys to measure the gender sensitivity of primary care providers and staff and identify their care delivery in WH-PACTs or general PACTs at 12 VA medical centers. We measured gender sensitivity using a modified version of the validated 10-item VA-Gender Awareness Inventory. We identified women Veterans who utilized primary care between 2013 and 2014 (i.e., baseline) and linked them to providers and staff who participated in the survey and for whom we had gender sensitivity measure and the type of PACT information. We examined women Veterans' PC visits in the following three years after

baseline and used multi-level logistic regression to examine the association between provider/staff gender sensitivity and patient primary discontinuance.

Results: Eleven percent of women Veterans discontinued primary care within three years. After adjusting for characteristics of patients, providers, and staff, we found that poor gender sensitivity (i.e., lowest quartile) was associated with higher odds of discontinuance (adjusted odds ratio 1.4; 95% confidence interval: 1.1, 1.8) regardless of whether the patients were seen in WH-PACTs or general PACTs.

Discussion: Being gender-sensitive to women Veterans' care needs is associated with primary care continuity. Future policies and programs integrating activities to enhance VA workforce gender sensitivity may help improve women Veterans' care continuity in primary care.

Background

While the proportion of Veterans who are women is currently small (8%), [14] their numbers are projected to increase faster than their male counterparts. [19] Although the demand for services among women Veterans has increased at the Department of Veterans Affairs (VA) healthcare system, prior studies have highlighted challenges related to women Veterans' access to care and workforce readiness to care for them. [15, 16] Research shows that one-fourth of women Veterans new to VA discontinued their VA care within the three years. [88] On average, they make more visits within and outside VA compared to men, [14] yet their care experience and quality of care are poorer. [75, 89] Access barriers are exacerbated by poor workforce gender sensitivity to the care needs and preferences of women Veterans. [15, 46, 47, 53] These barriers can compromise VA's current efforts to provide high-quality care for women Veterans and the success of its patient-centered medical home model. [24]

Alongside the 2010 nationwide implementation of Patient-Aligned Care Teams (PACTs), the VA's version of the medical home model, the VA PACT policy recommends implementation of Women's Health PACTs (WH-PACTs) where women Veterans can receive gender-sensitive comprehensive primary care from primary care providers (PCPs) who are trained or have experience in women's health. [25] [24] WH-PACTs can be located in 1) gender-integrated general primary care clinics, 2) women's health clinics within or adjacent to primary care clinics, and 3) physically separated women's health clinics. The policy also allows women Veterans to receive primary care from PCPs of their choice, e.g., PCPs from general PACTs. However, the PACT policy does not include specific accommodations for tailoring the PACT model to WH-

PACTs, such as how to restructure existing practices to meet the care needs and preferences of women Veterans, or assessing and improving gender sensitivity of clinical staff so that the care is provided in a gender-sensitive care environment per VA women's health guidelines. [16] [24]

PACT focuses on continuity of care provided by teamlets consisting of PCPs, nurses, medical assistants (LVNs/LPNs), and clerks. Continuity of care has been associated with benefits such as improved preventive services and reduced emergency room visits, hospitalizations, and costs associated with multiple visits. [90-92] Discontinuance of care would adversely impact the potential to optimize these benefits.

Prior studies used patient surveys to understand reasons for women Veterans leaving VA care, and they found that women Veteran's perception of provider sensitivity to their concerns, having non-VA insurance, not having had history of military sexual trauma, and not having diagnosed with depression or post-traumatic stress disorder are associated with their decision to leave VA care. [47] Other studies have characterized women Veteran patient factors for discontinuing VA care within three years: age, race/ethnicity, service-connected disability which reflects a Veteran's injury or disability as the result of her military service and is considered in determining for the level of her VA health care benefits, physical and mental comorbidities, rural vs. urban residential area, driving time between residence and the nearest VA primary care site, and whether or not they had used the VA care in prior three years. [93] Some studies evaluated gender sensitivity from the VA workforce's perspective with a goal to improve workforce gender sensitivity, but the findings were not linked to patients or their experience with care. [21] However, these studies were conducted prior to PACT implementation and need to be validated and accounted for additional characteristics pertaining to the PACT environment, such as team

functioning, communication with other members of the team, leadership support for change, and barriers to delivering women's health care. [15, 29] [30] [15, 31]

A better understanding of gender sensitivity from the workforce perspective in the context of PACT and its direct relationship to patient care continuity can inform VA programs and policies to improve workforce gender sensitivity while promoting patient-centered care. In this study, we report the findings on the relationship between provider- and staff-reported gender sensitivity and women Veterans' discontinuance of VA primary care within three years, while adjusting for women Veteran characteristics (e.g., age, comorbidities, and distance to the nearest VA primary care site) and provider- and staff-level characteristics (e.g., team functioning, communication within clinic, leadership support for change, and barriers to women's health care delivery).

Methods

Data sources

We used data from 2014 cross-sectional surveys of primary care providers and staff and linked the survey participants to women Veteran patients whom they had seen for primary care reasons between 2013 and 2014. The surveys assessed provider and staff gender sensitivity, team functioning, communication within the clinic, and barriers to comprehensive women's health care delivery. The surveys were collected as part of a cluster randomized controlled trial of an Evidence-Based Quality Improvement (EBQI) strategy for WH-PACT implementation (ClinicalTrials.gov, NCT02039856). The study design and survey data collection have been described elsewhere by the principal investigator. [41] We used the VA Corporate Data Warehouse (CDW) to identify women Veteran characteristics and outpatient visits for linking

survey respondents to women Veterans. CDW stores information on outpatient visits beginning from 1999 and Veteran patient age, race/ethnicity, diagnoses, the level of a service-connected disability, residential area in rural or urban, and driving time from patient's residence to the nearest VA primary care clinic in VA medical centers.

Providers and staff sample

We sent surveys to 280 PCPs and 369 staff who worked in general PACTs or WH-PACTs in 2014. PCPs included physicians, nurse practitioners, and physician assistants. Staff included care managers (RNs), medical assistants (LPNs/LVNs), and administrative clerks. We included 94 providers (33% response rate) and 167 staff (41% response rate) who responded to the survey. The demographics between survey respondents and non-respondents were statistically similar.

Women Veteran sample

We linked the survey respondents (94 PCPs and 167 staff) to women Veterans who they had seen for a primary care-related reason between 2013 and 2014 (i.e., baseline). We used this 2-year baseline window for two reasons: 1) the timeframe overlapped with the 2014 provider and staff surveys and captured patients who might be expected to complete their annual physical check-up within two years [94]; and 2) at the time of the analysis, we had VA outpatient visit data available up to 2017, which allowed a three-year follow-up timeframe after 2014. This three-year window was consistent with prior studies on women Veteran attrition from VA care. [93] We defined patients' primary care visits based on stop codes, which represent the type of patient encounters (phone or in-person) with providers and staff that are specific to the VA and

identify specific reasons for the encounter. We used 301 for general internal medicine, 322 for comprehensive women's health, 323 for primary care/medicine, 338 for telephone primary care, and 348 for primary care shared appointment. We excluded 10 PCPs and 22 staff who had missing primary care stop codes, saw only male Veterans or non-Veterans, or had cared for women Veterans who died at baseline. We also excluded 751 women Veteran patients, for whom the information on the type of PACT was missing. The final analysis sample included 85 PCPs, 111 staff, and 9,958 women Veteran patients. The VA and RAND Institutional Review Boards approved the study.

Dependent Variable

We examined women Veteran patients' primary care visits in the VA within three years. The reference date for the dependent variable was their last primary care visit between 2013 and 2014 (Figure 4.2). We defined follow-up PC visits using the same stop codes (301, 322, 323, 338, and 348). We coded the discontinuance of primary care as 1 if there was no primary care visit or 0 if there was one or more primary care visits within three years.

Independent Variables

Our independent variables were provider and staff gender sensitivity and the type of PACT that delivered primary care.

We adapted the Gender Awareness Inventory-VA (GAI-VA) to measure the gender sensitivity of PCPs and staff. [4, 61] We modified and pretested 10 survey items with eight PCPs using cognitive interviewing techniques and incorporated their feedback in the final surveys. Providers and staff responded on a 5-point Likert scale, from 1 being "strongly disagree" to 5 being "strongly agree". The items included 1) The VA should not be expected to provide special health services for women, 2) It would bother me to see a woman breastfeed in

the clinic, 3) Having a special room for women to breastfeed would be a good clinic policy, 4) Sometimes I wish VA primary care clinics had only male patients, 5) it is nice to have female patients at VA primary clinics, 6) Special women's clinics should be at all VA health facilities, 7) Having female patients at VA primary care clinics makes things too difficult, 8) Compared to men, women expect too much courtesy from clinic staff, 9) Female patients care too much about the way the clinic looks, and 10) Having female patients makes this a better clinic. We reverse coded the six negatively worded items (items 1, 2, 4, 7, 8, and 9) and then created a single composite score by averaging responses ($\alpha=0.78$). The composite score ranged from 1 to 5 with higher scores reflecting greater gender sensitivity. We replaced the missing values of 14 cases with values from mean imputation (mean 4.04, SD 0.59).

Next, we linked provider and staff gender sensitivity to women Veteran patients. To measure patients' exposure to gender sensitivity, we created an exposure scale calculated based on the visit relationship between patients and providers and staff. Evaluation of patient visits to PCPs and staff showed a one-to-many relationship in which one patient could be cared for by one or more PCPs and staff who responded to the survey. To account for this multiple visit pattern, we assigned weights, calculated as the proportion of total times a patient had visited the PCP or staff between 2013 and 2014 (Appendix Table 4.1). For example, a patient, who saw one PCP and one staff for a total of two PC visits, would contribute a weight of 50% to the PCP gender sensitivity score and 50% to the staff score. Next, we multiplied the weights by PCP and staff gender sensitivity scores before summing the weighted scores per patient (i.e., exposure scale). We found that the weighted gender sensitivity score was statistically similar to average scores per patient (Appendix Table 4.2). The gender sensitivity exposure scale was a continuous variable ranging from 1 to 5, where higher scores represented greater gender sensitivity.

To better understand the gender sensitivity scale in the context of whether patients were exposed to high or low scale rather than in the context of incremental point change, we dichotomized the gender sensitivity exposure scale into the lowest quartile (≤ 25 percentile) and top three quartiles (> 25 percentile).

Women Veterans can receive primary care from general PACTs or WH-PACTs. We identified the type of PACT by using provider and staff surveys. We asked PCPs and staff, “Are you a member of a PACT teamlet for women patients?” We coded as WH-PACTs if the response was “Yes” and general PACTs if the response was “No”. Although PCPs and staff in WH-PACTs might also provide care in general PACTs in addition, we prioritized WH-PACT over general PACT and encoded one type of PACT per PCP and staff without accounting for their possible other PACT association. This allowed us to maximize the possibility that the type of PACT was counted only once per PCP and staff before linking to patients. After linking, we coded as PACT (the type of PACT=1) if patients were seen by PCPs and staff in PACTs, we coded as WH-PACT (the type of PACT=3) if they were seen by PCPs and staff in WH-PACTs. During the process of linking, we found that some patients were seen in both PACTs and WH-PACTs. We coded this group separately as PACT/WH-PACT (the type of PACT=2). Since PACT information was missing for 26 PCPs and 28 staff, we removed them from the analyses, as well as the 751 patients who were linked to them.

Covariates

Women Veteran characteristics

All measures of women Veteran characteristics came from the VA CDW and were identified at the time of their last primary care visits to survey participant PCPs and staff between 2013 and 2014. The characteristics included age, race/ethnicity (White, Black, Latino/Hispanic,

Asian, American Indian, Pacific Islander, Multiple race/ethnicity, and unknown, rurality of residential area (rural vs urban), non-VA insurance status (yes or no), and reported military-related sexual trauma (yes or no). Consistent with prior studies, we controlled for service-connected disability in the following categories: 1) not-service connected, 2) 0-49%, 3) 50-99%, and 4) 100%. [14] We also controlled for the number of physical and mental health diagnoses per patient. [95] Physical health diagnoses included diabetes, hypertension, asthma, congestive heart failure, chronic obstructive pulmonary disease, ischemic heart disease, peripheral vascular disease, stroke, renal failure, and any type of cancer. Mental health diagnoses included post-traumatic stress disorder, depression, major depression, alcoholism, substance use disorder, borderline personality/antisocial/schizophrenia, and other psychiatric condition.

Patient exposure to provider and staff characteristics

We also controlled for patient exposure to PCP- and staff-level characteristics measured in the 2014 surveys: team-functioning, communication within clinics, barriers to comprehensive primary care, and leadership support for quality improvement. Survey items assessing each characteristic are described in Appendix Table 4.3 to 4.6. First, we created composite scores for each characteristic by averaging the responses. Next, we generated patient exposure scales for each PCP and staff characteristic using the same algorithm used for the gender sensitivity exposure scale.

Analysis

We compared women Veteran characteristics by the type of PACT. We used a non-parametric test of trend for categorical variables and ANOVA for continuous variables. We used multivariate logistic regressions to evaluate the relationship between gender sensitivity and discontinuance of primary care within three years, adjusting for baseline characteristics with site

clustering. We recoded race/ethnicity to White, Black, Latino/Hispanic, or Others for regression. We also categorized gender sensitivity into quartiles and included the lowest quartile (=1) vs. top three quartiles (=0).

We conducted several sensitivity analyses to test the robustness of our main regression model. First, we tested to see if there was a possible collinearity issue between gender sensitivity and the type of PACT by removing the type of PACT from the main regression model. Second, as part of the test for collinearity issue, we re-ran regression by removing gender sensitivity from the main regression model. Third, we examined the independent effect of the set of women Veteran patient characteristics. To accomplish this, we re-ran the main regression model without provider- and staff-level characteristics. A prior study has found that women Veterans are new to the VA (i.e., no history of outpatient visits in VA in prior three years) are more likely to discontinue VA care than women Veterans who are established patients (i.e., history of outpatient visits in VA in prior three years) [93]. We conducted additional sensitivity analyses to test whether gender sensitivity coefficient in our main regression model changes depending on patients' history of VA primary care visits. To accomplish this, we re-ran our main regression model on five subgroups of patients categorized by their history of primary care visits in the past one to five person-years prior to their last primary care visit between 2013 and 2014: 1) had at least one primary care visit in each year for the past five person-years, 2) had at least one primary care visit in each year for the past four person-years, 3) had at least one primary care visit in each year for the past three person-years, 4) had at least one primary care visit in each year for the past two person-years, and 5) had at least one primary care visit for the past person-year. We used Stata 15 for all analyses.

Results

Overall, most women Veteran patients (71.4%) received primary care in WH-PACTs, followed by 17.0% in both WH-PACTs and PACTs and 12.6% in PACTs (Table 4.1). On average, patients experienced higher gender sensitivity among WH-PACTs and lowest among PACTs. More than 50% of patients who were seen in PACTs experienced gender sensitivity in the lowest quartile. Patients in WH-PACTs experienced higher team functioning, more positive communication among their providers and staff and greater leadership support for change than patients in PACTs. Barriers to women's health care delivery were higher in WH-PACTs than PACTs.

In general, patients who were seen in WH-PACTs were younger (mean age 47.2) than those seen in PACTs only (mean age 50.9) or both WH-PACTs and PACTs (mean age 50.7) (Table 4.1). The majority were White race (67%), did not have non-VA insurance (60%), and lived in urban areas (78%) with an average 20 minutes driving time to the nearest VA primary care site from their residence. One-third reported experience with military sexual trauma. About half of the patients had one or more diagnoses for physical or mental comorbidities. Compared to PACTs, patients seen in WH-PACT or both PACT/WH-PACT had experienced lower barriers to providing comprehensive women's health services and greater team functioning, communication within the clinic, and leadership support for change.

Overall, 11% discontinued PC within three years (Table 4.2). Patients who were seen by both WH-PACTs and PACTs had the lowest rate of discontinuance (6.3%) compared to patients seen in PACTs only (13.3%) and WH-PACTs only (11.7%) (Figure 4.3).

After adjusting for baseline characteristics, experiencing lowest quartile gender sensitivity was significantly associated with higher odds of women Veterans discontinuing from primary care within three years (Adjusted Odds Ratio=1.4; 95% CI: 1.1, 1.8) (Model 1 in Figure 4.4). Other providers and staff characteristics were not associated with care discontinuance of VA primary care.

Sensitivity Analyses

Model 2 and Model 3 in Figure 4.4 examines whether gender sensitivity and the type of PACT induced multicollinearity in our main regression model because gender sensitivity tends to be higher in WH-PACTs than general PACTs. Model 2 removed gender sensitivity from the main regression model and finds that the coefficient of the type of PACT variable did not change. Model 3 removed the type of PACT from the main regression model and finds that the coefficient of gender sensitivity variable did not change. Model 4 tests the independent effect of the set of patient-level characteristics. Model 4 removed provider- and staff-level characteristics from the main regression model, and the results indicated that coefficients of patient-level characteristics were not different from the main regression model.

Table 4.3 reported the proportion of women Veterans and proportion of discontinuance within three years by subgroups based on their history of VA primary care visits in the past one to five person-years prior to their last VA primary care visit between 2013 and 2014. Among women Veteran patients in Subgroup 1 who had at least one primary care visit each year for the past five person-years, only 3.2% discontinued from primary care within three years. On the other hand, among women Veterans in Subgroup 5 who had at least one primary care visit in the last person-year from her last primary care visit, 24.3% discontinued from primary care within three years. Figure 4.5 reports adjusted odds of gender sensitivity from the multivariate logistic

regression by subgroup, while adjusting for all covariates in the main model. The findings show that among women Veterans who had a more recent history of VA primary care visits (Subgroup 5), experiencing gender sensitivity in the lowest quartile had higher odds of discontinuing compared to women Veterans with a longer history of VA primary care visits (Subgroup 1). However, these associations were not statistically significant.

Discussion

Gender sensitivity has gained increasing importance in improving patient experiences and quality of care for female patients. [1, 16] Prior studies have examined provider gender sensitivity and its relationship to patient satisfaction and quality of care prior to the 2010 VA PACT initiative. [4, 21, 46, 47, 58] Our study validated the findings from prior studies in the PACT context but used gender sensitivity reported by providers and staff. We found that poor provider and staff gender sensitivity was independently associated with higher odds of women Veterans discontinuing from VA primary care within three years.

Our findings showed that gender sensitivity was generally higher in WH-PACTs compared to general PACTs, possibly due to a higher number of providers and staff proficient in women's health worked in WH-PACTs. However, not all providers and staff who worked in WH-PACTs had high gender sensitivity, as suggested by our results that one in five patients seen in WH-PACTs experienced the lowest quartile gender sensitivity scale. In addition, half of the patients who were seen in general PACTs experienced poor gender sensitivity in the lowest quartile group. These findings highlight that poor sensitivity to women Veterans continues to persist, especially more so in teamlets with fewer female patients, despite the VA WH policy emphasis on the provision of all types of health care services in a gender-sensitive environment. [24] These findings have implications for the type of programs VA might prioritize in increasing

primary care workforce gender sensitivity because specifications in the policy may not be sufficient without effective strategies on how the policy should be translated into practice. Using an evidence-based quality improvement approach to uptake a gender sensitivity training in VA facilities has been proven effective in improving workforce gender sensitivity. [9] A similar approach with training or a more systematic approach, such as evidence-based quality improvement described in Chapter 3, would offer potential strategies to increase gender sensitivity.

While most women Veterans received primary care in either WH-PACTs or PACTs, about one in five received care in both PACTs and WH-PACTs. Although the VA PACT policy recommends that women Veterans receive comprehensive primary care from their assigned (or choice of) PACTs, our finding shows that about 20% of women Veterans are still making multiple visits to more than one PACT for comprehensive primary care. These visits are related to WH-PACTs and PACTs, rather than the care models for WH-PACTs (i.e., gender-integrated general primary care clinics, women's health clinics within or adjacent to primary care clinics, and physically separated women's health clinics). On the other hand, receiving care from both WH-PACTs and PACTs resulted in a lower rate of discontinuance of primary care compared to those who received care from either general PACTs or WH-PACTs. Although it appears that visiting more than one PACT is protective against discontinuing VA primary care, it is unclear whether women Veterans were visiting both PACTs because they preferred to see certain providers or staff, or whether they had to visit both PACTs because specific services were not available. Early VA studies have documented issues in women's health clinics where four in ten new clinics providing only gender-specific services rather than both gender-specific and primary care services. [96] Challenges with WH-PACT implementation may also contribute to patients

utilizing more than one PACT. These challenges include poor team functioning from sharing staff with other PACTs, and concerns with continuity of care and same-day appointments resulting from a high prevalence of part-time providers in WH-PACTs. [54] [55]

Understanding women Veterans' experiences with the utilization of more than one PACT will be an important next step for meeting their complex care needs and improving their quality of care. Despite being more frequent outpatient users than their male counterparts, [97] they face varying level of access to gender-specific services across VA, [98] have higher rates of PTSD and military sexual trauma that exacerbate other physical and mental illnesses, [99] [100] and perform lower in management of chronic conditions (e.g., hypertension and diabetes). [51] [75] Future research should examine why women Veterans are receiving care from more than one PACT, its effect on patient experiences and quality of care, and whether patients are receiving optimal access as a result.

Sensitivity analyses indicate that women Veterans who had begun VA primary care in the most recent year were more likely to leave primary care when they experienced poor gender sensitivity. On the other hand, women Veterans who had been visiting VA consecutively for at least five years were likely to stay in VA primary care even after accounting for gender sensitivity. Our findings are consistent with findings from early studies that women Veterans new to VA are more likely to leave VA care. [93] Our findings also add to the knowledge base that gender sensitivity can modify the relationship between new versus established patient status and leaving VA care.

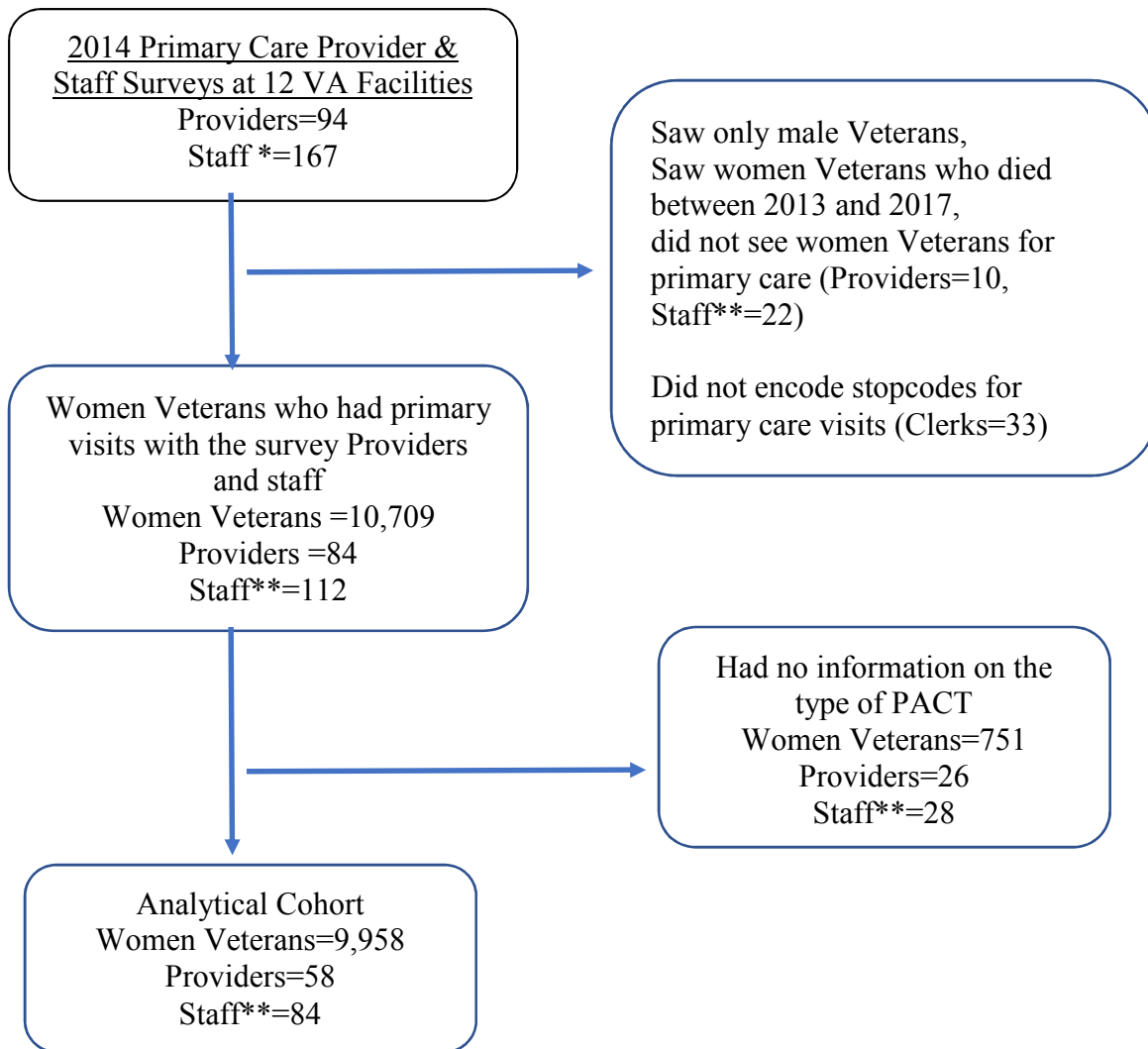
Our study has limitations. First, our gender sensitivity measure was limited to providers and staff who participated in the surveys. Although we found no significant differences in demographics between survey respondents and non-respondents, our results may be

overestimated if non-respondents had lower gender sensitivity. As a next step, we plan to compare our results to the remaining women Veterans from the same VA facilities whose provider and staff gender sensitivity scores were unavailable. Second, the survey items used to measure provider and staff gender sensitivity focused on the individual level of perceived availability of women's health services or welcoming women Veterans in the VA. The measure did not include how well providers and staff understand gender differences in health or health outcomes, their attitudes toward addressing gender inequalities in health, or their communication skills that reflect sensitivity to women Veterans' needs and preferences. [6] Yet, we believe that the gender sensitivity items used in our study detected a good level of gender sensitivity because our findings are consistent with the findings from prior studies, which found that patient perception of poor gender sensitivity was associated with women Veterans leaving VA care. [47] [101] Third, while gender sensitivity matters to both male and female patients, our study focused on female patients. Fourth, we excluded clerks from our analytical sample because we were not able to link them to patient visits via administrative data. Reports of barriers to care among women Veterans included the vital role clerks play in making patients feel welcome or respected during their telephone or in-person visit. [15] Future studies on gender sensitivity of clerk and patient experience can shed some light on this limitation. Fifth, our data was limited to VA primary care visits. Our results may be overestimated if there was a significant number of women Veterans receiving primary care in non-VA settings.

Despite these limitations, our study provides evidence for the relationship between provider and staff gender sensitivity and patient continuation of primary care services. Gender sensitivity to women's care needs and preferences and being respectful to them are equally important as knowledge and skills in caring for women patients, [4] especially in the VA where

the majority of the workforce is experienced in caring for male patients. In addition, Veterans who have not visited VA primary care after two years may be reassigned to a new PACT. Consequently, 11% of women Veterans in our study who missed primary care for three years are likely to be reassigned to a new PACT, resulting in disruption of the team-patient relationship and missed opportunities for preventive screenings or effective management of chronic conditions. As VA continues to transform health care through PACT, efforts focusing on transforming care teams to become sensitive to the minority population are promising approaches to maintaining the team-patient relationship and consequently improving patient continuity.

Figure 4.1: Study cohort selection



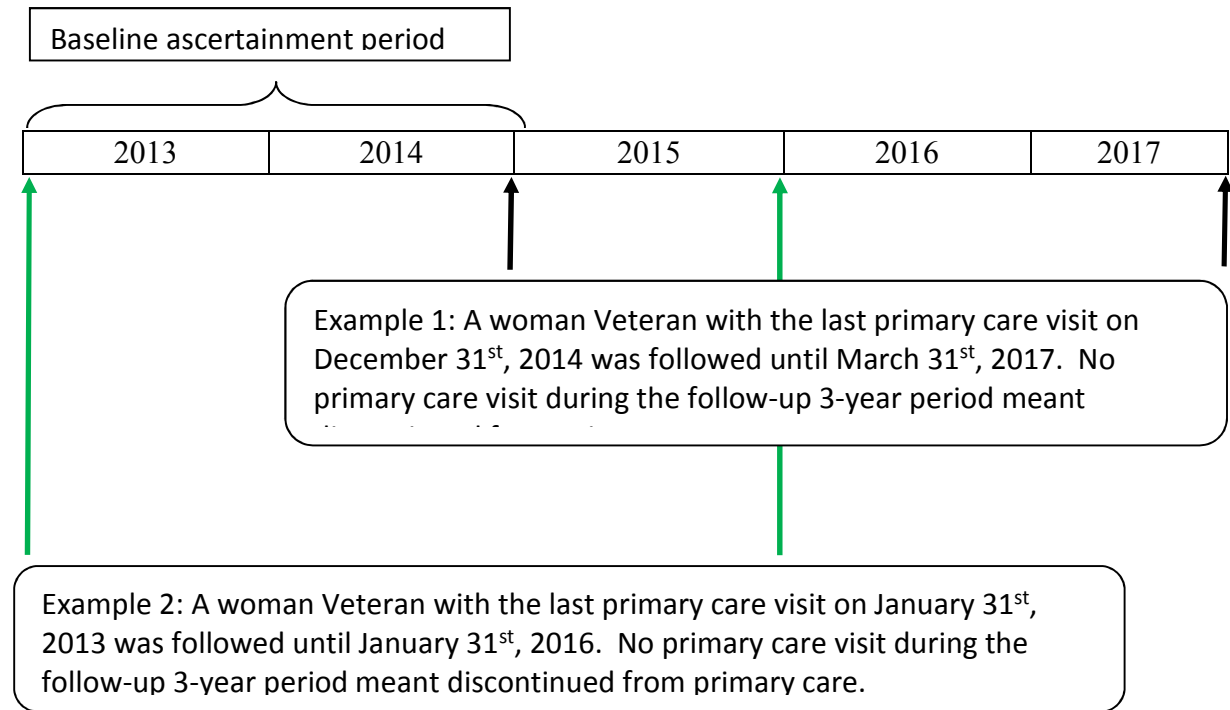
Notes: Stopecodes used to define primary care visit include: 323, primary care; 322, comprehensive women’s health; 301, general internal medicine; 348, primary care shared appointment; 338, telephone primary care

* Primary care providers include physicians, nurse practitioner, physician assistants

* Staff include nurses (RN), medical assistants/technicians (LVN/LPN), clerks

** staff include nurses (RN), health assistants/technicians

Figure 4.2: Baseline and follow-up primary care visit measure timeline



Notes: Stopecodes used to define primary care visit include: 323, primary care; 322, comprehensive women’s health; 301, general internal medicine; 348, primary care shared appointment; 338, telephone primary care

Table 4.1: Baseline Women Veteran Patient Characteristics and Their Exposure Scales to Primary Care Provider- and Staff-level Characteristics, by the Type of Patient-Aligned Care Teams (PACTs) Where They Were Seen for Primary Care at Baseline

	Combined (N=9958)	PACT (N=1150)	PACT/WH-PACT (N=1695)	WH-PACT (N=7113)	P-value
Overall		11.6%	17.0 %	71.4%	
Exposure scales to provider- and staff-level characteristics*					
Gender sensitivity, mean (SD) ^a	4.3 (0.5)	3.9 (0.6)	4.3 (0.4)	4.4 (0.4)	<0.0001
Gender sensitivity					
Lowest quartile	26.4	51.7	29.6	21.6	<0.0001
Top 3 quartiles	73.6	48.4	70.4	78.5	
Team functioning, mean score (SD) ^b	3.5 (0.96)	3.13 (1.51)	2.59 (0.93)	3.73 (0.81)	<0.001
Communication within clinic, mean score (SD) ^c	2.95(0.98)	2.62 (1.47)	2.94 (0.71)	3.01 (0.92)	<0.0001
Leadership support for change, mean score (SD) ^d	3.15 (1.05)	2.58 (1.53)	3.06 (0.67)	3.26 (0.99)	<0.0001
Barriers to comprehensive women’s health care delivery, mean score (SD) ^e	0.24 (0.20)	0.16 (0.22)	0.20 (0.14)	0.26 (0.21)	<0.0001
Women Veteran Patient Characteristics					
Age					
18-29 years	12.1	10.3	9.0	13.1	<0.0001
30-39 years	19.5	14.8	15.0	21.3	
40-49 years	18.6	17.5	19.1	18.6	
50-59 years	26.9	29.7	30.4	25.6	
60-64 years	12.4	13.5	13.0	12.1	
>=65 years	10.5	14.3	13.5	9.2	
Race/ethnicity					
White	66.7	65.9	72.7	65.4	0.009
Black	20.5	17.8	16.5	21.8	
Latino/Hispanic	4.7	3.1	3.4	5.2	
Unknown	4.3	8.9	3.7	3.8	

Asian	1.2	1.5	0.5	1.3	
Multi race/ethnicity	1.1	1.2	1.1	1.1	
American Indian	0.9	1.2	1.4	0.8	
Pacific Islander	0.6	0.5	0.7	0.6	
Service-connected disability					
NSC	38.6	45.4	36.3	38.0	0.001
0-49% SC	19.2	18.3	19.5	19.2	
50-99% SC	29.9	26.2	31.0	30.3	
100% SC	12.4	10.1	13.2	12.5	
Had non-VA insurance					
No	60.3	61.2	59.4	60.3	0.818
Yes	39.7	38.8	40.6	39.7	
Patient Residence Rurality					
Highly rural	1.2	1.0	1.6	1.1	0.000
Rural	20.8	28.8	22.2	19.3	
Urban	78.0	70.1	76.2	79.6	
Drive time in minutes to nearest VA Primary Care site, mean (SD)					
	19.7 (14.8)	21.12 (15.3)	21.1 (16.5)	19.2 (14.3)	<0.0001
Drive time in minutes to nearest VA Primary Care site - log transformed, mean (SD)					
	2.7 (0.7)	2.8 (0.8)	2.8 (0.7)	2.7 (0.7)	<0.0001
No MST reported	66.4	72.5	61.9	66.5	0.053
MST reported	33.6	27.5	38.1	33.5	
Physical comorbidity count ^f					
0	52.6	53.0	42.3	54.9	0.000
1	27.2	25.0	31.6	26.5	
2	13.1	15.0	15.1	12.3	
3	4.5	4.6	6.7	4.0	
4	1.8	1.5	3.1	1.5	
5	0.5	0.4	0.8	0.4	
6	0.3	0.3	0.4	0.3	
7	0.0	0.1	0	0.04	
Mental comorbidity count ^g					
0	50.7	60.7	42.6	51.1	0.001
1	20.9	19.9	21.4	21.0	

2	14.6	9.6	17.1	14.8
3	8.7	7.6	11.7	8.1
4	3.4	2.1	4.8	3.3
5	1.4	0.2	2.1	1.4
6	0.2	0	0.2	0.3
7	0.0	0	0.1	0.03

Abbreviations: VA, Department of Veterans Affairs; PACT, Patient-Aligned Care Teams; WH-PACT, Women’s Health Patient-Aligned Care Teams; SD, standard deviation; NSC, not service-connected; SC, service-connected; MST, military sexual trauma.

*Exposure to provider- and staff-level characteristics were calculated as scales in which each provider- and staff-level scores, calculated based on survey items, were converted to patient-level exposure scale based on the proportion of total times a patient had visited the provider or staff between 2013 and 2014.

^a Gender sensitivity exposure scale ranges from 1 to 5, where higher scale represents greater sensitivity.

^b Team functioning exposure scale ranges from 1 to 5, where higher scale represents greater team functioning.

^c Communication exposure scale ranges from 1 to 5, where higher scale represents greater communication within the clinic.

^d Leadership support for change exposure scale ranges from 1 to 5, where higher scale represents greater leadership support for change.

^e Barriers to women’s health care delivery exposure scale ranges from 0 to 1, where a lower scale represents lower barriers.

^f Physical health comorbidities included diabetes, hypertension, asthma, congestive heart failure, chronic obstructive pulmonary disease, ischemic heart disease, peripheral vascular disease, stroke, renal failure, and any type of cancer.

^g Mental health comorbidities included post-traumatic stress disorder, depression, major depression, alcoholism, substance use disorder, borderline personality/antisocial/schizophrenia, and other psychiatric condition.

Table 4.2: Pattern of Primary Care Discontinuance Within Three Years.

	N	%	Person- Year 1	Person- Year 2	Person- Year 3
PC Discontinued	1093	11.0%			
	876	8.8%	V		
	179	1.8%		V	
	189	1.9%			V
PC Continued	319	3.2%	V		V
	700	7.0%	V	V	
	666	6.7%		V	V
	5,936	59.6%	V	V	V
Total	9958	100.0%			

Note: The cells with a letter V indicates one or more PC visit, while the cell highlighted gray indicates no primary care visit.

Figure 4.3: Primary Care Discontinuance Within Three Years by the Type of PACT.

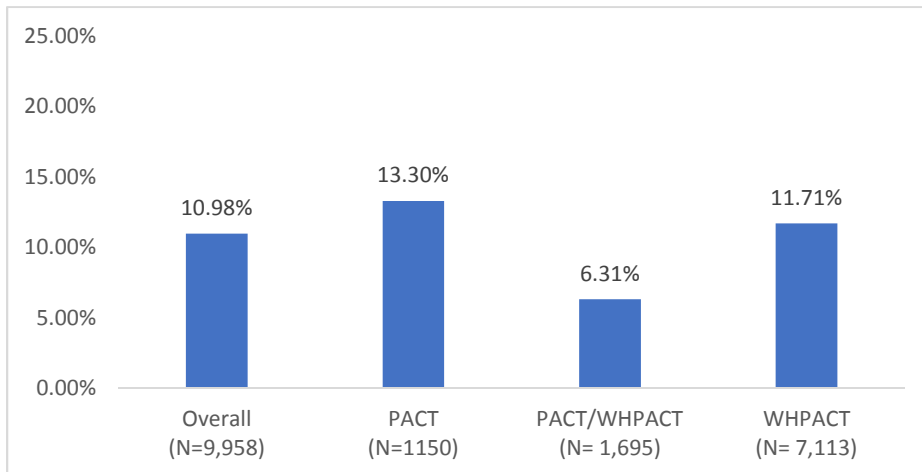
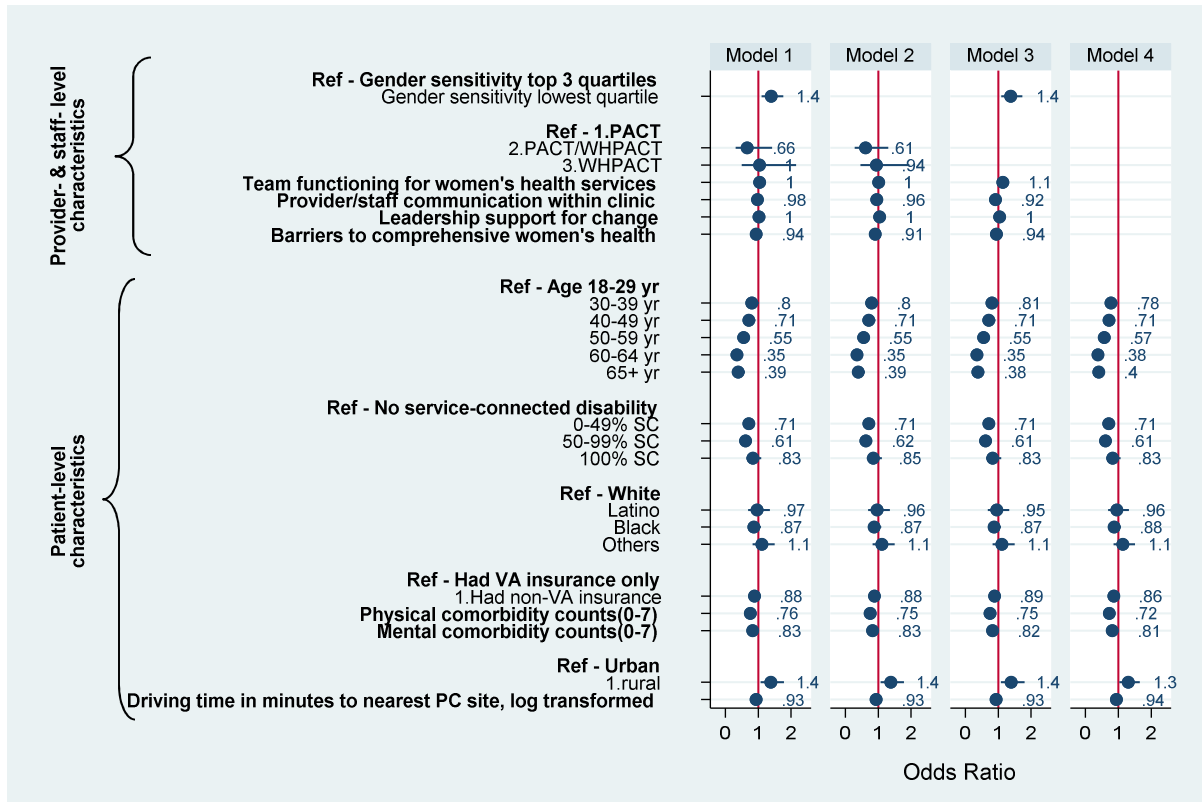


Figure 4.4: Adjusted Odds of Gender Sensitivity for Discontinuance of Primary Care Among Women Veteran Patients in the Department of Veterans Affairs



Notes: Model 1 controls for all the variables listed on the left-hand side of the graph. Model 2 controls all the variables on the left-hand side of the graph, except for the type of PACT. Model 3 controls all the variables on the left-hand side of the graph, except for provider and staff gender sensitivity. Model 4 controls all the variables on the left-hand side of the graph pertaining to women Veteran patient characteristics only.

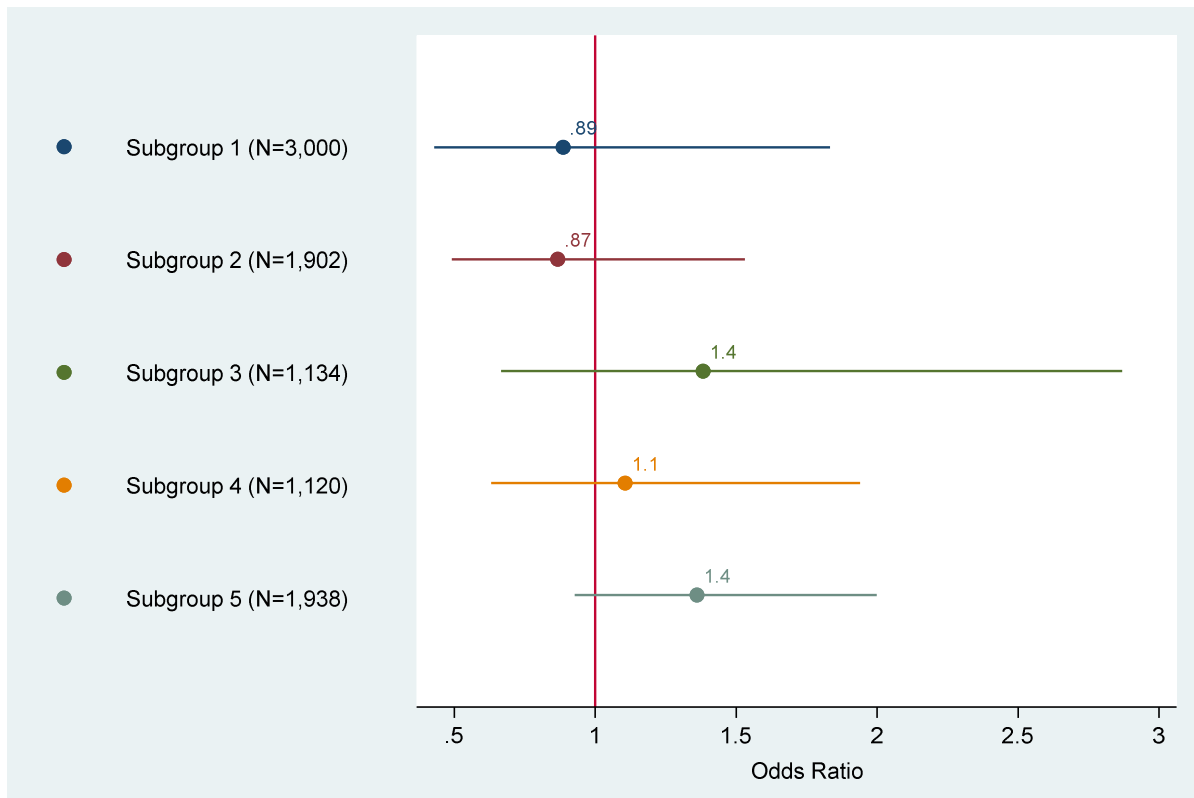
Abbreviation: Ref, reference group; PACT, Patient-Aligned Care Team; WHPACT, Women's Health Patient-Aligned Care Teams; yr, years; SC, service-connected disability; ins, insurance.

Table 4.3: Subgroups of women Veteran patients based on their history of primary care visits in the past one to five years prior to their last primary care visit between 2013 and 2014, and the proportion who discontinued primary care within three years for each subgroup.

Subgroups	Past 5 person-years	Past 4 person-year	Past 3 person-year	Past 2 person-year	Past 1 person-year	N (%)	% who discontinued within three years
Subgroup 1	V	V	V	V	V	3000 (30.1)	3.2
Subgroup 2		V	V	V	V	1902 (19.1)	8.6
Subgroup 3			V	V	V	1134 (11.4)	11.7
Subgroup 4				V	V	1120 (11.2)	12.1
Subgroup 5					V	1938 (19.5)	24.3

Note: The cells with a letter V indicates one or more primary care visit, while the cell highlighted gray indicates no primary care visit.

Figure 4.5: Adjusted Odds of Gender Sensitivity for Discontinuance of Primary Care Within Three Years Among Women Veteran Patients, by Subgroup Based on Their History of Prior Primary Care Visit in the Past One to Five Years.



Notes on the graph legend: “Subgroup 1” represents women Veterans who had at least one primary care (PC) visit in each year of the past five person-years prior to their last PC visit between 2013 and 2014. “Subgroup 2” represents women Veterans who had at least one PC visit in each year of the past four person-years. “Subgroup 3” represents women Veteran who had at least one PC visit in each year of the past three person-years. “Subgroup 4” represents women Veteran who had at least one PC visit in each year of the past two person-years. “Subgroup 5” represents women Veteran who had at least one PC visit in the last person-year.

Notes: Each coefficient line represents the coefficient of gender sensitivity (the lowest quartile versus the top three quartiles) from logistic regression for primary care discontinuance within each subgroup. Each regression was adjusted for the type of PACT, age, service-connected disability, race/ethnicity, non-VA insurance status, rurality of residence, count of physical morbidities, count of mental morbidities, log-transformed driving time to the nearest VA primary care site, provider/staff team functioning, provider/staff communication within clinic, provider/staff leadership support for change, provider/staff barriers to comprehensive women’s health care.

Appendix Table 4.1: Methods Used to Generate Patient Exposure to Gender Sensitivity of Primary Care Providers and Staff Who Participated in the Cross-Sectional Surveys

Patient 1								
B	C	D	E	F	G	H	I	J
Visit days 2013-2014	Visit #	total visits 2013-2014	provider/ staff	Indicator for provider/staff per visit	count provider/staff per visit	weight = F/D/G	gender sensitivity score reported by provider/ staff	weighted score at patient level =H*I
day 1	1	3	provider 1	1	1	0.3333	4.5	1.5
day 2	2	3	provider 1	1	1	0.3333	4.5	1.5
day 3	3	3	provider 1	1	2	0.1667	4.5	0.75
day 3	3	3	staff 1	1	2	0.1667	4.2	0.7
Method 1: Patient Exposure Gender Sensitivity Scale = sum (Column J)								4.45
Method 2: Patient Exposure Gender Sensitivity Scale =Average (Column I)							4.425	

Appendix Table 2: Comparison of Methods Used to Generate the Gender Sensitivity Scale in Appendix Table 1

	N	Mean	SD	Min	Max
Method 1	10,709	4.269468	0.452341	2	5
Method 2	10,709	4.264097	0.452365	2	5

Appendix Table 4.3: Survey Items Used to Measure Provider and Staff Team Functioning

Team functioning	Strongly Disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
a. Members of our PACT teamlet for women patients actively share their special knowledge and expertise with one another.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Some members of this PACT teamlet for women patients lack the knowledge and skills that they need to do their parts of the teamlet's work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Members of this PACT teamlet for women patients have more than enough talent and experience for the kind of work that we do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Our PACT teamlet for women patients is quite skilled at capturing the lessons that can be learned from our work experiences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. How seriously a member's ideas are taken by others on our PACT teamlet for women patients often depends more on who the person is than on how much he or she actually knows.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Everyone in this teamlet has the special skills that are needed for teamlet work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Overall, I am satisfied with how my teamlet members work together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. My core teamlet members (e.g., RN, LPN, or clerk) are available (in person or by phone/messaging) whenever I need assistance during <u>face-to-face</u> patient encounters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix Table 4.4: Survey Items Used to Measure Provider and Staff Perception of Barriers to Comprehensive Primary Care for Women Patients

Barriers to comprehensive primary care for women patients	Does not apply	Does not limit	Limits somewhat	Limits a great deal
a. Limited female staff available to serve as chaperones for gender-specific exams		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Limited space and structure (e.g., small rooms, too few rooms, poor layout)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Women patients are not comfortable with the presence of men in the clinic (e.g., waiting areas)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Inadequate time or opportunity for me to maintain proficiency in women's health care		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Inadequate visit time to address physical health issues		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Inadequate training to address women's physical health issues (e.g., reproductive health)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Inadequate visit time to address mental health issues		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Inadequate training to address mental health of women patients		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Discomfort dealing with mental health in women patients (e.g., sexual trauma, PTSD)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Teamlets are not adequately staffed		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Difficulty maintaining teamlet cohesiveness due to staff turnover, or sharing staff across multiple teamlets		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Difficulty coordinating care with other providers or clinics		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Lack of support from the local clinical leadership		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Inadequate training to address health issues of lesbian, gay, bisexual, and transgender patients.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Lack of support from direct supervisors within the clinic		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Other limiting factors— <i>specify</i> :		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix Table 4.5: Survey Items Used to Measure Provider and Staff Communication Within Clinic

Communication within clinic	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
a. Staff and clinicians are involved in developing plans for improving quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. In this clinic, when I have a conflict with a co-worker from a different clinical or administrative discipline, I can access help to resolve the problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Clinic leadership discourages nursing staff from taking initiative.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. This clinic encourages staff and clinicians' input for making changes and improvements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. This clinic defines success as teamwork and concern for people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. All of the staff and clinicians participate in important decisions about clinical operations (e.g., workflow).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. In this clinic, co-workers from different clinical or administrative backgrounds frequently interact to solve quality of care problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Our staff and clinicians have constructive work relationships.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. There is often tension between people in this clinic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. The staff and clinicians in this clinic operate as real teams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix Table 4.6: Survey Items Used to Measure Provider and Staff Perception of Leadership Support for Change

	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
Clinic leadership:					
a. Provides measurable objectives for implementing the strategy and vision within our clinic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Recognizes and rewards progress in implementing change with our clinic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Encourages and supports changes in clinic patterns to improve patient care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Is willing to try new clinical protocols.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Works cooperatively with senior leadership/clinical management to make appropriate changes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Understands the difficulties and challenges related to the implementation of PACT.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chapter 5: Conclusion

Sensitivity to gender differences in health and healthcare needs influence gender equality in health and access to care. One of the barriers to building a gender-sensitive healthcare culture has been related to the under-representation of women in either the workforce or patient population. This dissertation tried to understand workforce gender sensitivity when female patients are a minority group in a healthcare organization. The three studies in this dissertation focused on the VA healthcare system where only 8% of patients are women Veterans. Because the VA has historically been designed to care for male Veterans and the majority of its workforce is experienced in caring for male patients, there are general concerns that the workforce may not be sensitive to the care needs of the growing population of women Veterans. To address these concerns, the VA has taken proactive steps in setting standards for women's health care delivery through policies, hiring additional women's health providers, and tailoring the medical home to women Veterans. However, few studies have examined the gender sensitivity of the workforce within the context of these changes. This dissertation expands the knowledge base in the understanding of workforce gender sensitivity and its relationship to women Veterans' utilization of VA primary care services after the VA strengthened policy standards on delivery of gender-sensitive comprehensive primary care for women Veterans through the PACT initiative in 2010. This dissertation also provides evidence for a systemic quality improvement approach used in implementing these policy standards and its relationship to improving workforce gender sensitivity.

Chapter 2 examined individual characteristics of primary care providers and staff associated with their gender sensitivity four years after PACT implementation. Positive communication among team members in a medical home is an important correlate with greater gender sensitivity. Working in medical homes tailored to women Veterans (i.e., WH-PACTs)

provided more exposure to caring for women Veterans and was associated with higher gender sensitivity compared to general PACTs. However, working in WH-PACT did not improve gender sensitivity for staff who had been working in the VA for many years and had little or no prior experiences or training in women's health. Although the VA women's health policy requires staff to have competency in women's health for working in WH-PACTs, the policy does not specify the type of training or experience required for competency. Future programs and research focusing on the following areas can be helpful in improving workforce gender sensitivity: strategies to support better communication among providers and staff, ensuring all members of WH-PACT teamlets receive appropriate training related to the care for women Veterans.

Chapter 3 examined a systematic quality improvement approach (i.e., EBQI) used in helping and training local teams as they tailored practices to improve care for women Veterans and whether EBQI made an impact on workforce gender sensitivity over time. The results revealed that challenges in care delivery for women Veterans owing to limited time and resources may have reduced interests in quality improvement efforts for women Veterans among providers and staff, and as a result reduced their gender sensitivity. However, when quality improvements are guided through EBQI, providers and staff showed maintained sensitivity over time. Providers and staff caring for women Veterans often face more challenges with time and resources. Quality improvement efforts for female patients may consider a systematic approach like EBQI to help clinical team members maintain their sensitivity towards female patients while reducing the burden associated with quality improvements.

Chapter 4 provided evidence on the relationship between gender sensitivity and a patient outcome. The results showed that poor gender sensitivity was directly associated with women

Veterans discontinuing primary care in the VA. The findings showed that other characteristics of providers and staff, such as communication within the clinic and team functioning, were not associated with women Veterans leaving the VA primary care. However, the other provider and staff characteristics are associated with each other and are important in enhancing provider and staff gender sensitivity. This gender sensitivity also modifies the relationship between patients new to the VA and their care discontinuance. For example, women Veterans who have just begun primary care at the VA are more likely to leave the care when they experienced poor provider and staff gender sensitivity, compared to women Veterans who have been with the VA for a long time. VA efforts to achieve care continuity for women Veterans may benefit by targeting programs in maintaining or improving the gender sensitivity of its workforce.

Limitations

The findings on gender sensitivity are limited to survey respondents. However, we found no statistical differences in demographics between survey respondents and non-respondents, and all analyses were weighted for non-responses. Yet, a lower gender sensitivity among non-respondents could have biased the findings toward greater gender sensitivity than the actual sensitivity of the population. The findings were based on 12 VA medical centers and may be different for other settings with different composition of providers, staff and female patients. The items used to measure gender sensitivity are limited to practice-level characteristics (e.g., “The VA should not be expected to provide special health services for women”). The measure does not reflect how well providers and staff communicate or interact with patients. The communication and interaction are important factors in patient continue use of services and adherence to treatment plans advocated by providers and staff. Future studies should incorporate

these important attributes in measuring gender sensitivity. Lastly, gender sensitivity matters for both female and male patients. However, this study did not focus on gender sensitivity toward male patients. Future work on understanding the relationship between the current measure of gender sensitivity and male patients' utilization or outcome can provide further insights.

Implications

The findings from this dissertation are also relevant to other non-VA care settings working to improve workforce gender sensitivity or sensitivity toward patients who are in the minority group. Transformation of care culture that is welcoming and respectful to all patients is an important step in reducing the gaps in quality and improving access to care. Training and systematic approaches driven by research evidence offer potential solutions to achieve such care transformation.

References:

1. Celik, H., et al., *Bringing gender sensitivity into healthcare practice: a systematic review*. Patient Educ Couns, 2011. **84**(2): p. 143-9.

2. Bird, C.E. and P.P. Rieker, *Gender matters: an integrated model for understanding men's and women's health*. Soc Sci Med, 1999. **48**(6): p. 745-55.
3. Celik, H.H., et al., *Gender sensitivity among general practitioners: results of a training programme*. BMC Med Educ, 2008. **8**: p. 36.
4. Vogt, D.S., et al., *Gender awareness among Veterans Administration health-care workers: existing strengths and areas for improvement*. Women Health, 2001. **34**(4): p. 65-83.
5. Regitz-Zagrosek, V., *Sex and gender differences in health*. Science & Society Series on Sex and Science. EMBO Rep, 2012. **13**(7): p. 596-603.
6. WHO, *Gender and Health: Technical Paper*. 1998, World Health Organization: Geneva.
7. Verdonk, P., et al., *From gender bias to gender awareness in medical education*. Adv Health Sci Educ Theory Pract, 2009. **14**(1): p. 135-52.
8. Daugherty, S.L., et al., *Implicit Gender Bias and the Use of Cardiovascular Tests Among Cardiologists*. J Am Heart Assoc, 2017. **6**(12).
9. Fox, A.B., et al., *Effectiveness of an Evidence-Based Quality Improvement Approach to Cultural Competence Training: The Veterans Affairs' "Caring for Women Veterans" Program*. J Contin Educ Health Prof, 2016. **36**(2): p. 96-103.
10. Donabedian, A., *Evaluating the quality of medical care*. 1966. Milbank Q, 2005. **83**(4): p. 691-729.
11. Acker, J., *Hierarchies, jobs, bodies: A theory of gendered organization*. Gender & Society, 1990. **4**: p. 139-58.
12. Britton, D.M., *The epistemology of the gendered organization*. Gender & Society, 2000. **14**: p. 418-34.
13. Riska, E., *Towards gender balance: but will women physicians have an impact on medicine?* Soc Sci Med, 2001. **52**(2): p. 179-87.
14. Frayne, S.M., et al., *Sourcebook: Women Veterans in the Veterans Health Administration. Volume 4. Longitudinal Trends in Sociodemographics, Utilization, Health Profile, and Geographic Distribution*. Women's Health Evaluation Initiative, Women's Health Services, Veterans Health Administration, Department of Veterans Affairs, Washington D.C., 2018.
15. Women's Health Services, *Study of Barriers for Women Veterans to VA Health Care: Final Report* Department of Veterans Affairs, Editor. 2015.
16. Yano, E.M., S. Haskell, and P. Hayes, *Delivery of gender-sensitive comprehensive primary care to women veterans: implications for VA Patient Aligned Care Teams*. J Gen Intern Med, 2014. **29** Suppl 2: p. S703-7.
17. Doyal, L., *Gender equity in health: debates and dilemmas*. Soc Sci Med, 2000. **51**(6): p. 931-9.
18. Bean-MayBerry, B.A., et al., *Organizational characteristics associated with the availability of women's health clinics for primary care in the Veterans Health Administration*. Military Medicine, 2007. **172**(8): p. 824-8.
19. National Center for Veterans Analysis and Statistics, *Women Veterans Report: The Past, Present, and Future of Women Veterans*. 2017, Department of Veterans Affairs: Washington, DC.

20. Cordasco, K.M., et al., *Early lessons learned in implementing a women's health educational and virtual consultation program in VA*. *Med Care*, 2015. **53**(4 Suppl 1): p. S88-92.
21. Vogt, D.S., A.A. Barry, and L.A. King, *Toward gender-aware health care: evaluation of an intervention to enhance care for female patients in the VA setting*. *J Health Psychol*, 2008. **13**(5): p. 624-38.
22. Williams, A.P., et al., *Women in medicine: practice patterns and attitudes*. *CMAJ*, 1990. **143**(3): p. 194-201.
23. Schectman, G. and R. Stark, *Orchestrating large organizational change in primary care: the Veterans' Health Administration experience implementing a patient-centered medical home*. *J Gen Intern Med*, 2014. **29 Suppl 2**: p. S550-1.
24. US Department of Veterans Affairs, *Health Care Services for Women Veterans VHA Directive 1330.01*. 2017, US Department of Veterans Affairs: Washington DC.
25. US Department of Veterans Affairs, *Patient Aligned Care Team (PACT) Handbook. Handbook 1101.10*. 2014, Veterans Health Administration: Washington DC.
26. Rodriguez, H.P., et al., *The effects of primary care physician visit continuity on patients' experiences with care*. *J Gen Intern Med*, 2007. **22**(6): p. 787-93.
27. Starfield, B., L. Shi, and J. Macinko, *Contribution of primary care to health systems and health*. *Milbank Q*, 2005. **83**(3): p. 457-502.
28. Reid, R.J., et al., *The Group Health medical home at year two: cost savings, higher patient satisfaction, and less burnout for providers*. *Health Aff (Millwood)*, 2010. **29**(5): p. 835-43.
29. Tuepker, A., et al., *"We've not gotten even close to what we want to do": a qualitative study of early patient-centered medical home implementation*. *J Gen Intern Med*, 2014. **29 Suppl 2**: p. S614-22.
30. Farmer, M.M., et al., *Challenges facing primary care practices aiming to implement patient-centered medical homes*. *J Gen Intern Med*, 2014. **29 Suppl 2**: p. S555-62.
31. Rodriguez, H.P., et al., *Teamlet structure and early experiences of medical home implementation for veterans*. *J Gen Intern Med*, 2014. **29 Suppl 2**: p. S623-31.
32. True, G., et al., *Teamwork and delegation in medical homes: primary care staff perspectives in the Veterans Health Administration*. *J Gen Intern Med*, 2014. **29 Suppl 2**: p. S632-9.
33. Kansagara, D., et al., *Getting performance metrics right: a qualitative study of staff experiences implementing and measuring practice transformation*. *J Gen Intern Med*, 2014. **29 Suppl 2**: p. S607-13.
34. Nutting, P.A., et al., *Initial lessons from the first national demonstration project on practice transformation to a patient-centered medical home*. *Ann Fam Med*, 2009. **7**(3): p. 254-60.
35. McMullen, C.K., et al., *Cultivating engaged leadership through a learning collaborative: lessons from primary care renewal in Oregon safety net clinics*. *Ann Fam Med*, 2013. **11 Suppl 1**: p. S34-40.
36. Heyworth, L., et al., *Patient-centered medical home transformation with payment reform: patient experience outcomes*. *Am J Manag Care*, 2014. **20**(1): p. 26-33.

37. Rubenstein, L.V., et al., *Impacts of evidence-based quality improvement on depression in primary care: a randomized experiment*. J Gen Intern Med, 2006. **21**(10): p. 1027-35.
38. Yano, E.M., et al., *Targeting primary care referrals to smoking cessation clinics does not improve quit rates: implementing evidence-based interventions into practice*. Health Serv Res, 2008. **43**(5 Pt 1): p. 1637-61.
39. Chaney, E.F., et al., *Implementing collaborative care for depression treatment in primary care: a cluster randomized evaluation of a quality improvement practice redesign*. Implement Sci, 2011. **6**: p. 121.
40. Rubenstein, L.V., et al., *A patient-centered primary care practice approach using evidence-based quality improvement: rationale, methods, and early assessment of implementation*. J Gen Intern Med, 2014. **29** Suppl 2: p. S589-97.
41. Yano, E.M., et al., *Cluster randomized trial of a multilevel evidence-based quality improvement approach to tailoring VA Patient Aligned Care Teams to the needs of women Veterans*. Implement Sci, 2016. **11**(1): p. 101.
42. Ajzen, I., *From Intentions to Actions: A Theory of Planned Behavior*. , in *Action Control: SSSP Springer Series in Social Psychology*, B.J. Kuhl J., Editor. 1985, Springer: Berlin, Heidelberg.
43. Goold, D.S. and M. Lipkin, Jr., *The doctor-patient relationship: challenges, opportunities, and strategies*. J Gen Intern Med, 1999. **14**(Supplemental 1): p. S26-S33.
44. Tessler, R. and D. Mechanic, *Factors affecting the choice between prepaid group practice and alternative insurance programs*. Milbank Mem Fund Q Health Soc, 1975. **53**(2): p. 149-72.
45. Stroupe, K.T., et al., *Patient satisfaction and use of Veterans Affairs versus non-Veterans Affairs healthcare services by veterans*. Medical Care, 2005. **43**(5): p. 453-60.
46. Washington, D.L., et al., *Women veterans' perceptions and decision-making about Veterans Affairs health care*. Mil Med, 2007. **172**(8): p. 812-7.
47. Hamilton, A.B., et al., *Factors Related to Attrition from VA Healthcare Use: Findings from the National Survey of Women Veterans*. Journal of General Internal Medicine, 2013. **28**(Suppl 2): p. 510-516.
48. Yano, E.M., et al., *The organization and delivery of women's health care in Department of Veterans Affairs Medical Center*. Womens Health Issues, 2003. **13**(2): p. 55-61.
49. Klap, R., et al., *Prevalence of Stranger Harassment of Women Veterans at Veterans Affairs Medical Centers and Impacts on Delayed and Missed Care*. Womens Health Issues, 2019.
50. Wright, S.M., et al., *Comparing the Care of Men and Women Veterans in the Department of Veterans Affairs*. . Washington, DC: Veterans Health Administration, 2012.
51. Whitehead, A.M., et al., *Improving trends in gender disparities in the Department of Veterans Affairs: 2008-2013*. Am J Public Health, 2014. **104** Suppl 4: p. S529-31.
52. Wright, S.M., et al., *Patient satisfaction of female and male users of Veterans Health Administration services*. J Gen Intern Med, 2006. **21** Suppl 3: p. S26-32.
53. Kehle-Forbes, S.M., et al., *Experiences with VHA care: a qualitative study of U.S. women veterans with self-reported trauma histories*. BMC Womens Health, 2017. **17**(1): p. 38.
54. Chuang, E., et al., *Challenges with Implementing a Patient-Centered Medical Home Model for Women Veterans*. Womens Health Issues, 2017. **27**(2): p. 214-220.

55. Bergman, A.A., et al., *Challenges with delivering gender-specific and comprehensive primary care to women veterans*. *Womens Health Issues*, 2015. **25**(1): p. 28-34.
56. Maisel, N.C., et al., *Readying the workforce: evaluation of VHA's comprehensive women's health primary care provider initiative*. *Med Care*, 2015. **53**(4 Suppl 1): p. S39-46.
57. US Department of Veterans Affairs Office of Inspector General, *Review of VHA Care and Privacy Standards for Women Veterans (Report No 15-03303-206)*, Office of Healthcare Inspections, Editor. 2017, US Department of Veterans Affairs: Washington DC.
58. Washington, D.L., et al., *Access to care for women veterans: delayed healthcare and unmet need*. *J Gen Intern Med*, 2011. **26 Suppl 2**: p. 655-61.
59. Meredith, L.S., et al., *Attitudes, Practices, and Experiences with Implementing a Patient-Centered Medical Home for Women Veterans*. *Womens Health Issues*, 2017. **27**(2): p. 221-227.
60. Meredith, L.S., et al., *Primary Care Providers with More Experience and Stronger Self-Efficacy Beliefs Regarding Women Veterans Screen More Frequently for Interpersonal Violence*. *Womens Health Issues*, 2017. **27**(5): p. 586-591.
61. Salgado, D.M., et al., *Gender Awareness Inventory-VA: A Measure of Ideology, Sensitivity, and Knowledge Related to Women Veterans' Health Care*. *Sex Roles*, 2002. **46**(7): p. 247-262.
62. Arora, S., et al., *Partnering urban academic medical centers and rural primary care clinicians to provide complex chronic disease care*. *Health Aff (Millwood)*, 2011. **30**(6): p. 1176-84.
63. Allison, P.D., *Handling missing data by maximum likelihood*. 2012: SAS Global Forum. 1-21.
64. Cordasco, K.M., et al., *Health and Health Care Access of Rural Women Veterans: Findings From the National Survey of Women Veterans*. *J Rural Health*, 2016. **32**(4): p. 397-406.
65. Moreau, J.L., et al., *The Use of Telemental Health to Meet the Mental Health Needs of Women Using Department of Veterans Affairs Services*. *Womens Health Issues*, 2018. **28**(2): p. 181-187.
66. Conway, L.G., III, & Schaller, M. , *How communication shapes culture*. 2007, New York: Psychology Press.
67. Schectman, G. and R. Stark, *Orchestrating large organizational change in primary care: the Veterans' Health Administration experience implementing a patient-centered medical home*. *Journal of general internal medicine*, 2014. **29 Suppl 2**(Suppl 2): p. S550-S551.
68. Bean-Mayberry, B.A., et al., *Organizational characteristics associated with the availability of women's health clinics for primary care in the Veterans Health Administration*. *Mil Med*, 2007. **172**(8): p. 824-8.
69. Crump, A.M., et al., *Rural Medicine Realities: The Impact of Immersion on Urban-Based Medical Students*. *J Rural Health*, 2019. **35**(1): p. 42-48.
70. Yano, E.M., et al., *Diffusion of innovation in women's health care delivery: the Department of Veterans Affairs' adoption of women's health clinics*. *Womens Health Issues*, 2006. **16**(5): p. 226-35.

71. Fischer, E.P., et al., *Overcoming Barriers to Sustained Engagement in Mental Health Care: Perspectives of Rural Veterans and Providers*. J Rural Health, 2016. **32**(4): p. 429-438.
72. Nelson, K.M., et al., *Implementation of the patient-centered medical home in the Veterans Health Administration: associations with patient satisfaction, quality of care, staff burnout, and hospital and emergency department use*. JAMA Intern Med, 2014. **174**(8): p. 1350-8.
73. Price, R.A., Sloss, E.M., Cefalu, M., Farmer, C.M., Hussey, P.S., *Comparing Quality of Care in Veterans Affairs and non-Veterans Affairs Settings*. J Gen Intern Med, 2018. **33**(10).
74. Trivedi, A.N., et al., *Systematic review: comparison of the quality of medical care in Veterans Affairs and non-Veterans Affairs settings*. Med Care, 2011. **49**(1): p. 76-88.
75. Wright, S.M., et al. *Comparing the Care of Men and Women Veterans in the Department of Veterans Affairs*. . 2012 March 12, 2012 [cited 2018 October 20]; Page 1-17]. Available from: https://www.womenshealth.va.gov/docs/OIA-BRCO_GenderHealthCareReport.pdf.
76. Yano, E.M., et al., *Integration of women veterans into VA quality improvement research efforts: what researchers need to know*. J Gen Intern Med, 2010. **25 Suppl 1**: p. 56-61.
77. Klap, R., et al., *Prevalence of Stranger Harassment of Women Veterans at Veterans Affairs Medical Centers and Impacts on Delayed and Missed Care*. Womens Health Issues, 2019. **29**(2): p. 107-115.
78. Helfrich, C.D., et al., *Elements of team-based care in a patient-centered medical home are associated with lower burnout among VA primary care employees*. J Gen Intern Med, 2014. **29 Suppl 2**: p. S659-66.
79. Parker, L.E., et al., *Balancing participation and expertise: a comparison of locally and centrally managed health care quality improvement within primary care practices*. Qual Health Res, 2007. **17**(9): p. 1268-79.
80. Rubenstein, L.V., et al., *Using evidence-based quality improvement methods for translating depression collaborative care research into practice*. Families, Systems, & Health, 2010. **28**(2): p. 91-113.
81. Fortney, J., et al., *Implementation outcomes of evidence-based quality improvement for depression in VA community based outpatient clinics*. Implement Sci, 2012. **7**: p. 30.
82. Meredith, L.S., et al., *Emotional exhaustion in primary care during early implementation of the VA's medical home transformation: Patient-aligned Care Team (PACT)*. Med Care, 2015. **53**(3): p. 253-60.
83. Arora, S., et al., *Partnering urban academic medical centers and rural primary care clinicians to provide complex chronic disease care*. Health Affairs (Millwood), 2011. **30**(6): p. 1176-84.
84. McLeod, C.C., et al., *Health care provider surveys in the United States, 2000-2010: a review*. Eval Health Prof, 2013. **36**(1): p. 106-26.
85. Nicholls, K., et al., *Enhancing response rates in physician surveys: the limited utility of electronic options*. Health Serv Res, 2011. **46**(5): p. 1675-82.
86. Meredith, L.S., et al., *Long-term impact of evidence-based quality improvement for facilitating medical home implementation on primary care health professional morale*. BMC Fam Pract, 2018. **19**(1): p. 149.

87. Washington, D.L., et al., *To use or not to use. What influences why women veterans choose VA health care.* J Gen Intern Med, 2006. **21 Suppl 3**: p. S11-8.
88. Friedman, S.A., et al., *New women veterans in the VHA: a longitudinal profile.* Womens Health Issues, 2011. **21**(4 Suppl): p. S103-11.
89. Wright, S.M., et al., *Patient satisfaction of female and male users of Veterans Health Administration services.* Journal of General Internal Medicine, 2006. **21**(Supplemental 3): p. S26-32.
90. Pourat, N., et al., *In California, Primary Care Continuity Was Associated With Reduced Emergency Department Use And Fewer Hospitalizations.* Health Aff (Millwood), 2015. **34**(7): p. 1113-20.
91. Tsai, M.H., et al., *Reducing High-Users' Visits to the Emergency Department by a Primary Care Intervention for the Uninsured: A Retrospective Study.* Inquiry, 2018. **55**: p. 46958018763917.
92. Perry, R.J., et al., in *Care Continuity in a Patient-Centered Medical Home Setting.* 2016: Research Triangle Park (NC).
93. Friedman, S.A., et al., *Travel time and attrition from VHA care among women veterans: how far is too far?* Med Care, 2015. **53**(4 Suppl 1): p. S15-22.
94. Blackwell DL, V.M., *Tables of Summary Health Statistics for U.S. Adults: 2017 National Health Interview Survey.* National Center for Health Statistics. 2018. Available from <http://www.cdc.gov/nchs/nhis/SHS/tables.htm>.
95. Yoon, J., et al., *Reducing costs of acute care for ambulatory care-sensitive medical conditions: the central roles of comorbid mental illness.* Med Care, 2012. **50**(8): p. 705-13.
96. Yano, E.M., Bean-Mayberry, B., Washington, D.L., *Barriers to delivering women's care in VA healthcare settings, in VA HSR&D Center of Excellence.* Technical Report, 2009: Sepulveda, CA.
97. Frayne, S., et al., *Sourcebook: Women Veterans in the Veterans Health Administration. Volume 3.Sociodemographics, Utilization, Costs of Care, and Health Profile,* W.s.H.S. Women's Health Evaluation Initiative, Editor. 2014, Women's Health Evaluation Initiative, Women's Health Services. Veterans Health Administration, Department of Veterans Affairs: Washington DC.
98. Seelig, M.D., et al., *Availability of gynecologic services in the department of veterans affairs.* Womens Health Issues, 2008. **18**(3): p. 167-73.
99. MacGregor, A.J., et al., *Gender Differences in Posttraumatic Stress Disorder Among U.S. Navy Healthcare Personnel.* J Womens Health (Larchmt), 2017. **26**(4): p. 338-344.
100. Frayne, S.M., et al., *Sexual assault while in the military: violence as a predictor of cardiac risk?* Violence Vict, 2003. **18**(2): p. 219-25.
101. Dyer, K.E., Moreau, J.L., Chrystal, J.G., Gammage, C.E., Saechao, F.S., Frayne, S.M., Hamilton, A.B., *The Influence of Patient-Provider Relationship on Women Veterans' Attrition from VA Healthcare.* 2019 HSR&D/QUERI National Conference Abstract, 2019.