

HEALTHCARE NEEDS AND FACTORS RELATED TO NON-USE/UNDERUTILIZATION
OF VETERANS HEALTHCARE ADMINISTRATION (VHA) HEALTH SERVICES
ENTITLEMENTS BY POST 9/11 WOMEN VETERANS

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Key Words: Women Veterans, Post 9/11 Veteran, Veterans Healthcare Administration,
Veterans Affairs, health services use, marginalization, BMHSU, United States

DEDICATION

In memory of my first nursing role model, Elsie Clowers, my maternal grandmother. She taught me to never stop learning. In gratitude to my parents, Earl and Liz Parsons who encouraged my independent spirit. Without the support of my family, none of this work would be possible.

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E kuhikuhi pono i nā au iki a me nā au nui.

Pukui, M. K. (1983). *‘Ōlelo No‘eau Hawaiian Proverbs & Poetical Sayings*

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ABSTRACT

Women are the fastest growing population in the Department of Veteran Affairs (VA), but only in recent history. U.S. military shift to an All-Volunteer Force (AVF) in 1973 resulted in a dramatic spike in women serving in the military. During the transition from active military to Veteran status, Veterans are eligible to apply to the Department of Veterans Affairs (VA) for benefits, including healthcare. In 2020, the VA estimated that over two million Women Veterans (WV) were living. The VA estimates the percentage of WV will rise to over 18% of all Veterans by 2046. In a report to Congress in FY2020, 38.8% of eligible WV were enrolled in Veterans Health Administration (VHA) services, but only 22.4% used VHA services in the prior 12 months. It has been reported that many WV cite feeling unwelcome in VHA while others question the adequacy of gender-based services. The purpose of this study was to gain a better understanding of VHA health services use patterns and factors influencing non-use/underutilization by two current service era populations of WV. This study used a quantitative, secondary analysis of two WV cohorts: 158 Pre 9/11 and 124 Post 9/11 WV from the National Survey of Veterans 2010 (NSV 2010). The analysis included nonparametric tests for differences between groups for three outcome variables: enrollment for VHA care, use of primary care within the prior six months, and use of women's healthcare within the prior twelve months. Binary logistic regressions were performed to determine the significance of predictor variables developed under the Behavioral Model of Health Services Use by Andersen. Findings: Percentages of non-enrolled in the Pre 9/11 and Post 9/11 WV groups were 53.15% and 45.97%, respectively. Within the prior year, 77.20% of Pre 9/11 WV used primary healthcare services and 65.60% used women's healthcare services that were not in or paid for by the VHA. Similarly, 74.20% of Post 9/11 WV used primary healthcare services and 63.70% used women's healthcare services that were not in or paid for by the VHA. An unanticipated finding was WV in the two service era groups who

used outpatient care outside the VHA system in the prior six months, 35.66% Pre 9/11 and 41.30% Post 9/11 paid for healthcare services out-of-pocket. Directing research and programs to target WV who are not enrolled for VHA health services can guide VHA efforts to tailor outreach to improve access and use of entitled healthcare services within the VHA these WV have earned.

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LIST OF ABBREVIATIONS

ABS	Address-Based Sampling
ACS	American Community Survey
ADSM	Active-Duty Service Member
ANW	Annual Wellness Visit
CATI	Computer-Assisted Telephone Interviewing
CDC	Centers for Disease Control
CMS	Centers for Medicare and Medicaid Services
COE	Certificate of Eligibility
DAV	Disabled American Veterans
DEERS	Defense Enrollment Eligibility Reporting System
DMDC	Defense Manpower Data Center
DoD	Department of Defense
EHR	Electronic Health Record
GDP	Gross Domestic Product
GWOT	Global War on Terror
IOM	Institute of Medicine
LBS	List-Based Sampling
mTBI	mild Traumatic Brain Injury
MDD	Major Depressive Disorder
MST	Military Sexual Trauma
n.d.	no date
NG/R	National Guard/Reserve Component
NIH	National Institutes of Health
NSV	National Survey of Veterans
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OMB	Office of Management and Budget
OND	Operation New Dawn
PC	Primary Care
P.L.	Public Law
PITE	Point-In-Time Extract

Post 9/11	Post September 9, 2011, Attack on World Trade Center, and Pentagon
POW	Prisoner of War
PTS	Post-Traumatic Stress
PTSD	Post-Traumatic Stress Disorder
SC	Service-Connected
SUD	Substance Use Disorder
TAP	Transition Assistance Program
USVETS	United States Veterans Eligibility Trends and Statistics
VA	U.S. Department of Veterans Affairs
VADIR	VA/DoD Identity Repository
VBA	Veterans Benefits Administration
VFW	Veterans of Foreign Wars
VHA	Veterans Health Administration
VISN	Veterans' Integrated Service Network
VSA	Veterans' Service Area
VSO	Veteran Service Organization
WHC	Women's Healthcare
WHEI	Women's Health Evaluation Initiative
WV	Woman (Women) Veteran(s)
WWP	Wounded Warrior Program

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CHAPTER I

Purpose

The purpose of this study was to gain a better understanding of VA healthcare benefit utilization patterns and factors influencing non-use/underutilization by two current service era populations of women Veterans (WV). A second dataset analysis sought to determine whether there were differences in the incidence and reasons for non-use/underutilization of VHA healthcare entitlements for Post 9/11 WV with a history of deployment to Iraq or Afghanistan.

Impetus

The impetus for this study was this researcher's experience as a military clinical nurse who navigated the process of transition to Veteran status and application for VHA healthcare benefits. As a military nurse with thirty years of service, the process did not seem too arduous, but during the transition to Veteran classes, this researcher noted few women were present despite knowing the number of women in the military. What was assumed to be a straightforward process became increasingly more difficult as I embarked on the process online and at a local VHA facility to apply for benefits and compensation. Observations included few WV in the VHA administrative wing and even fewer in the health services section of the VHA facility. Based on personal experiences with the challenges of navigating the process of enrollment for care due to injuries/disabilities experienced on active-duty and seeing few other WV in the VHA facility, I spoke with colleagues and other WV in the community. I discovered many had not enrolled for VHA care or applied for service-connected (SC) disability compensation. During conversations, some WV verbalized feeling marginalized and not welcome in VHA facilities. Others spoke about not wanting to be associated with the VA due to negative experiences during military service. Others recounted hostile and/or harassing experiences while in VHA facilities. The experiences related by WV raised the question; what

factors significantly influence non-use/underutilization or earned VHA healthcare entitlements in WV who served since 1990?

Framework

The Andersen Behavioral Model of Health Services Use (BMHSU) fits as a framework to predict health services use and physical health outcomes in WV. This framework is the leading model for health services utilization by identifying predisposing characteristics, barriers to healthcare use, health status and healthcare needs (Kominski, 2014).

The BMHSU was utilized as a framework for five studies focusing on Veterans published between 2006 and 2020. Table 1 outlines the study populations, design, and findings related to use/non-use of VHA health services. Four of the studies were only WV and the other included a group of WV in a larger study of all Veterans.

Table 1 Prior Studies Involving WV Using the BMHSU as a Theoretical Framework				
Investigator(s)	Sample	Study type	Used VHA care reasons	Non-Use of VHA care reasons
Washington et al., 2006	2,174 WV in CA & NV, all service eras (VHA users = 1,801, non-users = 981, no care in 12 mos. = 174)	Telephone survey	Affordability of VHA care (67.9%) Presence of a women’s health clinic with the VHA facility (58.8%)	Presence of other than VHA insurance (71%) Non-VHA care more convenient (66.9%) Lack of VHA eligibility knowledge (48.5%)
O’Toole et al., 2011	457 high-risk and vulnerable Veterans enrolled and using VHA care in 4 groups (WV = 145 WV)	Quasi-experimental pre-(2006) and post-(2008) analysis of enrolled in VHA	Population tailored approach improved use of VHA health services Enhanced engagement of	NA

		Medical Home	disease monitoring	
Evans et al., 2019	22 WV in CA, all service eras	Mixed methods, semi-structured in-person interviews of VHA non-users or formers users (2013-2015)	No insurance, no other options Partial coverage by other program	Barriers to health services use: lack of accessible gender-specific services, negative perceptions of VHA care and providers, staff with little experience treating WV, and lack of access to timely appointments
Vance et al., 2020	6,561 VHA enrolled/non-enrolled WV over 5-year period 3,534 in 2013 3,027 in 2017	Qualitative, thematic, mixed methods study using BRFSS data for measures of healthcare access (VHA/non-VHA not specified)	WV in 2017 were 1.79 times as likely as those in 2013 to have health insurance	No statistically significant differences in HRQoL measures of general health, number of poor physical health days, number of poor mental health days, and the number of days poor mental or physical health prevented usual activities
Grekin et al., 2020	510 pregnant WV enrolled for VHA care	1 st trimester pregnancy screened from VHA EHR, mailed invitation. Telephone survey in 1 st trimester and 3 months postpartum	Comparison of intended and actual use of VHA services of VHA services during pregnancy based on demographic, psychiatric, and perinatal characteristics	NA

Significance

Women's service in the United States military forces is increasing which creates a new population of Veterans with unique healthcare needs. In addition to the stresses of dangerous environments in a combat zone, women are subject to higher risk of sexual trauma as well as experiencing the stress and guilt of being separated from children and family responsibilities. Upon return from deployment, women often separate from the military and their honorable service earns access to VHA benefits and services. Surveys in 2011, 2015, and 2017 published by the American Community Survey of Veterans reveal an ongoing trend of women Veterans (WV) as having higher rates of being uninsured (3.8% vs 2.8%), having no income (7.4% vs 2.8%), and living in poverty compared to their male Veteran counterparts (10.3% vs 7%) respectively (National Center for Veterans Analysis and Statistics, 2019).

Women Veterans in the Post 9/11 service era experience higher rates of Post Traumatic Stress (PTS) and sequelae associated with Military Sexual Trauma (MST) than their male peers, yet the rate of VHA non-use by WV is greater than male Veterans (61.2% vs. 52.5%) (Center for Veterans Analysis and Statistics, 2020). Of all eligible living Veterans, the percentage enrolled for VHA care and using health services is 22.4% and 26.6% for WV and male Veterans, respectively. While the use of VHA health services is low for both genders, the focus of this study will be on WV due to WV being a vulnerable population within the general Veteran population.

The questions remain, why do WV have lower utilization rates of their earned VHA entitlements and what barriers exist which limit WV access to healthcare within the VHA system? To date, there is little information from large-scale studies focusing on the segment of the population of WV whose enrollment status is "unknown." The term unknown equates to not understanding where non-enrolled WV receive healthcare. The question arises as whether

current service era WV, of which a much higher percentage experienced combat or trauma during the 20 plus years of war in Iraq and Afghanistan, are more likely to miss an opportunity for healthcare via their earned VHA benefits. The purpose of this study is to identify differences in enrollment for VHA services and reasons for non-use/underutilization of VHA healthcare entitlements by two current service era populations of WV.

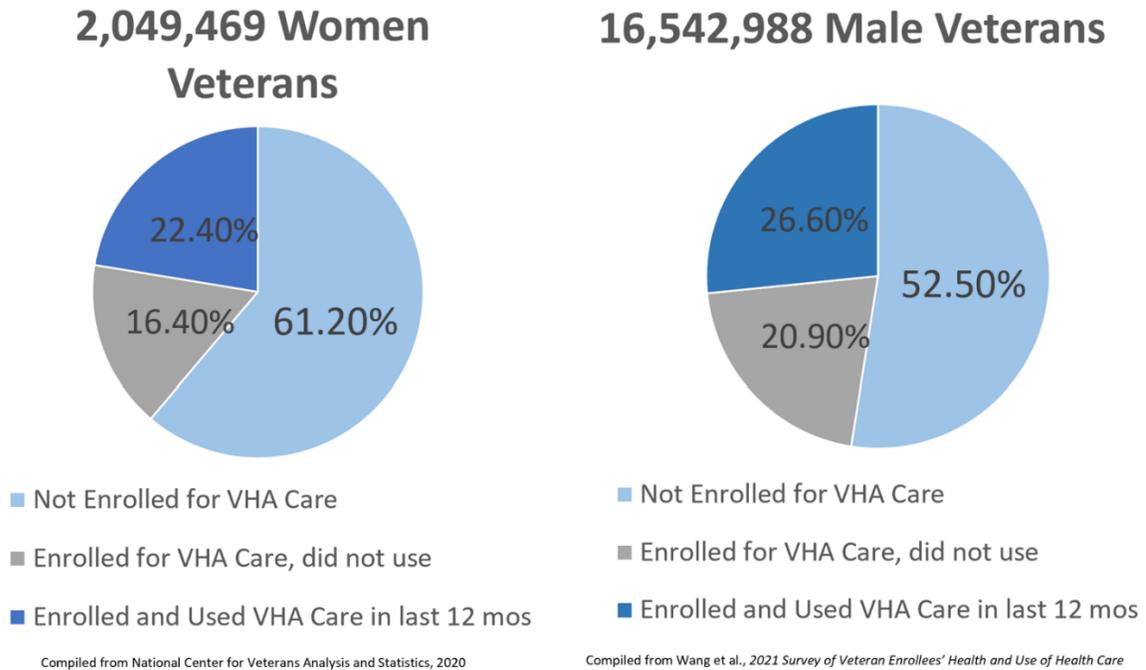


Figure 1
 WV and Male Veteran Enrollment and Use/Non-Use of VHA Care in Prior 12 Months, 2020

To understand the unique challenges of WV, it is important to outline women’s service in the U.S. military. The significance of this study is informed by the many barriers faced by women who choose to serve in the military which translates to barriers when military women transition to Veteran status.

Women’s Military Service

History of Women’s Service in the United States Military

In all countries and throughout history, women engaged in military service. Until recently

in the U.S. women were not assigned to combat roles. Women's service was relegated to support roles, including nursing, domestic work, and cooking (DoD, 2015). Women who sought to serve in direct combat roles in early United States history had to conceal their gender due to societal beliefs that banned women from serving on active-duty (AD). One of the earliest documented accounts of a woman hiding her gender with the intention of serving in the U.S. military occurred during the Revolutionary War. In 1782, Deborah Sampson Gannett enlisted in the Continental Army posing as her deceased brother (Wood, 2016). Although she sustained persistent injuries during service, she was denied a pension because she entered the service under a false name (Wood, 2016). Social context influenced the exclusion of women from military service based on gender and when service was carried out surreptitiously, women were not recognized for their sacrifice nor provided their earned entitlements.

During the Civil War, there are more than 400 accounts of women concealing their gender to be eligible to enlist for military service (Feller & Moore, 1995). Other women fought the system openly to serve, including Dr. Mary Walker who volunteered to serve as a physician for the Union Army between 1861-1865. Resulting from her courageous actions on and off the battlefield including being held as a Prisoner of War, she was the first woman to receive the Congressional Medal of Honor (MOH) in 1865 (DoD, 2015). In 1917, the Medal of Honor was rescinded because Dr. Walker was considered a "civilian" and deemed "ineligible" (Lange, 2017), however President Carter restored the MOH in 1977 (<https://www.cmoahs.org/recipients/mary-e-walker>).

Formal recognition of women's service in the U.S. military did not occur until 1898 during the Spanish-American War when vast numbers of Soldiers became incapacitated from typhoid, malaria, and yellow fever. These illnesses overwhelmed existing military medical personnel. Dr. Anita Newcomb McGee made a recommendation to the Army Surgeon General to bring 1,500

civilian nurses under contract to provide care to ill Soldiers (WIMSA.org, n.d.), however they were considered contract employees, and thus ineligible for military pension.

The contributions of nurses in military medicine resulted in more formal establishment of women's presence in military settings by 1901, but female nurses held no rank and could not receive benefits related to military service. Nurses wore military uniforms, but their title was Miss Smith or Nurse Jones rather than Lieutenant Smith or Captain Jones. The same was true for the over 35,000 women recruited during WWI through the National Service School which trained women to assume non-combat roles so men could serve in combat positions (Feller & Moore, 1995). In 1918, the Army Signal Corps assigned 223 women as telephone operators, known as "Hello Girls". They were issued Army uniforms and took an enlisted soldier's oath prior to shipping out to France. Their worksites were often near battlefield front lines because telephone technology required individual telephone lines to be rolled out along the ground to each unit phone of those fighting in the trenches and the operators would connect calls through a switchboard. This frequently resulted in their coming under direct artillery fire, and two of the operators died because of their "front line" service. Yet when the "Hello Girls" returned to the U.S., they were informed they were not Veterans and did not qualify for benefits despite facing danger and risk of enemy capture (Sheftick, 2018; U.S. Army, n.d.).

Legislation Mandating Recognition of Women's Military Service

In May 1941, Congress introduced legislation to form a department for women serving in the military. After the bombing of Oahu, Hawai'i and Pearl Harbor on December 7, 1941, Congress voted to approve the establishment of the Women's Army Auxiliary Corps (WAAC). The initial group of 565 women reporting for WAAC training in July 1942 were the first women in U.S history eligible for Veteran's benefits including hospitalization in VA facilities (Bellafaire, n.d.). In 1942, the first group of flight nurses were engaged to assist with medical evacuation

after the Allied invasion in WWII. These nurses and civilian women pilots became the first women to serve utilizing the advances in aviation technology. Known as the Women's Auxiliary Ferrying Squadron (WAFS) and Women's Airforce Service Pilots (WASPS), the women flew supposedly non-combat missions, they carried out dangerous missions delivering supplies to forward units and evacuating 1.2 million patients during WWII where threat of enemy fire and attack was inevitable (Landdeck, 2020). The WASPS were recognized with honorary rank as officers, but they were considered "civilians" (Guffey, 2019). Of note, being categorized as non-military, the 38 WASPS who died during service were not eligible for VA burial benefits (Miller, 2016).

This practice of "allowing" women to serve in the military continued in limited roles. Those who were successful in remaining on Active-Duty long enough to earn a pension were granted VA benefits, but those numbers were extremely small as the barriers to continued service were significant. As of 1970, women comprised only one percent of the military (Barroso, 2019). Until 1971, military regulations prohibited military women from being married. Upon rescinding this regulation, married women could remain on active duty, but they had to request a waiver to remain on active duty upon becoming pregnant until 1975. With the transition to the All-Volunteer Force in 1973, there was a significant outreach by all Services to recruit women to ensure adequate military strength in the post-Vietnam War era.

Even with opening roles to women in the military, the ongoing marginalization of women's contributions and abilities persisted within the military. Army Captain Kathleen Wilder successfully completed the exceptionally demanding Special Forces Qualification Course in the 1980s, but she was not allowed to graduate with her class of male peers nor hold the designation as a Green Beret (Riley, 2022).

As the military structure and assigned roles of women in U.S. society changed over the last 50 years, the numbers of women serving in the military continued to increase steadily. In 1981, Lieutenant Commander (LCDR) Lucy Young became the first woman in the military to qualify as a pilot in Naval Air Combat Maneuvering (ACM). She then served as an instructor pilot for A-4 fighter jets. Although one of the most experienced A-4 pilots in the Navy, she was relegated to flying transport aircraft. LCDR Young, along with other female pilots, testified before Congress in 1991 regarding the abilities of women pilots to serve based on skills rather than gender (Young, L., Personal communication, 1993). These Congressional hearings led to removal of prohibitions for women flying combat missions.

All Jobs Open to Women in the Military

In the following years, the Secretary of Defense progressively amended ground combat assignment rules which allowed women to serve in more military specialty areas and assignments (Vergun, 2013). In 2013, more than 100,000 jobs were closed to women including infantryman, combat engineer, and Special Operations Command (Special Forces/Green Beret and Ranger qualification) since these occupations were engaged with direct combat (Lopez, 2014). Women who pushed the boundaries to move into these roles were subjected to sexist commentary and some alleged overt attempts to make them fall short of standards (Britzky, 2022). Secretary of Defense, Ash Carter, directed all military positions opened to women in December 2015. His directive indicated, if women qualified for positions by meeting specific standards, they could serve as “Army Rangers and Green Berets, Navy SEALs, Marine Corps infantry, Air Force parajumpers” (Pellerin, 2015).

In September 2015, two female Army officers successfully completed the grueling Army Ranger training program (Yan, Starr, & Scott, 2015). In 2016, one of them assumed command of an Army Infantry unit and 23 additional women officers graduated from Armor and Infantry

Officer Basic Courses. The Secretary of the Navy established a process and timeline for women to enter SEAL (SEa, Air, and Land) training, and in 2017, a female midshipman was the first to attempt the SEAL Officer Assessment and Selection program. (Faram, 2018). Only 28% of male enlisted candidates successfully complete all phases of SEAL training (Steele, 2016). In 2019, women in the Marines broke barriers by completing F-35B fighter jet training, being assigned to fly fighter jets (F-35C) aboard aircraft carriers and passing the grueling 12-week Basic Reconnaissance Course (Athey, 2019).

Today, women enter Marine combat units as officers and enlisted as well as in the Air Force where women are piloting fighter aircraft on combat missions (Hodge-Seke, 2018; Lendon, 2015). The opening of all occupations, including the most dangerous, places women at risk for serious injuries. This directly impacts the types of healthcare services are needed as women move from military to Veteran status.

Participation of Women in Military and Veteran Cultures

WV are a significantly increasing component of the military. Upon transition to Veteran status, they are subsequently faced with unique challenges in the long-standing male-dominated culture of the VA. Between the World Wars era through the Vietnam War, conscription (the “draft”) for males was compulsory, so the number of male Veterans is proportionally higher in the 70+ age group than females. The shift of demographics to more women into the military has been fraught with difficulties as change is often laborious and slow in military and VA cultures. Military services are known to have a unique language, code of conduct, expectations for behavior, a system of beliefs, dress, and customs. The aforementioned characteristics are components identifying a distinctive culture. Even though the military is composed of multiple distinct ethnic/religious/cultural populations, those who serve in the military join together as members of a distinct vocational culture (Hall, 2011). Upon entering

the military during initial training, individuals are enculturated to military customs and courtesies as well as unique skills required of those who will enter combat environments. New recruits are presented with extensive lessons about their service's history, how to wear the various uniforms, trained in military customs, courtesies, values, and ethics as well as how to follow orders and the military chain of command (Halvorson, 2010). This conditioning establishes the military cultural behavior which overlays other cultural identities, and creates cohesive military units (Abb & Goodale, n.d.). The military masculine cultural behavior is carried over into interaction within the VA population and is often referred to as a "brotherhood," excluding "sisterhood" aspects. Thus, an unwelcoming and sometimes adversarial environment initiated in military service is perpetuated in the experience of WV (Klap et al., 2019). Women Veterans who experienced Military Sexual Trauma (MST), defined by the VA as sexual harassment and/or assault occurring during active-duty service, can experience this level of unwelcoming environment as an additional barrier for WV present to VHA facilities for care (Barth et al., 2016).

While there are multiple reasons individuals choose to join the military, common ones include achievement of a steady income, access to educational benefits, and the opportunity to transition (also termed "escape") from their current life circumstances. Undoubtedly, since the attacks on the World Trade Center and Pentagon (9/11), which signaled the beginning of the Global War on Terror, the rationale for many individuals joining the military was patriotism (Hall, 2011). Regardless of motivation, the length of the Iraq and Afghanistan wars are producing large numbers of Veterans, many of whom are in their twenties and thirties. This includes women who are of childbearing age.

Impact of Social Norms on Women's Veteran Status

With virtually all the military job specialties open to women, the numbers of WV will

continue to increase. Overall, including women who served without formal recognition, estimates indicate over 2.5 million women served in the U.S. military (Women in Military Service for America Memorial Foundation, n.d.). While the opportunities for women are now unrestricted, the opening of occupations throughout the services places women in conditions where they are more likely to become injured and/or have sequelae secondary to the unique aspects and risks of military service. This directly impacts the healthcare needs of women eligible for VHA benefits.

Greater participation by women in the Post 9/11 military resulted in an increase in the number of WV eligible for VA healthcare entitlements. This produces a significant new burden on the VHA healthcare system. The total armed forces strength for the U.S. as of April 30, 2022, was 1,317,688 and 783,194 Reserve personnel. Included in this total are 230,614 women (Defense Manpower Data Center, 2022). The demographics of today's population of military service members directly predict the characteristics and needs of the Veterans' population in relation to healthcare (Larson & Norman, 2014).

History of Veterans Affairs (VA) and Veterans Healthcare Administration (VHA)

Through numerous levels of transformations, the Department of Veterans Affairs (VA) is now the largest and most complex integrated healthcare system in the nation (Kizer & Dudley, 2009). To fulfill President Lincoln's declaration from his 1865 second inaugural address "to care for him who shall have borne the battle and for his widow, and his orphan" (Department of Veterans Affairs, n.d.), the VA public presence projects their mission to serve and care for Veterans of all eras. Today, the VA services encompass much more than a healthcare system. The VA provides healthcare to eligible Veterans, financial/educational support to Veterans and family members, career counseling, transition assistance, and cemetery/burial services for Veterans.

Over four million Americans fought in World War I (WWI) with more than one hundred thousand deaths, and two hundred thousand wounded. Most medical services were provided in military hospitals with follow-on provided by the Public Health Service. Rehabilitation and vocational training programs were implemented, but due to increasing demands, the Veterans' Bureau was formed to oversee Veterans' programs (VA, n.d.). The Veterans Administration (VA) was established by President Hoover through Executive Order in 1930. Veterans were granted benefits through the VA for healthcare which spurred the growth of capacity. The VA doubled the number of available beds, and built 27 new hospitals, which established 91 hospitals by 1941 (House Committee on Veteran Affairs, n.d.).

As a result of the WWII (1941), more than 400,000 military died, 700,000 were injured, and more than 12 million Veterans sought care for injuries through the VA. Those who responded to the call to arms often went from high school to boot camp. Those who were injured and disabled from combat found it difficult to find jobs. In response, Congress enacted the Disabled Veterans' Rehabilitation Act of 1943 which provided job training opportunities for disabled Veterans, and the GI Bill of Rights was passed by Congress to assist Veterans by providing funds for up to four years of education or training, federally guaranteed loan for homes, and unemployment compensation (VA, n.d.).

As WWII Veterans entered the education system, the VA worked diligently to improve the quality and quantity of healthcare services (Department of Veteran Affairs, n.d.). With funding from Congress, the VA continued to construct hospitals, initiated hospital-based research programs, and created academic affiliations with medical schools and teaching programs. Although much of the focus of VA healthcare focused on inpatient services, there were tremendous gains in clinical research including the development of the implantable pacemaker, the concept for computerized tomography (CT) scanners, and the "Seattle Foot" as

well as other prosthetic devices to achieve quality of life for Veterans (Kizer & Dudley, 2009). Equally groundbreaking clinical research within the VA which benefited all patients included clinical trials leading to effective (and lifesaving) treatment of tuberculosis, hypertension, and psychoactive drugs (Hays, 2019).

Evolution of the Veterans Administration During the Vietnam War Era

From 1961 through 1975, the jungle and hand-to-hand fighting of the Vietnam War resulted in more than 300,000 Veterans with service-connected disabilities (Disabled American Veterans, 2014). Many Veterans faced profound readjustment stressors caused by historically unique challenges with unclear battle lines, the inability to distinguish enemy from non-combatant personnel, as well as the political conflicts surrounding the war. (Veterans Administration, n.d.). Often, Vietnam Veterans were spat upon, assaulted, and treated disrespectfully when they returned to the U.S. after leaving the combat zone (B. Clowers, personal communication, 2008). In the post-Vietnam era, the VA was very slow to respond to claims for disability status, notably “losing” paperwork, leaving many Vietnam Veterans, including women, suffering for decades before corrective processing procedures were mandated by Congress.

Many suffered from what are now known as Post Traumatic Stress (PTS) symptoms, but they were already discharged from service. Their only recourse was to launch a VA disability claim which was all paper-based and relied on scant medical documentation recorded in basecamp aid stations and besieged combat hospitals (B. Clowers, personal communication, 2008). Records were lost during urgent relocation of combat zone hospitals and during transport from Vietnam to U.S. military base hospitals.

It was not uncommon for Veterans to resubmit claim applications multiple times due to being “lost” in the process. Some Vietnam Veterans had to seek assistance from members of

Congress to have their claims recognized. Even then, it was not uncommon for Veterans to be left without earned benefits for over 50 years (R. Arthur, personal communication, 2013). Many Vietnam Veterans exhibited unexplained health conditions including skin cancer, non-Hodgkin's lymphoma, liver disease, respiratory cancer, multiple myeloma, peripheral neuropathy, and prostate cancer, which were later attributed to Agent Orange exposure. In addition, Veterans' children experienced higher incidence of birth defects, such as spina bifida (Veterans Affairs, n.d.). This resulted in the system being overwhelmed with service-related medical claims and the perception that access to care was underfunded and understaffed (Kizer & Dudley, 2009). Despite growing evidence, claims were slow to be processed and many Veterans lost faith in the VA's ability to recognize and address health concerns. In 1979, Veteran Affairs created Vet Centers in response to reluctance of Vietnam Veterans to come to VA facilities. There are over 300 Vet Centers which differ from the traditional VA medical centers and clinic settings. Vet Center services are free to Veterans and are confidential (www.USVetsinc.org, n.d.). This format may represent a possible template of energies and efforts to better accommodate WV who feel unwelcome/unsafe in traditional VHA facilities.

The sometimes ten to twenty year-long delays in procession claims led Veterans to accuse the VA of using paperwork as an avoidance tactic to deny services, further increasing distrust in the ability of the VHA to provide appropriate timely healthcare. (Stellman, Stellman, & Sommer, 1988). To counter this, the VA deployed outreach programs and toll-free telephone services to provide care and benefits to Veterans who refused to come to military/VA facilities (www.USVetsinc.org, n.d.). Despite the health service programs designed to increase engagement in care by male Veterans eligible for VHA care, WV were not afforded the same attention. A study published by Dvoredsky and Cooley (1985), pointed out stark deficiencies in all healthcare services for WV. The results of the survey prompted several tough questions to

the VHA, including, “Why do fewer women seek services? Why is the VA dragging its feet in providing services for the increasing numbers of women veterans?” (Dvoredsky & Cooley, 1985, p. 1101).

The continued growth of VA services and facilities resulted in the VA becoming the largest corporation in the U.S., managing hospitals, clinics, and other healthcare services, as well as 172 national cemeteries, numerous golf courses, fire departments, Veteran canteen services, and even laundry services. Around this time, the Army transferred the National Cemetery System to the VA except for Arlington Cemetery and the Soldiers’ Home National Cemetery (Veterans Affairs, n.d.). Despite this branching of responsibility, the unwieldy VA system continued to be extremely dysfunctional, and quality of care plummeted, which prompted action within Congress when stories of mismanagement and mistreatment emerged in the media. In the mid-1980s, scandals rocked the VA including diversion of millions of dollars away from Vietnam Veteran programs and employment of almost 100 physicians who either had sanctions or revoked licenses (Government Accounting Office, 1988). The following year, President Reagan appointed a Cabinet-level seat in the executive branch and the title of the Veterans’ Administration was changed to Veterans’ Affairs (Kizer & Dudley, 2009). Currently, within the Cabinet structure of Veterans’ Affairs, there are three sub-cabinets-the Veterans Benefits Administration (VBA), the Veterans Health Administration (VHA), and the National Cemetery System (Veterans Affairs, n.d.). The focus of this research study will be contained within the VHA system which is responsible for delivery of healthcare and services to all eligible Veterans.

VHA Struggle to Deliver Healthcare Entitlements

Congress continued to be critical of VHA care and services based on complaints from constituents. During Operation Desert Shield and Operation Desert Storm, the VA initiated

research studies to identify causes and determine health consequences from exposure to environmental/chemical hazards from smoke inhalation of exhaust fumes from oil-well fires and depleted uranium. (Veterans Affairs, n.d.).

The VA demonstrated significant increases in VA service utilization since 9/11, recently indicating almost 50% of Veterans utilized some type of VA benefits/services. (National Center for Veterans Analysis and Statistics, 2020). However, these numbers can be misleading to the average American as these statistics include all VA services (compensation, home loans and education, as well as healthcare services). Many Veterans take advantage of support for home loans and education, but the accurate percentage of utilization of earned healthcare entitlements by Veterans and WV is not easily ascertained. The 2021 report of statistics from the VA lists 19,088,805 living Veterans with 6,322,423 (31.1%) unique patients, meaning individual's utilization of at least one VHA service in a 12-month interval (National Center for Veterans Analysis and Statistics, 2022). Data reported by VHA indicates WV comprise approximately 9.6 percent of enrolled VHA users (National Center for Veterans Statistics, May 2020).

Key Challenges in Use of VHA Healthcare

Even though today's Veterans are welcomed home with fanfare and recognition, their rapid transition from active combat to their hometown occurs in such a compressed timeframe, the disorientation of returning to home life is exacerbated. Lengthier deployments (averaging 12 or more months) created longer intervals of exposure to combat life and death situations.

A study with Veteran and civilian cohorts in 2019, the Pew Research Center queried almost 1,300 Veterans (487 were Post 9/11 service only). Sixty-one percent of Post 9/11 Veterans indicated one or more deployments, fifty-seven percent reported they witnessed someone being seriously injured or killed during deployment, sixty-one percent identified as

having PTS (Pew Research Center, 2019). In contrast, the rate of PTS in the civilian population is significantly lower. An IOM report indicated U.S. national lifetime averages for non-military women were 9.7% and 3.6% for men (Institute of Medicine, 2014). Coupled with the rigorous physical requirements associated with military service, and trauma (physical, sexual, psychological) there is a steadily growing population of Veterans with disability/compensation ratings warranting access to healthcare within the VHA.

A 2019 national survey by the Pew Research Center which evaluated the difficulty of transitioning to daily life activities upon return from deployment showed almost half of Post 9/11 Veterans rated their transition as very or somewhat difficult, in contrast to 21% of the Pre 9/11 Veterans. (Pew Research Center, 2019). Post 9/11 Veterans reported the mundane issues of day-to-day family activities often seemed odd and unimportant (Baechtold, & De Sawal, 2009). Post 9/11 WV (n=14) participating in a Grounded Practical Theory analysis also reported feelings of social isolation and “out of sync” upon return from combat zones (Koenig et al., 2014, p. 417). Ordinary tasks, like grocery shopping, became a new source of anxiety, which bombarded them with too much information and too many choices.

Many WV, upon returning from deployment, must re-engage in roles and responsibilities as the primary family organizer, it can be overly exhausting to maintain polite, civil interactions (Pellegrino, & Hoggan, 2015). Similarly, having a heightened sense of danger in public locations can create anxiety when WV are expected to go to school events with children, stand in shopping lines, and participate in community events. WV felt disconnected when family members who were so close prior to deployment now seemed incapable of understanding them and that compounded anxious feelings and even caused WV to question their sanity. A WV reported feeling angry at the changes thrust upon her after returning from deployment and said she was “angry at everything, you come back and you’re mom again, you’re paying bills again,

you have all these responsibilities where for 14 months, the only responsibility you had was yourself" (Mankowski et al., 2015, pg. 298). Women Veterans who reported fewer positive recollections of military service, most often also noted a sense of betrayal from their time in service. A thematic analysis of 20 WV enrolled for VHA healthcare conducted by Mankowski et al., (2015) identified WV who reported emotional numbness and difficulty with relationships resulting from PTS and depression symptoms.

Numerous studies indicate a high incidence of MST in the WV population who describe the event or episode as a betrayal and fracture of trust occurring within the setting of the military family. One WV related a sexual assault during deployment, and stated she recognized she would be at risk of injury by the enemy, however, after an MST incident, noted she felt completely exposed when she could no longer trust those in her unit (Ahern et al., 2015). This sense of broken trust negatively impacts the willingness/desire of WV to access a system filled with those she may fear. A 2010 qualitative study published by the Palo Alto VAMC by Turchik et al., (2012) identified four primary barriers to WV engagement with VHA healthcare: psychological avoidance, stigma, gender disparities, and lack of knowledge. Within this group of 9 participants, 5 (56%) felt they lacked sufficient knowledge of VHA processes to obtain critically needed care. (Turchik & Wilson, 2010).

Challenges Experienced by Military Personnel Transitioning to Veteran Status

Contrasts Between Active-Duty and Veteran Processes

Accessing VHA healthcare entitlements is directly opposite of the military healthcare, "push" system, where services are detailed and directed to the Active-Duty Service Member (ADSM). This can be quite disorienting to the new Veteran who oftentimes knows only the military, "you will be told what you need to do, and then do it" policies, especially regarding accessing healthcare services. Healthcare to ADSM is free and access to healthcare is

considered a part of an ADSM duty and workday. ADSM are required to undergo Periodic Health Assessments as a part of Unit Readiness for deployment, so Unit leaders ensure compliance with basic healthcare screening, including immunizations, dental, vision, and wellness metrics (weight, blood pressure, cholesterol). Medical records are housed electronically and monitored for needed health screening by military unit medical staff. With each duty station change, ADSM health records are screened for needed preventive and routine healthcare.

In contrast, the VHA healthcare system is a “pull” system. To access services and benefits, one must pull information from the system, and the burden of gaining access is on the Veteran (Pellegrino, & Hoggan, 2015). Access to healthcare enrollment in the VA requires each Veteran to seek out paperwork and processes on their own. Follow-up is the responsibility of the Veteran. Each time a Veteran’s health status changes, the process of applying for benefits must be repeated. Failure to complete all requirements within a year of initiating request for benefits results in the application being dropped/deleted and the Veteran must start the process over. If a referral is initiated to external care sources, the Veteran must ensure records are sent to the consultant and reports are returned to the VHA records system.

Unique Danger and Trauma Factors Associated with Deployments

During deployments, a majority of daily life activities are suspended due to direct engagement with combat related roles and the overarching need for vigilance and life preservation. Meals are provided, supplies and services are pushed to the deployed units as well as to the individuals, and uniforms/equipment are provided to replace damaged or worn items. The intent is to allow the ADSM to focus on their mission, and activities within the Units are organized around building strong defenses which suspends attention to mundane daily activities. Despite the provision of abundant resources and training, injuries in such a dangerous

and harsh environment are inevitable. The brutal environment and wear of the stressors of heightened danger take a toll on the physical body as well as the mind and spirit. When engaged in extremely dangerous actions, blast and projectile injuries can lead to significant injuries. Advances in emergency treatment on the battlefield are saving a record number of lives, but the aftercare system is struggling to catch up. Warrior Transition Units (WTU) and rehabilitation Centers of Excellence (CoE) provide “push” services to active duty and Reservists who are injured, but upon transition to the VA, there is a significant gap because every aspect of enrolling in care and determining disability ratings becomes the burden of the individual.

The gap for access, it seems, is even wider for WV whose VHA utilization rate in 2020 was 22.4% which varied significantly from male Veterans (26.6%) (National Center for Veterans Analysis and Statistics, 2022). Traumatic events during deployment, disruption of family/home life, disconnection from friends, and significant health problems (substance misuse, psychiatric disorders, physical injuries), all result in more difficult transitions for WV (Ahern et al., 2015). Tragically, these statistics paint a grim picture for WV who struggle to return to normalcy in their civilian lives when the literature indicates significantly higher rates of conditions warranting healthcare intervention. So, why are there such tremendous gaps in the provision of healthcare to WV when there is such obvious need? Why do WV avoid VHA care at a higher rate?

Monitoring the Sequelae of Combat Deployments

Multiple episodes of fifteen to eighteen-month deployments during the early years of the wars contributed to prolonged stress (Street et al., 2013). Military personnel in combat environments experience austere living conditions, threat to life and safety in a continuous manner, and minimal social support (Kelly, Laverne, & Nilsson, 2014). A 2014 analysis conducted by the Institute of Medicine (IOM) noted 43% of military personnel deployed more than once (Institute of Medicine, 2014). Some units, especially Marine and Army were placed on

the timeline for their next deployment within a few months of returning from combat resulting in persistent elevated levels of stress and anxiety. A 2014 Institute of Medicine analysis of military personnel serving between 2004 to 2012 identified those with a documented PTS diagnosis increased from 0.4% to 5.2% (Institute of Medicine, 2014). A 2019 Pew Research Center survey of 1,284 Veterans which contrasted Pre (572) and Post 9/11 (712) Veterans, noted almost twice as many Post 9/11 Veterans reported at least one combat deployment (31% vs. 58%), had emotionally traumatic experiences (25% vs. 47%), and felt they experienced posttraumatic stress (14% vs. 36%) (Pew Research Center, 2019). Also in 2019, the VHA reported 877,785 Veterans received treatment for PTS, and 80% of those Veterans diagnosed with PTS had other comorbid mental health disorders including depressive and anxiety disorders, substance use, and high-risk behaviors (Hadlandsmyth et al., 2022).

Military personnel returning from deployment are required to undergo redeployment examinations and reintegration processing which is intended to facilitate decompressing from the high stress environment of combat zones. Many military members choose not to disclose exposure to trauma and psychological symptoms for various reasons when completing an (redeployment) examination. The stoic military culture encourages personnel to avoid disclosing injuries or PTS symptoms as well as fearing of loss of income if discharged, loss of status, potential separation from unit support systems/personnel, and delay in release to family if health issues were disclosed (Street, Vogt & Dutra, 2009). Another combat related stressor personnel experience is the prolonged period while not deployed, but awaiting deployment, knowing their military unit is on the deployment cycle scheduled to return to a war zone (Singh & Murdoch, 2007). In a 2011 study by Rivers, Gordon, Speraw, & Reese, nurses identified shortcomings in transition processing as “expecting individuals to go back to life the way it was simply because they had completed the mandatory processing” (p. 169).

Identification of PTS in the Post 9/11 Veteran Population

The definition of PTS by the American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (DSM-V) includes: history of exposure to a traumatic event with symptoms from four clusters: “intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity” as well as three other diagnostic categories of duration of symptoms, ability to function, and other symptoms not associated with other medical conditions (American Psychiatric Association, 2013). For Veterans diagnosed with PTS, the severity factors include “prior traumas, magnitude and/or severity of the trauma event, the degree of threat (or perceived threat) to one’s life, length of exposure to trauma, and presence of multiple exposures to trauma” (Feczer & Bjorklund, 2009, p. 279). Veterans experience disabling symptoms of PTS, including significant depression, social phobia, panic disorder, mood and anxiety disorders, and substance use disorders, which function as barriers to VHA services use (American Psychiatric Association, 2013; Feczer & Bjorklund, 2009).

Identification of PTS in Women Veterans

Mental health diagnoses including PTS are noted as more prevalent in Post 9/11 WV than civilian women (Disabled American Veterans, 2018; Haskell et al., 2010; Kimerling et al., 2010; Street et al., 2013). In 2014, IOM researchers noted a higher percentage of military women (13.2%) of PTS diagnosis than their male peers (8.9%) during the period 2004 to 2012 (Institute of Medicine, 2014).

Women Veterans are noted in numerous studies to experience a higher rate of PTS, but the VHA does not have a consistent presence of gender-specific support groups, group counseling, inpatient treatment, and residential treatment programs (Batuman et al., 2011; Castro, 2014; Crum-Cianflone & Jacobson, 2014; Curry et al., 2014; Erbes et al., 2007; Feczer, & Bjorklund, 2009; Frayne et al., 2011; Lawrence et al., 2021) often relying on treatment

programs in the public sector. In a large-scale data analysis from the Defense Manpower Data Center based on 43,078 Veterans from OIF/OEF wartime service who were enrolled in VHA for care between 2001 and 2008, 4,233 WV were diagnosed with PTS (Kimerling et al., 2010). A clinical study of 145 WV attending a 7-week residential PTS treatment center was conducted to determine the relationship between severity of PTS, MST, and improvement of overall symptoms during treatment. Analysis with paired t-tests and regression analysis demonstrated significant decreases in overall symptoms with residential treatment (O'Brien et al., 2008). Many of the VHA residential PTS programs provide space for one or less female cohorts per year. The only VHA residential PTS program at the Spark Matsunaga VA clinic in Hawai'i has rarely held a cohort for females since it was moved to Tripler Army Medical Center on O'ahu in 2006 and none in the last ten years.

Addressing Women Veteran Healthcare Needs

The (2014) DAV publication's key recommendations for improving WV care within the VHA encompass innovative treatment delivery modalities including pairing with Department of Defense (DoD) programs, use of distance technology (telehealth), and increasing the presence of regional treatment centers marketed towards OEF, OIF, OND Veterans (Murphy & Hans, 2014). In the follow-on report by the DAV published in 2018, many of the health services use barriers remain inconsistently addressed by VHA facilities across the United States. While the follow-up 2018 program analysis noted improvements in certain VA Integrated Service Networks (VISNs), the DAV noted many areas of the country were still lacking effective (or even existing) WV treatment programs (Disabled American Veterans, 2018). A study published in 2020 compared over 6,500 WV from the 2013 and 2017 Behavioral Risk Factor Surveillance System (BRFSS) data sets to assess trends in healthcare access, quality of life, and healthcare outcomes over a 5-year period. Notably, there was negligible forward movement in quality-of-life

measures. The primary positive change noted by the researchers was a higher percentage of WV in the 2017 year-group reported being insured (Vance, Alhussain, & Sambamoorthi, 2020). Insurance, as a single factor, did not significantly change the challenges faced by WV.

The BRFSS study noted in the 2017 sample, “7.0% reported being uninsured, still yet 13.2% reported cost as a barrier to care and, 16.7% did not have a usual source of care.” (Vance, Alhussain, & Sambamoorthi, 2020, pg. 168). So, the question remains. Why are there persistent gaps in utilization of healthcare to WV when there is such a clear need?

Individual Characteristics: Current Service Era Women Veterans

The National Center for Veterans Analysis and Statistics, *Women Veteran Report* (February 2017), reports an increase in number of women in the military since 9/11/2001. The VA projects WV to reach 11% of the VHA eligible population by 2025 while the male Veteran population will level off and decline (Department of Veterans Affairs, 2022). A 2020 analysis from the U.S. Census Bureau projects WV will comprise more than 18% of the Veteran population by 2045 (U.S. Census Bureau, 2023).

As noted in Figure 2, *Female Active-Duty Military Personnel: 1945 to 2015*, the end of conscription, the end of the Vietnam War, and establishment of the All-Volunteer Force (AVF) brought a sharp uptick in the number of women entering military service (National Center for Veterans Analysis and Statistics, 2017). In a study directed by Congress in 1976, the National Academy of Sciences assessed the current and future Veteran population needs through 2020. At that time, WV comprised 2 percent of the Veteran population and though projected increases up to 10 percent of WV by 2000 was acknowledged, no WV were included in the study

population of 7,000 Veterans (Senate Committee on Veterans Affairs, 1977).

Key Points in U.S. Military History

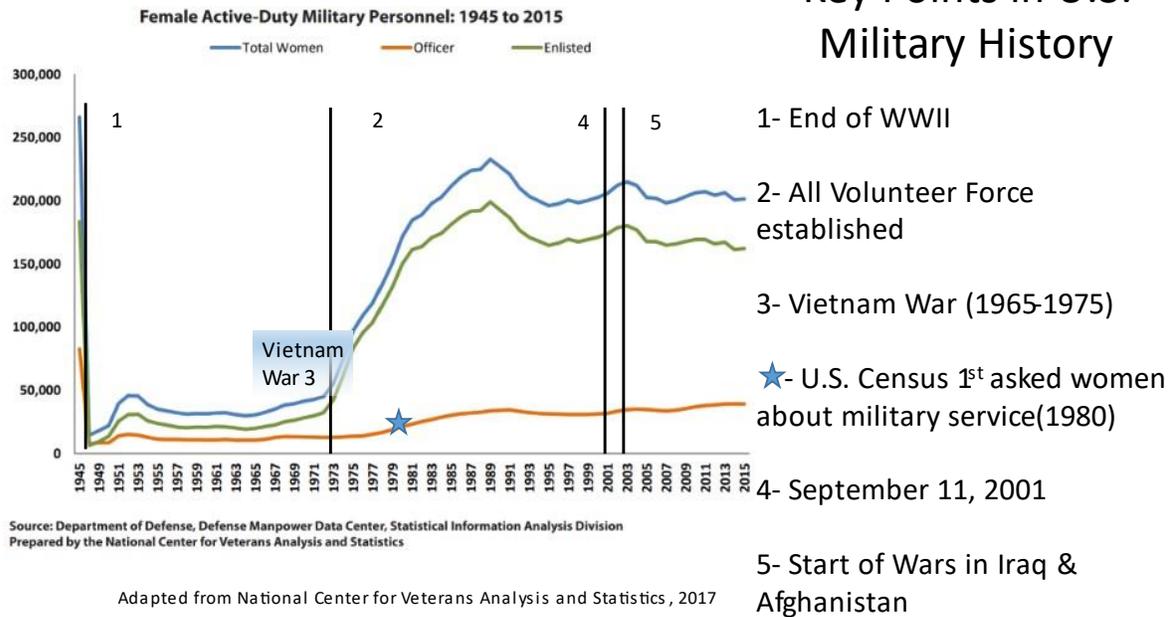


Figure 2 *Female Active-Duty Military Personnel: 1945 to 2015*

On the heels of this report, an important event occurred in 1980 when the U.S. Census Bureau first included a question for women about military service (<https://www.census.gov/topics/population/veterans/about.html>). In the first year, 1.2 million women indicated Veteran status on the 1980 Census questionnaire (Veterans Affairs, n.d.). This number garnered the attention of Senator Daniel Inouye who pushed for a report from the Government Accounting Office (GAO) to assess the VA's efforts to equally address the healthcare needs of WV. The GAO report (HRD-82-98) published in 1982 noted four significant shortfalls: WV did not have equal access to VHA treatment programs; they often did not receive complete medical examinations nor gynecologic care; the VHA plans for future care did not anticipate increasing WV numbers; and the VA did not have processes in place to adequately inform WV of their earned entitlements (Government Accountability Office, 1982). Despite knowing the rapid increase in the number of women entering military service with the AVF, the

National Vietnam Veterans Readjustment Study, commissioned by Congress in 1985, was the first national study which included WV (Veterans Affairs, n.d.). By 2009, Veterans Affairs (VA) documented over 2 million WV and over 530,000 Post 9/11 service era WV, yet estimated less than 25% of eligible WV were enrolled for VHA healthcare benefits ten years after the start of the Iraq and Afghanistan wars (National Center for Veterans Analysis and Statistics, 2011).

The increasing numbers of Post 9/11 WV creates even more challenges for the VHA. This new population of WV come with unique healthcare needs as they are significantly younger than their male Veteran peers with 47 percent of Post 9/11 WV are under age 35 compared to 39 percent of Post 9/11 male Veterans (U.S. Department of Labor 2021). Historically, the Veterans Affairs (VA) focused on provision of services to male Veterans, but the changing demographics of the Veteran population, changing Federal policies, and the end of Selective Service require adjustments based on increased numbers of WV.

Women Veterans as a Vulnerable Population

Although WV make up 9.6% of the *enrolled* Veteran population, the number of women who are enrolling and utilizing the VHA is growing more rapidly than male Veterans (National Center for Veterans Statistics, May 2020). In a census of WV conducted in the early 2000's, "among women veterans who use the VA, 42% depend on it as their sole source of healthcare" (Washington et al., 2003, p. 50). In 2007 and 2010, the VHA published guidelines to incorporate women's healthcare services to all VA healthcare facilities, but the results were unequally applied and not easily accessed by WV in non-urban settings (Oishi et al., 2011). In 2015, the percentage of WV using VHA care was 22% of the population of over 2 million eligible WV (Frayne et al., 2018).

Vogt, Bergeron, Salgado, Daley, Ouimette, & Wolfe (2006) completed a cross-sectional telephone survey with 1,662 WV accessed through the National Registry of Women Veterans

(NRWV) to measure barriers to accessing care in VA facilities. Factors noted as barriers to accessing care were lack of ease of access/use, availability of services, perceived difficulty in understanding service-connected disability status (which determines priority and cost for services within VHA), provider insensitivity, (Elnitsky et al., 2013; Frayne et al., 2011; Haskell et al., 2010) and unpleasant/disturbing physical environment characteristics of VHA facilities. One WV in a 2015 focus group noted, “It’s all men. It’s built for men...You don’t know if these guys even know what they’re doing...” (Evans et al., 2019, p. 14).

Delayed Care and Unmet Needs from Marginalization of Women Veterans

Regrettably, researchers noted these shortfalls over 30 years ago, (Dienstfrey, 1988; Dvoredsky, & Cooley, 1985). As mentioned earlier, the VA did not include WV in studies for healthcare services until 1985. The marginalization of WV persists today. Barriers to accessing VHA care by WV were noted in a 2011 cross-sectional telephone survey of over 3,600 WV regarding incidence of delayed or unmet healthcare needs in the prior 12 months. One in five women stated they experienced delays in care or unmet healthcare needs with higher percentages in younger age groups “36%, 29%, 16%, 7%, respectively, in 18-34, 35-39, 50-64, and 65+ age groups; $p < 0.001$ ” (Washington et al, 2011a, pg. S657). Reasons included lack of insurance, prohibitive cost of healthcare, lack of reliable transportation, inability to take off work or leave children, lack of understanding on how to access VA care, perception of VA providers not being sensitive to women, and history of military sexual trauma (MST). This trend continues despite efforts by the VA as noted in a 2017 analysis of 37 WV with Vietnam Era service who accessed VHA services but later discontinued their care because they did not feel welcomed, perceived providers to lack gender-specific competencies, and noted insensitivity to WV concerns. This was particularly noted among WV who utilized VHA mental health services for PTS and MST (Kehle-Forbes et al., 2017).

Contextual Factors

Lack of Gender-Specific Care Within VHA

A compounding issue impacting WV access to VHA care is the lack of availability of comprehensive women's health services (Mengeling et al., 2011; Oishi et al., 2011). Although Congress passed the Veterans' Healthcare Eligibility Reform Act of 1996 (PL104-62) mandated the VA to reduce gender healthcare disparities, the reality is most VHA facilities continue to focus on programs targeted towards men. The Director of each VISN holds a unique authority to shape the type and depth of services within their region. This creates uneven access which is compounded by the mobility of U.S. society. Women may have access to comprehensive services within one VISN, but upon moving to a new location the WV will find cursory services at best within the VISN. The result of a 12-month study assessing 21 services considered to be a part of a comprehensive women's healthcare program demonstrated a wide variability in on-site services. In a 2007 survey of 193 urban VHA sites, researchers noted fewer VHA sites offered reproductive health services on site in comparison to urban hospital-based clinics (Katon et al., 2012; Mattocks et al., 2010).

As recently as 2019, Dr. Hayes, the lead for VA Women's Health Services, indicated all VHA hospitals have at least two designated Women's Providers (WP) and only 10 percent of clinics do not have designated WP, but this is woefully short of needed numbers (Shane, 2019). In 2020, an Office of the Inspector General (OIG) conducted an audit of the Women's Health Program at an urban location in Texas after complaints were filed alleging inadequacy in services. VHA was directed by Congress to achieve and maintain a goal of 85 percent of enrolled WV assigned to a women's health primary care provider, yet findings indicated 60 percent at best. The OIG report demonstrated a chronic insufficiency of comprehensive gender-specific care for WV within the VHA facility, but also a lack of suitable providers in the

community to support the WV healthcare needs (Office of the Inspector General, VA, 2020 January 23). Funding for WV health services in the VHA in 2015 equaled \$500 million, but this still constituted only one percent of the entire VHA budget for Veterans' health (Shane, 2019).

Demographics of 9/11 Service Era Women Veterans

The changing age demographics and healthcare needs of WV is significantly altering the population of Veterans which demands a change to the shape and focus of the VHA, including the need for reproductive services as many OEF/OIF/OND Veterans are of childbearing age (Katon et al., 2012; Mattocks et al., 2010; Washington et al., 2003). The effects of over 20 years of wartime military service in the U.S. since 9/11/2001 is creating a much different healthcare need spectrum compared to the VA beneficiaries of the previous two decades (Kizer, & Dudley, 2009). With diligent community efforts, services specific to WV are improving, albeit sporadically (Disabled American Veterans, 2018; Resnick, Mallampalli, & Carter, 2012). Significant improvements are still required to meet the national goal of providing optimal care promised to those who served. In 2013, a review of services indicated twenty percent of WV in the VHA were diagnosed with conditions related to military sexual trauma (MST), but one in three VHA centers had insufficient providers trained in provision of sexual assault care (Augustine, 2014).

Factors Restricting Use by Women Veterans

The Disabled American Veterans organization (DAV) published a report in 2014 titled, *Women Veterans: The long journey home*, highlights twenty-seven key policy and program recommendations required to adequately meet WV healthcare needs. The healthcare focused key recommendations include improving access to gender-specific healthcare, providing gender-sensitive mental health services, removing existing barriers to access services, and creating focused transition programs targeting WV. The researchers noted significant inconsistency in available services for WV between VHA facilities and emphasized how this

compounds the barriers to utilization and access of needed services (Murphy & Hans, 2014). The DAV completed a follow-on review of VHA services for WV, published in 2018, titled *Women Veterans: The road ahead*. This series of focus groups, policy reviews and interview of experts resulted in forty-five key findings requiring immediate action (Disabled American Veterans, 2018). While the report indicated satisfactory progress in some areas, the inconsistency across VISNs was deeply concerning, especially in areas where service providers within the community were often sparse due to demographic region.

Co-Pay & Priority of Care for Use of VHA Healthcare

Another confounding issue faced by many WV is the payment system for VHA services. Even for the trained VHA employee, the payment system is confusing and complex. Many receive care for conditions covered because of military service, such as a back injury, but may not be covered for costs of mental healthcare based on the completeness of the disability application. The burden of proof lies with the WV who must ensure they claim all possible injuries. If the WV does not make a claim for each specific injury, they can receive care at a lower priority and/or with a co-payment (fee based) unless they go through the appeal process to add another disability to their rating (Frayne et.al, 2014; Institute of Medicine, 2013; Murphy & Hans, 2014). Adding to the complex paperwork process to claim disability, long wait times, cost-sharing for non-covered services, limited/inconsistent gender specific services are common complaints of WV (Friedman et al., 2011).

Battlefield Injury and Survivability

The technological advances which increase survivability on the battlefield also increase the physical burden on the military service member's body, including life-saving body armor and other protective equipment which can weigh over 100 pounds (Batuman et al., 2011; Frayne et al., 2014, Haskell et al., 2020). This is a significant burden on a woman's body and Table 2

illustrates the top ten issues experienced by WV (National Center for Veterans Analysis and Statistics, 2011). Researchers also noted a higher incidence of WV developing compounding musculoskeletal injuries over time which they suggest there are service-related injuries not evident at the time of separation from active-duty (Haskell et al., 2020). The mental stress of performing when physically debilitated compounds trauma experiences. (Friedman et al., 2011; Yan et al., 2013).

Condition	Frequency	Percent
Post Traumatic Stress	13,783	5.7%
Lower back pain	11,870	4.9%
Migraine	11,700	4.8%
Major depressive disorder	11,547	4.8%
Partial hysterectomy	9,903	4.1%
Removal of reproductive glands	8,558	3.5%
Impairment of knee	7,805	3.2%
Asthma	7,214	3.5%
Arthritis, due to trauma	6,620	2.7%
Tenosynovitis	5,686	2.3%
Total- Most Prevalent Disabilities	94,686	39.0%
Total- All Disabilities	243,632	100%
Patten & Parker. (2011). <i>Women in the U.S. military: Growing share, distinctive profile.</i> Pew Social and Demographic Trends		

Enabling/Limiting Characteristics

Outsourcing Gender-Specific Services by VHA

To bridge the gap in services, there is significant reliance on non-VA healthcare providers (contract and fee based) for women’s healthcare delivery (Mengeling et al., 2011; Resnick, Mallampalli & Carter, 2012; Washington et al., 2003). When common women’s health services are not available in their primary care setting, the likelihood for fragmented care increases with corresponding decrease in confidence in the system (Lutwak & Dill, 2013). Care in the community is often difficult to monitor for appropriateness. One WV with a history of

combat trauma who began using substances to manage her anxiety was enrolled in a community-based substance abuse treatment setting in 2013 where she noted, “I had bad experiences. They sent me to a 30-day hell hole for women, but not just vets, but also court ordered.” (Evans et al., 2019).

Women: A Unique Population in Transition from Military to Veteran

Women Veterans experience unique transition issues when returning from combat deployments and leaving active service. The inconsistent addressing of these needs by VHA healthcare services erodes confidence of WV in VA capabilities to address healthcare needs in a gender sensitive manner (Pew Research Center, 2011; Schaffer, 2021). Although women are clearly exposed to direct combat, trauma, and violence during deployments, many downplay the significance of their contributions and exposure (Mengeling et al., 2011; Schaffer, 2021; Street, Vogt, & Dutra, 2009). In a large scale, 2-phase study directed by Congress and conducted by the IOM from 2010 to 2012, focus groups were conducted in the second phase at 6 sites where large populations of military with deployment histories were located. One WV indicated she felt like once they returned from deployment, everything should just return to “normal,” like nothing happened and they should just forget everything that happened rather than dealing with the psychological pain, feelings of anger and guilt, or even acknowledging the trauma of combat and violent death (Institute of Medicine, 2013). These challenges may be reflected in the continued non-use and underutilization of VA healthcare.

The dramatic increase in the number of WV and the changing age distribution of WV warrants attention to the structure of the VHA to ensure adequate services and resources to address the healthcare needs of women who serve in the military (Wolfe et al., 2000). The number of WV under age 35 increased 120% in the past decade and will continue to push the curve for the next 20 years (Friedman et al., 2011).

Research on Women Veterans' Healthcare Needs

Equally important is lack of data collection specifically targeted to identify WV healthcare needs (Disabled American Veterans, 2014; Disabled American Veterans, 2018). The number of WV exploded since 9/11/2001 and percentage of WV utilizing VHA services increased by 80% between 2008-2017, but this significant increase accounts for less than 40 percent of the total population of WV utilizing earned healthcare benefits (National Center for Veterans Analysis and Statistics, May 2020). With the VA estimating there are over 2 million WV (Department of Veterans Affairs, 2022), the number of WV who are not accessing earned healthcare entitlements is near one million. Regrettably, the increase in utilization significantly lags behind the volume of WV who need access to healthcare. Even within the population WV who have disability ratings, the percent of Post 9/11 WV who enrolled and utilized VHA healthcare in 2017 did not reach 50 percent (National Center for Veteran Statistics, 2020). The challenge continuing to face the VHA is how to reach out effectively to military women who are transitioning to Veteran status, including those in the National Guard and Reserve components (Kelly, LaVerne, & Nilsson, 2014).

Paucity of Research on Women Veteran's Healthcare Access and Utilization

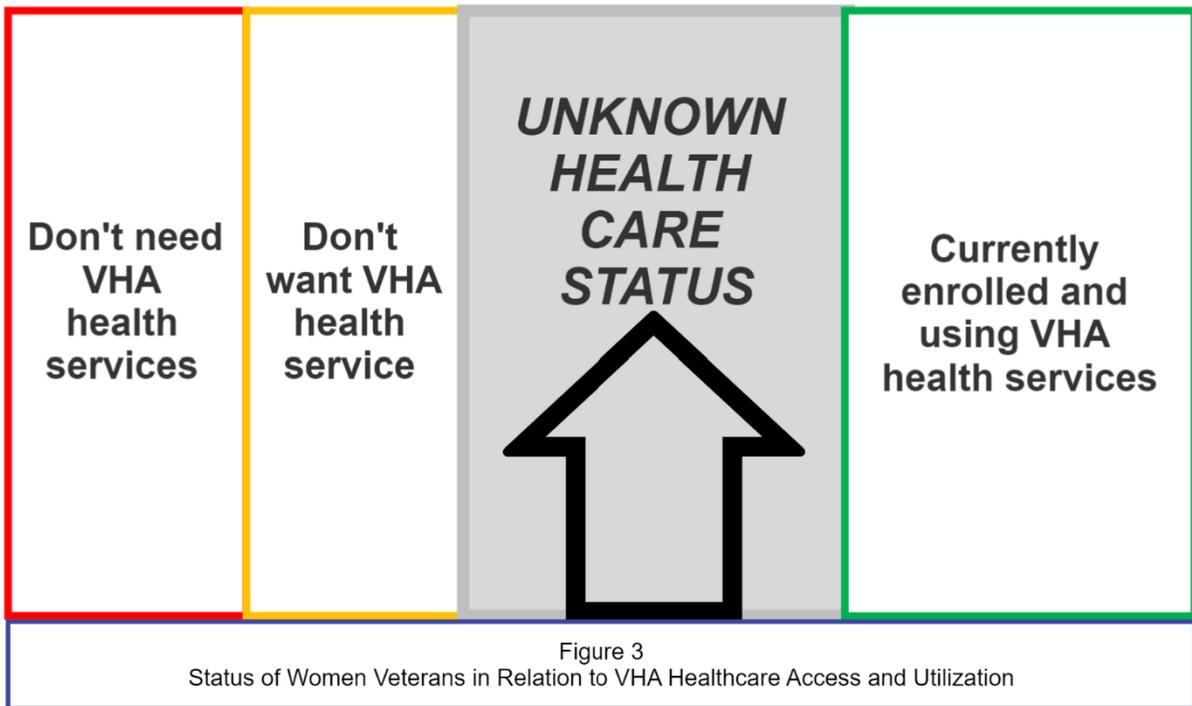
Little is known about the reasons WV do not utilize VHA healthcare. Often, women's health services are contracted to local community providers who do not have access to VA electronic health records or understand the complexities of military culture and service, especially relating to combat trauma (Kelly, LaVerne, & Nilsson, 2014). A WV discharged in 2015 noted, "There's not one justifiable website that says, 'Here is everything you need as a veteran; these are all of the services...'" (Evans et al., 2019, p. 11).

Statement of the Problem

More WV health research was published during 2004-2008 than the preceding 25 years (Disabled American Veterans, 2014). Since then, thousands of articles about WV health and healthcare have been published, yet still little is known about the reasons WV do not utilize VHA healthcare. Despite the increasing numbers of women serving in the military since 9/11/2001 and the increasing percentage of women who are eligible for care within the VHA, the amount and level of research regarding women's healthcare needs is observational and focused on those who utilize VHA. The most significant gap noted in the literature review is addressing the healthcare needs of WV who do not enroll for VA healthcare entitlements. Even in the largest (to date) study on utilization of VHA healthcare services by WV, the authors acknowledge the *denominator for all assessments* was based on WV who enroll and utilize VHA services at least once, so the questions about adequacy of services are only being answered by those WV who are within the VHA system (Disabled American Veterans, 2018; Frayne et al., 2014; Frayne et al., 2018). Equally concerning is the percentage of WV who present for VHA healthcare and discontinue use. (National Center for Veteran Statistics, May 2020).

As illustrated by Figure 3, Status of WV in Relation to VHA Healthcare Access and Utilization, there is a percentage of WV who currently receive VHA care and WV who do not need VHA care (no service-connected disability or have other sources of healthcare access/coverage). The gap in the center of the figure represents the percentage of WV who are eligible for VHA health services, but do not enroll despite the need for healthcare. The group of WV with the "unknown status" on the continuum of VHA healthcare use prompts the need for more research to determine not only their health services use status, but also to target VHA outreach, education, and programs to address this population of WV's healthcare needs. This is

the population of interest for this research.



Although in the last 12 years since the NSV 2010, programs were implemented to address Veteran's issues in the general population, the focus on this vulnerable population of WV continues to be marginalized by the lack of consistent availability of gender-sensitive programs. Therefore, the sacrifices (physical, mental, social) of WV continues to impede participation in earned healthcare entitlements. A 2016 focused survey of twenty-one VHA facilities (15 urban and 6 rural) were assessed for adequacy of gender-specific services. Predominant themes which providers, staff and WV noted as limiting access to care included limited gender-centric services, complicated/disjointed community care coordination, poor perception VHA settings which were identified as unwelcoming or hostile, and challenges with competing societal/familial responsibilities (Marshall et al., 2021). Even in 2021, the focus of the preponderance of VHA sponsored research is with those WV who access/utilize VHA services. Before the adequacy of VHA health services needed by WV can be adequately assessed, an

accurate identification of WV healthcare needs for WV who are not engaged in VHA healthcare must occur.

Purpose

The purpose of this study is to gain a better understanding of VHA health services use patterns and factors influencing non-use/underutilization of VHA healthcare among two service era groups of Pre and Post 9/11 WV.

Specific Aims and Research Questions

The specific aims of this study are to identify factors restricting access to VHA healthcare by WV and factors promoting access to VHA healthcare by WV, and identifying aspects/factors which describe the population of WV who do not access VHA healthcare.

Research questions for this study include:

1. Are there differences in VHA health services use for populations of Pre and Post 9/11 WV related to outcome variables?
2. What factors influence non-use/underutilization of VHA health services in Pre vs. Post 9/11 WV?
3. Does exposure to combat deployments influence non-use/underutilization of VHA health services in Post 9/11 WV?
4. What factors influence non-use/underutilization of VHA health services for Post 9/11 WV with combat deployments?

The theoretical framework for this study will apply Andersen's Behavioral Model of Health Services Use (BMHSU) related to use/non-use of VHA health services by WV. The researcher conducted a quantitative, non-experimental, comparative analysis of WV engaged in receiving VHA health services and WV not using VHA health services. There were two dataset analyses. The primary dataset analysis focused on two target groups divided into WV who served from 1990 to August 2001 and those WV serving after the September 11, 2001, terrorist

attack on the World Trade Center and Pentagon (referred to as 9/11). The secondary dataset analysis compared those WV who served after 9/11/2001 with history of being deployed/not deployed to Iraq and/or Afghanistan. These analyses can provide insights into the healthcare needs of this new generation of WV. This is especially important since the Department of Labor estimates three-quarters of Post 9/11 WV deployed to combat zones in Iraq and Afghanistan (U.S. Department of Labor, 2021).

The concept of access and use of VHA health services encompasses those who are eligible for VHA benefits which includes those who do and do not enroll for care. To understand the health services needs of WV, it is important to identify what factors decrease use of earned benefits. This is particularly true for WV as they have higher documented rates of mental health needs (PTS, MST, depression). These mental health conditions in Veterans are known to be associated with tendency towards social isolation, social phobias, fear of being in a military-like environment, and mistrust of the military system. Coupled with the large number of women who leave the military soon after they return from deployment and often move to areas remote from VHA services further compounds the issues surrounding health services non-use/underutilization.

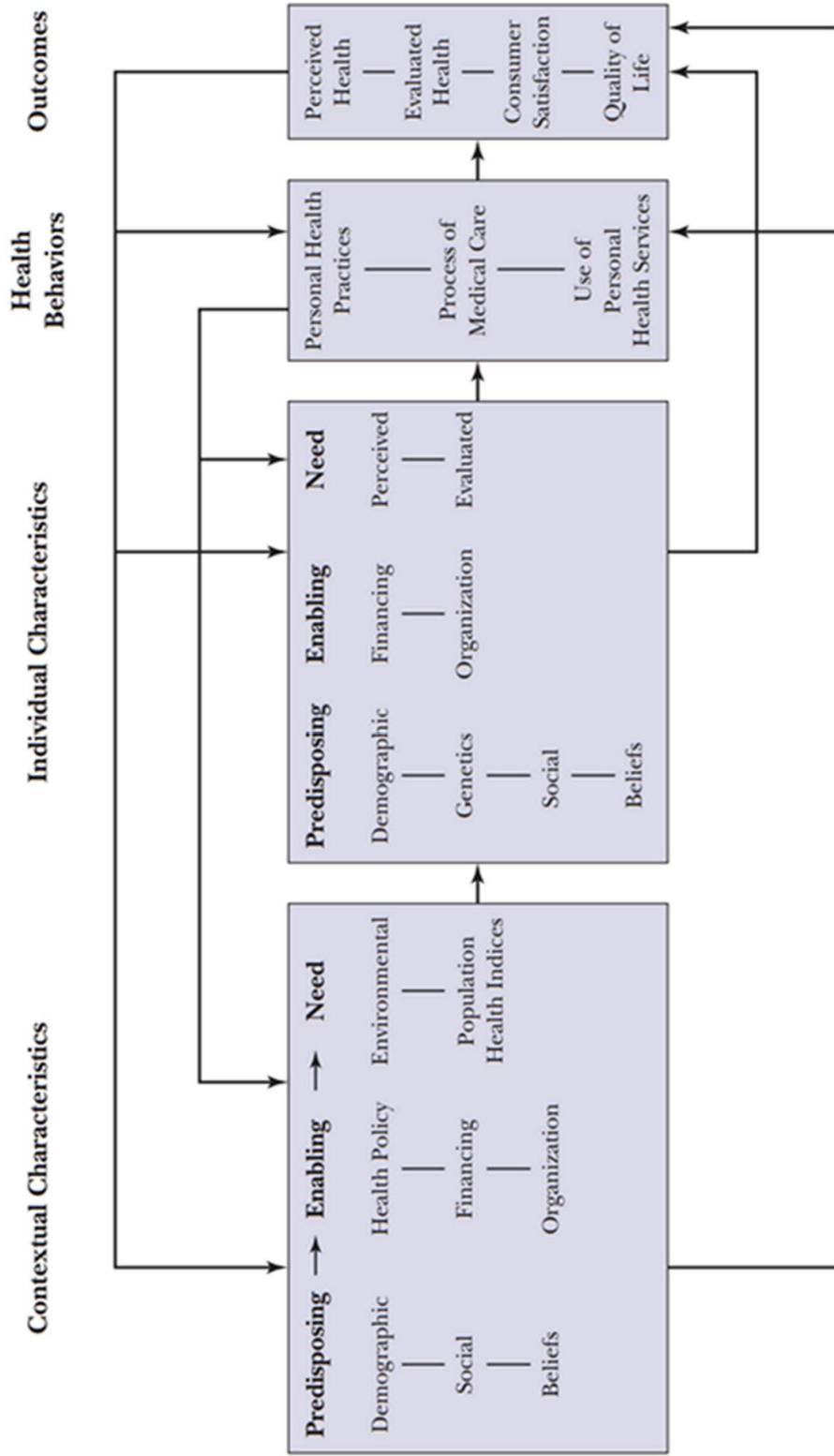


Figure 4 Behavioral Model of Health Services Use (BMHSU). Andersen, Davidson, & Baumeister (2014). In Kominski (Ed.) *Changing the U.S. health care system: Key issues in health services policy & management*.

The Study

The framework for this quantitative, non-experimental, secondary analysis study uses a current modification of the Behavioral Model of Health Services (Andersen, 1968) by Andersen, Davidson, and Baumeister (Kominski, 2014) which focused on identifying patterns and trends to explain health services utilization as a function of predictive variables including predisposing characteristics of a population of interest, system variables enabling or impeding health services use, and identified healthcare needs of the population. Traditional predisposing characteristics include the “propensity” of individuals to use health services, enabling characteristics include “means” available to individuals to obtain health services, and “needs” meaning the illness/injury level as the influential elements impacting an individual’s use of health services. The dynamic structure of this framework permits examination of associations between health services use and the predisposing characteristics and healthcare needs in the selected groups.

The domain of predisposing characteristics of WV used to explain use of health services for this study includes a primary analysis of WV who served in the U.S. military between 1990 and August 2001 and WV who served between September 11, 2001, and the time of survey; enrollment/non-enrollment for VHA health services; use of primary and women’s health care within six or twelve months, respectively. A second data analysis in this study includes WV who did/did not experience combat deployment to Iraq and/or Afghanistan; enrollment/non-enrollment for VHA health services; use of primary and women’s health care within six or twelve months, respectively.

What is missing from the literature is research regarding the population of WV who do not use VHA health services and information on the reasons/barriers for non-use/underutilization of earned benefits. Other factors missing from the literature include patterns of health services use for WV who seek care outside the VHA, reasons for using health services

outside of the VHA, and sources of financial support to pay for used health services (insurance, other government programs, out-of-pocket).

This quantitative design describes and analyzes data obtained from survey respondents including military service background, assessment of familiarity with Veterans benefits, knowledge of service-connected (SC) compensation procedures, health status, health services use, health insurance coverage, and demographic data. The inclusion criteria were: 1) female gender; 2) active U.S. military service in Pre 9/11 and/or Post 9/11 service eras.

Report of the Study

The report of the study is organized in the following manner: Chapter I introduces the problem, impetus, and significance of the study as well as the scope and history of women in the military and as Veterans.

Chapter II is a critical evaluation of previously published research, including theoretical frameworks. The influence of theory on research and findings is used to clarify the strengths and limitations of prior work. Chapter II provides an explanation of the Behavioral Model of Health Services Use (BMHSU) developed by Andersen, Davidson, & Baumeister (Figure 4), including contextual and individual characteristics guiding the study. The BMHSU framework may assist in identifying gaps in previous research and build knowledge to improve use of VHA health services by WV.

Chapter III includes the research questions, research design, setting, study population, target populations, ethical considerations, and quantitative data analysis methodology.

Chapter IV presents demographic characteristics of the target populations and the research findings.

Chapter V explains the meaning of the data and interprets the research findings. Also included are the summary and conclusion of the study as well as study limitations, implications, and suggestions for future research.

CHAPTER II

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Organization of the Chapter

This chapter is organized and presented in sections reflecting the extent of research and the study of health services use. The main thrust of this chapter outlines the two literature review periods conducted as a part of the study design and development of research questions. The chapter includes a discussion of the fit of the selected theoretical framework, Behavioral Model of Health Services Use (BMHSU) and rationale for use of this framework.

Extent of Research on Health Services Use

Women's service in the military forces during periods of conflict and war is increasing and this creates a new population of veterans who have unique healthcare needs. In addition to the stresses of violent environments within a combat zone, women are also subject to sexual trauma as well as the stress and guilt of being separated from children and family responsibilities. Upon return from deployment, women often separate from the military and are entitled to Veterans' Healthcare Administration (VHA) benefits and services. A report for VA compiled by the National Center for Veterans Analysis and Statistics (NCVAS) from the 2017 American Community Survey of Veterans found Women Veterans (WV) are frequently uninsured, have no income, and live in poverty compared to their male Veteran counterparts, yet a surprisingly large percentage of these WV either underutilize or do not utilize their earned healthcare benefits (National Center for Veterans Analysis and Statistics, 2019).

The questions arise, why do WV not utilize their earned VHA entitlements and are there barriers to WV access to healthcare within the VA system? To date, few studies examined the segment of WV whose enrollment status is "unknown." To assess the presence and depth of literature regarding WV, a review of the literature was undertaken.

While Veterans are often grouped into Service era (WWI, WWII, Korean service, Vietnam, and Post 9/11), the small numbers of WV in most of the Service eras except for Post 9/11 generally result in all WV being placed together for purposes of research. Therefore, this literature review will group studies in those in which WV were identified as a separate population, whether the study included gender-specific metrics, and identified use or non-use of VHA healthcare services.

Literature Reviews

Review of Women Veterans' VHA Healthcare Utilization

In the 2017 *Women Veterans Report* compiled by the National Center for Veterans Analysis and Statistics, the number of Post 9/11 WV including Operation Enduring Freedom (OEF)/Operation Iraqi Freedom (OIF) exceeds 600,000. The Disabled American Veterans (2018) projected by 2020 WV eligible for VHA care will continue to rise while the male population of VA eligible veterans will level off and even decline.

Literature Search Criteria

To assess the extent of research on women veterans' access and utilization of VHA healthcare entitlements, two literature reviews were undertaken. Search terms included women/female veterans, combat veteran, Post 9/11, U.S. Armed Forces, Veterans' Administration (VA, VHA), healthcare access/utilization, military sexual trauma, mental health, disparities, and barriers. Thirty-three research studies, including the three above mentioned, were selected for inclusion in the first literature review. Upon reviewing the publications, several historical references were noted using the snowball method. The initial search of "Women Veteran healthcare" produced over 60,000 results. Utilizing search filters of "U.S. and United States" and the years from 1990 through 2000 and after 2001 narrowed the results to several hundred. Using a variety of the above-mentioned search terms further refined the number of

relevant articles. The result of the literature search within the University of Hawaii at Manoa Library in 2016-2017, OneSearch yielded 207 articles and 2 dissertations. Several of the articles were excluded as duplicate submissions to different journals, opinion pieces, and descriptive articles. In seeking research involving WV, the number of articles were narrowed to 78 citations specifically addressing access and utilization of VHA healthcare.

Due to the COVID-19 pandemic and the need for this researcher to focus on the Public Health Emergency for two years, a subsequent search of the literature was conducted in 2021 to determine the presence of new literature/studies focused on WV. The second review was limited to the intervening years, 2017 through 2022. OneSearch conducted through University of Hawai'i using the terms "Women Veterans Healthcare" and limiting to Peer Reviewed articles yielded 18,471 articles and six book chapters. Further search filters included U.S. and United States, as well as "Women Veterans Medical Care" and English language narrowed the results to 1,556 articles, six books/chapters and one webpage. Including the search terms of "Post 9/11", and "access/utilization" narrowed the results to 336. Upon adding the search term "barriers," 27 articles were found. Of this number, 15 new citations specifically addressed WV access and utilization of VHA healthcare and were included within the literature review. Sample sizes for the various studies ranged from over ten thousand to a single case study example. A total of nineteen studies included at least some data on VHA users and non-users. Combining the high percentage of WV healthcare research funded and conducted by the VHA (forty of the forty-eight) and the small number of studies including WV who do not utilize VHA healthcare supports the purpose of this study to identify factors impacting non-use/underutilization of earned VA healthcare entitlements by WV. Table 3, *Major Study Characteristics and Study Types* includes a summary of the combined literature reviews undertaken for this study.

A total of 48 publications included 40 of the studies funded by the VA and 29 of the studies included only those enrolled for VHA care. Thirty-nine studies identified WV as a focus or subset of the study population. Twenty-three studies assessed primarily mental health and PTS and another nine addressed maternity care. Thirty-seven studies address healthcare access and barriers. Of these, six were thematic analysis, six were in-person/virtual interviews, nine utilized computer-assisted telephone surveys, and six involved longitudinal surveys. The remainder were EHR review, secondary analysis, and systematic review of prior literature. There was one RCT found which included only VHA enrolled WV.

Seven studies referenced WV or WV healthcare access in the VHA, but did not have WV as a study population. Four studies in the literature review involved VHA providers and staff to assess awareness of gender role identity and sensitivity (Bastian et al., 2014; Bergman et al., 2015; Mattocks et al., 2010; Vogt et al., 2006), another was a concept analysis clarifying re-integration in relation to transition from Active-Duty to Veteran (Elnitski et al., 2017). While it is important to assess the views and beliefs of providers, there is a potential for respondent bias as the providers are senior clinicians in charge of assessing adequacy of their own programs. The sixth was a RAND study of 860,000 family members between 2004 to 2009 assessing healthcare utilization during the ADSM's deployment (Resnick et al., 2014). Assessing the well-being of family members is key to the ADSM, it is not the focus of this research. The seventh article in this grouping is a 2014 IOM assessment of PTS programs across DoD and VHA which did include items on VHA access, but did not have a significant focus on WV.

Twenty-three publications assessed men and WV, but five studies did not differentiate between genders during analysis (Epidemiology Program, 2002-2015, 2017; Pew Research Center, 2019; O'Toole et al., 2011; Wittrock et al., 2015; Zinzow et al., 2008) and yielded limited useful information about WV. Three studies focused on gender differences in mental healthcare

access (Bovin et al., 2019; Lam et al., 2017; Leung et al., 2020). Of note, two studies published in 2021 compared Post 9/11 Veterans and non-Veterans with documentation of suicidal ideation vs suicide attempts. Hoffmire collected data from a national survey of 15,082 Veterans (36.7% WV) and 4,638 non-Veterans (30.5% female). Male Veterans were found to have significantly increased lifetime suicidal ideation (SI) over non-Veteran male peers (O.R. 1.13). Women Veterans had significantly higher lifetime odds of suicide attempts over non-Veteran women (O.R. 1.35) (Hoffmire et al., 2021). A second significant study by Lawrence followed over 1,000 men and WV for years post military separation. The results indicated a need for the VHA to have longer running programs than the current policy of one year (Lawrence et al., 2021). Post 9/11 WV recorded dual identity transition challenges (from military to civilian and gender-based) whereas male Veterans had the challenge of military to civilian structure. The reintegration process for WV was noted as doubly complex which resulted in higher stress scores.

Two studies in the literature review assessed prevalence of MST in OEF/OIF Veterans and MST services perception of care. Data from the *National Health Study for a New Generation of U.S. Veterans* was conducted between 2009-2011 which included 30,000 Veterans deployed to OEF/OIF compared to 30,000 male and females who were not deployed regarding MST (while on active-duty), sexual harassment (while on active-duty) and sexual assault (after leaving active-duty and transitioning to Veteran status). Of those with a history of deployment to OEF/OIF, 20,563 Veterans responded and a similar number of Veterans with no deployment history participated (Barth et al., 2016). The percentage of respondents who reported sexual trauma is detailed in Table 4 below. It is important to note the Centers for Disease Control and Prevention (CDC) estimate, in the general U.S. population, one in four women and about one in twenty-six men experience sexual assault in their lifetimes (<https://www.cdc.gov/violenceprevention/sexualviolence/sexualvictimization.html>).

Table 4 MST, Sexual Harassment, and Sexual Assault by Gender and History of Deployment to OEF/OIF
<p>Veterans Experiencing Military Sexual Trauma Men Deployed: 3.7% Men Non-Deployed: 4.4% <i>Women Deployed: 41.1%</i> <i>Women Non-Deployed: 41.7%</i></p>
<p>Veterans Experiencing Sexual Harassment Men Deployed: 3.7% Men Non-Deployed: 4.3% <i>Women Deployed: 40.9%</i> <i>Women Non-Deployed: 41.2%</i></p>
<p>Veterans Experiencing Sexual Assault Men Deployed: 0.4% Men Non-Deployed: 0.6% <i>Women Deployed: 9.6%</i> <i>Women Non-Deployed: 10.2%</i></p>
<p>Barth et al., (2016). Military Sexual Trauma among recent Veterans: Correlates of sexual assault and sexual harassment.</p>

Monteith conducted a thematic analysis of fifty Veterans (32 WV, 18 male Veterans) who experienced MST. This study included volunteers who were not queried about enrollment in VHA care. WV who experienced MST had negative perceptions and reluctance to utilize VHA services, especially when they were often placed in group therapy with men. WV in these studies noted the distrust of VHA care and saw VHA providers as lacking compassion (Monteith et al., 2021).

An important study published in 2019 by Klap et al., evaluated the frequency of incidence of harassment at four VHA sites. Ninety-five Veterans (57 male, 38 female) participated in separate discussion groups which yielded significant differences between men and women’s impression of what constituted harassment. Male Veterans classified interactions as “harmless flirting” and women “just being overly sensitive” whereas WV reported feeling intimidated with an environment perceived as threatening. Common statements from WV

included "...male Vets just say, you're not a Veteran. Why are you here?" and "...you can't sit there. That's only for Veterans." (Klap et al., 2019, p.S88). This type of open hostility negatively impacts access for WV.

Four studies in the literature review focused on barrier reduction programs (Morgan et al., 2020), redeployment challenges and gender-based variance in prescribing practices for patients with a PTS diagnosis (Hadlandsmlyth et al., 2022), and a Pew Research Center comparison of views on service, sacrifices, and adjustment between military and civilian Americans in the Post 9/11 era (Pew Research Center, 2011). Important findings included forty-four percent of Post 9/11 Veterans felt readjustment after military service compared to twenty-five percent of Pre 9/11 Veterans, seventy-five percent of Post 9/11 Veterans reported persistent nightmares and flashbacks. The limitation of this survey of 1,853 Veterans was no stratification by gender. There were seven Pre 9/11 and 19 Post 9/11 WV which is significantly less than a representative sample.

A concerning finding in the Hadlandsmlyth et al., (2022) study was WV were noted to have different treatment practices than male peers. In a health records analysis of 878,000 Veterans with a diagnosis of PTS, 118,500 (13.5%) were WV. Within this study assessing health records documenting PTS treatment within the Veteran population using VHA healthcare services between 2010 to 2019, researchers noted WV were more often prescribed medications not recommended for PTS despite 2017 evidence-based VA/DoD clinical practice guidelines which delineated classes of medications were appropriate to treat PTS. Although the rates of prescribing not recommended medications decreased over the 10-year period of analysis, the difference in prescribing between women and men persisted, "including benzodiazepines, aOR = 1.62, 95% CI [1.59, 1.65]; anticonvulsants, aOR = 1.41, 95% CI [1.38, 1.44]; and antidepressants, aOR = 1.26, 95% CI [1.19, 1.33]" (Hadlandsmlyth et al., 2022, p.1).

Koenig (2014) conducted a qualitative, semi-structured interviews with 28 Veterans (17 male, 14 female) between 2008 to 2010 regarding transition to civilian status. While the focus was on redeployment challenges rather than healthcare access, there is evidence that reintegration challenges are barriers to access, especially in context of culture.

Two studies highlighted characteristics of different service eras. Dursa (2019) conducted a follow-up of an initial assessment of Gulf War era Veterans. The original study was conducted by Kang in 1995 which included VA and non-VA users. Kang's study population comprised of 30,000 Gulf War (1990s) era Veterans (20% WV). The follow-on study by Dursa included 14,852 Veterans with 2,883 WV (20%). In this Pre 9/11 population, WV had a higher prevalence of major depression, PTSD, and anxiety disorder than male Veterans. WV had higher odds of a diagnosis of migraine (O.R. 2.43), endocrine disorders (O.R. 3.77), and bladder infections (O.R. 6.21) than male Veterans. Sixty-four percent of WV in this study reported more than one chronic condition (mean 3.2) compared to fifty-six percent of male Veterans (Dursa et al., 2019). Ward et al., (2021) conducted an analysis of The Million Veteran Program (MVP) dataset which consists of self-reported racial/ethnic health disparities collected from 437,413 Veterans between 2011-2019. Analysis groups were divided by service era, race, and gender. Thirty-four percent of the sample were Post 9/11 Veterans and Nine percent were WV which is representative of the larger WV population. Of the WV in the dataset, forty-five percent utilized VHA for all their care, twenty-five percent used VHA healthcare for less than half of their care, and eight percent used no VHA healthcare.

Contained within the literature search were three large studies conducted by the Institute of Medicine (Institute of Medicine, 2013), Women's Health Evaluation Initiative (Frayne et al., 2014), and the Disabled American Veterans (Murphy & Hans, 2014).

The first literature review noted a total of three large analyses addressing WV issues. Captured in the second review were another iteration of the Women's Health Evaluation Initiative (WHEI) study, which was commissioned by the VA, (Frayne et al., 2018), a follow-on analysis by the Disabled American Veterans (DAV) (Disabled American Veterans, 2018) and one survey Women's Health Services of the Department of Veterans Affairs (Altarum Institute, 2015). The Altarum Institute study, *Study of Barriers to Care for Women Veterans 2015* focused on barriers to comprehensive healthcare for WV in response to Public Law 111-163, Sec. 201-Women Veterans Healthcare Matters. As this study's framework is the Andersen Behavioral Model of Health Services Use, the literature review is categorized by contextual (circumstances and environment) and individual factors which influence healthcare access and utilization, including factors that predispose individuals to use/not use services; enable or impede health services utilization; and recognition of the need for healthcare services (Kominski, 2014).

Yano and associates initiated the only RCT found in these two literature searches. As noted in a project report, this study occurred at twelve VHA sites with the intent to evaluate the Women's Health-Patient Aligned Care Teams (WH-PACT) model (Yano et al, 2016). The study included providers/staff in primary care and women's health clinics and VHA leaders between 2013 to 2017. The purpose of the evidence-base quality improvement (EBQI) programs was to improve VHA utilization by WV. While results have not been published to date, communication with Dr. Yano revealed encouraging findings. Specifically, Dr. Yano stated, "EBQI was effective at improving PACT team function, provider gender sensitivity and in reducing provider burnout. Women's clinics and general primary care clinics had clinic-specific improvements as well.... the Office of Women's Health has adopted EBQI for national implementation in every VA facility nationwide given results." (E.M. Yano, Personal communication, 2023). This may be a key

process to significantly move the needle towards improved access and utilization of VHA healthcare by WV.

Theoretical Framework: Behavioral Model of Health Services Use

This literature review was guided by Andersen's Behavioral Model of Health Services Use (BMHSU) through the context of predisposing, enabling, and need characteristics of U.S. Veterans' health services needs and use. The decision to use the BMHSU as a framework for this study was based on Andersen and colleagues' refinement of the framework to focus more closely on accommodating vulnerability factors into the framework which better analyzes access and equity in health services use. The BMHSU integrates predisposing, enabling, and need vulnerability variables to determine potential access on the individual level, such as having a trusted source of healthcare, insurance coverage, and presence of a service-connected disability.

Pre and Post 9/11 Women Veterans' Research in Context of the BMHSU Framework

Contextual Characteristics: Enabling Factors

Since the beginning of the Global War on Terror, these six large analyses addressed a wide range of WV issues. The three publications conducted by the WHEI focused only on WV who were enrolled in VHA healthcare, while the primary studies conducted through the VA revealed health policy issues surrounding availability of women's health providers, access issues (wait times, distance from services) did not include WV who did not utilize VHA healthcare. While the data is important, it sheds no light on the significant percentage of WV who do not utilize VHA healthcare. The analysis conducted by the Institute of Medicine, *Returning home from Iraq and Afghanistan: Assessment of readjustment needs of veterans, service members, and their families* (Institute of Medicine, 2013) was a broad inclusion of all Veterans with segments and a chapter addressing WV. Again, while important

data was collected on Enabling/Limiting factors of all Veterans, the veracity of ensuring a representative sample of WV in the larger Veteran population was not addressed.

Individual Characteristics: Enabling and Need

The two commissioned publications by the Disabled American Veterans (DAV) *Women Veterans: The Long Journey Home* (Murphy & Hans, 2014) and *Women Veterans: The journey ahead* (Disabled American Veterans, 2018) included WV who did and did not utilize VHA healthcare entitlements. These two publications captured factors related to Individual Characteristics within the BMHSU, specifically Need, which includes perceived knowledge of processes to access care and need for healthcare as well as Health Behaviors, including personal health practices, access to HC services, provider skills with gender-specific knowledge, and utilization of services.

The data gathered in these DAV studies prompted further investigation of their data by researchers and Congress. The findings of the smaller, targeted analyses elicited significant concerns as an indicator of how many WV may not utilize healthcare benefits even though they are eligible (Elnitsky et al., 2013; Monteith et al., 2021; Office of Data Governance and Analytics, 2017). The studies indicated the number of WV who experience low socioeconomic status and homelessness creates a significant concern for those who are not utilizing their earned healthcare entitlements (National Center for Veterans Analysis and Statistics, 2020; Office of Data Governance and Analytics, 2017). This is concerning on many fronts, including development of co-morbidities from lack of treatment, negative societal impacts, and disruption of transition from deployment.

Contextual Characteristics: Predisposing Factors-Demographics

The Veteran's Administration (VA) website (VetPop2018) projected almost twenty-two million living Veterans in the U.S. and over 2 million WV for FY2022. Of the entire population of

U.S. Veterans in VA projections for 2022, 3.5 million are from the Post 9/11 Service era and over 660,000 of the Post 9/11 Veterans are women (http://www.va.gov/vetdata/Veteran_Population.asp). This population's health behaviors vary from other Service era Veterans. This population is younger (average age 35), more technologically savvy, more educated (upon entry into the military), and over 25 percent have a service-connected disability including medical retirement at a younger age (National Center for Veterans Analysis and Statistics, 2019).

In analysis by the VA, the utilization rates for healthcare for Post 9/11 WV lagged behind all other Service era WV until 2017, yet this population of Post 9/11 WV has significantly higher rates of service-connected disability (32% Post 9/11; 17.4% all others). Post 9/11 WV were noted to have a lower rates of healthcare utilization than other Service era WV until 2017 ([VA Utilization Profile 2017.pdf](#)). This speaks to evidence of progress, but there continues to be a substantial number of WV who are missing access to earned healthcare entitlements.

Contextual Characteristics: Predisposing and Enabling Factors-Enrollment

A significant percentage of WV do not utilize VHA healthcare (Rohs et al., 2022). In a 2014 analysis by the VA, utilization rates for healthcare for Post 9/11 Veterans was lower than all other Service era Veterans, yet this population has a significantly higher rate of service-connected disability (32% Post 9/11; 17.4% all others). VHA care is measured by two parameters: enrollment and utilization of services during a 12-month period. Post 9/11 Veterans were enrolled at nearly 10 percent less than other Service era Veterans (37.3% vs 45.5%) and the trend continued for utilization at 19.9% vs 29.%. Within this low rate of VHA care utilization, Post 9/11 WV have a lower rate of healthcare utilization than other WV (18.3% Post 9/11; 24.7% all other WV) which speaks to the underlying problems facing the VA today and in the future (http://www.va.gov/vetdata/docs/SpecialReports/Post_911_Veterans_Profile_2014.pdf).

This trend continues in ongoing reports on VA healthcare access and utilization. WV have a lower rate of utilizing VA healthcare than male Veterans (32.7% vs 35.9%) yet were noted to have higher rates of service-connected disability (25.1% vs 22.8%). (National Center for Veterans Analysis and Statistics, 2017). A compounding factor was noted in an analysis of the 2010 Behavioral Risk Factor Surveillance System (BRFSS) which revealed WV healthcare utilization decreased along with a corresponding decrease in physical and mental health (Villigran et al., 2015). Another significant longitudinal study included trend analysis of healthcare use of recently separated Veterans, titled The Veteran Metrics Initiative (TVMI). TVMI is a 6-wave longitudinal study with semi-annual surveys conducted between 2016-2019. In 2016, a cohort of 49,865 Veterans were surveyed at 90 days post separation with a one-year follow-up survey. Respondents included 16 percent WV. At 90 days post separation, 60 percent of WV reported using healthcare versus 43 percent of male Veterans. At the one-year follow-up, 37 percent of WV used healthcare versus 26 percent of male Veterans. The most concerning finding was WV were twice as likely to use healthcare as male Veterans (OR, 2.15; 95% CL, 1.84- 2.52), but half as likely to utilize VHA healthcare which indicates WV are utilizing healthcare services outside the VHA (Copeland et al., 2020; Perkins et al., 2020).

This indicates a “red flag” for significant barriers for WV in need of healthcare as numerous studies noted similar trends for WV living in poverty, having no income, receiving subsistence aid (food stamps), and having no other health insurance (Batuman et al., 2011; Bean-Mayberry et al., 2011b; Elnitsky et al., 2013; Kehle-Forbes et al., 2017; Mustillo et al., 2017; Office of Data Governance and Analytics, 2017; Parker et al., 2019; Street et al., 2013; Vance et al., 2020). This creates a dire situation facing WV and warrants attention and action.

It is noted, there have been significant efforts by VHA personnel to create women’s clinics, enhance provider sensitivity, and engage in research about WV within the VHA clearly

increased the percentage of WV applying for benefits (Friedman et al., 2011; Grekin, et al., 2020; Katon et al., 2012; Mattocks et al., 2010; Mengeling et al., 2011; Parker et al., 2019; Resnick et al., 2012; Washington et al., 2003;). Despite the noteworthy efforts, the process for enrolling and accessing VHA entitlements by WV has not been given enough attention. Researchers note conditions including higher rates of mental health needs (PTS, MST, depression) are known to be associated with tendency towards social isolation, social phobias, fear of being in a military-like environment, and mistrust of the military system (Altarum Institute, 2015; Barth, et al., 2016; Crum-Cianflone & Jacobson, 2014; Curry, et al., 2014; Erbes et al., 2007; Feczner & Bjorklund, 2009; Frayne et al., 2011; Haskell et al., 2010; Larson & Norman, 2014; O'Brien et al., 2008; Oishi et al., 2011; Vespa, 2020; Wolff & Mills, 2016). Women with combat/trauma exposure have higher rates of mental health needs. If women who are transitioning from military service are not welcomed into the VA and made to feel safe, it is unlikely the numbers of enrolled will improve significantly.

Since women learn differently than men, the process of educating women transitioning from the military and assisting with completing the steps to determine eligibility may have better success if conducted in a woman-centered approach (Lehavot et. al, 2013). Addressing the unique learning and interaction needs of the WV demonstrates respect for their way of learning, which could increase the level of trust with the VA (Ahern et al., 2015; Alhussain, & Sambamoorthi, 2020; Vance et al., 2020; Vespa, 2020; Vogt et al., 2006). Determining the best options to engage WV to access/utilize VA entitlements is an obligation for those who sacrificed so much. It is critical to re-work the system during transition to access VHA care when the significant percentage of women who leave the military soon after deployment and move to areas remote from VA services. Failing to achieve a better understanding of the reasons WV do not access VHA care compounds the issues facing today's U.S. WV.

Literature Synthesis

Synopsis

The percentage of women serving in the military compared to men over the past 20 years is steadily increasing but remains less than 11% of the total Veteran population. This smaller percentage of women serving has resulted in a majority of the literature relegating WV data to footnotes in research. Seven studies included surveys of WV as a primary population, but more often the surveys targeted all Veterans which resulted in a small subset of WV in a larger male Veteran study. This potentially reduced the relevance of the survey as most the questions focused on male Veterans. Three of the studies focused on perceptions of care provided by VHA healthcare facility providers (Bergman, 2014; Yano et al., 2016; Mattocks et al., 2010). While it is important to assess the views and beliefs of providers, there is a potential for respondent bias as the providers are senior clinicians in charge of assessing adequacy of their own programs. Three studies included focus groups to solicit more detail about WV perceptions of gaps and barriers to VHA healthcare utilization (Aronson, 2019; Copeland, 2020; Vogt et al., 2018).

Less than 25% of studies in the Post 9/11 era included surveys of WV as a primary population. More often the surveys targeted all Veterans which resulted in a small subset of WV in a larger male Veteran study and in four studies, gender was not reported other than demographics. This potentially reduced the relevance of the survey as most the questions focused on male Veterans. A handful of studies included discussion groups and semi-structured interviews to solicit more detail about WV perceptions of gaps and barriers to VHA healthcare utilization. Maiocco & Smith (2016) conducted thematic analysis with eight WV who recently returned from deployment. Mankowski et al. (2015) conducted semi-structured interviews with twenty WV to identify barriers to re-integration which included role distress, relational issues,

mental/physical wounds, and VHA services. Klap et al., (2019) conducted discussion groups to determine the extent of harassment at four VHA facilities in 2016. Mankowski et al., (2015) conducted a Post 9/11 WV only longitudinal study of WV social support before, during and after deployment. The balance of the studies was based on secondary analysis of the larger data sets. The primary shortcoming of the secondary analysis studies was all focused-on WV who were enrolled in VHA healthcare.

Gaps in the Literature

The focus of much of the studies included in the literature review addressed the percentage of WV who discontinued VHA healthcare (attrition) after accessing and utilizing VHA care and the percentage of VHA facilities with comprehensive women's services vs. women's services embedded in primary care clinics. Sample sizes for the various studies ranged from over ten thousand to a solitary case study example. The following is a discussion of the findings of the studies included in the literature review.

VetPop2020 estimated 19.4 million living Veterans at the baseline of 9/30/2020. Information about Veterans is compiled from the U.S. Veterans Eligibility Trends and Statistics (USVETS) (U.S. Department of Veterans Affairs 2020) and other data sources such as the American Community Survey (ACS) (U.S. Census Bureau, 2020). More than two million are women who comprise over 10% of the total Veteran population (National Center for Veterans Analysis and Statistics, 2020).

In a National Survey of Veterans (NSV) conducted in 2010, a large percentage of Veterans indicated they knew little or nothing about veterans' healthcare benefits (National Survey of Veterans, 2010). This finding elicited significant concern by the VHA as an indicator of how many Veterans may not access healthcare benefits even though they are eligible. This unknown population is concerning on many fronts, including development of co-morbidities from

lack of treatment, negative societal impacts, and disruption of transition from deployment and active-duty service to Veteran status.

Although WV made up only 9.6% of the *enrolled* Veteran population in 2010, the number of women who enrolled and used the VHA grew more rapidly than male Veterans (Frayne et al., 2014). In a census of WV conducted in the early 2000’s, “among women veterans who use the VA, 42% depend on it as their sole source of healthcare” (Washington et al., 2003, p. 50). In 2007 and 2010, the VHA published guidelines to incorporate women’s healthcare services to all VA healthcare facilities, but the results were unequally applied and not easily accessed by WV in more remote locations (Oishi et al., 2011).

The Veterans’ Administration Pacific Islands Healthcare System (VAPIHCS) serves all Veterans across the Pacific including Hawai’i, American Samoa, Samoa, Guam, Mariana Islands, Marshall Islands, and the Armed Forces Pacific. In the state of Hawai’i, the number and percentage of WV continues to grow while the male Veteran population is declining as noted in Table 5: Hawai’i State Veteran Population 2017-2045 below.

Table 5 Hawai’i State Veteran Population 2017-2045			
	2017	2020	2045
Total Veteran Population	112,304	109,533	96,944
Male Veterans	100,400	97,188	83,083
Women Veterans	11,904 (10.6%)	12,365	13,861
Compiled from the U.S. Census Bureau. Veteran Statistics: Hawai’i (2023)			

As of 2014, the total number of WV eligible for healthcare enrollment in VAPIHCS was 14,507 with 11,515 residing in the state of Hawai’i. Of the over 11,500 WV, only 2,356 women were actively enrolled in VAPIHCS care with 326 in treatment for PTS (Hallry Ho, personal communication, October 21, 2014). In December 2022, VAPIHCS Director Robinson reported 5,837 enrolled WV and 5,424 WV actively receiving care (Director’s Veterans Message, 2022,

December 27). While the increase is encouraging, the reasons for other WV non-use is unknown.

Vogt, Bergeron, Salgado, Daley, Ouimette, & Wolfe (2006) completed a cross-sectional telephone survey of 1,662 WV who were accessed through the National Registry of Women Veterans (NRWV) to measure barriers to accessing care in VHA facilities. Factors noted as barriers to accessing care included lack of ease of access/use, availability of services, perceived difficulty in understanding service-connected disability status (which determines priority and cost for services within VHA), provider insensitivity, and unpleasant/disturbing physical environment characteristics of VHA facilities (Elnitsky et al., 2013; Frayne et al., 2011; Haskell et al., 2010). These factors were also noted in a 2011 cross-sectional telephone survey of over 3,600 WV regarding incidence of delayed or unmet healthcare needs in the prior 12 months. In Vogt et al. (2006) survey, one in five women stated they experienced delays in care or unmet healthcare needs. Additionally, the study noted higher percentages of unmet needs in younger age groups “36%, 29%, 16%, 7%, respectively, in 18-34, 35-39, 50-64, and 65+ age groups; $p < 0.001$ ” (Vogt et al., 2006, p. S655). Reasons included lack of insurance, cost of healthcare, transportation issues, inability to take off work, lack of understanding of VA care, perception of VA providers not being sensitive to women, and history of military sexual trauma.

Gaps in Access to Gender-Specific Care

A compounding issue impacting WV access to VHA care is the lack of availability of comprehensive women’s health services (Mengeling et al., 2011; Oishi et al., 2011). Although Congress passed the Veterans’ Healthcare Eligibility Reform Act of 1996 (PL104-62) which mandated the VA to reduce gender healthcare disparities, the reality is most VHA facilities are targeted towards men who comprise the greatest percentage of beneficiaries. The result of a 12-month study assessing twenty-one services considered to be a part of a comprehensive

women's healthcare program demonstrated a wide variability in on-site services. In a 2007 survey of 193 urban VHA sites, researchers noted fewer VHA sites offered reproductive health services on site in comparison to urban hospital-based clinics (Katon et al., 2012; Mattocks et al., 2010).

To bridge the gap in services, there is significant reliance on non-VHA healthcare providers (contract and fee basis) for women's healthcare delivery (Mengeling et al., 2011; Resnick, Mallampalli & Carter, 2012; Washington et al., 2003). When common women's healthcare services are not routinely available, the likelihood for fragmented care increases with corresponding decrease in confidence in the system (Lutwak & Dill, 2013).

Equally important is lack of data collection specifically targeted to identify WV healthcare needs (Disabled American Veterans, 2014). The number of WV increased exponentially since 9/11/2001 (National Center for Veterans Analysis and Statistics, 2011). The VHA reports an 80% increase in WV use of VHA health services between 2002-2012 (Frayne et al., 2014, p.22), and similar growth was noted in the 2018 Data Sourcebook (Frayne et al., 2018). This factor makes Post 9/11 WV the fastest growing segment of the Veteran population.

Women Veterans experience unique transition issues when returning from deployments in combat zones. Failure to consistently address these needs by VHA healthcare services erodes confidence of WV regarding VHA capabilities to address healthcare needs in a gender sensitive manner. Although women are clearly exposed to direct combat, trauma, and violence during deployments, many downplay the significance of their contributions and exposure. In a large scale, 2 phase study directed by Congress and conducted by the IOM from 2010 to 2012, focus groups were conducted in the second phase at 6 sites where large populations of military with deployment histories were located. One WV indicated she felt like once they returned from deployment, everything should just return to "normal," like nothing happened and they should

just forget everything that happened rather than dealing with the hurt, anger, and trauma of combat and violent death (Institute of Medicine, 2013).

The dramatic increase in the number of WV and the changing age distribution of WV warrants attention to the structure of the VHA to ensure adequate services and resources to address the healthcare needs of women who serve in the military (Wolfe et al., 2000). The number of WV under age 35 *increased 120% in the past decade* and will continue to push the curve for the next 20 years (Friedman et al., 2011).

The changing age demographics and healthcare needs of WV will significantly alter the shape and focus of the VHA, including the need for reproductive services as many OEF/OIF/OND Veterans are of childbearing age. The effects of a 20+ years of wartime military service in the U.S. since 9/11/2001 is creating a much different healthcare need spectrum compared to the VA beneficiaries of the previous two decades. The U.S. Department of Veterans Affairs at the VA.gov website lists the following as their current status regarding health services for women: Primary care which includes all preventative healthcare preventative measures in addition to gender-specific services such as gynecological and breast screening, birth control, pre-conception counseling, and menopausal support. Mental health services include routine screenings for mood and anxiety disorders, sexual trauma, intimate partner violence, and PTS.

With diligent community efforts, services specific to WV are improving, albeit sporadically. Significant improvements are still required to meet the national goal of providing optimal care promised to those who served. In 2014, one researcher noted one-third of the Department of Veterans Affairs medical centers did not have a gynecologist on staff and 18% of VHA clinics failed to hire at least one provider who specialized in women's health (Augustine, 2014). Military Sexual Trauma (MST) can have far-reaching physical and mental health

implications, and in 2014 researchers estimated one in five WV enrolled in VHA care were diagnosed with sequelae stemming from MST. Despite the high numbers of WV with MST history, one in three VHA facilities did not have enough staff specializing in sexual trauma care (Wolff & Mills, 2016).

The Disabled American Veterans organization (DAV) published a report on a large-scale study titled, *Women Veterans: The long journey home*, highlights 27 key policy and program recommendations required to adequately meet WV healthcare needs (Murphy & Hans, 2014). According to the study, the inconsistency in available services for WV compounds the difficulty for utilization and access to needed services. The DAV produced a second edition in 2018, titled, *Women Veterans: The journey ahead* which reassessed the status of the key recommendations through focus groups with WV, analyzing reports, and engaging policy experts. The report established 45 recommendations needing immediate action to address shortfalls in provision of a wide range of needs for WV including primary and mental health, community-based care, a dire need for shelter, legal assistance, career-producing education, individualized disability compensation application, and financial support to prevent homelessness. (Disabled American Veterans, 2018). One needed action is directly focused on the difficulty surrounding applying for, navigating, and understanding the complex system for disability ratings and compensation.

Gaps in Access: Complexity of VHA Disability Ratings

Misunderstood by many, the payment system for VHA services when the Veteran does not have a 100% service-connected disability rating is confusing and complex. If a Veteran claims multiple disabilities, the VA does not sum the total percentages to achieve a final rating. There is an overly complex formula based on categories of disabilities, which in some ways, are more complex than the IRS tax code. There are 21 pages of codes addressing various disability

ratings. For example, for one disability rated at 60% and another a 30% does not equate to 90%. A Combined Ratings Table is utilized by the VA which applies the next disability rating of 30% to the Veteran's remaining "unrated" 40%, which is 72%. The disability rating is rounded, so the example rating would be 70% (www.benefits.va.gov).

Many receive care for covered conditions, such as a back injury, but are not covered for mental healthcare unless the Veteran claims all possible injuries. If the Veteran does not make a claim for each specific injury, they can receive care at a lower priority and/or with a co-payment (fee-based) unless they go through the appeals process to add another disability to their rating. Adding to the complex paperwork process to claim disability, long wait times, cost-sharing for non-covered services, limited/inconsistent gender specific services are common complaints of WV (Vogt et al., 2018; Wagner, Dichter, & Mattocks, 2015).

Equally consternating are the Priority Groups which tier access to care. There are 8 tiers of priority for veterans and an additional 4 sub-priority groups (https://www.va.gov/HEALTHBENEFITS/resources/priority_groups.asp). Most Veterans are eligible for enrollment in VA healthcare, but often are burdened with cost-shares. When coupled with the incidence of lower income/poverty in WV, this is a barrier to healthcare access. Ten publications reviewed in the overview of research on WV challenges to accessing care by Street, Vogt, & Dutra (2009) addressed the disability rating and payment process as significant barriers to healthcare access.

The technological advances which increase survivability on the battlefield also increase the physical burden on the ADSM's body, including life-saving body armor and other protective equipment which can weigh 60-70 pounds. This does not include the standard load typically carried by the "boots on the ground" military person which averages another 60 pounds. This is a significant burden on a woman's body, but there is an equal incentive to meet the physical

demands managed by male peers (Batuman et al., 2011; Disabled American Veterans, 2018; Frayne et al., 2014). The top 3 issues facing more than 60 percent of WV who present for care while on active-duty include musculoskeletal, metabolic/endocrine, and mental health which are directly related to physical and mental stressors of military service (Hawaii Health Data Warehouse, 2014). This places an additional stressor on women who are often seen by their male peers as a burden on unit capabilities and require special treatment to be protected. The mental stress of performing when physically debilitated during deployments compounds trauma experiences. (Friedman et al., 2011; Yan et al, 2013). When WV leave the military and transition to Veteran status, WV note disappointment and even anger upon learning gender-specific services are not available (Evans et al., 2019; Maiocco & Smith, 2016).

Gaps in Healthcare Utilization for Women Veterans

The above issues are even more damaging when the feelings of betrayal and disconnection are reinforced by VA shortfalls in healthcare. A 2010 GAO report to Congress noted none of the VHA facilities (9 VA Medical Centers, 10 Community Based Outpatient Clinics, 10 Vet Centers) assessed were fully compliant with the VA mandate to provide privacy for WV. While the report indicated, all sites took steps to improve, there were cautions as the only sources of information were internal without validation from external reviewers (Government Accountability Office, 2010).

These factors may contribute to the small numbers of WV utilizing VA healthcare. Lack of gender-specific services, offering women's care as add-on to a male centric clinic setting, and difficulty accessing briefings about availability of VA eligibility are challenges for the ADSM who is transitioning to Veteran status. Transition from active-duty to VA patient can be related to being given a box of parts and told to build a working engine without instructions. A 2011 analysis of over 280,000 women in all States in the U.S., 5,877 women were noted to be

Veterans, Active Duty, or National Guard/Reserves (NG/R). In this analysis, WV noted poorer health, less exercise, increased rates of obesity, and more tobacco use than any other cohort. They also reported higher rates of depression and anxiety (Maiocco & Smith, 2016). Equally concerning were the high rates within National Guard/Reserves (Lehavot et al., 2012). This is significant as many of those deploying to combat zones are activated NG/R who return to disperse across the U.S. where military medical treatment facilities are not located (Wagner, Dichter, & Mattocks, 2015; Yan et al., 2013).

Critique of Current Literature

More WV health research was published during 2004-2008 than the preceding 25 years (Disabled American Veterans, 2014). Despite the increasing numbers of women serving in the military since 9/11/2001 and the increasing percentage of women who are eligible for care within the VHA for PTS and other health needs, the amount and level of research regarding women's healthcare needs remains primarily observational and focused on utilization and quality of care. The most significant gap noted in the literature review is addressing the healthcare needs of WV who do not enroll for VHA entitlements. Even in the largest (to date) study on utilization of VHA healthcare services by WV, the authors acknowledge the *denominator for all assessments* was based on WV who enroll and utilize VHA services at least once, so the questions about adequacy of services are only being answered by those WV who are within the VHA system (Frayne et al., 2014). There are over two million WV, but less than half are enrolled and use VHA health services. This leaves a significant number of WV who are not included in current research to determine why almost a million WV do not use their earned VHA healthcare entitlements.

There was another burst of publications that occurred during the Public Health Emergency for COVID-19 between 2019 and 2021, but most of the new publications utilized

data from earlier mentioned studies and were often based on data from the 2010 NSV. Other publications expanded on prior year's publications which focused on satisfaction metrics of WV who are already enrolled in VHA healthcare. In the review of almost 70 published articles during this time, only two new studies were found. One is The Veteran Metrics Initiative (TVMI) which assessed barriers to all VA services, not just healthcare. The themes identified were important as they mirrored prior study data on barriers to VHA access (Morgan et al., 2020). The second new study focused exclusively on mental healthcare access (National Academies of Sciences, Engineering, and Medicine 2018). While there are studies underway, there are significant gaps in knowledge which warrant further study, specifically to identify reasons WV do not use their earned VHA healthcare entitlements. Identifying reasons for non-use/underutilization can inform future program direction by the VHA to engage more WV in healthcare and potentially improve health outcomes.

Literature Review Conclusion

There is a percentage of WV who currently receive VHA care and another percentage of WV who do not need VHA care (no service-connected disability). The intent of this research is to identify the healthcare needs and reasons for non-use/underutilization of earned VHA healthcare benefits by Post 9/11 WV. To date, there is little, large-scale study focusing on the segment of WV whose enrollment status is "unknown," meaning the reasons for underutilization of VHA health services are undetermined. Are the reasons for non-use/underutilization of VHA health services entitlements the same as male Veterans? Do some of the gender issues unique to women discourage use of earned benefits? Specific gaps noted in existing WV health services use research includes lack of clinical and intervention programs/services for gender-specific care, unique challenges of female service member transition to civilian life, availability of women's lifespan care, and mental health conditions treatment (Bean-Mayberry et al., 2011).

Women Veterans are considered a vulnerable population based on their increased likelihood of co-morbidities, health disparities, and challenges to accessing healthcare services. Serving in a male dominated profession and coupled with the high rates of military sexual trauma (MST) and post-traumatic stress disorder (PTS) places WV at increased risk for missed/delayed/discouraged healthcare utilization (O'Toole et al., 2011). Female military members learn to integrate rapidly into a traditionally masculine culture, and while this is often an opportunity for service and professional growth, it does not ensure an equitable environment (Kelly, Nilsson, & Berkel, 2014). Additionally, military service members are conditioned to follow instructions and to not question directives. Even more so, many women are culturally indoctrinated to not question authority, so there is increased risk of WV to acquiesce to denied services, tolerate minimal or fragmented gender-specific care, and suffer from lack of care rather than travel away from family responsibilities for care. Structuring services within VHA to address the unique healthcare needs of WV from a population-specific perspective is culturally sensitive and more likely to effectively address the booming population of at-risk Post 9/11, combat era WV (O'Toole et al., 2011).

Although in recent history VHA programs were implemented to address Veteran's issues in the general population, the focus on the vulnerable WV population continues to lag behind in tailored, comprehensive services. As noted in the Women's Health Evaluation Initiative (WHEI) 2014 study, "the number of women veterans using VHA services increased by 80% in the past decade..." (Frayne et al., 2014, p. 22). If significant changes are not introduced to address the unique needs of the WV, the system is at-risk of being overwhelmed and failing this segment of the Veteran population. Due to government, financial barriers, and overtaxed programs, many Veterans are already experiencing a long waiting period to receive services (Jones et al., 2021; National Academies of Sciences, Engineering and Medicine, 2018). This

compounds the barriers for the smaller, but rapidly growing population of WV. Before adequacy of VHA health services needed by WV can be assessed, an accurate identification of WV needs who are not engaged in VHA healthcare must occur.

Therefore, further review of the NSV 2010 dataset will seek to answer some of the questions related to the gaps in knowledge. Creating a more robust knowledge base regarding the healthcare needs of WV can potentially improve health outcomes as well as establish more accepting and welcoming healthcare delivery systems for Veterans, especially those in marginalized and vulnerable populations.

Conceptual Framework

In recognition of the multi-faceted aspects of access and utilization of healthcare, Andersen's Behavioral Model of Health Services Use (BMHSU) was selected as the framework for this study. The BMHSU is shown in Figure 4 (pg. 38) Andersen developed the Behavioral Model of Health Services Use in 1968 (Aday & Andersen, 1981). Along with colleagues, Andersen continued to refine the model which assists in understanding healthcare utilization, measures equitable access to healthcare, and identifies gaps to develop policies to promote equitable access (Andersen, 1995). The adaptations (1994, 2000, and 2006) emphasize contextual characteristics at the aggregate level which is most applicable to assessing such a large organization as the VHA (Andersen, 2008; Kominski, 2014). The main focus of the most current model includes factors facilitating or impeding individual access to healthcare. In Andersen's sixth iteration of the BMHSU model, access is identified through a systematic recording of contextual characteristics, individual characteristics, health behaviors, and outcomes (Kominski, 2014). Contextual characteristics are influenced by life events including social status and personal beliefs, and outcomes are reflected by an individual's health status as well as individual consumer satisfaction. As shown in Figure 4 (pg. 38), the Andersen model

conceptualizes utilization of healthcare services in four components: contextual and individual characteristics, health behaviors, and health outcomes. The contextual and individual characteristics are further divided into predisposing, enabling, and need. Within this framework, multiple contextual factors influence WV use/non-use/underutilization of VHA health services. Examples of contextual factors include WV perception of services provided by VHA, such as accessibility to clinical appointments, appropriateness of gender-specific services and acceptability of the VHA environment. As noted in a study by Evans et al., “When viewed through a framework for achieving a high-quality healthcare system, the women veterans’ perceptions and contextual influences on their VA use point to actions needed to modify VA healthcare design and delivery with the aim of creating a more women veteran–centric culture of healthcare.” (Evans et al., 2019, Pg. 25).

The BMHSU is appropriate to define and measure the multiple characteristics impacting WV, including contextual characteristics including increased combat environment exposure and trauma (predisposing), identifying factors enable or discourage access, including availability of women’s services (enabling), and specific types of healthcare access needed by WV, including gender-specific services and specialized mental healthcare for PTS and MST (need). The most current BMHSU includes a health behaviors component focusing on health behaviors (process of medical care) and consumer satisfaction which addresses provider behaviors when interacting with patients. This factor is significant in relation to VHA access and utilization of healthcare by WV as previous studies cited perceived lack of provider sensitivity and skill in addressing women’s healthcare issues (Hamilton et al., 2013; Vogt et al., 2006; Washington et al., 2011a). The outcomes of the BMHSU incorporate individual perceptions of health and satisfaction with services along with provider input on the individuals’ health evaluation. These outcomes are important to WV healthcare within the VHA as approximately half of the

population of WV do not utilize their earned benefits (National Center for Veterans Statistics, 2020). The VHA focuses significant attention to the perception of quality of care of enrolled and engaged Veterans, but data is virtually absent regarding the consumer experience of those who either do not utilize VHA care and those who enroll, then disengage from VHA services (Hamilton et al., 2013).

In applying the characteristics (contextual and individual) of WV to the BMSHU framework as noted below in Figure 5, the following crosswalk is offered to demonstrate the appropriateness of framework selection and fit. The needs listed as components of contextual and individual characteristics directly impact the personal health practices and use of services (access and utilization) which can positively or negatively affect quality of life, self-esteem, and hope (outcomes).

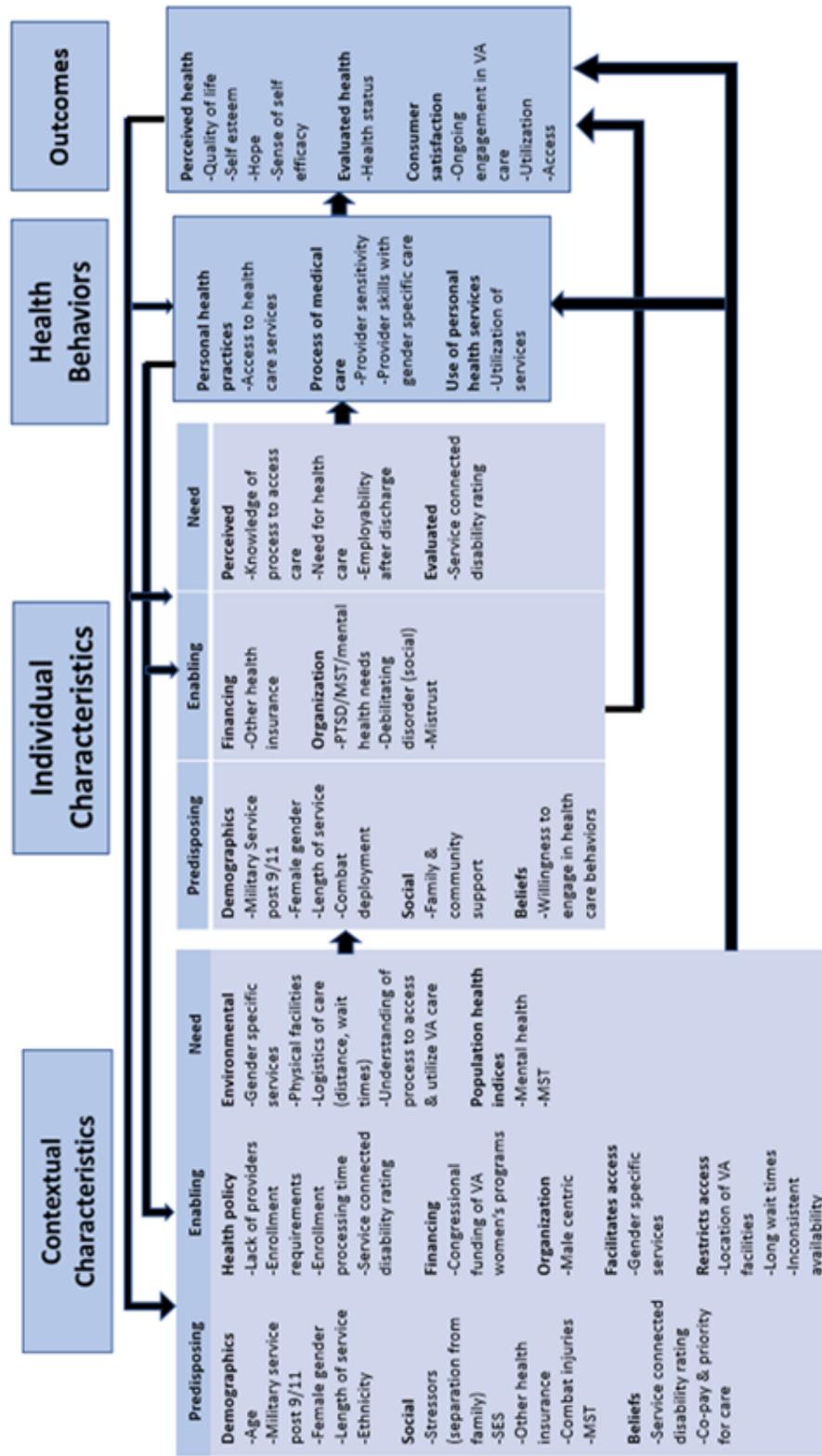


Figure 5 Behavioral Model of Health Services Use (BMHSU) with Overlay of WW Factors

Summary of Literature Review

Access and utilization of healthcare services is an important concept in health policy and health services research, yet it is one which has not been defined or applied consistently. Access to some refers to entry into or use of the healthcare system, but for others it encompasses the factors influencing entry or use of services, essentially the process of gaining access (Gulliford et al., 2002). Access is a complex concept which is noted to have several aspects in the concept definition; availability of services, adequate supply of services, and the opportunity to obtain desired services. If these factors are present, an individual may have access to a service (Gulliford, 2009). When the ability to access healthcare services is impacted by socioeconomic, organizational, and cultural barriers, the ability to utilize available services is limited.

Utilization is described by Aday and Andersen as gaining “access to satisfactory health outcomes” (1981, p. 7) based on affordability, ease of access to service locations (physical accessibility) and acceptability of services (as perceived by the user). So merely the presence/availability of access to services is insufficient in determining utilization of services.

The U.S. civilian population places value on the determinants of health and there is focus on groups of individuals who are underserved in access to quality healthcare. These determinants point to patterns of non-use/underutilization of healthcare based on sense of self efficacy, self-worth, perceived health state, and personal health practices (Andersen & Newman, 1973). For this study sample, Contextual Characteristics within the BMHSU framework include WV from two service eras, Pre 9/11 (1990 to August 2001) and Post 9/11 (September 2001-2010) as two groups which have inadequate utilization of VHA services. While women who serve in the military experience health consequences from service, the impact of

combat exposure is an additional unique characteristic which increases the need for health access.

In one research study on the gender-based effects of combat, questions were administered to provide depth to the understanding of the differences in women who experienced combat deployments since 9/11/2001 (Zinzow et al., 2008). Women were more likely than men to report handling human remains while men were more likely to engage in fire fights (shooting at enemy forces). These findings suggest women's role in combat environments may not be directly engaging with the enemy using deadly force, but their exposure to violence, the aftermath of violence, and traumatic exposures are significant factors which may not be acknowledged during post-deployment assessments. Coupled with the rigorous environment within war zones where privacy is non-existent, personal hygiene access is laborious, and physical hazards are overly abundant, WV with combat deployments are at risk for numerous and more intense health consequences. This includes injuries to the musculoskeletal system, reproductive cycle disruption, mental anguish due to violence, and emotional stress due to extended family separation (Batuman et al., 2011; Frayne et al., 2014; Murphy & Hans, 2014; Street, Vogt, & Dutra, 2009).

The ability of an active-duty service member (ADSM) to recover from the stresses and injuries of a combat deployment is linked to resiliency. The presence of self-esteem directly impacts the individual's ability to recognize and be willing to engage in a healthcare system to create positive change and recovery (Ferdinand et al., 2011). When women are physically assaulted or subjected to sexual harassment, the ability to recover from combat stressors is made even more difficult. The additional risk for women in the military includes sexual assault and sexual trauma. In large studies conducted by workgroups commissioned by the Department of Veterans' Affairs and directed by the U.S. Congress, researchers noted 20% of WV reported

experiencing military sexual trauma (MST) and another 20% experienced ongoing sexual harassment (Kimerling et al., 2010). The 30,000 Veteran, National Health Study for a New Generation of U.S. Veterans conducted between 2009-2011, noted even higher rates of MST, sexual harassment, and sexual assault (41.7%, 41.2%, 10.2% respectively) (Barth et al., 2016).

The presence of co-morbid health conditions can negatively impact a WV ability to engage in recovery from deployment experiences as well (Curry et al., 2014). Women with a history of sexual trauma often have more health concerns and may require longer appointment times to effectively use healthcare services. These same authors noted an increased level of distrust and blame towards military/VHA medical personnel which translates into reticence to access care in comparison to non-military women who experience sexual assault (Kelly et al., 2008). The process of returning to a high quality, post deployment state of being is noted to be a series of transitions, not an event. As noted by a WV participating in a DAV Women Veterans Focus Group on August 11, 2014, "Transition does not end when you first get out of the military. Veterans must have opportunities for later support as needs arise." (Murphy & Hans, 2014).

In one qualitative study by Ahern et al. (2015), investigators identified themes impacting transition. Most Veterans (n=24) felt the military served as a family, especially in support during stressful times. A sizable portion felt the military unit structure provided a sense of calm in the chaos of combat as well as an environment where military structure provided many daily requirements. Upon discharge, Veterans often feel they are lost, having too many decisions to make, and missing the structure/formality of military processes, rules, and policies (Ahern et al., 2015).

The purpose of this analysis is to gain a better understanding of VA healthcare benefit utilization patterns and factors influencing non-use/underutilization among post 9/11 WV. The intent is to apply the BMHSU framework in review of the NSV2010 population of WV to assess

the reasons for WV non-use/underutilization of VHA benefits entitlements, specifically utilization and access to gender-specific healthcare.

The specific aims of this study are to identify factors restricting access to VHA healthcare by WV and factors promoting access to VHA healthcare by WV, and identifying aspects/factors which describe the population of WV who do not access VHA healthcare.

Research questions for this study include:

1. Are there differences in VHA health services use for populations of Pre and Post 9/11 WV related to outcome variables?
2. What factors influence non-use/underutilization of VHA health services in Pre vs. Post 9/11 WV?
3. Does exposure to combat deployment influence non-use/underutilization of VHA health services in Post 9/11 WV?
4. What factors influence non-use/underutilization of VHA health services for Post 9/11 WV with combat deployments to Iraq and/or Afghanistan?

Summary of Chapter II

In essence, little is known about the reasons WV for non-use or underutilization of VHA healthcare entitlements. Anecdotally, WV lament the extremely laborious process to gain benefits only to find they cannot receive all their healthcare needs in one location (and with one provider). Often, women's health services are contracted to local community providers who do not have access to VHA electronic health records or understand the complexities of military culture and service, especially relating to combat trauma.

Within the context of this framework and study, when a WV utilizes VHA health services entitlements, the consequences include finding hope in achieving a more stable life and experiencing the ability (potential) to move beyond health issues to a healthier life. The BMHSU

highlights the factors which can lead to WV overcoming barriers to healthcare access, demonstrating resiliency in post deployment transition, exhibiting a sense of self-efficacy by successfully seeking out and using needed/desired healthcare, and expressing a personal perception of social support.

In reviewing the current literature regarding WV and VHA health services entitlements, there are few studies focused solely on the needs of this growing population of Veterans who have unique healthcare needs. Most large studies over the past 20 years grouped WV into a larger Veteran survey population and often only included those already enrolled in VHA healthcare.

Despite the increasing numbers of women serving in the military since 9/11/2001 and the increasing percentage of women who are eligible for care within the VHA, the amount and level of research regarding women's healthcare needs is observational and focused on those who use VHA services, or the quality of care rendered within the VHA. The most significant gap noted in the literature review is addressing the healthcare needs of WV who do not enroll or use VHA health services.

CHAPTER III

METHODOLOGY

Organization of the Chapter

In this chapter, the research questions, the research design, study population, domain advisors, instruments, data collection methodology, investigator involvement, operational and theoretical definitions, and data analysis methodology will be presented. Prior to the discussion of the methodology, an introductory overview will be presented in which the methodological context and factors are discussed.

Introductory Overview

As noted in Chapter II, choice of the BMHSU framework determines the study characteristics. The NSV2010 is a public dataset maintained by Veterans Affairs and is intended for open use. The method of data analysis for this study was quantitative. Although this data was collected in 2010, the selected service eras are similar in length (approximately 10 years) and encompasses one primarily peaceful military era and one wartime military era. The goal is to determine whether there is a difference between non-use/underutilization of earned healthcare entitlements between Pre/Post 9/11 WV and whether there is a correlation between deployment and non-use/underutilization of VHA health services benefits by WV who deployed to Iraq, Afghanistan, or other hazardous/combat duty locations.

As an edict from Congress, pertaining to Public Law 108-454, Section 805, the VA is mandated to conduct intermittent assessments of the awareness of VA benefits and services among living U.S. Veterans. There have been six national surveys conducted since the 1970s. The NSV2010 is the most recent national survey conducted. This national survey utilized a broad collection of records, including current Active-Duty Service Members (ADSM) maintained by the Defense Enrollment Eligibility Reporting System (DEERS) and the Defense Manpower

Data Center (DMDC) along with Veterans through the Veterans Benefits Administration (VBA) and VHA databases to create a unique record set representing personnel who are defined as being a U.S. Veteran (Washington, Sun, & Canning, 2010). This survey included those who were VHA users and non-users. Attention was given to stratification by service era to provide opportunity to assess use of all VA benefits by grouping of pre-Vietnam era, Vietnam era, Pre 9/11, and Post 9/11 service eras (National Survey of Veterans, 2010). The 2010 National Survey of Veterans is a national survey of a minimum of 10,000 participants eligible for VA benefits which is intended to represent a national cross-section of those eligible for various VA entitlements.

Methodological Approach

The methodology for this study is a quantitative, non-experimental, secondary analysis of a large data set maintained by the VA titled, the National Survey of Veterans 2010 (NSV 2010). The NSV 2010 is the most recent of national surveys “designed by the Department of Veterans Affairs (VA) to help plan for future programs and services for Veterans” (National Survey of Veterans, 2010, pg. 2). The population of U.S. Veterans included 21 million of which 2 million were WW. This population was determined through the VA/DoD Identity Repository (VADIR). The NSV 2010 data set consists of over 10,000 records from an address-based sampling (ABS) of living Veterans with a focused effort to ensure distribution of many groups of Veterans. The NSV 2010 collected data by mailing requests to complete either a 25-page, paper-based or web-based survey which was estimated to take 40-45 minutes to complete. If the survey was not completed, a postcard reminder request was mailed and a third option of completing the survey by telephone was added. It was noted approximately two percent of surveys were sent to spouses and surviving spouses and researchers noted the possibility of completion by other family members. The VA does have programs for some family members, so

a portion of the NSV 2010 surveys were targeted at family members. The family member surveys were removed for this analysis, which resulted in 8,710 living Veterans in this survey population. The remaining records were further filtered to include only WV.

One of the benefits of utilizing this data set is it includes WV who are engaged with the VHA, as well as non-users of VHA health services; therefore, the survey included the population of “unknown” WV as opposed to most of the surveys conducted within the VHA which targets only those enrolled for VHA healthcare. This was an important decision for selecting this data set as it permitted evaluation of the seemingly invisible WV population of non-users. Extracting this information from the original data set permitted assessment of how many WV who are eligible, but do not use VHA entitlements. This provided an opportunity to gain some insights into reasons for non-use/underutilization of VHA health services.

The NSV 2010 included items detailing why respondents whether Veterans ever applied for a service-connected (SC) disability and/or healthcare entitlements. The survey also assessed basic understanding of the various VHA entitlements and proximity of VHA services to a Veteran’s home.

While enrollment for VHA care is straightforward, it is not automatically free for all health services. The cost share for the Veteran is dependent on disability rating (if any). The response choices focusing on reasons for non-use/underutilization include volume of necessary paperwork to receive a SC disability rating, such as requirements to present detailed medical record documentation. The responsibility for gathering necessary documentation and statements often results in six to twelve months from application to decision on disability compensation rating. If the Veteran is not satisfied, the appeals process can be lengthy, often over a year. Several of the survey items allowed selection of multiple reasons/answers which lends to regression analysis to further refine differences to account for significant variance

between populations. Other multiple-choice items with an option to choose “other” queried the perceptions of WV regarding what services are/are not available through the VHA, including gender-specific services, and specific factors deterring WV from seeking VHA health services.

Research Data Source and Permission

The 2010 NSV was published in November 2011 and is located at <https://www.va.gov/vetdata/surveys.asp>. This data set is published by the U.S. Department of Veterans’ Affairs, licensed for open, public use under Creative Commons CC Zero License (cc-zero). The metafile is licensed for reuse and is maintained by Tom Garin (tom.garin@va.gov) with the intent to allow researchers to assess awareness and knowledge of VA services and benefits among Veteran groups (<https://catalog.data.gov/dataset/national-survey-of-veterans>). The 2010 NSV included anonymized data from all respondents. The target population for the NSV 2010 was identified through an address-based list from which stratified random participants were selected. The 2010 NSV instruments focused on the spectrum of all VA services and programs including healthcare, disability, pensions, home loan guaranty, education, and other areas divided into sections. This allowed respondents to skip sections that did not apply and increased the likelihood of completion of a lengthy survey.

Requesting permission to access was not required as the metadata file is downloadable via the Department of Veterans’ Affairs Cooperative Studies Program (CSP) website (<https://www.vacsp.research.va.gov/CSPEC/Studies/INVESTD-R/Ntl-Survey-Veteran.asp>) as well as Data.gov. The public data file with listed variables and codebook were downloaded. Specific data related to WV healthcare needs and reasons for not utilizing VHA entitlements were extracted from the data file with the intent to compare Pre/Post 9/11 WV who do utilize VHA healthcare and those who do not access/utilize VHA healthcare.

Purpose

The purpose of this analysis was to gain a better understanding of VHA healthcare benefit utilization patterns and factors influencing use of VHA health services among Pre and Post 9/11 WV. The goal was to determine whether there was a difference between non-use/underutilization of earned healthcare entitlements between Pre/Post 9/11 WV and whether there was a correlation between deployment and non-use/underutilization of VHA health services benefits by WV who deployed to Iraq, Afghanistan, or other hazardous/combat duty locations. The specific aims of this study were to identify factors restricting access to VHA healthcare by two populations of WV (within the NSV2010), identify factors enabling use of VHA healthcare by WV, and identify characteristics which describe the populations of Pre and Post 9/11 WV who do not use VHA healthcare.

The intent was to assist in targeting programs to increase utilization of healthcare benefits for a population at-risk for more service-related conditions.

Aims and Objectives

While the purpose of this study was to determine the reasons for WV non-use/underutilization of VHA health services entitlements with overarching factors related to access and use of gender-specific healthcare. The specific aims of this study were to apply the BMHSU developed and modified by Andersen (Kominski, 2014) related to non-use/underutilization of VHA health services by WV. Specifically identifying factors acting as barriers to WV access to VHA healthcare use and factors enabling access to VHA health services, as well as identifying self-reported limiting factors for WV who do not utilize VHA health services by a series of descriptive comparative analyses between Pre-Post 9/11 WV. A secondary dataset analysis sought similar correlation between Post 9/11 WV with/without a history of deployment to Iraq and/or Afghanistan. This researcher sought to determine factors

which facilitated engagement in VHA health services and factors leading to non-use/underutilization of VHA health services for Post 9/11 WV.

Framework: General Development of the Behavioral Model of Health Services Use

Andersen's Behavioral Model of Health Services Use (BMHSU) was selected as the framework to organize and understand the multi-faceted aspects impacting WV access and utilization of VHA healthcare considered in this study. The BMHSU framework was originally set out by Andersen in 1968 and further developed by Andersen and Newman. In 1973, they conceptualized the model as an interplay between societal determinants, individual characteristics, and the health service system, all of which ultimately influence health services utilization. Andersen and colleagues continued to refine the model to detect patterns and trends to explain healthcare utilization as a function of predictive variables, measure equitable access to healthcare, and to identify gaps, all of which are used to assist in developing policies promoting equitable access (Andersen, 2008). The current version of the BHMSU focuses on contextual characteristics and individual determinants at the aggregate level which is most applicable to assessing such a large organization as the VHA. The BMHSU is appropriate to conceptualize and measure access and actual use of healthcare, specifically to assess interaction of the multiple contextual and individual factors influencing health and healthcare access by WV. The most recent adaptation is noted in Figure 5 (pg. 72) which includes contextual and individual characteristics influencing health behaviors and health-related outcomes (Kominski, 2014, p. 35).

The BMHSU is appropriate for the purposes of this study, as the model assists to conceptualize and measure access and actual use of healthcare, considering the multiple contextual and individual factors influencing health and healthcare access by WV. The needs listed as components of contextual and individual characteristics directly impact the personal

health practices and use of services (access and utilization) which can positively or negatively affect quality of life, self-esteem, and hope (outcomes). Contextual characteristics alone or combined with individual characteristics can influence measurable health behaviors and outcomes. The contextual factors and individual factors influencing health services use include predisposing, enabling and need characteristics.

The multiple characteristics impacting WV include increased deployment to combat environments and risk for trauma exposure (predisposing), identification of factors which enable or discourage access/utilization, and availability of women's services (enabling). This includes specific types of healthcare access needed by WV, such as gender-specific services and specialized mental healthcare for PTS and MST (need). The most current BMHSU model includes a component focusing on health behaviors (medical care process) which encompasses provider behaviors when interacting with patients. In numerous studies, WV indicated the medical care process negatively influenced VHA access and use of health services, citing perceived lack of provider sensitivity and skill in addressing women's healthcare issues (Hamilton et al., 2013; Vogt, et al., 2006; Washington et al., 2011b).

The BMHSU framework is modified to fit contextual and individual characteristics of WV participating in healthcare services through the VHA to assess health services use and outcomes. In applying the characteristics (contextual and individual) of WV to the BMSHU framework, the following crosswalk as illustrated in Figure 5 (pg. 72) is offered to demonstrate the appropriateness of framework selection and fit. The needs listed as components of contextual and individual characteristics directly impact the personal health practices and use of services (access and utilization) which can positively or negatively affect quality of life, self-esteem, and hope (outcomes).

Data Collection and Procedure

Data collection procedure began by accessing the NSV 2010 de-identified public data set through Data.gov. A sample within the NSV2010 data set was extracted encompassing the study sample of Pre and Post 9/11 WV. The Pre 9/11 WV sample consisted of all WV categorized as serving between 1990 and August 2001 and the Post 9/11 WV included all those serving after September 11, 2001. While the total NSV 2010 sample is over 10,000 records, the number of respondents fitting the inclusion criteria was smaller. The process for this study included selecting every record meeting inclusion criterion for each sample population, which was intended to improve chances of a representative sample of the larger sample and to control for bias. Analysis of this data set included comparisons of selected demographic and descriptive variables between the two WV service era groups. A series of chi squared tests of independence were conducted to determine if the predisposing, enabling, and need predictor variables were independent from the three outcome variables of Enrolled in VHA healthcare, Used primary healthcare in the last six months, and Used women's healthcare in the last year, respectively. For each test, there were two levels for each of the outcome variables (yes and no), and two levels for each of the predictor variables (yes and no). Therefore, 2x2 contingency tables were created for each pair of variables. Finally, unadjusted odds ratios were also calculated for each pair of variables. Correlation between Post 9/11 WV by use of nonparametric tests (post hoc tests) was conducted due to small cell sizes. Analysis of reasons (frequencies and percentages) for not enrolling for VHA health services were conducted as well as determining sources of financial support (insurance) to pay for used health services within or external to the VHA. Binary logistic regressions were conducted to determine which predictor variables accounted for significant variance between WV service era groups and outcome variables. A secondary dataset analysis repeated the above statistical tests for the Post 9/11

WV service era group filtered by combat deployment to OEF/OIF. The intent of the second dataset analysis was to assess for differences between Post 9/11 WV who did/did not experience combat deployments. The goal was to determine whether combat deployments and the resulting health conditions impact WV who are combat Veteran's non-use/underutilization of VHA health services.

The public data file with listed variables and codebook were downloaded from the VA.gov public research site. Specific questions related to WV healthcare needs as well as the cited reasons for non-use of VHA health services were extracted. Selected predictor variables which fit the BMHSU predisposing, enabling, and need characteristics were analyzed with the intent to compare WV who use VHA health services compared to those who do not use VHA health services. The demographic and descriptive characteristics of the service era groups were presented.

Population/Sample/Setting

As noted in Figure 6, a model depicting the populations and variables assists in focusing on the population of interest. In an effort to determine what barriers exist for WV non-use/underutilization of VHA healthcare entitlements, this study sample were those within the larger NSV 2010 data set who identify as female gender with U.S. military service. The two sample populations consisted of Pre 9/11

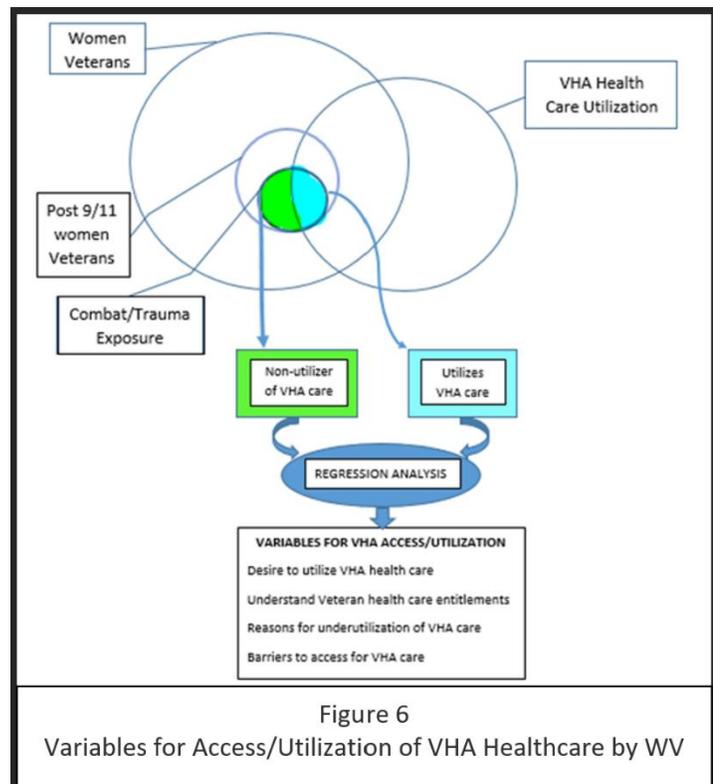


Figure 6
Variables for Access/Utilization of VHA Healthcare by WV

(1990-2000) and Post 9/11 (2001-2010) WV identified in the codebook as Period8 and Period9, respectively. Additional criteria included those noted as eligible for VHA services (other than dishonorable discharge), Post 9/11 combat deployment experience, and status of use of VHA health services entitlements.

Sampling

Within the NSV 2010, a total of 10,972 surveys were completed across the various survey populations of interest to the VA, including 8,710 surveys completed by Veterans. The response rate for the Veteran survey was 66.7%, and the researchers estimated the effective coverage rate to be 38.8% (Washington, Sun, & Canning, 2010). There were 500 WV included in the NSV 2010. Of this number of respondents, 282 were identified in the two populations of interest. The remainder of female respondents were from other service eras, thus excluded from the sample.

Table 6 NSV 2010 Selected Populations		
Population	Number of records	Percent of Completed surveys
All NSV 2010 respondents	10,972	100%
Veterans	8,710	79.4%
Women Veterans	500	4.56%
Pre 9/11 WV	158	1.4%
Pre 9/11 WV with and without combat deployment	32/126*	N/A
Pre 9/11 WV not enrolled for VHA care and with/without combat deployment	10/16/6(N/A)**	N/A
Post 9/11 WV (includes 56 WV who served in Pre 9/11 service era too)	124	1.13%

Post 9/11 WV with and without combat deployment	63/61*	N/A
Post 9/11 WV who were not enrolled for VHA care and with/without combat deployment	21/32/10 (N/A)**	N/A

*With deployment/Without deployment

**With deployment/Without deployment/Not ascertained

Due to the prevalence of cell phones, the 2010 NSV researchers utilized the Address-Based Sampling (ABS) method which used the U.S. Postal Service (USPS) listing of residential mailing addresses. The mailing list was generated from all regions in the U.S. to create a random stratified sampling. The researchers also mailed paper surveys via the USPS to solicit participation from a wide array of respondents. The letter included with the survey provided an option to complete the survey via computer (Washington et al., 2006).

Inclusion Criteria

Table 7: Inclusion Criteria Primary Data Analysis	
Inclusion Criteria	Type of Data Answer
Female Veteran (GENDER)	Yes/No
Pre 9/11 service (Period8)	Yes/No
Post 9/11 service (Period9)	Yes/No

This secondary analysis of the 8,710 Veteran records in the dataset included females with U.S. military service in two service eras, Pre 9/11 (1990 to August 2001) and Post 9/11 (September 11, 2001 to 2010). Age was an inclusion criterion. Typically, those aged 18-50 are consistent with eligibility to serve on active-duty. For purposes of analysis, Age was categorized to younger than 35 and older than 35 which is used by the VA to separate childbearing age groups. Additional inclusion criteria were VHA health services eligible WV which included those discharged from military service under honorable or general discharge status and those

medically retired. Veterans separated with a dishonorable discharge were excluded as they are not eligible for VHA care.

Data analysis began by accessing the 2010 NSV de-identified public data set through the Department of Veterans' Affairs website and Data.gov. The sample in this analysis was a subset of the larger WV population contained in the 2010 NSV. The process for sample record inclusion was 100% of the records meeting the three criteria listed in Table 7. The two comparison groups were the service eras of interest (independent variables). Table 8 below lists the three outcome (dependent) variables selected from the survey. For each outcome variables, the survey included items to further address reasons for non-use of VHA health services and sources of financial support for used primary and women's health care outside the VHA.

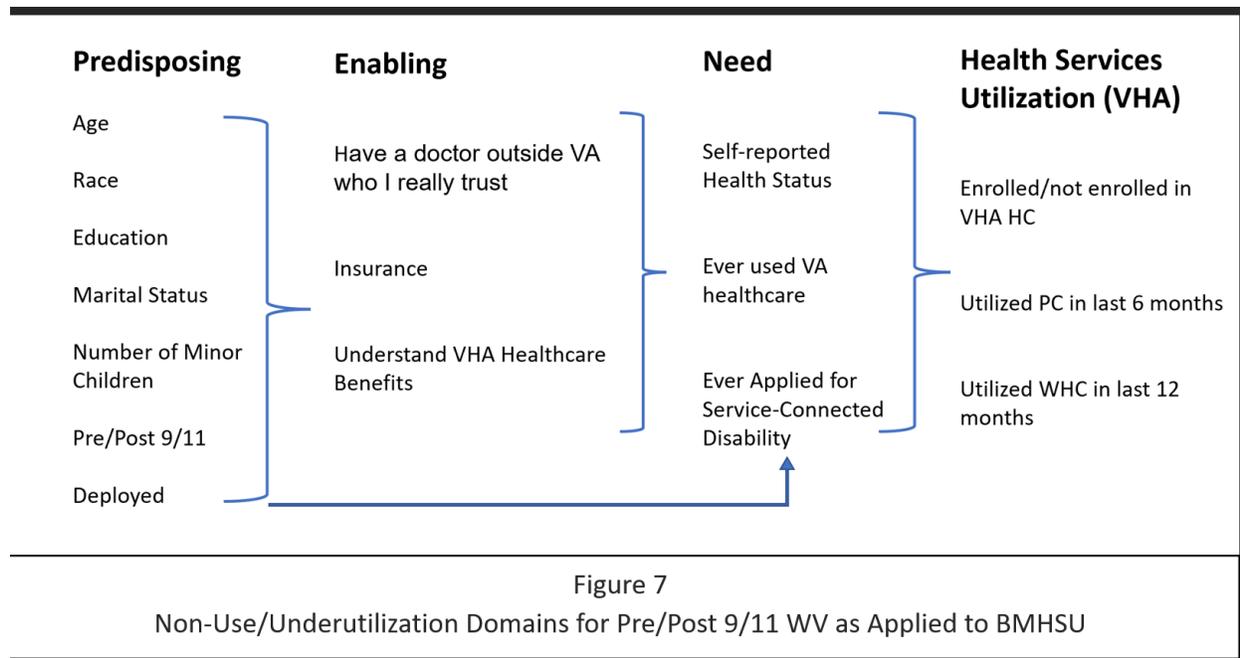
Table 8: Outcome Variables	
Outcome Variables	Type of Data Answer
Not enrolled to receive VHA healthcare	Yes/No/Not Ascertained
Used primary care within the preceding 6 months	Yes/No/Not Ascertained
Used gender specific care within the preceding 12 months	Yes/No/Not Ascertained

Table 9 lists the inclusion criteria for the secondary analysis for WV who did/did not deploy to Iraq and or Afghanistan.

Table 9: Inclusion Criteria for Secondary Data Analysis	
Inclusion Criteria	Type of Data Answer
Female Veteran (GENDER)	Yes/No/Not Ascertained
Post 9/11 service (Period9)	Yes/No/Not Ascertained
Deployment to Iraq or Afghanistan (OEF)	Yes/No/Not Ascertained

Predictor Variables

The inclusion criteria noted in Tables 7 and 9 were used to extract the records based on items contained in the NSV 2010. The predictor variables were selected and categorized under the three characteristics of the BMHSU. In alignment with the BMHSU, selected predictor variables were matched to the crosswalk for predisposing, enabling, and need characteristics as illustrated in Figure 7. Due to the number of variables, the BMHSU characteristics provided a means to group contextually similar survey items and responses to facilitate meaningful regression analysis.



Binary logistic regression was conducted to determine if there was a predictive relationship of predisposing characteristics variables, enabling characteristics variables, and need characteristics variables on the outcome variables of Ever enrolled in VHA healthcare, Used primary care in the last 6 months, and Used women's healthcare in the last twelve months, respectively. Table 10 lists the domains, survey responses, and compressed (coded) responses for use in binary logistic regressions. Items in tables with ** designation allowed

multiple answers resulting in a potential for more answers than respondents. For those predictor variables demonstrating significance, the matched follow-on items were assessed for frequencies and percentages.

Table 10: Predictor Variables Grouped by BMHSU Characteristics and Coded for Binary Logistic Regression Analysis		
Predisposing Characteristics	Survey Responses	Coded Responses
Age	Birth Year	1-Under age 35, inclusive 2-Over age 35 8-NA
Race	0-Not checked 1-White 2-Black/African American 3-American Indian/Alaska Native 4-Asian Indian 5-Chinese 6-Filipino 7-Other Asian 8-Native Hawaiian 9-Guamanian/Chamorro 10-Samoan 11-Other Pacific Islander	1-White 2-Black/African American 3-Other 8-Not checked
Highest Degree/Level of Education	N-Not Ascertained 1-Less than high school 2-High School Diploma/GED 3-Less than 1 year of college 4-1 or more years of college, no degree 5-Associate degree 6-Bachelor's degree 7-Master's degree 8-Professional degree beyond BS/BA (MD, DDS, DVM, LLB, JD) 9-Doctorate Degree (PhD, EdD)	1-Less than high school, High school diploma/GED, Less than 1 year of college, 1 or more years of college, no degree 2-Associate degree, Bachelor's degree, Master's degree, Professional degree, Doctorate 8-NA
Marital Status	0-Not Ascertained 1-Now married 2-Widowed 3-Divorced 4-Separated 5-Never married	1-Married/Civil Union 2-Widowed, Divorced, Separated, Never married

	6-Civil commitment/Union	8-NA
Number of Minor Children	N-Not Ascertained 0-Number of children range 1- 2- 3- 4- 5- 6- 7- 8- 9- 15- 23- 30-	1-Presence of minor children 2-No children 8-NA
Enabling Characteristics	Survey Responses	Coded Responses
I have a doctor outside VA who I really trust.	1-Completely agree 2-Agree 3-Neither agree nor disagree 4-Disagree 5-Completely disagree 8-Don't know	1-Completely agree, Agree, Neutral 2-Disagree, Completely disagree 8-Don't know, NA
**Are you CURRENTLY covered by any of the following types of health insurance or health coverage plans?	1-No health insurance 2-Insurance through a current or former employer or union (of yours or another family member) 3-Insurance purchased directly from an insurance company (by you or another family member) 4-Medicare, for people 65 and older, or people with certain disabilities 5-Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability 6-VA (including those who have ever used or enrolled for VA health care) 7-TRICARE, TRICARE for Life or other military health care 8-Indian Health Service 9-Any other type of health insurance or health coverage plan (Open Comment box) N-Not Ascertained, Not checked	1-Yes, health insurance of any type 2-No health insurance
How much do you understand about Veterans	1-A lot 2-Some	1-A lot, Some 2-A little, Not at all

healthcare benefits you're entitled to?	3-A little 4-Not at all N-Not Ascertained	8-NA
Need Characteristics	Survey Responses	Coded Responses
In general, would you say your health is...	1-Excellent 2-Very good 3-Good 4-Fair 5-Poor N-Not Ascertained	1-Excellent, Very good, Good 2-Fair, Poor 8-NA
Have you ever used any VA healthcare?	1-Yes 2-No 8-Don't know N-Not Ascertained, S-Skipped, V-Valid Skip	Same
Have you ever applied for VA disability compensation benefits?	1-Yes 2-No N-Not Ascertained	Same
**What are the reasons you haven't applied for any VA disability benefits?	1-Don't have a service-connected disability 2-Not aware of VA service-connected disability program 3-Don't think I'm entitled or eligible 4-Getting military disability pay 5-Getting disability income from another source 6-Don't think disability is severe enough 7-Don't know how to apply 8-Don't want any assistance 9-Don't need assistance 10-Applying is too much trouble or red tape 11-Never thought about it 12-Other: Open comment box 13-Don't know N-Not Ascertained, S-Skipped, V-Valid Skip	
Outcome Variable: In the last six months, have you had outpatient care for doctor visits, urgent care, routine exams, medical tests, or shots?	1-Yes 2-No N-Not Ascertained, S-Skipped, V-Valid Skip	Same
**What source or sources provided the financial support for that care?	1-VA (Department of Veterans Affairs) 2-CHAMPUS, CHAMPVA, or TRICARE (military)	

	<p>3-Medicare, including Medigap supplement</p> <p>4-Medicaid/Medical Assistance</p> <p>5-Some other federal/state/local government program</p> <p>6-Private insurance purchased directly or by a family member, through a union, or from a current or former employer</p> <p>7-Out of pocket by you or your family (copayment)</p> <p>8-Some other source</p> <p>N-Not Ascertained, S-Skipped, V-Valid Skip</p>	
<p>**What are the reasons` you never used any VA healthcare benefits?</p>	<p>1-Did not need any care</p> <p>2-Not aware of VA healthcare benefits</p> <p>3-Not entitled to or eligible for healthcare benefits</p> <p>4-Did not need or want assistance from VA</p> <p>5- Too much trouble or red tape</p> <p>6-Never considered getting any healthcare from VA</p> <p>7-Don't think VA health care would be as good as that available elsewhere</p> <p>8-I use other sources for health care</p> <p>9-VA care is difficult to access (parking, distance, appointment availability)</p> <p>10-Applied, but was told that I am not eligible</p> <p>11-Other: Open comment box</p> <p>12-Don't know</p> <p>N-Not Ascertained, S-Skipped, V-Valid Skip</p>	
<p>Outcome Variable: During the past 12 months, have you used women's healthcare services, for example, for pap smears or prenatal care from VA or other providers?</p>	<p>1-Yes</p> <p>2-No</p> <p>N-Not Ascertained, S-Skipped, V-Valid Skip</p>	
<p>During the past 12 months, have you received women's</p>	<p>1-A primary care clinic at a VA facility</p> <p>2-A women's health clinic or gynecology clinic at a VA facility</p>	

healthcare services at any of the following?	3-Any provider or facility outside VA, but paid for by VA 4-Any provider or facility outside VA, not paid for by VA 5-Any women's healthcare provider or gynecology clinic outside VA, not paid for by VA N-Not Ascertained, S-Skipped, V-Valid Skip	
**Multiple answers allowed		

The variables listed in Table 11 were considered to further describe the populations. Selected variables were used to further summarize the WV service era groups using descriptive statistics of frequencies and percentages.

Table 11: Descriptive/Demographic Variables		
Variables	Type of Data Answer	Adjusted Coding
Branch of Service	0-Not checked 1-Army 2-Navy 3-Air Force 4-Marine Corps 5-Coast Guard 6-Other (not specified) N-Not Ascertained	Same
Hispanic/Latino Origin	N-Not Ascertained 1-No, Not Hispanic/Latino/Spanish 2-Yes, Cuban 3-Yes, Mexican, Mexican American, Chicano 4-Yes, Puerto Rican 5-Yes, Other Hispanic/Latino/Spanish	1-Yes, Cuban, Mexican, Mexican American, Chicano, Puerto Rican, Other Hispanic/Latino/Spanish 2-No, Not Hispanic/Latino/Spanish 8-NA
In the last 6 months, did you use any VA healthcare services, or did you have any of your healthcare paid for by VA?	1-Yes – I received services at VA, or they were paid for by VA 2-No – I received services, but not from VA and were not paid for by VA 3-No – I did not receive any healthcare services 8-Don't know/Don't remember	1-Strongly agree, Agree, Neutral 2-Disagree, Strongly disagree 8-NA

	N-Not Ascertained, S-Skipped, V-Valid Skip	
**What were the reasons you didn't use the VA healthcare services in the past six months?	1-Do not need any care 2-Not aware of the VA health care benefits 3-Do not believe I'm entitled to or eligible for health care benefits 4-Bad prior experience 5-Do not know how to apply for health care benefits 6-Do not need or want assistance from VA 7-Applying for health care benefits too much trouble or red tape 8-Never considered getting any health care from VA 9-Don't think VA health care would be as good as that available elsewhere 10-Uses other sources for health care 11-VA care is difficult to access (parking and/or appointment availability) 12-VA care is difficult to access due to distance 13-I do not feel welcome at VA 14-VA does not provide the services that I need 15-Other: Open Comment box 16-Don't know N-Not Ascertained, S-Skipped, V-Valid Skip	1-Completely agree, Agree, Neutral 2-Disagree, Completely disagree 8-Don't know, NA
**What source or sources provided the financial support for that care?	1-VA (Department of Veterans Affairs) 2-CHAMPUS, CHAMPVA, or TRICARE (military) 3-Medicare, including Medigap supplement 4-Medicaid/Medical Assistance 5-Some other federal/state/local government program	

	6-Private insurance purchased directly or by a family member, through a union, or from a current or former employer 7-Out of pocket by you or your family (copayment) 8-Some other source N-Not Ascertained, S-Skipped, V-Valid Skip	
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Analysis of Primary and Secondary Data Sets

Analysis of Primary Data Set

Analysis of the primary data set included a comparative description between Pre and Post 9/11 WV (Gender*Period8) and (Gender*Period9) regarding variables assessing non-use/underutilization of VHA healthcare. The intent was to determine whether there is a difference between VHA health service use between WV in “peacetime” service era prior to 9/11/2001 and WV health services use after entry into the Iraq and Afghanistan Wars.

Analysis of Secondary Data Set

Further analysis in the secondary data set focused on WV who reported combat deployment to Iraq and/or Afghanistan (Gender*Period9*OEF) and WV who did not report deployment (Gender*Period9). Once the two secondary data set groups were identified, analysis was conducted to determine whether there is a correlation between WV who experienced deployment to Iraq and/or Afghanistan and non-use/underutilization of VHA health services, use of primary care within the prior six months, and use of women’s health care within the prior twelve months.

Statistical tests used to analyze the primary and secondary data sets included the following: Nominal response items were assessed using Chi-square analysis and/or Fisher’s Exact tests. Descriptive characteristics as listed in Table 11 Descriptive Variables were compared between Pre and Post 9/11 service era groups to determine perceptions of VHA

health services. Binary logistic regressions were conducted to pair female gender (Gender) and deployment to a combat zone (OEF), which was used to assess the relationship between barriers to access/use of primary and women’s healthcare to combat/trauma experience of Pre 9/11 and Post 9/11 WV service era groups surveyed in the NSV 2010. The level of significance was set at 0.05.

Logistic regression was chosen as the predictive model to determine the relationship between a predictor variable and either an outcome variable or a series of outcome variables. Logistic regression is used to predict the probability (relationship between) of a binary event occurring based on a set of predictor variables.

All statistical recording and analysis were conducted using Intellectus Statistics (2022). Intellectus Statistics is based on R programming. The results of the regression analysis informed the gaps in access which can be addressed by VHA personnel to create better pathways/programs to improve/ease access. This study identified WV populations with larger rates of non-use/underutilization which can inform VHA leadership to target marginalized, at-risk populations with outreach and assistance to navigate VA entitlement access.

Procedures

Analysis of the data sets included a comparative description between Pre and Post 9/11 WV (Gender*Period8) and (Gender*Period9) regarding outcome variables influencing non-use/underutilization of VHA health services. Table 12 below shows the numbers of WV in each service era from the total sample population of 500 WV included in the NSV2010.

Table 12: Study sample Pre and Post 9/11 WV populations		
Pre 9/11 WV	Post 9/11 WV	Pre and Post 9/11 WV
158	124	56

The intent was to determine whether there was a difference between VHA health services use between the “peacetime” service era prior to 9/11/2001 and entry into the Iraq and Afghanistan Wars. Further analysis focused on WV who reported deployment to combat zones (Gender*Period9*OEF) and WV who did not report deployment (Gender*Period9). Once the two groups for the secondary analysis data set were identified, analysis was conducted to determine whether there is a correlation between WV who have combat deployments and non-use/utilization of VHA health services. With the higher percentage of WV with mental and physical health issues who experienced combat deployments, there is a question whether there is a difference in barriers to enrollment for VHA health services, barriers to use of primary care, and barriers to use of women’s healthcare.

Statistical tests used to analyze the results included the following: Nominal response items were assessed using Chi-square correlations. Demographic analysis between groups were conducted by frequencies and percentages which was then used to assess the relationship between barriers to enrollment for VHA health services, barriers to use of primary care, and barriers to use of women’s healthcare between the primary and secondary datasets. The secondary dataset analysis targeted combat deployment of Post 9/11 WV surveyed in the NSV 2010. The level of significance was set at 0.05.

Binary logistic regression analysis was performed for the WV service era groups for the three outcome variables and selected predictor variables. Binary logistic regressions can determine the variance explained by groups of predictor variables. The predictor variables were cross walked to reflect the BMHSU predisposing, enabling, and need characteristics. The intent of binary logistic regressions was to determine the odds of a No answer for the three outcome variables and selected predictor variables.

A series of chi squared tests of independence were conducted to determine if the predisposing, enabling, and need predictor variables were independent from the three outcome variables of Enrolled in VHA healthcare, used primary healthcare in the last six months, and used women's healthcare in the last year, respectively. Therefore, 2x2 contingency tables were created for each pair of variables. The unadjusted odds ratios were also calculated for each pair of variables. Fisher's Exact tests were conducted to examine whether Enrollment in VHA healthcare benefits, Use of primary care in the last six months, and Use of women's care in the last twelve months and WV service era groups were independent from one another.

The results of the regression analysis and frequencies for reasons for non-use/underutilization can inform the gaps in health services use which can be addressed by VHA leadership policy and processes to create better pathways/programs to improve/ease access. This study identified WV populations with significant percentages of non-use/underutilization of VHA health services which can inform VHA leadership to target populations at-risk for non-use with outreach and assistance to navigate VHA health service entitlement access and use.

Limitations and Assumptions

It is understood utilization of existing data imparts limitations. While significant efforts were undertaken to include all populations of WV in the 2010 National Survey of Veterans, all WV cannot be captured in a data set. As with any large-scale study, respondents are voluntary, and the 35-minute average length of the survey can reduce the interest of the respondents in completing the survey. The Veterans survey instrument is twenty-five pages in length which discourages survey participation and completion. The survey was administered independently of VA researchers, so all items were self-reported. Although the multiple-choice questions offered the option to add items if the listed responses were not reflective of the Veteran's intended answer, the ability to view those manually entered answers is limited. Equally challenging were

the relatively few questions targeting WV specific health needs. A startling limitation was the number of WV included in the 2010 NSV. For all service eras, a total of 500 women were included in the 8,710 Veteran responses. This equates to 5.7% of the surveys which is significantly less than the 7.8% of the total Veteran population in 2010 as reported by the Defense Media Network (Lyons, 2010) and even more so with the WV population reaching 10% in 2021.

Assumptions include the reason for a large response rate in the Veteran pool was personnel from a military culture expectations to participate and complete lengthy paperwork items and this tendency continues after service completion. This was noted as accurate based on the NSV 2010 completion rate of sixty-seven percent. There were three attempts to reach respondents and three ways to complete the survey (paper, electronically/web-based, telephone). Also, since the survey was de-identified, respondents were more likely to answer honestly, without fear of retaliation or stigma.

Human Subjects (IRB/Ethical Considerations)

This study only involved a de-identified public data set, so it did not meet the criteria for review by an IRB and was determined to be exempt. Application for Human Studies protection was routed through the University of Hawai'i at Mānoa, and the letter of exemption is attached in Appendix A.

Rationale for Study

Since there has been relatively little inquiry into the “unknown” WV who underutilize VHA healthcare entitlements, this study shed light on the reasons WV did not access and use VHA health services. This was particularly important as identification of areas for adjustment and improvement in services for women who sacrificed for this nation is imperative. Identifying

barriers will allow opportunities to reduce restrictions to access and use which will positively impact the lives of women who need healthcare resulting from military service.

Figure 3 (pg. 36) provides an illustration of the target population intended in this study. There is a segment of the population of WV who do not need or want services as they are either unaffected/uninjured by combat or have other sources of healthcare (private or other sources of insurance, remaining on active-duty). There is another segment of the population of WV who are engaged in ongoing VHA health services. But there is a segment of the population who have an unknown status and they are the ones of concern as we do not know the extent of resources required to meet their healthcare needs. Until their healthcare needs are identified, there is no way to effectively identify barriers preventing health services use, so the VHA is unlikely to positively impact the health of the “unknown status” population of WV. The importance of this research was to assist the VHA to provide needed and wanted health services for WV to improve their lives and transition successfully to public life and family.

The concept of access and utilization to VHA healthcare encompasses those who are eligible for VA benefits, as well as those who enroll and those who do not enroll. To understand the healthcare needs of WV it is important to identify what precludes WV from using earned benefits. Conditions including higher rates of mental health needs (PTS, MST, depression) are known to be associated with tendency towards social isolation, social phobias, fear of being in a military-like environment, and mistrust of the military system. Coupled with the large number of women who leave the military soon after returning from deployment/separating from active-duty and move to areas remote from VHA services compounds the issues surrounding utilization and potentially increases the number of “unknown status” WV population. This is especially concerning for WV who live in rural areas of the U.S. where access to primary care is already constrained.

The seeming invisibility of the WV in U.S. society is mirrored in the healthcare setting, and this can undermine the efforts of the WV to disclose all of their healthcare needs, especially related to sexual violence and feelings of shame/guilt over family separation or loss of matriarchal family roles. A preponderance of healthcare providers within the VHA are male. With this comes a need to be especially attentive to culturally sensitive, professional interactions to ensure WV at-risk for poor health outcomes do not continue to be marginalized.

Summary of Methodology

Secondary analysis of a large public dataset holds positive and negatives. It is not possible to conduct experimental analysis as survey items and answers are complete. While it would be beneficial to have more items assessing barriers to accessing and using VHA health services by WV, an individual researcher would face a daunting task to compile such a far-reaching and comprehensive national record set upon which to pull records for inclusion in a study as well as the sheer magnitude of collecting national data. The challenge to utilizing an existing dataset is the inability to pull more information than what is presented. Initially, finding a dataset of over 10,000 records gave rise to the opportunity to evaluate a wealth of information, especially when the original researchers exercised diligence to include records of living Veterans from the various U.S. military service eras as well as having a nationwide reach. There was much useful information, but the number of records for WV was limited to 500. The target study population was further reduced by limiting to Pre and Post 9/11 WV (n = 282).

While Andersen's BMHSU is mature and well suited for analysis of health services use in vulnerable populations, the items within the NSV 2010 did not crosswalk completely. This creates gaps in the model to make comparisons to the larger WV population. However, there were variables within these target populations, when considered together, assisted to conceptualize, and measure access and use of healthcare considering the multiple contextual

and individual factors influencing health and healthcare use by the newest WV. The dataset and codebook were readily available, as were some of the original researchers who provided insight to the challenges of reaching such a large number of Veterans. The rationale for selecting the NSV 2010 was based on it being the only nationally representative survey of all Veterans which provided important information for WV who do/do not use VHA health services.

CHAPTER IV

FINDINGS

Overview of Chapter

The purpose of this quantitative, non-experimental, secondary analysis was to gain a better understanding of VHA healthcare benefit non-use/underutilization patterns and factors influencing non-use/underutilization among Pre and Post 9/11 WV. To accomplish this, an archival dataset was obtained through the 2010 National Survey of Veterans which was published in November 2011 and located at <https://www.va.gov/vetdata/surveys.asp>. This data set is published by the U.S. Department of Veterans' Affairs, licensed for open, public use under Creative Commons CC Zero License (cc-zero).

The intent of this analysis was to measure a variety of variables such as understanding of VHA benefits, use of VHA healthcare benefits, presence/absence of insurance coverage, and demographic information about the two service era groups of WV as the primary dataset analysis. The secondary dataset analysis narrowed the comparison groups to WV who served in the Post 9/11 service era who did/did not deploy to a combat zone. Once the de-identified, public dataset was obtained, it was uploaded to Intellectus Statistics (2022) for analysis. To prepare the data for analysis, any missing data was removed. There were no outliers present within the data. Data cleaning was required for some survey items answers that were negatively configured, which required them to be reverse coded to ensure all answers could be analyzed in a consistent direction. Additionally, dummy coding was employed on the categorical variables to ensure they could be added to the regression model. Prior to hypothesis testing, summary statistics were conducted for the variables of interest as well as factors external to the VHA which may influence VHA health services use. Frequencies and percentages were calculated

for the categorical variables, while means and standard deviations were calculated for the continuous variables.

The specific aims of this study are to identify factors restricting access to VHA healthcare by WV and factors promoting access to VHA healthcare by WV, and identifying aspects/factors which describe the population of WV who do not access VHA healthcare.

Research questions for this study include:

1. Are there differences in VHA health services use for populations of Pre and Post 9/11 WV related to outcome variables?
2. What factors influence non-use/underutilization of VHA health services in Pre vs. Post 9/11 WV?
3. Does exposure to combat deployments influence non-use/underutilization of VHA health services in Post 9/11 WV?
4. What factors influence non-use/underutilization of VHA health services for Post 9/11 WV with combat deployments to Iraq and/or Afghanistan?

To answer each of the research questions, series of chi squared tests of independence and 2x2 contingency tables were created as well as calculations for unadjusted odds ratios for each pair of variables. Fisher's Exact tests and eighteen binary logistic regression analyses were also conducted. The following chapter will present the results of each analysis.

Prior to the hypothesis testing, summary statistics were conducted and presented for the variables of interest, as well as the variables of Presence non-VHA insurance coverage for care, Use of outpatient primary care (PC) used in the preceding six months and Use of women's healthcare (WHC) used in the preceding 12 months. Further analysis was conducted for those WV who were not enrolled in VHA care, but did use PC and WHC, specifically assessing for payor coverage for non-VHA resourced healthcare. Since each variable was dichotomous in

nature, frequencies and percentages were calculated for each variable. For ease of reporting and understanding, the frequencies and percentages are grouped together by military service era, outcome variables, and predictor variables grouped into predisposing, enabling, need variables in keeping with Andersen’s Behavioral Model of Health Services Use (BMHSU). Additional analysis for those not enrolled for VHA care included insurance payor coverage for PC and WHC used within specific timeframes.

Characteristics of Sample: WV Service Era Groups

The two service era groups consisted of Pre 9/11 WV (n = 158, 31.6%) and Post 9/11 WV (n = 124, 24.8%) of the total WV population (n = 500) in this survey. Frequencies and percentages are presented in Table 13. The Pre and Post 9/11 WV service era groups comprised more than half the total survey population of WV in the NSV2010.

Table 13 Frequency Table: WV Service Era Groups		
Variable	n = 500	%
Pre 9/11 WV		
No	327	65.40
Yes	158	31.60
Missing	15	3.00
Post 9/11 WV		
No	361	72.20
Yes	124	24.80
Missing	15	3.00
All other service era WV	218	43.6

Demographic characteristics, including branch of service, race, marital status and level of education of the study samples are outlined in the Figures 8-11 below. In brief review, the two study samples appeared to be similar, but both of the study sample groups differ by race and marital status from the general population of WV documented in 2010.

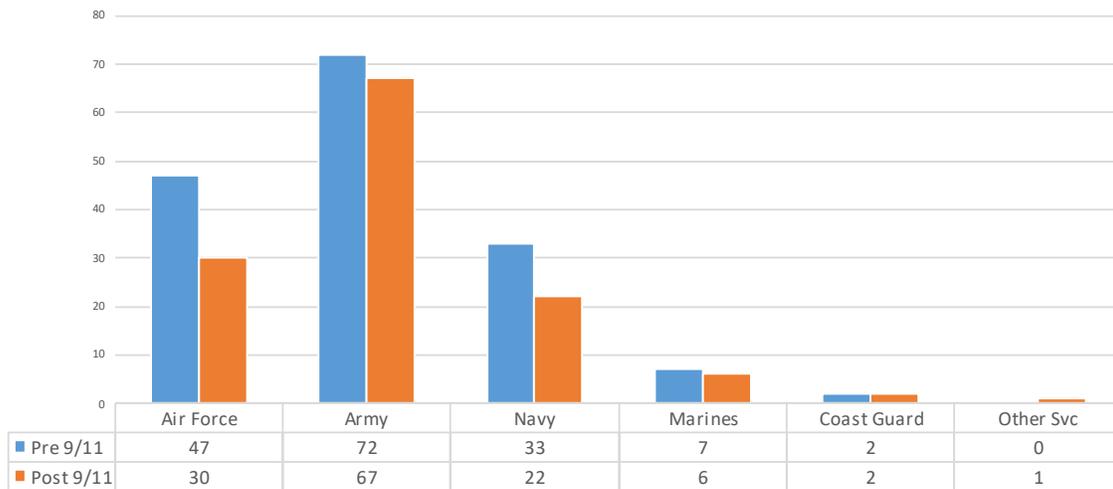


Figure 8
Study Sample Characteristics: Military Branch by Service Era

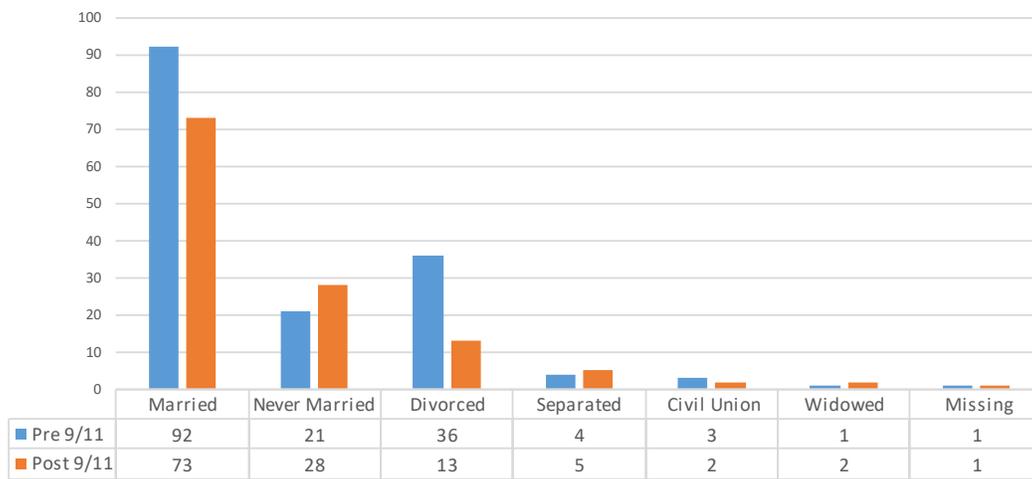


Figure 9
Study Sample Characteristics: Marital Status by Service Era

Service Era	Pre 9/11 WV		Post 9/11	
Race	n	%	n	%
American Indian/Alaska Native	2	1.27	1	0.81
Black/African American	36	22.78	25	20.33
Filipino	3	1.90	1	0.81
Hispanic (Spanish, Puerto Rican, Mexican, Cuban, Chicano)	12	7.59	17	13.82
Other Asian (Hmong, Laotian, Thai, Pakistani, Cambodian)	3	1.90	3	2.44
Other Pacific Islander (Fijian, Tongan)	1	0.63	2	1.63
White	115	72.78	88	71.54
Asian/Indian	0	0	0	0
Chinese	0	0	0	0
Native Hawaiian	0	0	0	0
Guamanian or Chamorro	0	0	0	0
Samoan	0	0	0	0

Note: Percentages will not equal 100 due to rounding and multi-race selection.

Figure 10
Study Sample Characteristics: Race by Service Era

Level of Education				
	Pre 9/11	Post 9/11	Total #	%
Less than High School	0	0	0	0
High School diploma/GED	13	9	22	7.8%
Less than 1 year college	13	14	27	9.6%
More than 1 year college, no degree	31	32	63	22.34%
Associate's degree	25	25	50	17.73%
Bachelor's degree	43	27	70	24.82%
Master's degree	29	13	42	14.89%
Professional degree (MD, DDS, DVM, JD)	1	1	2	0.71%
Doctoral degree	2	2	4	1.42%
Not ascertained	1	1	2	0.71%
Total	158	124	282	

Note: Due to rounding, percentages may not equal 100%

Figure 11
Study Sample Characteristics: Education Level by Service Era

The primary dataset analysis for this study is divided into Pre 9/11 and Post 9/11 WV service era groups to determine differences in health services use by WV who served in predominantly peacetime and wartime eras which addressed the first two research questions. A secondary dataset analysis was conducted to determine differences in health services use by filtering the WV who served after 9/11/2001 into deployed to a combat zone/not deployed to combat zone groups to address the second two research questions. Women Veterans who experienced deployment to Iraq and/or Afghanistan included thirty-two who served in Pre and Post 9/11 service eras and sixty-three who served after 9/11/2001. Figure 12 compares the percent of non-enrollment for VHA healthcare by service era and a history of deployment to either Iraq or Afghanistan by service era group.

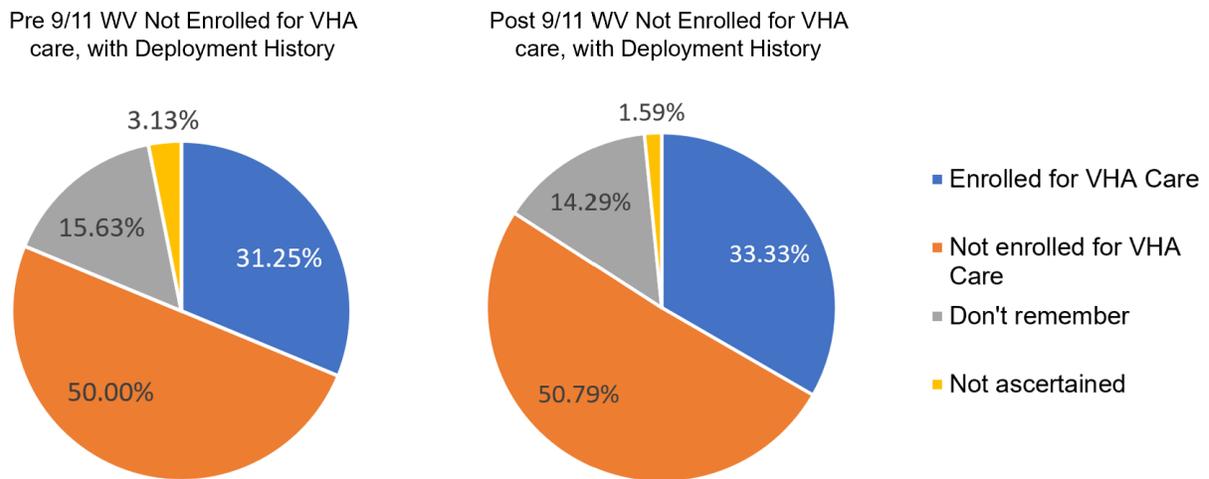


Figure 12
WV Not Enrolled for VHA Care (By Service Era) with Deployment History

Chi-Square Tests of Independence

A series of chi squared tests of independence were conducted to determine if the predisposing, enabling, and need predictor variables were independent from the three outcome variables of Enrolled in VHA healthcare, used primary healthcare in the last six months, and used women’s healthcare in the last year, respectively. For each test, there were two levels for

each of the outcome variables (yes and no), and two levels for each of the predictor variables (yes and no). Therefore, 2x2 contingency tables were created for each pair of variables. Finally, unadjusted odds ratios were also calculated for each pair of variables using the equation $(A \cdot D) / (C \cdot B)$. In this equation, A and B are the top row of the 2x2 matrix, while C and D are the bottom row of the 2x2 matrix.

The first set of nine analyses were conducted for the outcome variable Ever enrolled in VHA healthcare (INHC). The results of eight of the nine analyses were significant, indicating the variables of Age and INHC, Race (WHITE) and INHC, Race (BLACK) and INHC, Marital status (MARRY) and INHC, I have a doctor outside the VA I trust (AGREE3) and INHC, Self-reported health status (HLTH1) and INHC, Ever applied for SC disability compensation (EVDIS) and INHC, and Used healthcare benefits (USEHC) and INHC were related to one another. Table 15 details the results for each chi-square test. For the variable of Age: under 35 years, the following level combinations had observed values greater than their expected values: Under 35 (no): INHC (no) and Under 35 (yes): INHC (yes). While the following level combinations for age had observed values that were less than their expected values: Under 35 (yes): INHC (no) and Under 35 (no): INHC (yes). For the variable of Race (WHITE), the following level combinations had observed values that were greater than their expected values: WHITE (yes): INHC (no) and WHITE (no): INHC (yes). While the following level combinations had observed values that were less than their expected values: WHITE (no): INHC (no) and WHITE (yes): INHC (yes). For the variable of Race (BLACK), the following level combinations had observed values that were greater than their expected values: BLACK (no): INHC (no) and BLACK (yes): INHC (yes). While the following level combinations of black had observed values that were less than their expected values: BLACK (yes): INHC (no) and BLACK (no): INHC (yes). For the variable of Marital status (MARRY), the following level combinations had observed values that were greater than their expected values: MARRY (Married): INHC (no) and MARRY (not married): INHC (yes). While the following level combinations for MARRY had observed values that were less than their expected values: MARRY (not married): INHC (no) and MARRY (married): INHC (yes). For the variable of AGREE3, the following level combinations had observed values that were greater than their expected values: AGREE3 (yes): INHC (no) and AGREE3_Nominal

(no): INHC (yes). While the following level combinations of agree3 had observed values that were less than their expected values: AGREE3 (no): INHC (no) and AGREE3 (yes): INHC (yes). For the variable of health status, the following level combinations had observed values that were greater than their expected values: HLTH1 (good): INHC (no) and HLTH1 (poor): INHC (yes). While the following level combinations of health status had observed values that were less than their expected values: HLTH1 (poor): INHC (no) and HLTH1 (good): INHC (yes). For the variable of used healthcare, the following level combinations had observed values that were greater than their expected values: USEHC (No): INHC (no) and USEHC (Yes): INHC (yes). While the following level combinations of used healthcare had observed values that were less than their expected values: USEHC (Yes): INHC (no) and USEHC (No): INHC (yes). For the variable of Ever applied for disability compensation (EVDIS), the following level combinations had observed values that were greater than their expected values: EVDIS (no): INHC (no) and EVDIS (yes): INHC (yes). While the following level combinations of EVDIS had observed values that were less than their expected values: EVDIS (yes): INHC (no) and EVDIS (no): INHC (yes).

	INHC: Ever enrolled in VHA		χ^2	df	p	OR	95% CI
	Yes	No					
Under 35 years of age			10.14	1	.001	2.25	(1.36, 3.74)
Yes	37[25.18]	37[48.82]					
No	111[122.82]	250[238.18]					
DEGREE: Highest degree/school level			0.26	1	.612	1.11	(0.74, 1.65)
HS/some college	76[73.51]	142[144.49]					
College degree	70[72.49]	145[142.51]					
BLACK: Black race			4.43	1	.035	1.71	(1.03, 2.83)
Yes	34[26.09]	43[50.91]					
No	110[117.91]	238[230.09]					
WHITE: White race			4.55	1	.033	0.60	(0.37, 0.96)
Yes	105[113.51]	230[221.49]					
No	39[30.49]	51[59.51]					
MARRY: Marital status			23.03	1	< .001	0.37	(0.24, 0.56)
Married/Civil Union	50[73.67]	168[144.33]					
Not married	97[73.33]	120[143.67]					
AGREE3: I have a doctor outside VA I trust			24.03	1	< .001	0.35	(0.23, 0.53)
Yes	60[82.68]	169[146.32]					
No	79[56.32]	77[99.68]					
HLTH1: Self-reported health status			35.91	1	< .001	3.88	(2.45, 6.12)
Poor	61[35.66]	45[70.34]					
Good	85[110.34]	243[217.66]					
EVDIS: Ever applied for SC disability			62.00	1	< .001	5.90	(3.71, 9.40)
Yes	72[38.02]	40[73.98]					
No	75[108.98]	246[212.02]					
USEHC: Ever used VHA healthcare benefits			326.09	1	< .001	249.17	(108.70, 571.19)
Yes	131[47.89]	11[94.11]					
No	13[96.11]	272[188.89]					

As noted in Table 14, the predictor variables of Age under 35 years, being married or in a civil union, having a trusted doctor outside the VHA, self-reporting good health, never applying for a SC disability compensation rating, and never using VHA health services significantly negatively influenced the odds of enrollment for VHA health services.

The next set of nine analyses were conducted for the outcome variable Used healthcare in the last 6 months (OUTPC6). The results of three of the nine analyses were significant, indicating that the variables of DEGREE and OUTPC6, HLTH1 and OUTPC6, and USEHC and OUTPC6 were related to one another. Table 16 details the results for the chi-square tests for OUTPC6 and predictor variables. For the variable of DEGREE, the following level combinations had observed values that were greater than their expected values: DEGREE (HS/some college): OUTPC6 (no) and DEGREE (College degree): OUTPC6 (yes). While the following

level combinations for DEGREE had observed values that were less than their expected values: DEGREE (College degree): OUTPC6 (no) and DEGREE (HS/some college): OUTPC6 (yes). For the variable of Self-reported health status, the following level combinations had observed values that were greater than their expected values: HLTH1 (good): OUTPC6 (no) and HLTH1 (poor): OUTPC6 (yes). While the following level combinations for health status had observed values that were less than their expected values: HLTH1 (poor): OUTPC6 (no) and HLTH1 (good): OUTPC6 (yes). Finally, for the variable of used healthcare, the following level combinations had observed values that were greater than their expected values: USEHC (No): OUTPC6 (no) and USEHC (Yes): OUTPC6 (yes). While the following level combinations for used healthcare had observed values that were less than their expected values: USEHC (Yes): OUTPC6 (no) and USEHC (No): OUTPC6 (yes).

As noted in Table 15, the primary predictor variable influencing use of primary care in the prior six months was a self-reported health status of good which indicated those WV who felt they were in good health were less likely to use primary care.

Table 15 Chi-Square Tests between Independent Variables and Outpatient Care							
	OUTPC6: Last 6 months - Outpatient care (doctor visits, urgent care, tests)		χ^2	df	p	OR	95% CI
	Yes	No					
Under 36 years of age			0.27	1	.603	0.85	(0.46, 1.56)
Yes	66[67.62]	16[14.38]					
No	315[313.38]	65[66.62]					
DEGREE: Highest degree/school level			4.43	1	.035	0.60	(0.37, 0.97)
HS/some college	183[191.65]	50[41.35]					
College degree	197[188.35]	32[40.65]					
BLACK: Black race			0.29	1	.592	0.84	(0.45, 1.58)
Yes	62[63.62]	15[13.38]					
No	309[307.38]	63[64.62]					
WHITE: White race			0.10	1	.753	1.10	(0.61, 1.99)
Yes	296[294.98]	61[62.02]					
No	75[76.02]	17[15.98]					
MARRY: Marital status			0.03	1	.863	1.04	(0.65, 1.68)
Married/Civil Union	194[193.29]	41[41.71]					
Not married	186[186.71]	41[40.29]					
AGREE3: I have a doctor outside VHA I trust			0.01	1	.917	1.03	(0.61, 1.74)
Yes	200[199.61]	40[40.39]					
No	141[141.39]	29[28.61]					
HLTH1: Self-reported health status			10.28	1	.001	3.30	(1.54, 7.09)
Poor	103[91.90]	8[19.10]					
Good	277[288.10]	71[59.90]					
EVDIS: Ever applied for SC disability			1.17	1	.280	1.38	(0.77, 2.46)
Yes	102[98.14]	17[20.86]					
No	279[282.86]	64[60.14]					
USEHC: Ever used VHA healthcare benefits			5.48	1	.019	1.98	(0.94, 3.01)
Yes	60[51.21]	226[234.79]					
No	17[25.79]	127[118.21]					

The final set of nine analyses were conducted for the outcome variable- Used women's healthcare in the last year (WHCARE). The results of four of the nine analyses were significant, indicating that the variables of age and WHCARE, Race-Black and WHCARE, EVDIS and WHCARE, and USEHC and WHCARE were related to one another. Table 16 details the chi-square results. For the predictor variable of Age, the following level combinations had observed values that were greater than their expected values: WHCARE (no): Under 35 (no) and WHCARE (yes): Under 35 (yes). While the following level combinations for Age had observed values that were less than their expected values: WHCARE (yes): Under 35 (no) and WHCARE (no): Under 35 (yes). For the variable of Race (BLACK), the following level combinations had

observed values that were greater than their expected values: BLACK (no): WHCARE (no) and BLACK (yes): WHCARE (yes). While the following level combinations for Race (BLACK) had observed values that were less than their expected values: BLACK (yes): WHCARE (no) and BLACK (no): WHCARE (yes). For the variable of disability compensation, the following level combinations had observed values that were greater than their expected values: EVDIS (no): WHCARE (no) and EVDIS (yes): WHCARE (yes). While the following level combinations for disability compensation had observed values that were less than their expected values: EVDIS (yes): WHCARE (no) and EVDIS (no): WHCARE (yes). Finally, for the variable of USEHC, the following level combinations had observed values that were greater than their expected values: USEHC (no): WHCARE (no) and USEHC (yes): WHCARE (yes). While the following level

	WHCARE: Used women's health care services in the last 12 months		χ^2	df	p	OR	95% CI
	Yes	No					
Under 36 years of age			11.89	1	< .001	2.39	(1.44, 3.96)
Yes	63[48.49]	196[210.51]					
No	25[39.51]	186[171.49]					
DEGREE: Highest degree/school level			1.53	1	.216	0.80	(0.55, 1.14)
HS/some college	122[128.68]	112[105.32]					
College degree	137[130.32]	100[106.68]					
BLACK: Black race			5.33	1	.021	1.80	(1.09, 2.99)
Yes	53[43.65]	27[36.35]					
No	198[207.35]	182[172.65]					
WHITE: White race			1.50	1	.221	0.75	(0.47, 1.19)
Yes	195[200.25]	172[166.75]					
No	56[50.75]	37[42.25]					
MARRY: Marital status			0.60	1	.439	1.15	(0.80, 1.66)
Married	134[129.82]	103[107.18]					
Not married	124[128.18]	110[105.82]					
AGREE3: Have a trusted doctor outside VHA			1.53	1	.215	0.78	(3.99, 16.47)
Yes	134[140.20]	114[107.80]					
No	104[97.80]	69[75.20]					
HLTH1: Self-reported health status			1.18	1	.278	0.79	(0.52, 1.21)
Poor	57[61.98]	55[50.02]					
Good	202[197.02]	154[158.98]					
EVDIS: Ever applied for SC disability			4.91	1	.027	1.60	(1.05, 2.44)
Yes	81[70.41]	46[56.59]					
No	179[189.59]	163[152.41]					
USEHC: Ever used VHA healthcare benefits			7.20	1	.007	1.73	(1.16, 2.59)
Yes	97[83.68]	56[69.32]					
No	142[155.32]	142[128.68]					

combinations for used healthcare had observed values that were less than their expected values: USEHC (yes): WHCARE (no) and USEHC (No): WHCARE (yes).

The primary finding in this chi-square analysis was related to age. As noted in Table 16, the WV who were under 35 years of age were more likely to use women’s health care in the preceding year. This finding is not unexpected as reproductive care is more important to women in their childbearing years.

Point Biserial Correlation Analyses

Due to the continuous nature of “number of minor children”, point biserial correlations were conducted with the outcomes. As noted in Table 17, the number of minor children was significantly, positively associated with use of women’s health care services in the previous 12 months, $r_{pb} = .10$, $p = .036$, indicating that having more minor children was related with more use of women’s health care services.

Table 17 Point Biserial Correlations between Number of Minor Children and Outcome Variables			
Outcome Variable	DEPEND1: Minor children		
	r_{pb}	n	p
INHC: Ever enrolled in VA healthcare	-.02	387	.676
OUTPC6: Used outpatient care in last 6 months	.00	415	.932
WHCARE: Used women’s health care services in last 12 months	.10	424	.036

Pre 9/11 Women Veterans Service Era Group (n = 158)

Outcome Variables

Frequencies and percentages were calculated for some outcome variables to assist in describing the study samples. The most frequently observed category of Ever enrolled in VHA healthcare was no ($n = 84$, 53.16%). The most frequently observed category of Used outpatient (primary) care in the past 6 months was yes ($n = 122$, 77.22%). The most frequently observed

category of Used women’s healthcare in the last 12 months was yes ($n = 102, 64.56\%$).

Frequencies and percentages are presented in Table 18. This data indicates the Pre 9/11 WV study sample was less likely to be enrolled for VHA care, but a significant percentage did use primary and women’s healthcare in the preceding six and twelve months, respectively. This raises the question of how WV are paying for primary and women’s healthcare if not enrolled for VHA care.

Outcome Variable	n = 158	%
Ever enrolled in VA healthcare		
No	84	53.16
Yes	53	33.54
Missing	21	13.29
Utilized outpatient care in the past 6 months		
No	27	17.09
Yes	122	77.22
Missing	9	5.70
Utilized women’s healthcare		
No	54	34.18
Yes	102	64.56
Missing	2	1.27
<i>Note: Due to rounding errors, percentages may not equal 100%.</i>		

Reasons for Never Using VHA Healthcare

Of the ninety-two Pre 9/11 WV who indicated they never used VHA services, a follow-on item asked why they did not use VHA healthcare. There were only twelve who answered this survey item. The most frequently observed reason was Use other sources for healthcare ($n = 10, 6.33\%$) and followed by Difficult to access (distance) to VHA facility ($n = 3, 1.9\%$). Don’t believe I’m entitled/eligible, Don’t think VHA help is as good as elsewhere, and Difficult to access (parking/appt. availability) were the next most frequently observed reasons ($n = 2,$

1.27%). The remaining response items were either selected once or not at all. The small number of responses compared to the total number of WV who indicated they did not use VHA healthcare precludes any correlation. Frequencies and percentages were calculated for the multi-answer item as outlined in Table 19.

Table 19 What are the reasons you never used any VHA healthcare benefits?		
Variable ID	Variable Reason Description	Number of Yes Answers
NOHC1	Do not need VHA care	1
NOHC2	Not aware of VHA benefits	1
NOHC3	Don't believe I'm entitled/eligible	2
NOHC4	Bad prior experience	0
NOHC5	Don't know how to apply	1
NOHC6	Don't want/need VHA assistance	1
NOHC7	Applying is too much trouble/red tape	1
NOHC8	Never considered getting VHA help	1
NOHC9	Don't think VHA help is as good as elsewhere	2
NOHC10	Use other sources for healthcare	10
NOHC11	Difficult to access (parking/appt. availability)	2
NOHC12	Difficult to access (distance) to VHA facility	3
NOHC13	Do not feel welcome at VHA facility	1
NOHC14	VHA does not provide needed services	0
NOHC15	Other (open comment)	1
NOHC16	Don't know	0

The frequencies and percentages of Pre 9/11 WV identifying reasons why WV never used VHA healthcare are presented in Table 20. This data is important as it provides valuable insights into barriers to VHA health services.

Table 20

Frequency Table: Why Never Used VHA Healthcare Variables

Variable	n= 12	%
Do not need VHA care		
No	11	6.96
Yes	1	0.63
Missing	146	92.41
Not aware of VHA benefits		
No	11	6.96
Yes	1	0.63
Missing	146	92.41
Don't believe I'm entitled/eligible		
No	10	6.33
Yes	2	1.27
Missing	146	92.41
Bad prior experience		
No	11	6.96
Yes	1	0.63
Missing	146	92.41
Don't know how to apply		
No	12	7.59
Yes	0	0.00
Missing	146	92.41
Don't want/need VHA assistance		
No	11	6.96
Yes	1	0.63
Missing	146	92.41
Applying is too much trouble/red tape		
No	11	6.96
Yes	1	0.63
Missing	146	92.41
Never considered getting VHA help		
No	11	6.96

Yes	1	0.63
Missing	146	92.41
Don't think VHA help is as good as elsewhere		
No	10	6.33
Yes	2	1.27
Missing	146	92.41
Use other sources for healthcare		
No	2	1.27
Yes	10	6.33
Missing	146	92.41
Difficult to access (parking/appt. availability)		
No	10	6.33
Yes	2	1.27
Missing	146	92.41
Difficult to access (distance) to VHA facility		
No	9	5.70
Yes	3	1.90
Missing	146	92.41
Do not feel welcome at VHA facility		
No	11	6.96
Yes	1	0.63
Missing	146	92.41
VHA does not provide needed services		
No	12	7.59
Yes	0	0.00
Missing	146	92.41
Other		
No	11	6.96
Yes	1	0.63
Missing	146	92.41
Don't know		
No	12	7.59
Yes	0	0.00
Missing	146	92.41
<i>Note: Due to rounding errors, percentages may not equal 100%.</i>		

Of the 73 Post 9/11 WV who indicated they never used VHA services, a follow-on item asked reasons for not using VHA healthcare. There were only ten respondents who selected twenty-three reasons for not using VHA healthcare. The most frequently observed reason was Use other sources for healthcare (n = 5, 4.03%) and followed by Don't believe I'm entitled/eligible (n = 4, 3.23%). Three responded to Not aware of VHA benefits, Difficult to access (distance) to VHA facility (1.9%). Two responded, Applying is too much trouble/red tape and Difficult to access (parking/appt. availability) (1.27%). The remaining response items were either selected once or not at all. Frequencies of reasons for never using VHA healthcare benefits were calculated for the multi-answer item as outlined in Table 21. The small number of responses of the Pre and Post 9/11 WV compared to the number who did not use VHA healthcare precludes any significant correlation for this variable and renders this study unable to answer the second research question.

In an effort to determine the reasons for non-use for WV who were not enrolled for VHA health services, a follow-on question in the survey provided multiple answers as well as an open comment section. More than one response was allowed. Table X lists the number of responses for each of the reasons.

Variable ID	Variable Reason Description	Number of Yes Answers
NOHC1	Do not need VHA care	1
NOHC2	Not aware of VHA benefits	3
NOHC3	Don't believe I'm entitled/eligible	4
NOHC4	Bad prior experience	0
NOHC5	Don't know how to apply	1
NOHC6	Don't want/need VHA assistance	1

NOHC7	Applying is too much trouble/red tape	2
NOHC8	Never considered getting VHA help	0
NOHC9	Don't think VHA help is as good as elsewhere	0
NOHC10	Use other sources for healthcare	5
NOHC11	Difficult to access (parking/appt. availability)	2
NOHC12	Difficult to access (distance) to VHA facility	3
NOHC13	Do not feel welcome at VHA facility	0
NOHC14	VHA does not provide needed services	1
NOHC15	Other (open comment)	0
NOHC16	Don't know	0

Post Hoc tests

Due to small cell sizes, post hoc tests were conducted to confirm the results of the tests run above. Specifically, three separate Fisher's Exact tests were conducted to examine whether the three outcome variables and WV service era groups were independent from one another. There were two levels in each of the dependent variables: yes and no. Additionally, there were two levels for independent variables of service eras: Pre 9/11 (1990 to August 2001) and Post 9/11 (September 2001 to 2010).

Outcome Variable: Enrolled in VHA Healthcare Benefits by Service Era

The results of the Fisher's Exact test were not significant based on an alpha value of .05, $OR = 1.22$, $p = .505$, suggesting that Enrolled in VHA healthcare benefits and service era could be independent of one another. This implies the observed frequencies were not significantly different than the expected frequencies. Table 34 presents the results of the Fisher's Exact test and the percentage of frequencies for each service era and outcome variable.

Outcome Variable: Used Primacy Care in the Last Six Months by Service Era

The results of the Fisher's Exact test were not significant based on an alpha value of .05,

Table 22 Observed and Expected Frequencies: Enrolled for VHA care and Service Era					
Enrolled for VHA Healthcare					
Service Era	No	Yes	O.R.	95% CI	p
Pre 9/11 WV (n = 137)	84[68.74] (61.31%)	53[47.29](38.67%)	1.22	[0.550, 1.515]	.505
Post 9/11 WV (n = 101)	57[50.68](56.44%)	44[34.86](43.56%)			
<i>Note:</i> Values formatted as Observed[Expected](Percent).					

OR = 0.93, $p = .873$, suggesting that Used primary care in the last 6 months and service era could be independent of one another. This implies the observed frequencies were not significantly different than the expected frequencies. Table 23 presents the results of the Fisher's Exact test and the percentage of frequencies for each service era and outcome variable.

Table 23 Observed and Expected Frequencies: Used Outpatient Primary Care and Service Era					
Used Outpatient Primary Care in the Last 6 Months					
Service Era	No	Yes	O.R.	95% CI	p
Pre 9/11 WV (n = 149)	27[25.98](18.12%)	122[113.47](81.88%)	0.93	[0.548, 1.824]	.873
Post 9/11 WV (n = 114)	22[19.88](19.30%)	92[86.82](80.70%)			
<i>Note:</i> Values formatted as Observed[Expected] (Percent).					

Outcome Variable: Used Women’s Healthcare in the Last 12 Months by Service Era

The results of the Fisher’s Exact test were not significant based on an alpha value of .05, OR = 0.94, $p = .802$, suggesting that Used women’s healthcare in the last 12 months and service era could be independent of one another. This implies the observed frequencies were not significantly different than the expected frequencies. Table 24 presents the results of the Fisher's Exact test and the percentage of frequencies for each service era and outcome variable.

Table 24 Observed and Expected Frequencies: Used WHC in the Last 12 Months and Service Era					
	Used Women’s Healthcare in the Last 12 Months				
Service Era	No	Yes	O.R.	95% CI	<i>p</i>
Pre 9/11 WV (n = 156)	54[54.41](34.62%)	102[99.93]	0.94	[0.645, 1.645]	.802
Post 9/11 WV (n = 122)	44[42.55](36.07%)	78[78.15](63.93%)			
<i>Note:</i> Values formatted as Observed[Expected](Percent).					

Binary Logistic Regressions: Patterns of Health Services Use

To answer the research questions, a series of eighteen separate binary logistic regressions were conducted to determine if there was a predictive relationship of predisposing characteristics variables, enabling characteristics variables, and need characteristics variables on the three outcome variables as follows:

Predisposing characteristics variables-Age, Education level, Marital status, and Race

Enabling characteristics variables-Having a doctor outside the VHA that I trust, How much I understand VHA healthcare benefits, and Presence/absence of insurance

Need characteristics variables-Self-reported health status, Ever used VHA healthcare, and Ever applied for a SC disability

For the variable of Race, only the categories of Black and White were included in the regression model. This is because the other seven race categories had very few respondents selecting other than White or Black (Pre 9/11, n = 9 and 5 NA; Post 9/11, n = 4 and 7 NA), and the regression analysis model did not recognize the differences between the small number of those selecting other races and thus were excluded.

Binary regression analysis was conducted in this manner for the combined Pre 9/11 and Post 9/11 WV service era groups as the prior statistical analysis demonstrated no significant differences between groups. The first nine binary regression analyses included the primary dataset groups. The last nine binary regression analyses included the secondary dataset groups of WV who served after 9/11/2001, the terrorist attack on the World Trade Center and Pentagon who did/did not deploy to Iraq and/or Afghanistan.

Predisposing Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictor variables. High VIFs indicate increased effects of multicollinearity in the model. VIFs greater than 5 are cause for concern, whereas VIFs of 10 should be considered the maximum upper limit (Menard, 2009). All predictors in this study's regression model have VIFs less than 10. Table 25 presents the VIF for each predictor variable in the model.

Table 25 Variance Inflation Factors: Predisposing Characteristics Predictor Variables	
Variable	VIF
Age-Under 35 (over 35= reference category)	1.03
College degree	1.02
Marital Status (married/civil union = yes)	1.05
Presence of Minor Children	1.07
Race-Black	3.72
Race-White	3.67

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(6) = 31.15, p < .001$, suggesting the Predisposing Characteristics predictor variables collectively had a significant effect on the odds of observing the no category of Ever enrolled in VHA healthcare. McFadden's R-squared was calculated to examine the model fit, where values greater than .2 are indicative of models with excellent fit (Louviere et al., 2000). The McFadden R-squared value calculated for this model was 0.06. Since the overall model was significant, additional tests were conducted to determine the significance of the individual predictor variables. Specifically, the effect of the group of Age-under 35 was significant, $B = -0.79$, $OR = 0.28, p = .005$, indicating that compared to the Age-over 35 group, scoring in the age-under 35 group increased the odds of observing the No category of Ever enrolled in VHA healthcare by approximately 119.61%. The effect of the Marital status was also significant, $B = 0.91$, $OR = 2.49, p < .001$, indicating that going from unmarried to married increased the odds of observing the No category of Ever enrolled in VHA healthcare by approximately 59.81%. Table 26 summarizes the results of the regression model.

Table 26 Logistic Regression Results with Predisposing Characteristics variables predicting Ever Enrolled in VHA Healthcare						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>O.R.</i>	<i>95% C.I.</i>
(Intercept)	-0.09	0.54	0.03	.869	-	
Age-under 35	-0.79	0.28	7.78	.005	0.46	[0.26, 0.79]
Presence of Minor Children	0.07	0.10	0.45	.501	1.07	[0.88, 1.31]
College degree	0.13	0.23	0.31	.577	1.14	[0.73, 1.78]
Race-Black	-0.09	0.55	0.03	.872	0.91	[0.31, 2.70]
Race-White	0.44	0.52	0.71	.398	1.55	[0.56, 4.26]
Married/Civil Union	0.91	0.23	15.30	< .001	2.49	[1.58, 3.93]
Note: $\chi^2(6) = 31.15, p < .001, \text{McFadden } R^2 = 0.06$						

Enabling Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs of less than 10. Table 27 presents the VIF for each predictor in the model.

Table 27 Variance Inflation Factors: Enabling Characteristics Predictor Variables	
Variable	VIF
I have a doctor outside the VHA I really trust	1.10
VHA paid for healthcare outside VHA facilities	1.07
Tri-Care paid	1.91
Private Insurance paid	2.06
Some other federal/state/local program	1.07
Medicaid	1.12
Medicare	1.21
Paid for healthcare "Out of pocket" (Co-pay)	1.08
Are you currently covered by any type of healthcare coverage	1.34
I understand the VHA healthcare benefits I'm entitled to	1.11

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(10) = 190.88, p < .001$, suggesting the Enabling Characteristics predictor variables collectively had a significant effect on the odds of observing the No category of Ever enrolled in VHA healthcare. The McFadden R-squared value calculated for this model was 0.50. Since the overall model was significant, additional tests were conducted to determine the significance of the individual predictors. Specifically, the effect of the VHA paying for healthcare received outside the VHA was significant, $B = -4.33, OR = < 0.01, p < .001$, indicating as WV go from not using the VHA to pay for services to using VHA to pay for services, the odds of observing the No category of Ever enrolled in VHA healthcare decreased by approximately 7,491.85%. Additionally, the effect of the predictor variable of I understand my VHA healthcare benefits was

significant, $B = -1.89$, $OR = 0.15$, $p < .001$, indicating that as participants move from not understanding VHA healthcare benefits to understanding their VHA healthcare benefits, the odds of observing the No category of Ever enrolled in VHA healthcare decreased by approximately 562.02%. Table 28 summarizes the results of the regression model.

Table 28 Logistic Regression Results with Enabling Characteristics variables predicting Ever Enrolled in VHA Healthcare						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>O.R.</i>	<i>95.00% CI</i>
(Intercept)	1.68	0.63	7.05	.008	-	
I have a doctor outside the VHA who I trust	0.22	0.40	0.29	.592	1.24	[0.56, 2.73]
VHA paid for care outside VHA	-4.33	0.79	30.32	< .001	0.01	[0.003, 0.06]
Tri-Care	1.12	0.67	2.79	.095	3.07	[0.82, 11.46]
Private Insurance	0.49	0.54	0.82	.366	1.63	[0.56, 4.74]
Some other fed/state/local program	0.21	1.05	0.04	.842	1.23	[0.16, 9.73]
Medicaid	0.67	1.04	0.42	.519	1.95	[0.26, 14.85]
Medicare	0.57	0.56	1.07	.302	1.78	[0.60, 5.29]
Out of pocket (co-pay)	-0.26	0.39	0.45	.502	0.77	[0.36, 1.65]
Are you currently covered by a health insurance plan?	-0.29	0.68	0.18	.674	0.75	[0.20, 2.85]
I understand the VA healthcare benefits I'm entitled to	-1.89	0.39	22.98	< .001	0.15	[0.07, 0.33]
Note: $\chi^2(10) = 190.88$, $p < .001$, McFadden $R^2 = 0.50$						

Need Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs of less than 10. Table 29 presents the VIF for each predictor in the model.

Table 29 Variance Inflation Factors: Need Characteristics Predictor Variables	
Variable	VIF
Self-Reported Health Status	1.02
Ever applied for service-connected (SC) disability compensation	1.02
Ever used VHA healthcare benefits	1.01

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(3) = 356.43, p < .001$, suggesting the Need Characteristics predictor variables collectively had a significant effect on the odds of observing the No category of Ever enrolled in VHA healthcare. The McFadden R-squared value calculated for this model was 0.67. Since the overall model was significant, additional tests were conducted to determine the significance of the individual predictors. Specifically, the effect of the Ever used VHA healthcare benefits was significant, $B = -5.20, OR = 0.006, p < .001$, indicating going from not using VHA healthcare benefits to using VHA healthcare benefits decreased the odds of observing the No category of Ever enrolled in VHA healthcare by approximately 18,035.80%. Table 30 summarizes the results of the regression model.

Table 30 Logistic Regression Results with Need Characteristics variables predicting Ever Enrolled in VHA Healthcare						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>O.R.</i>	<i>95.00% CI</i>
(Intercept)	2.75	0.50	30.52	< .001	-	
Self-reported health status	0.53	0.49	1.17	.279	1.70	[0.65, 4.42]
Ever applied for SC disability compensation	-0.82	0.48	2.96	.085	0.44	[0.17, 1.12]
Ever used VHA healthcare benefits	-5.20	0.43	147.08	< .001	0.006	[0.002, 0.01]
Note: $\chi^2(3) = 356.43, p < .001, McFadden R^2 = 0.67$						

Predisposing Characteristics Predictor Variables: Used PC in the Last 6 Months

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 31 presents the VIF for each predictor in the model.

Table 31 Variance Inflation Factors: Predisposing Characteristics Predictor Variables	
Variable	VIF
Age-under 35	1.05
Race-Black	4.32
Marital Status (Married/Civil Union)	1.05
Presence of Minor Children	1.10
Race-White	4.27

The overall model was not significant based on an alpha of .05. The overall model was $\chi^2(6) = 3.96, p = .682$, suggesting the Predisposing Characteristics predictor variables combined

did not have a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months. The McFadden R-squared value calculated for this model was 0.01. Since the overall model was not significant, the individual predictors were not examined further. Table 32 summarizes the results of the regression model.

Table 32 Logistic Regression Results with Predisposing Characteristics variables predicting Used outpatient (primary) care in the last 6 months						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>O.R.</i>	<i>95.00% CI</i>
(Intercept)	-1.70	0.70	5.97	.015	-	
Age-Under 35	0.14	0.34	0.16	.688	1.15	[0.59, 2.24]
Presence of Minor Children	-0.09	0.14	0.44	.508	0.91	[0.69, 1.20]
College degree	-0.40	0.27	2.16	.142	0.67	[0.39, 1.14]
Married/Civil Union	0.25	0.28	0.81	.369	1.28	[0.75, 2.21]
Race-Black	0.53	0.71	0.54	.461	1.69	[0.42, 6.84]
Race-White	0.14	0.67	0.04	.835	1.15	[0.31, 4.29]
<i>Note:</i> $\chi^2(6) = 3.96$, $p = .682$, McFadden $R^2 = 0.01$						

Enabling Characteristics Predictor Variables: Used Primary Care in the Last 6 Months

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the model have VIFs less than 10. Table 33 presents the VIF for each predictor variable in the model.

Variable	VIF
I have a doctor outside the VHA who I trust	1.14
I understand my VHA healthcare benefits	1.04
Are you currently covered by any type of insurance?	1.15

The overall model was not significant based on an alpha of .05, $\chi^2(3) = 5.97$, $p = .113$, suggesting the predisposing variables collectively did not have a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months. The McFadden R-squared value calculated for this model was 0.02. Since the overall model was not significant, the individual predictors were not examined further. Table 34 summarizes the results of the regression model.

Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>O.R.</i>	<i>95.00% CI</i>
(Intercept)	-1.67	0.27	37.88	< .001	-	
I have a doctor outside the VHA who I trust	0.08	0.29	0.08	.776	1.09	[0.61, 1.93]
Are you currently covered by any type of insurance?	0.75	0.35	4.60	.032	2.12	[1.07, 4.23]
I understand my VHA healthcare benefits	-0.42	0.29	2.11	.146	0.65	[0.37, 1.16]
<i>Note: $\chi^2(3) = 5.97$, $p = .113$, McFadden $R^2 = 0.02$</i>						

Need Characteristics Predictor Variables: Used Primary Care in the Last 6 Months

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 35 presents the VIF for each predictor in the model.

Table 35 Variance Inflation Factors: Need Characteristics Predictor Variables and Ever used VHA healthcare	
Variable	VIF
Ever Applied for SC Disability Compensation	1.13
Self-reported Health Status	1.03
Ever used VHA healthcare	1.14

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(3) = 13.08, p = .004$, suggesting the Need Characteristics predictor variables collectively had a significant effect on the odds of observing the No category of Used outpatient primary care in the last 6 months. The McFadden R-squared value calculated for this model was 0.03. Since the overall model was significant, additional tests were conducted to determine the significance of the individual predictors. Specifically, the effect of the Self-reported health status was significant, $B = 0.92, OR = 2.52, p = .021$, indicating that moving from the poor category to the good category of Self-reported health status increased the odds of observing the No category of Used outpatient care in the last 6 months by approximately 60.31%. Table 36 summarizes the results of the regression model.

Table 36 Logistic Regression Results with Need Characteristics Variables Predicting Used outpatient care in the last 6 months						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>O.R.</i>	<i>95.00% CI</i>
(Intercept)	-2.15	0.40	29.25	< .001	-	
Self-Reported Health Status	0.92	0.40	5.29	.021	2.52	[1.15, 5.54]
Applied for Disability Compensation	-0.08	0.35	0.06	.814	0.92	[0.47, 1.82]
Ever used VHA healthcare benefits	-0.57	0.33	2.92	.087	0.56	[0.29, 1.09]
<i>Note:</i> $\chi^2(3) = 13.08, p = .004, \text{McFadden } R^2 = 0.03$						

Predisposing Characteristics Predictor Variables: Used Women’s Healthcare in the Last Twelve Months

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 37 presents the VIF for each predictor in the model.

Table 37 Variance Inflation Factors: Predisposing Characteristics Predictor Variables	
Variable	VIF
Race-Black	4.00
Married/Civil Union	1.08
Race-White	3.97
College degree	1.02
Presence of Minor children	1.10
Age-under 35	1.04

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(6) = 18.66$, $p = .005$, suggesting the Predisposing Characteristics predictor variables combined had a significant effect on the odds of observing the No category of Used women's healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.03. Since the overall model was significant, additional tests were conducted to examine the significance of the individual predictors. Specifically, the effect of the Race-Black was significant, $B = -1.40$, $OR = 0.25$, $p = .013$, indicating those identifying as Race-Black decreased the odds of observing the No category of Used women's healthcare in the last twelve months by approximately 304.15%. Additionally, the effect of the Age-under 35 was significant, $B = -0.68$, $OR = 0.51$, $p = .013$, indicating compared to the Age-over 35 group, those identifying as under age 35 decreased the odds of observing the No response of Used women's healthcare by approximately 97.63%. Table 38 summarizes the results of the regression model.

Table 38 Logistic Regression Results with Predisposing Characteristics Variables predicting Used women's healthcare in the last twelve months						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>O.R.</i>	<i>95.00% CI</i>
(Intercept)	1.11	0.55	4.11	.043	-	
Presence of Minor Children	-0.15	0.11	1.88	.170	0.86	[0.69, 1.07]
Age-under 35	-0.68	0.27	6.21	.013	0.51	[0.30, 0.86]
College degree	-0.20	0.21	0.90	.343	0.82	[0.55, 1.23]
Married/Civil Union	-0.06	0.21	0.08	.781	0.94	[0.62, 1.43]
Race-Black	-1.40	0.56	6.18	.013	0.25	[0.08, 0.74]
Race-White	-0.97	0.52	3.46	.063	0.38	[0.14, 1.05]

Table 38 Logistic Regression Results with Predisposing Characteristics Variables predicting Used women's healthcare in the last twelve months						
Variable	B	SE	χ^2	p	O.R.	95.00% CI
<i>Note:</i> $\chi^2(6) = 18.66$, $p = .005$, McFadden $R^2 = 0.03$.						

Enabling Characteristics Predictor Variables: Used Women's Healthcare in the Last Twelve Months

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 39 presents the VIF for each predictor in the model.

Table 39 Variance Inflation Factors: Enabling Characteristics Variables	
Variable	VIF
I have a doctor outside the VHA who I trust	1.16
Medicare paid	1.13
Tri-Care paid	1.84
Private insurance paid	2.16
VHA paid for care outside VHA	1.80
Other federal/state/local program paid	1.08
Are you currently covered by any type of insurance?	1.43
Out of pocket(co-pay)	1.16
Medicaid paid	1.12
I understand my VHA healthcare benefits	1.43

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(10) = 31.85, p < .001$, suggesting the Enabling Characteristics predictor variables combined had a significant effect on the odds of observing the No category of Used women’s healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.08. Since the overall model was significant, additional tests were conducted to determine the significance of the individual predictors. Specifically, the effect of the Medicare paying for healthcare was significant, $B = 1.37, OR = 3.93, p < .001$, indicating those using Medicare insurance increased the odds of observing the No category of Used women’s healthcare in the last twelve months by approximately 75.04%. Additionally, the effect of the VHA paying for WHC was significant, $B = -1.02, OR = 0.36, p = .012$, indicating utilizing VHA to pay for WHC decreased the odds of observing the No category of Used women’s healthcare in the last twelve months by approximately 155.97%. Table 40 summarizes the results of the regression model.

Table 40 Logistic Regression Results with Enabling Characteristics variables predicting Used women’s healthcare in the last twelve months						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-0.47	0.40	1.38	.241	-	
I have a doctor outside the VHA who I trust	0.24	0.27	0.79	.374	1.27	[0.75, 2.14]
Are you currently covered by any type of insurance?	-0.04	0.43	0.01	.920	0.96	[0.41, 2.22]
VHA paid for WHC outside the VHA	-1.02	0.41	6.31	.012	0.36	[0.29, 1.61]
Tri-Care	-0.39	0.44	0.77	.382	0.68	[0.29, 1.61]
Private insurance	-0.08	0.35	0.06	.814	0.92	[0.46, 1.84]
Other fed/state/local program	-0.12	0.64	0.04	.848	0.88	[0.25, 3.11]

Medicaid	0.47	0.69	0.45	.503	1.59	[0.41, 6.21]
Medicare	1.37	0.37	13.80	< .001	3.93	[1.91, 8.10]
Out of pocket(co-pay)	-0.31	0.27	1.77	.183	0.70	[0.42, 1.18]
I understand my VHA healthcare benefits	0.42	0.29	2.03	.154	1.52	[0.85, 2.70]
<i>Note:</i> $\chi^2(10) = 31.85, p < .001, \text{McFadden } R^2 = 0.08$						

Need Characteristics Predictor Variables: Used Women’s Healthcare in the Last Twelve Months

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 41 presents the VIF for each predictor in the model.

Table 41 Variance Inflation Factors: Need Characteristics Predictor Variables	
Variable	VIF
Self-reported health status	1.11
Ever used VHA healthcare benefits	1.22
Ever applied for SC disability compensation	1.18

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(3) = 13.23, p = .004$, suggesting the Need Characteristics predictor variables collectively had a significant effect on the odds of observing the No category of Used women’s healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.02. Since the overall model was significant, additional tests were conducted to determine the effect of the individual predictors. Specifically, the effect of Self-reported health status was significant, $B = -$

0.52, OR = 0.59, $p = .032$, indicating that moving from a self-reported poor health status to good health status decreased the odds of observing a No category of Used women’s healthcare by approximately 68.67%. The effect of the Ever used VHA healthcare benefits was significant, $B = -0.56$, OR = 0.57, $p = .015$, indicating going from No to a Yes category decreased the odds of observing the No category of Used women’s healthcare in the last twelve months by approximately 75.36%. Table 42 summarizes the results of the regression model.

Table 42 Logistic Regression Results with Need Characteristics variables predicting Used women’s healthcare in the last 12 months						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>O.R.</i>	<i>95.00% CI</i>
(Intercept)	0.47	0.25	3.66	.056	-	
Self-reported health status	-0.52	0.24	4.60	.032	0.59	[0.37, 0.96]
Ever applied for SC disability compensation	-0.35	0.25	1.98	.159	0.71	[0.44, 1.15]
Ever used VHA healthcare benefits	-0.56	0.23	5.88	.015	0.57	[0.36, 0.90]
<i>Note:</i> $\chi^2(3) = 13.23$, $p = .004$, McFadden $R^2 = 0.02$						

One of the follow-on survey items asked, “In the last six months, have you had outpatient care for doctor visits, urgent care, routine exams, medical tests, or shots?” For the respondents who answered No, they were directed to the next survey item. For those who answered Yes, a follow-on question was presented, “What source or sources provided the financial support for that care?”

Of the 158 Pre 9/11 WV, 122 responded Yes, but seven did not answer the follow-on question for having at least one outpatient visit in the prior 6 months. Excluding the seven respondents who did not select any source of financial support to pay for care used in the past

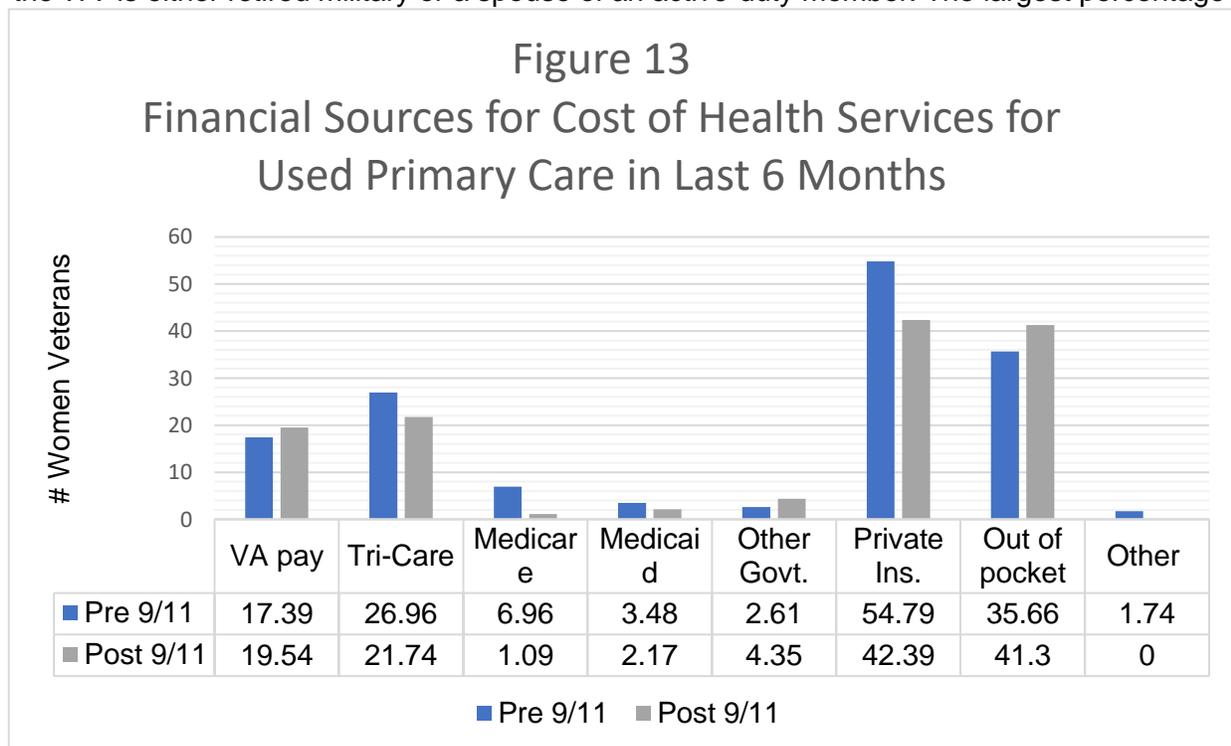
six months the Pre 9/11 WV service era group for this analysis was 115 (72.78%).

Of the 124 Post 9/11 WV, 92 responded Yes, but five did not answer the follow-on question for having at least one outpatient visit in the prior 6 months. Excluding the five respondents who did not select any source of financial support to pay for care used in the past six months, the Post 9/11 WV service era group was 87 (70.16%). The frequencies and percentages of Pre and Post 9/11 WV service era groups are presented in Table 43 below.

Table 43 Frequency Table: Used outpatient care in last six months by WV service era group and source of financial support to pay for care		
Variable	<i>n</i>	%
VA (Department of Veterans Affairs)		
Pre 9/11	20	17.39
Post 9/11	17	19.54
CHAMPUS, CHAMPVA, or TRICARE (military)		
Pre 9/11	31	26.96
Post 9/11	20	21.74
Medicare, including Medigap supplement		
Pre 9/11	8	6.96
Post 9/11	1	1.09
Medicaid/Medical Assistance		
Pre 9/11	4	3.48
Post 9/11	2	2.17
Some other federal/state/local government program		
Pre 9/11	3	2.61
Post 9/11	4	4.35

Private insurance purchased directly or by a family member, through a union, or from a current or former employer		
Pre 9/11	63	54.79
Post 9/11	39	42.39
Out of pocket by you or your family (copayment)		
Pre 9/11	41	35.66
Post 9/11	38	41.30
Some other source		
Pre 9/11	2	1.74
Post 9/11	0	0

As illustrated in Figure 13, less than 20 percent of WV in either target group utilized VHA for primary care in the last six months and about a quarter of WV used Tri-Care which indicates the WV is either retired military or a spouse of an active-duty member. The largest percentage



of financial support was through private insurance. The most concerning statistic in this analysis is the percentage of WV who pay out-of-pocket for their health services (Pre 9/11, 35.66%, Post 9/11, 41.30%). This is an important point as this survey was conducted prior to the passage of the Affordable Care Act.

Secondary Dataset Analysis: Enrolled for VHA Healthcare, Post 9/11 Not Deployed Group

Predisposing Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Binary logistic regression was conducted to examine whether the Predisposing Characteristics Predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare. The reference category for Enrolled in VHA healthcare was yes.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 44 presents the VIF for each predictor in the model.

Table 44 Variance Inflation Factors: Predisposing Characteristics Predictor Variables	
Variable	VIF
Age (under 35)	2.09
Presence of minor children	1.79
Level of education (College degree)	2.53
Marital status (Married/Civil Union)	1.84
Race-White	1.98

The overall model was not significant based on an alpha of .05, $\chi^2(5) = 5.73$, $p = .333$, suggesting the Predisposing Characteristics predictor variables did not have a significant effect

on the odds of observing the No category of Enrolled in VHA healthcare. The McFadden R-squared value calculated for this model was 0.28. Since the overall model was not significant, the individual predictors were not examined further. Table 45 summarizes the results of the regression model.

Table 45 Logistic Regression Results: Predisposing Characteristics Variables predicting Enrolled in VHA healthcare (Post 9/11, Not Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-4.49	3.19	1.98	.160	-	-
Age (under 35)	1.95	1.89	1.07	.302	7.05	[0.17, 287.10]
Presence of minor children	0.75	0.66	1.28	.257	2.11	[0.58, 7.68]
College degree	2.98	2.06	2.09	.148	19.70	[0.35, 1,119.99]
Married/Civil Union	1.35	1.79	0.57	.450	3.86	[0.12, 127.93]
Race-White	0.91	2.09	0.19	.664	2.48	[0.04, 148.94]
<i>Note.</i> $\chi^2(5) = 5.73, p = .333, \text{McFadden } R^2 = 0.28.$						

Enabling Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Binary logistic regression was conducted to examine whether the Enabling Characteristics Predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. The following predictors had VIFs greater than 10: I have a doctor outside the VHA I trust, Are you currently enrolled in health insurance,

and Understand VHA healthcare benefits. Table 46 presents the VIF for each predictor in the model.

Table 46 Variance Inflation Factors: Enabling Characteristics Predictor Variables	
Variable	VIF
I have a doctor outside the VHA I trust	6.67×10^6
Are you currently enrolled in health insurance	6.67×10^6
Understand VHA healthcare benefits	7.06×10^6

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(3) = 8.05, p = .045$, suggesting the Enabling Characteristic Predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare. The McFadden R-squared value calculated for this model was 0.40. Even though the overall model was significant, the individual predictor variables were not significant. This is most likely due to the small sample size of only Post 9/11 WV who had a history of combat deployment. Table 47 summarizes the results of the regression model.

Table 47 Logistic Regression Results: Enabling Characteristics Variables predicting Enrolled in VHA care (Post 9/11, Not Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	0.69	1.22	0.32	.571	-	-
I have a doctor outside the VHA I trust	19.30	3,835.62	0.00	.996	2.40×10^8	[0.00, Inf]
Are you currently enrolled in health insurance	-19.30	3,835.62	0.00	.996	4.17×10^{-09}	[0.00, Inf]
I understand my VHA healthcare benefits	-18.89	3,835.62	0.00	.996	6.25×10^{-09}	[0.00, Inf]
<i>Note.</i> $\chi^2(3) = 8.05$, $p = .045$, McFadden $R^2 = 0.40$.						

Need Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Binary logistic regression was conducted to examine whether the Need Characteristics Predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 48 presents the VIF for each predictor in the model.

Table 48 Variance Inflation Factors: Need Characteristics Predictor Variables	
Variable	VIF
Self-reported health status	1.82
Ever applied for SC disability compensation	1.65
Ever used VHA healthcare	2.14

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(3) = 20.26, p < .001$, suggesting the Need Characteristics Predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare. The McFadden R-squared value calculated for this model was 0.88. Even though the overall model was significant, the individual predictor variables were not significant. This is most likely due to the small sample size of only Post 9/11 WV who had a history of combat deployment. Table 49 summarizes the results of the regression model.

Table 49 Logistic Regression Results: Need Characteristics Variables predicting Enrolled in VHA healthcare (Post 9/11, Not Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	22.23	26,441.33	0.00	.999	-	-
Health status	-0.21	25,744.76	0.00	1.000	0.81	[0.00, Inf]
Ever applied for SC disability compensation	-22.02	12,590.35	0.00	.999	2.73×10^{-10}	[0.00, Inf]
Ever used VHA healthcare	-43.19	23,455.22	0.00	.999	1.75×10^{-19}	[0.00, Inf]
<i>Note.</i> $\chi^2(3) = 20.26, p < .001$, McFadden $R^2 = 0.88$.						

Enrolled for VHA Healthcare, Post 9/11 Deployed Group

Predisposing Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Binary logistic regression was conducted to examine whether the Predisposing Characteristic predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. The variable of Race-Black had a VIF

value over 10, and was removed from the analysis. Table 50 presents the VIF for each predictor variable in the model.

Table 50 Variance Inflation Factors: Predisposing Characteristics Predictor Variables	
Variable	VIF
Age (under 35)	1.20
Presence of minor children	1.11
College degree	1.13
Married/Civil Union	1.10
Race-White	1.12

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(5) = 12.75, p = .026$, suggesting the Predisposing Characteristics predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare. The McFadden R-squared value calculated for this model was 0.12. The effect of the Race-White was significant, $B = 1.54, OR = 4.68, p = .018$, indicating being Caucasian increased the odds of observing the No category of Enrolled in VHA healthcare by approximately 368.47%. Table 51 summarizes the results of the regression model.

Table 51 Logistic Regression Results: Predisposing Characteristics Variables predicting Enrolled in VHA healthcare (Post 9/11, Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-1.27	0.92	1.90	.168	-	-
Age (under 35)	-0.64	0.61	1.09	.295	0.53	[0.16, 1.74]
Presence of minor children	0.28	0.29	0.95	.329	1.32	[0.76, 2.31]
College degree	0.04	0.54	0.01	.942	1.04	[0.36, 3.00]
Married/Civil Union	0.71	0.55	1.63	.202	2.03	[0.68, 6.00]
Race-White	1.54	0.66	5.56	.018	4.68	[1.30, 16.92]
<i>Note.</i> $\chi^2(5) = 12.75$, $p = .026$, McFadden $R^2 = 0.12$.						

Enabling Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Binary logistic regression was conducted to examine whether Enabling Characteristics predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 52 presents the VIF for each predictor variable in the model.

Variable	VIF
I have a doctor outside the VHA I trust	1.03
Are you currently enrolled for health insurance	1.07
I understand my VHA healthcare benefits	1.04

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(3) = 19.84, p < .001$, suggesting the Enabling Characteristic predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare. The McFadden R-squared value calculated for this model was 0.20. The effect of I understand my VHA healthcare benefits variable was significant, $B = -1.86, OR = 0.16, p = .001$, indicating that understanding their VHA healthcare benefits decreased the odds of observing the No category of Enrolled in VHA healthcare by approximately 84.48%. Table 53 summarizes the results of the regression model.

Variable	B	SE	χ^2	p	OR	95.00% CI
(Intercept)	1.05	0.56	3.43	.064	-	-
I have a doctor outside the VHA I trust	0.68	0.55	1.52	.217	1.98	[0.67, 5.85]
Are you currently enrolled for health insurance	-1.34	0.73	3.33	.068	0.26	[0.06, 1.11]
I understand my VHA healthcare benefits	-1.86	0.57	10.76	.001	0.16	[0.05, 0.47]
<i>Note.</i> $\chi^2(3) = 19.84, p < .001, McFadden R^2 = 0.20$.						

Need Characteristics Predictor Variables: Ever Enrolled in VHA Healthcare

Binary logistic regression was conducted to examine whether the Need Characteristics predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 54 presents the VIF for each predictor variable in the model.

Variable	VIF
Self-reported health status	1.02
Ever applied for SC disability compensation	1.01
Ever used VHA healthcare	1.01

The model was evaluated based on an alpha of .05. The overall model was significant, $\chi^2(3) = 60.11, p < .001$, suggesting the Need Characteristics predictor variables had a significant effect on the odds of observing the No category of Enrolled in VHA healthcare. The McFadden R-squared value calculated for this model was 0.56. The effect of the Ever used VHA healthcare was significant, $B = -4.87, OR = 0.008, p < .001$, indicating that Using VHA healthcare benefits in the past decreased the odds of observing the No category of Enrolled in VHA healthcare by approximately 99.23%. Table 55 summarizes the results of the regression model.

Table 55
 Logistic Regression Results: Need Characteristics variables
 predicting Enrolled in VHA healthcare (Post 9/11, Deployed)

Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-0.37	1.32	0.08	.779	-	-
Self-reported health status	2.54	1.30	3.82	.051	12.64	[0.99, 160.85]
Ever applied for SC disability compensation	-0.56	0.77	0.52	.470	0.57	[0.13, 2.60]
Ever used VHA healthcare	-4.87	1.11	19.11	< .001	0.008	[0.0009, 0.07]

Note. $\chi^2(3) = 60.11, p < .001, \text{McFadden } R^2 = 0.56.$

Used Outpatient Primary Care in the Last Six Months, Post 9/11 Not Deployed Group

Predisposing Characteristics Predictor Variables: Used Outpatient Primary Care in the Last Six Months

Binary logistic regression was conducted to examine whether the Predisposing Characteristics predictor variables had a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 56 presents the VIF for each predictor in the model.

Table 56 Variance Inflation Factors: Predisposing Characteristics Predictor Variables	
Variable	VIF
Age (under 35)	2.36
Race-White	1.00
Presence of minor children	1.62
College degree	1.35
Married/Civil Union	2.57

The overall model was not significant based on an alpha of .05, $\chi^2(5) = 6.13$, $p = .294$, suggesting the Predisposing Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months. The McFadden R-squared value calculated for this model was 0.28. Since the overall model was not significant, the individual predictor variables were not examined further. Table 57 summarizes the results of the regression model.

Table 57 Logistic Regression Results: Predisposing Characteristics Variables predicting Used outpatient care in the last six months (Post 9/11, Not Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-20.78	3,217.99	0.00	.995	-	-
Age (under 35)	1.25	1.92	0.43	.513	3.50	[0.08, 149.46]
Race-White	19.63	3,217.99	0.00	.995	3.36×10^8	[0.00, Inf]
Presence of minor children	-0.73	0.77	0.88	.347	0.48	[0.11, 2.20]
College degree	-1.53	1.56	0.95	.329	0.22	[0.01, 4.65]
Married/Civil Union	3.02	2.27	1.77	.183	20.58	[0.24, 1,761.45]
<i>Note.</i> $\chi^2(5) = 6.13$, $p = .294$, McFadden $R^2 = 0.28$.						

Enabling Characteristics Predictor Variables: Used Outpatient Primary Care in the Last Six Months

The Binary logistic regression was conducted to examine whether the Enabling Characteristics predictor variables had a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 58 presents the VIF for each predictor variable in the model.

Variable	VIF
Are you currently enrolled in health insurance	1.05
I have a doctor outside the VHA I trust	1.01
I understand my VHA healthcare benefits	1.06

The overall model was not significant based on an alpha of .05, $\chi^2(3) = 1.03$, $p = .793$, suggesting the Enabling Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months. The McFadden R-squared value calculated for this model was 0.05. Since the overall model was not significant, the individual predictors were not examined further. Table 59 summarizes the results of the regression model.

Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	0.08	1.01	0.01	.934	-	-
Are you currently enrolled in health insurance	0.14	1.15	0.01	.903	1.15	[0.12, 11.05]
I have a doctor outside the VHA I trust	-0.94	1.07	0.77	.380	0.39	[0.05, 3.18]
Understand VHA healthcare benefits	-0.39	1.11	0.12	.726	0.68	[0.08, 6.00]
<i>Note.</i> $\chi^2(3) = 1.03$, $p = .793$, McFadden $R^2 = 0.05$.						

Need Characteristics Predictor Variables: Used Outpatient Primary Care in the Last Six Months

Binary logistic regression was conducted to examine whether the Need Characteristics predictor variables had a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 60 presents the VIF for each predictor in the model.

Variable	VIF
Ever used VHA healthcare	2.01
Self-reported health status	1.44
Ever applied for SC disability compensation	1.49

The overall model was not significant based on an alpha of .05, $\chi^2(3) = 3.14, p = .371$, suggesting the Need Characteristics Predictor variables did not have a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months. The McFadden R-squared value calculated for this model was 0.15. Since the overall model was not significant, the individual predictor variables were not examined further. Table 61 summarizes the results of the regression model.

Table 61 Logistic Regression Results: Need Characteristics Predictor Variables predicting Used outpatient care in the last 6 months (Post 9/11, Not Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-2.89	1.79	2.60	.107	-	-
Ever used VHA healthcare	2.62	1.69	2.40	.122	13.69	[0.50, 375.97]
Self-reported health status	1.60	1.67	0.91	.339	4.94	[0.19, 130.49]
Ever applied for SC disability compensation	-0.79	1.50	0.28	.600	0.46	[0.02, 8.61]
<i>Note.</i> $\chi^2(3) = 3.14, p = .371, \text{McFadden } R^2 = 0.15.$						

Used Outpatient Primary Care in the Last Six Months, Post 9/11 Deployed Group

Predisposing Characteristics Predictor Variables: Used Outpatient Primary Care in the Last Six Months

Binary logistic regression was conducted to examine whether the Predisposing Characteristics predictor variables had a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 62 presents the VIF for each predictor in the model.

Table 62 Variance Inflation Factors: Predisposing Characteristics Predictor Variables	
Variable	VIF
Age (under 35)	1.33
Race-White	2.56
Race-Black	2.62
Presence of minor children	1.23
College degree	1.29
Married/Civil Union	1.19

The overall model was not significant based on an alpha of .05, $\chi^2(6) = 4.17, p = .654$, suggesting the Predisposing Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months. The McFadden R-squared value calculated for this model was 0.05. Since the overall model was not significant, the individual predictors were not examined further. Table 63 summarizes the results of the regression model.

Table 63 Logistic Regression Results: Predisposing Characteristics Predictor Variables predicting Used outpatient care in the last 6 months (Post 9/11, Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	0.36	1.35	0.07	.788	-	-
Age (under 35)	-0.53	0.69	0.59	.442	0.59	[0.15, 2.28]
Race-White	-1.53	0.98	2.41	.121	0.22	[0.03, 1.49]
Race-Black	-0.68	1.09	0.39	.534	0.51	[0.06, 4.31]
Presence of minor children	-0.17	0.29	0.35	.553	0.84	[0.48, 1.49]
College degree	-0.60	0.67	0.80	.371	0.55	[0.15, 2.04]
Married/Civil Union	0.24	0.67	0.12	.725	1.27	[0.34, 4.74]
<i>Note.</i> $\chi^2(6) = 4.17, p = .654, \text{McFadden } R^2 = 0.05.$						

Enabling Characteristics Predictor Variables: Used Outpatient Primary Care in the Last Six Months

The Binary logistic regression was conducted to examine whether the Enabling Characteristics predictor variables had a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 64 presents the VIF for each predictor in the model.

Table 64 Variance Inflation Factors: Enabling Characteristics Predictor Variables	
Variable	VIF
Are you currently enrolled in health insurance	1.06
I have a doctor outside the VHA I trust	1.09
I understand my VHA healthcare benefits	1.03

The overall model was not significant based on an alpha of .05, $\chi^2(3) = 3.19, p = .363$, suggesting the Enabling Characteristics Predictor variables did not have a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months. The McFadden R-squared value calculated for this model was 0.04. Since the overall model was not significant, the individual predictor variables were not examined further. Table 65 summarizes the results of the regression model.

Table 65 Logistic Regression Results: Enabling Characteristics Predictor variables predicting Used outpatient care in the last 6 months (Post 9/11, Deployed)						
Variable	B	SE	χ^2	p	OR	95.00% CI
(Intercept)	-1.41	0.54	6.70	.010	-	-
Are you currently enrolled in health insurance	0.94	0.66	2.01	.156	2.56	[0.70, 9.36]
I have a doctor outside the VHA I trust	-0.21	0.61	0.12	.730	0.81	[0.24, 2.70]
I understand my VHA healthcare benefits	-0.56	0.60	0.89	.344	0.57	[0.18, 1.83]
<i>Note.</i> $\chi^2(3) = 3.19, p = .363, \text{McFadden } R^2 = 0.04.$						

Need Characteristics Predictor Variables: Used Outpatient Primary Care in the Last Six Months

Binary logistic regression was conducted to examine whether the Need Characteristics predictor variables had a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 66 presents the VIF for each predictor in the model.

Variable	VIF
Ever used VHA healthcare	1.14
Self-reported health status	1.04
Ever applied for SC disability compensation	1.10

The overall model was not significant based on an alpha of .05, $\chi^2(3) = 3.50, p = .321$, suggesting the Need Characteristics Predictor variables did not have a significant effect on the odds of observing the No category of Used outpatient care in the last 6 months. The McFadden R-squared value calculated for this model was 0.04. Since the overall model was not significant, the individual predictors were not examined further. Table 67 summarizes the results of the regression model.

Table 67 Logistic Regression Results: Need Characteristics Predictor variables predicting Used outpatient care in the last 6 months (Post 9/11, Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-1.28	0.88	2.15	.143	-	-
Ever used VHA healthcare	-1.42	0.85	2.77	.096	0.24	[0.05, 1.29]
Self-reported health status	-0.03	0.86	0.00	.970	0.97	[0.18, 5.27]
Ever applied for SC disability compensation	0.31	0.61	0.25	.615	1.36	[0.41, 4.54]
<i>Note.</i> $\chi^2(3) = 3.50, p = .321, \text{McFadden } R^2 = 0.04.$						

Used Women’s Healthcare in the Last Twelve Months, Post 9/11 Not Deployed Group

Predisposing Characteristics Predictor Variables: Used Women’s Healthcare in Last Twelve Months

Binary logistic regression was conducted to examine whether the Predisposing Characteristics predictor variables had a significant effect on the odds of observing the No category of Used women’s healthcare in the last twelve months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 68 presents the VIF for each predictor in the model.

Variable	VIF
Age (under 35)	1.69
Race-White	1.00
Presence of minor children	1.70
College degree	1.54
Married/Civil Union	1.97

The overall model was not significant based on an alpha of .05, $\chi^2(5) = 4.73$, $p = .450$, suggesting the Predisposing Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used women’s healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.22. Since the overall model was not significant, the individual predictors were not examined further. Table 69 summarizes the results of the regression model.

Table 69 Logistic Regression Results: Predisposing Characteristics Predictor variables predicting Used women's healthcare in the last twelve months (Post 9/11, Not Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-17.52	3,636.19	0.00	.996	-	-
Age (under 35)	-0.67	1.76	0.15	.703	0.51	[0.02, 16.19]
Race-White	17.90	3,636.19	0.00	.996	5.93×10^7	[0.00, Inf]
Presence of minor children	-0.74	0.77	0.93	.334	0.48	[0.11, 2.14]
College degree	-1.41	1.54	0.83	.362	0.25	[0.01, 5.05]
Married/Civil Union	1.10	1.93	0.33	.567	3.02	[0.07, 131.53]
<i>Note.</i> $\chi^2(5) = 4.73$, $p = .450$, McFadden $R^2 = 0.22$.						

Enabling Characteristics Predictor Variables: Used Women's Healthcare in Last Twelve Months

Binary logistic regression was conducted to examine whether the Enabling Characteristics predictor variables had a significant effect on the odds of observing the No category of Used women's healthcare in the last twelve months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 70 presents the VIF for each predictor in the model.

Variable	VIF
Are you currently enrolled in health insurance	1.12
I have a doctor outside the VHA I trust	1.06
I understand my VHA healthcare benefits	1.17

The overall model was not significant based on an alpha of .05, $\chi^2(3) = 1.41$, $p = .704$, suggesting the Enabling Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used women's healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.06. Since the overall model was not significant, the individual predictors were not examined further. Table 71 summarizes the results of the regression model.

Variable	B	SE	χ^2	p	OR	95.00% CI
(Intercept)	-0.07	1.02	0.01	.943	-	-
Are you currently enrolled in health insurance	-1.35	1.35	1.00	.318	0.26	[0.02, 3.67]
I have a doctor outside the VHA I trust	0.27	1.16	0.05	.819	1.30	[0.13, 12.61]
I understand my VHA healthcare benefits	-0.91	1.18	0.60	.439	0.40	[0.04, 4.04]
<i>Note.</i> $\chi^2(3) = 1.41$, $p = .704$, McFadden $R^2 = 0.06$						

Need Characteristics Predictor Variables: Used Women’s Healthcare in Last Twelve Months

Binary logistic regression was conducted to examine whether the Need Characteristics predictor variables had a significant effect on the odds of observing the No category of Used women’s healthcare in the last twelve months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. The variable of Self-reported health status had a VIF over 10 and was therefore removed from the analysis. Table 72 presents the VIF for each predictor in the model.

Variable	VIF
Ever used VHA healthcare	1.47
Ever applied for SC disability compensation	1.47

The overall model was not significant based on an alpha of .05, $\chi^2(2) = 1.46, p = .482$, suggesting the Need Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used women’s healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.08. Since the overall model was not significant, the individual predictors were not examined further. Table 73 summarizes the results of the regression model.

Table 73 Logistic Regression Results: Need Characteristics Variables predicting Used women's healthcare in the last twelve months (Post 9/11, Not Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-1.33	0.80	2.76	.096	-	-
Ever used VHA healthcare	1.56	1.47	1.12	.290	4.74	[0.27, 84.27]
Ever applied for SC disability compensation	-1.48	1.61	0.85	.356	0.23	[0.010, 5.28]
<i>Note.</i> $\chi^2(2) = 1.46, p = .482, \text{McFadden } R^2 = 0.08.$						

Used Women's Healthcare in the Last Twelve Months, Post 9/11 Deployed Group

Predisposing Characteristics Predictor Variables: Used Women's Healthcare in Last Twelve Months

Binary logistic regression was conducted to examine whether the Predisposing Characteristics predictor variables had a significant effect on the odds of observing the No category of Used women's healthcare in the last twelve months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 74 presents the VIF for each predictor in the model.

Table 74 Variance Inflation Factors: Predisposing Characteristics Predictor Variables	
Variable	VIF
Age (under 35)	1.22
Race-White	4.50
Race-Black	4.59
Presence of minor children	1.16
College degree	1.18
Married/Civil Union	1.16

The overall model was not significant based on an alpha of .05, $\chi^2(6) = 10.12, p = .120$, suggesting the Predisposing Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used women's healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.08. Since the overall model was not significant, the individual predictors were not examined further. Table 75 summarizes the results of the regression model.

Table 75 Logistic Regression Results: Predisposing Characteristics Variables predicting Used women's healthcare in the last twelve months (Post 9/11, Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	1.31	1.33	0.97	.325	-	-
Age (under 35)	-0.55	0.52	1.11	.292	0.58	[0.21, 1.60]
Race-White	-2.05	1.15	3.18	.074	0.13	[0.01, 1.22]
Race-Black	-2.16	1.22	3.11	.078	0.12	[0.01, 1.27]
Presence of minor children	0.05	0.24	0.04	.847	1.05	[0.66, 1.67]
College degree	0.03	0.50	0.00	.944	1.04	[0.39, 2.74]
Married/Civil Union	0.84	0.52	2.62	.105	2.32	[0.84, 6.44]
<i>Note.</i> $\chi^2(6) = 10.12$, $p = .120$, McFadden $R^2 = 0.08$.						

Enabling Characteristics Predictor Variables: Used Women's Healthcare in Last Twelve Months

Binary logistic regression was conducted to examine whether the Enabling Characteristics Predictor Variables had a significant effect on the odds of observing the No category of Used women's healthcare in the last twelve months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 76 presents the VIF for each predictor in the model.

Table 76 Variance Inflation Factors: Enabling Characteristics Predictor Variables	
Variable	VIF
Are you currently enrolled in health insurance	1.05
I have a doctor outside the VHA I trust	1.08
I understand my VHA healthcare benefits	1.04

The overall model was not significant based on an alpha of .05, $\chi^2(3) = 1.82, p = .612$, suggesting the Enabling Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used women's healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.02. Since the overall model was not significant, the individual predictors were not examined further. Table 77 summarizes the results of the regression model.

Table 77 Logistic Regression Results: Enabling Characteristics Variables predicting Used women's healthcare in the last twelve months (Post 9/11, Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-0.42	0.44	0.92	.338	-	-
Are you currently enrolled in health insurance	-0.70	0.63	1.23	.268	0.50	[0.14, 1.72]
I have a doctor outside the VHA I trust	0.12	0.46	0.07	.789	1.13	[0.46, 2.78]
I understand my VHA healthcare benefits	-0.17	0.45	0.15	.701	0.84	[0.35, 2.03]
<i>Note.</i> $\chi^2(3) = 1.82, p = .612, \text{McFadden } R^2 = 0.02.$						

Need Characteristics Predictor Variables: Used Women’s Healthcare in Last Twelve Months

Binary logistic regression was conducted to examine whether the Need Characteristics predictor variables had a significant effect on the odds of observing the No category of Used women’s healthcare in the last twelve months.

Variance inflation factors. Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. All predictors in the regression model have VIFs less than 10. Table 78 presents the VIF for each predictor in the model.

Variable	VIF
Self-reported health status	1.03
Ever used VHA healthcare	1.09
Ever applied for SC disability compensation	1.09

The overall model was not significant based on an alpha of .05, $\chi^2(3) = 6.04, p = .110$, suggesting the Need Characteristics predictor variables did not have a significant effect on the odds of observing the No category of Used women’s healthcare in the last twelve months. The McFadden R-squared value calculated for this model was 0.05. Since the overall model was not significant, the individual predictors were not examined further. Table 79 summarizes the results of the regression model.

Table 79 Logistic Regression Results: Need Characteristics Variables predicting Used women's healthcare in the last twelve months (Post 9/11, Deployed)						
Variable	<i>B</i>	<i>SE</i>	χ^2	<i>p</i>	<i>OR</i>	95.00% CI
(Intercept)	-0.77	0.74	1.09	.297	-	-
Self-reported health status	0.74	0.72	1.07	.302	2.10	[0.51, 8.54]
Ever used VHA healthcare	-0.93	0.53	3.06	.080	0.40	[0.14, 1.12]
Ever applied for SC disability compensation	-0.10	0.47	0.04	.839	0.91	[0.36, 2.29]
<i>Note.</i> $\chi^2(3) = 6.04, p = .110, McFadden R^2 = 0.05.$						

Summary of Binary Regression Analysis

The purpose of this quantitative, non-experimental, study was to gain a better understanding of VHA healthcare benefit non-use/underutilization patterns and factors influencing non-use/underutilization of VHA healthcare among current service era (1990-2010) WV. To accomplish this, an archival dataset was obtained through was obtained from the 2010 National Survey of Veterans which was published in November 2011 and located at <https://www.va.gov/vetdata/surveys.asp>, to measure a variety of variables such as service era, insurance information, whether WV have used VHA healthcare benefits, and demographic information about the two service era groups of WV as the primary dataset analysis. The secondary dataset analysis narrowed the comparison groups to WV who served in the Post 9/11 service era who did/did not deploy to a combat zone. Once the data was obtained, it was uploaded to Intellectus Statistics (2022) for analysis. To prepare the data for analysis, any missing data or outliers were removed. Missing data included those who left the item blank or indicated they did not remember/did not know. The missing data included those who skipped

the item, did not remember/did not know and ranged from four to fifteen. Regression models were adjusted to reflect only those with data responses (yes/no/multiple choice). There were no outliers present within the data. Dummy coding was employed for categorical variables to fit in the regression model.

The specific aims of this study are to identify factors restricting access to VHA healthcare by WV and factors promoting access to VHA healthcare by WV, and identifying aspects/factors which describe the population of WV who do not access VHA healthcare.

Research questions for this study included:

1. Are there differences in VHA health services use for populations of Pre and Post 9/11 WV related to outcome variables?
2. What factors influence non-use/underutilization of VHA health services in Pre vs. Post 9/11 WV?
3. Does exposure to combat deployments influence non-use/underutilization of VHA health services in Post 9/11 WV?
4. What factors influence non-use/underutilization of VHA health services for WV with combat deployments to Iraq and/or Afghanistan?

Prior to hypothesis testing, summary statistics were conducted for the variables of interest as well as insurance coverage information. To answer the first research question, three independent samples t-tests were conducted to determine if there was a significant difference in enrollment/non-enrollment for VHA healthcare benefits, Use of primary care in the last 6 months, and Use of women's healthcare in the last twelve months between the two service eras (Pre 9/11 and Post 9/11). Prior to each test, the assumptions of normality and homogeneity of variance were assessed. For each of the three tests, the assumption of normality was violated. Therefore, additional Mann-Whitney Tests were conducted to confirm the results of each t-test.

The results for each t-test were not significant, indicating there was not a significant difference in Enrollment in healthcare, Use of primary care in the last six months, and Use of women's care in the last twelve months between the service era groups. To answer the second research question, a series of nine separate binary logistic regression analyses were conducted to determine if there was a predictive relationship of predisposing, enabling, and need characteristics variables on the three outcome variables. The predictor variables are outlined below:

Predisposing characteristics-Age, Level of education, Marital status, and Race

Enabling characteristics- I have a doctor outside the VHA I trust, Understand my VHA healthcare benefits, and Type of insurance coverage

Need characteristics-Self-reported health status, Ever used VHA healthcare, and Ever applied for SC disability compensation

As detailed in Table 80 below, the first three regressions were significant, indicating some of the predisposing, enabling, and need characteristics variables collectively predicted non-enrollment in VHA healthcare. Specifically, the individual variables of Age (under 35), Marital status (married/civil union), Presence of other insurance coverage, Lack of understanding of VHA healthcare benefits, and Never used VHA healthcare benefits significantly predicted non-enrollment in healthcare benefits. For the next set of three regressions, the analysis, only one of the need characteristics variable category was significant. Self-reported health status was significant, indicating a decreased odds for Use of primary care in the last 6 months. The third set of regressions for the primary dataset analysis were also significant, indicating the predisposing, enabling, and need characteristics variables collectively predicted the Use of women's healthcare in the last twelve months. Specifically, the individual variables of Race-Black, Medicare payment coverage, VHA paid (insurance), Self-reported

health status, and Ever used VHA healthcare benefits significantly predicted the Use of women’s healthcare in the last twelve months.

Table 80 Primary Dataset Analysis Regression results for Pre/Post 9/11 WV			
Predictor Variable	Predisposing	Enabling	Need
Enrolled for VHA healthcare	Significant: Age under 35 and Marital status-married/civil union decreased odds of enrollment	Significant: Presence of other insurance coverage and Lack of understanding of VHA healthcare benefits decreased odds of enrollment	Significant: Never used VHA healthcare benefits decreased odds of enrollment
Used primary care in last six months	Not significant	Not significant	Significant: Higher self-reported health status decreased odds of enrollment
Used WHC in last twelve months	Significant: Race-Black decreased odds of WHC	Significant: Medicare and VHA coverage decreased odds of WHC	Significant: Higher self-reported health status decreased odds of enrollment

The regressions addressing the remaining research questions included a series of nine binary regression analyses for the Post 9/11 WV who did/not did not deploy to Iraq and/or Afghanistan. These regressions were conducted to determine if there was a predictive relationship of predisposing, enabling, and need characteristics variables on the outcome variables. The predictor variables were the same as the primary dataset analyses. The results of the regressions for deployed/not deployed are detailed in Tables 81 and 82. The implication of these results will be further discussed in the following chapter.

Table 81 Secondary Dataset Analysis Regression results for Deployed WV			
Predictor Variable	Predisposing	Enabling	Need
Enrolled for VHA healthcare	Not significant	Model significant, but predictors not significant due to small cell size	Model significant, but predictors not significant due to small cell size
Used primary care in last six months	Not significant	Not significant	Not significant
Used WHC in last twelve months	Not significant	Not significant	Not significant

Table 82 Secondary Dataset Analysis Regression results for Not Deployed WV			
Predictor Variable	Predisposing	Enabling	Need
Enrolled for VHA healthcare	Significant: Race-White decreased odds of enrollment	Significant: Not understanding VHA healthcare benefits decreased odds of enrollment	Significant: Ever used VHA care in the past increased odds of enrollment
Used primary care in last six months	Not significant	Not significant	Not significant
Used WHC in last twelve months	Not significant	Not significant	Not significant

CHAPTER V

Overview

The two-fold purpose of this chapter is to ascribe meaning to the data and to interpret the research findings presented in Chapter IV. The context in which all findings must be considered is WV who served in the U.S. military in contemporary service eras. The study aimed to answer the following research questions:

1. Are there differences in VHA health services use for populations of Pre and Post 9/11 WV related to outcome variables?
2. What factors influence non-use/underutilization of VHA health services in Pre vs. Post 9/11 WV?
3. Does exposure to combat deployments influence non-use/underutilization of VHA health services in Post 9/11 WV?
4. What factors influence non-use/underutilization of VHA health services for WV with combat deployment to Iraq and/or Afghanistan?

Study Group Characteristics

The data contained in the NSV2010 suggests the Pre and Post 9/11 WV groups were not significantly different in demographics and descriptors other than the Post 9/11 WV service era group had a higher percentage under 35. The difference of approximately ten years between service era groups accounts for this. Both study groups were predominantly white, married, and a college graduate which is not reflective of the larger WV population around the same time as the NSV2010 was conducted. The percentage of the general population of WV in 2010 were married (46%), Caucasian (53%), and Black/African American (31%) which indicates the WV in this study sample may not accurately represent the larger WV population. This is a

common, yet challenging, finding in large study populations where it is difficult to ensure each demographic characteristic is represented.

Since the VHA is such a large healthcare organization, it would seem prudent to conduct surveys divided by populations of interest. This is especially true of vulnerable populations such as WV and minority groups. It is understood the National Survey of Veterans is a Congressionally mandated process, but the results could be more informative by conducting targeted surveys with additional metrics of interest for unique populations. These surveys could then be collated after completion to give a broad picture of the state of Veteran's services for Congressional review, but also yield valuable insights to the healthcare needs of smaller populations of Veterans. This approach would provide better controls to ensure representation of Veteran groups who are often mentioned as a footnote in larger studies. This occurred in the NSV 2010 with an underrepresentation of WV despite this demographic being the fastest growing within the population of Veterans. Of particular note was the near zero representation of Indigenous and Pacific islanders in the NSV 2010 WV study groups which warrants further attention.

In surveying vulnerable populations, it is imperative to consider their unique characteristics. An aspect not assessed in this survey was the impact of military culture against admitting weakness or injury. This is especially true with women in the military who experience additional pressure from the masculine-centric military culture. Within any population, social status and positions held by age, gender, or ethnicity vary with socially derived power. Those with socially defined roles which relegate them to "lesser" status also places them at risk for higher rates of illness (Aday, 2002). These at-risk populations are considered more vulnerable to poor health outcomes as they face challenges to access care. Women Veterans are considered a vulnerable population based on their increased likelihood of co-morbidities, health

disparities, and challenges to access healthcare services (Gulliford et al., 2002). Additionally, military service members are conditioned to follow instructions and to not question directives. Even more so, many women are culturally indoctrinated to not question authority, so there is increased risk for women to acquiesce to denied services, tolerate minimal or fragmented gender-specific care, and suffer from lack of care rather than risk further time away from family responsibilities (Simon & Nath, 2004). Tailoring VHA facility programs to incorporate the unique healthcare needs of WV is more inclusive and thus, more likely to encourage WV to enroll for VHA healthcare services.

Challenges Facing the VHA Regarding Use of VHA Health Services

There are efforts underway within the VHA to address these concerns, including a large investment in WV research and researchers, some of whom provided invaluable information during the course of this study. Some of the challenges in recruiting women and minority populations in Veteran studies is rooted in mistrust from negative experiences occurring while women were on active-duty.

The finding that over fifty percent of the respondents did not understand their VHA healthcare benefits contributed to non-enrollment. Notably, more WV in the Post 9/11 WV group understood their VHA healthcare benefits (49.19%) than the Pre 9/11 WV group (46.84%) which suggests improvements in delivery of information about VHA benefits. The study found that lack of understanding about VHA healthcare benefits increased the odds of non-enrollment and non-use of VHA health services. Of note, the secondary dataset analysis comparing health services use between WV who did/did not deploy to Iraq and/or Afghanistan found that WV who did not deploy had decreased odds of enrollment for VHA health services. The explanation for this finding lies in the intensity of post-deployment assessments. Those returning from a combat zone are screened for PTS and TBI along with physical injuries which is clearly documented in

the military electronic health record. The EHR automatically generates a master problem list which assists in documenting SC injuries. Along with documentation of combat related injuries, military personnel are counseled about disability claims. Those WV who did not deploy did not undergo these evaluations. This speaks to the importance of ensuring women in the military are given timely information on the benefits and processes to enroll in VHA healthcare prior to leaving the service.

The transition assistance program (TAP), required for all military personnel exiting the services, includes a briefing on all VA benefits including health services. Delivery of the information varies widely between military branches of service. The Navy now holds transition briefings in a one-on-one setting which is optimal, but requires a significant addition of personnel to implement individual transition services. It is considered a “gold standard” and current Navy personnel feel the results are positive. Conversely, the Army holds TAP briefings in a classroom setting with all personnel in the same room. During the VHA briefing, service members are provided an option for a one-on-one consultation with a volunteer member of a VSO who has varying levels of expertise in compiling health information for application for a SC disability compensation rating. It is perplexing why the VHA does not provide more hands-on assistance as this would provide a more streamlined process leading to improved enrollment.

More than fifty-five percent of the Pre 9/11 service era group and over fifty-three percent of Post 9/11 WV never applied for SC disability compensation which is rooted in not understanding VHA healthcare benefits. This is important as SC disability compensation impacts how much reduced cost/no cost care WV can receive within the VHA. This is concerning as the Post 9/11 WV have higher rates of PTS, MST, and physical injuries due to higher operational tempo consistent with a wartime military.

While not understanding VHA benefits and non-enrollment for VHA health services is a significant problem, underutilization is equally concerning. The VA.gov website for WV notes 2023 enrollment to VHA by WV is forty-four percent, but the utilization of VHA health services hovers around twenty-two percent, meaning half of those WV enrolled did not use VHA care in the preceding year. Although the number of WV enrolled and using VHA care is increasing, so growth of the population is also increasing dramatically. The better indicator of health services access and use is the percentage of WV who enroll and use VHA health services. While it is accurate the number of WV enrolling for VHA health services is increasing, the percentage of the total eligible population of WV has not significantly changed since 1990.

Some research into the reasons for underutilization has been conducted. The DAV assessments of WV published in 2014 and 2018 noted WV felt VHA providers were insensitive to gender-specific issues and women's health issues in general. This was further reinforced in a study by Kehle-Forbes et al. (2017) of WV who accessed VHA services, but later discontinued their care because they did not feel welcomed, perceived providers to lack gender-specific competencies, and noted insensitivity to WV concerns.

Documented reasons for underutilization include overt occurrences of sexual harassment and sexual assault, but women serving in the military are still marginalized in regard to their abilities and opportunities for achievement. The review of the literature for this study included numerous instances of "firsts" for women in the military, but most of the advances in equal opportunities occurred since 2015. Until it is no longer "newsworthy" for women's attainment of a military specialty, such as Ranger, Special Operations, and SEaL team qualifications and promotion/command appointments, marginalization will continue to be a factor in non-use of VHA healthcare entitlements. Examples of change must come from the highest levels of leadership, and that is slowly occurring. The glass ceiling for women serving as

Secretary of Defense has not been broken to date, but in 2021, Ms. Christine Wormuth was tapped to serve as the first female Secretary of the Army. The top position in Veterans Affairs remains male only, although Secretary McDonough named Ms. Tanya Brasher, Chief of Staff for Veterans Affairs. Until more WV are included in top leadership roles within the military branches and VA, marginalization of women in the military and VA will persist.

This is especially true regarding sexual violence. The culture of the military is one of the “war-fighter” whose success is determined by dominance over the enemy, but that persona does not need to extend off the battlefield. In the 2016 survey of over 50,000 Veterans (deployed and no history of deployment), over 41% of WV reported a history of MST. Over 40% of WV reported experiencing sexual harassment while on active-duty. Since this is multitudes higher than the general U.S. population of women (25%), there is an urgent need for an ongoing emphasis to address factors contributing to the widespread incidence of MST in military and Veteran populations.

In October 2022, The Honorable Denis R. McDonough, Secretary of Veterans Affairs, published VHA DIRECTIVE 5019.02(1), Harassment, sexual assaults, and other defined public safety incidents in VHA. This policy updated the VHA processes and procedures reduce incidences of sexual assault, sexual harassment, and gender-based harassment. While there was a policy already in place, this directive is the first major overhaul since 2012. While this is an important step, the challenges facing gender-based harassment in VHA facilities require a concerted effort on all VHA staff to ensure safe and equitable access to VHA health services.

The risk for triggering memories of MST and/or harassment of women who served in the military is one of the concerns voiced by WV in focus groups held by Volunteer Service Organizations, including the DAV and WWP. Avoiding experiences known to exacerbate PTSD compounds the barriers to use of VHA health services. The results of this study indicate over

half of WV in these service era groups were not enrolled in VHA health services (53.16% and 45.97%). The NSV2010 did contain items specifically addressing reasons for not enrolling for VHA health services. Of the 282 survey respondents, 165 (58.51%) indicated they never used VHA services. A follow-on item asked for reasons for not using VHA healthcare. There were only twenty-two responses to this important question. This is unfortunate because the low percentage of respondents to the item, why did you not enroll for VHA services, is too small to conduct meaningful statistical tests. Similar data was noted for the item asking those who were enrolled for VHA care, but did not use VHA health services. This precludes answering the research question and provides little direction for outreach by the VHA. It is this researcher's belief that creating "safe zones" for WV is the right thing to do for women who have suffered injustices while serving their country. More than a separate hallway or entrance, the VHA must incorporate core changes to be inclusive of the growing demographic of WV which includes opening separate women's clinics away from the VHA facilities where many WV feel unwelcome. Another viable option is to redesign the clinic structure with VHA facilities to establish clinical areas for WV. Many VHA buildings are in line for renovation or replacement, and this is a golden opportunity to incorporate WV health services which reflect the value for WV and their sacrifices.

Researchers conducting future studies assessing WV VHA health services use and barriers need to consider a different format for survey items to assess reasons for non-use or utilize other modalities of assessment, such as focus groups to enable WV to share specific concerns. Another option would be to conduct a shorter, but more focused health services use survey targeted to WV who are VHA non-users. The small number of responses compared to the total number of WV who indicated they did not use VHA healthcare may be an indicator the item was not sensitive enough to resonate with WV respondents or the length of the entire

NSV2010 (21 pages, 15 sections) and the number of times the question of “if no, what are the reasons...” was asked created survey fatigue. Conversely, the positioning of this item was at the very end of the lengthy survey and could be affected by flagging attention span of participants or indicated the item was an inappropriate measurement of non-use of VHA health services. This is a perplexing finding as the overall response rate of Veterans for the NSV2010 was 67% (<https://www.vacsp.research.va.gov/CSPEC/Studies/INVESTD-R/Ntl-Survey-Veteran.asp>).

Regrettably, this precluded answering the research question, What factors influence non-use/underutilization of VHA health services in Pre vs. Post 9/11 WV. Researchers conducting future studies assessing WV VHA health services use and barriers need to consider survey items to assess reasons for non-use or utilize other modalities of assessment, such as focus groups to enable WV to share specific concerns. Another option would be to conduct a shorter, but more focused health services use survey targeted to WV who are VHA non-users.

Bright Spots in VHA Health Services Use

Of the 158 Pre 9/11 WV, 92 had never used VHA healthcare benefits (58.23%), but 123 self-reported their health to be excellent, very good, or good (77.85%). Self-reported health status was significant in regression analysis, indicating perceived health status decreased the odds of use of primary care in the prior six months. This suggests a majority of the Pre 9/11 WV group considered themselves to be healthy and possibly less inclined to apply for SC disability compensation and/or VHA healthcare. It is not uncommon for people who consider themselves to be in good health to forego healthcare and the WV in this study were no exception. The concerning aspects of this finding are the statistics documenting higher rates of PTS, MST, and musculoskeletal injuries in WV. This difference between perceived and actual health status could be explained by the “just deal with it” military culture which propels individuals forward in

extremely adverse conditions. Knowing there is a tendency towards being stoic in military personnel, the VHA should be more forward-leaning to make health services easier to access.

Another notable data point was a majority of the Pre 9/11 (56.53%) and Post 9/11 (45.97%) study groups indicated they had a provider outside the VHA they trusted which may factor into WV decisions to not enroll in VHA care. This is an encouraging finding since there are not sufficient numbers of VHA providers across all populations. A challenge is the lack of connection and communication with the VHA electronic health record. Often the only way reports of care in the public sector are incorporated in the EHR is when the WV brings documents to the VHA facility or uploads documents through the patient portal (MyHealthEVet). Another challenge is military-specific health issue training for providers in the public sector. It is nearly impossible to ascertain competencies and sensitivities of public sector providers who care for WV, especially with the unique military service risks (PTS, MST, musculoskeletal injuries) documented in numerous studies of military women.

The next important discussion point involves access and use of health services outside the VHA by WV. Of note, the CDC reported 86.80% of the general population of women in the U.S. in 2021 had a primary care visit with a provider (https://wwwn.cdc.gov/NHISDataQueryTool/SHS_adult/index.html). The health conditions arising from military service and combat deployment place WV at higher risk for poor health outcomes. The percentage of WV who use the VHA yearly is less than one-fourth of the eligible WV population, so it is critical to determine whether WV are utilizing health services elsewhere. Despite the abovementioned challenges using VHA health services, a significant percentage of the study population used primary care in the preceding six months, 77.22% and 74.19% respectively for Pre and Post 9/11 WV. Further research is indicated to determine the difference between WV and non-military women's use of primary care.

Forty Pre 9/11 WV used WHC within or paid for by the VHA, but the majority (65.56%) indicated the VHA did not provide nor pay for their WHC. Similarly, the Post 9/11 WV group reported 63.71% used WHC outside the VHA. It is not surprising to note WV under the age of 35 used WHC more frequently as they were in their childbearing years. In 2023, the VHA implemented a maternity program where a maternity care coordinator is located in “every VHA facility” per By Dr. Amanda M. Johnson, Director of Reproductive Health, Office of Women’s Health (<https://news.va.gov/118867/va-services-for-pregnant-veterans/>). Services provided by the maternity care coordinator include navigating healthcare services in and outside the VHA, assistance to access care other physical and mental health needs, connection to community resources, and billing questions. This is a positive and much needed step towards equitable access.

Unanticipated Findings

Within this study, the analysis of the enabling characteristics variables suggested a significant percentage of the study groups who sought care outside the VHA did not have insurance coverage. The question of what sources of financial support were responsible for paying for primary and women’s healthcare if they were not enrolled for VHA care. This is important as it is frequently “assumed” that non-use of VHA health services equates to having other sources of healthcare and/or insurance. While it was encouraging to see WV invested enough in their healthcare to seek primary and WHC, it raised the question of who was providing financial support to pay for the care? Those in the study population who sought care outside of the VHA clearly did not have alternative insurance coverage.

An unanticipated, but important finding was the financial sources for healthcare services used in the prior six months. Less than 20 percent of WV in either target group utilized VHA for primary care in the preceding six months and about a quarter of WV used Tri-Care which

indicates the WV is either retired military or a spouse of an active-duty member. The largest percentage of financial support did report having private insurance (54.79% and 42.39%). But the most concerning statistic in this analysis was the percentage of WV who paid out-of-pocket for their health services (Pre 9/11, 35.66%, Post 9/11, 41.30%) as was noted in Figure 13 in Chapter IV (pg. 144).

Healthcare in the U.S., both per person and as a share of GDP, continues to be far higher than in other high-income countries, averaging over \$12,000.00 per capita per year (<https://www.commonwealthfund.org/publications/issue-briefs/2023/jan/us-health-care-global-perspective-2022>). Health costs paid through CMS (Center for Medicare/Medicaid Services) reimburses for healthcare visits by CPT code. The 2023 reimbursement rates for an Annual Wellness Visit (AWV) for an established patient between 18 and 64 years old (CPT codes 99395 and 99396 is \$137). This does not include laboratory tests or procedures which is estimated to range from an additional \$75.00 to \$300.00 (<https://www.cms.gov/medicare/medicare-fee-for-service-payment/physicianfeesched>).

Women's healthcare is even more expensive, ranging from \$100.00 to \$600.00 depending on location. Of note, these figures do not include pregnancy care which can easily cost over \$10,000.00 for an uncomplicated pregnancy. This is a significant issue as managing the costs of healthcare for the uninsured creates even more barriers to health services. Regrettably, the U.S. trend of African American women experiencing lower rates of healthcare use is documented and this analysis indicates this trend continues in the WV population. The VHA must address the reasons for WV non-use/underutilization of VHA health services as the significant financial burden for WV negatively impacts quality of life.

Results Related to the Research Questions

The intent of research is to formulate and answer research questions based on evidence gained in analysis. This study had mixed results in terms of answering the questions posed at the beginning. The chi-square tests and regression analyses found the two study groups were similar in characteristics and demographics. The two groups were initially considered separately, but there were few differences when conducting independent samples t-tests. The Pre and Post 9/11 WV service era groups in the primary dataset analysis groups were combined for regression analysis which assessed for significance of the three outcome variables and selected predictor variables. In this study, the first research question was not supported. It is possible the predictor variables selected by the researcher may not have accurately reflected the variable(s) influencing non-use/underutilization. Consideration of including other variables could have resulted in significance. Research questions two and four could not be answered in this study due to the low number of respondents to the survey questions focused on reasons for non-enrollment and non-use of VHA health services. While this is a disappointing finding, it provides information on the persistent gap in knowledge about factors influencing non-use/underutilization of VHA health services and a direction for future research efforts. The third research question which addressed the exposure to the influence of combat deployments on non-use/underutilization of VHA health services was difficult to determine based on the small number of Post 9/11 WV in the survey. In conducting the regression analysis for the secondary dataset, there was significance in the non-deployed study groups for the predisposing, enabling and need variables influence on enrollment for VHA healthcare. Specifically, race (Caucasian) and not understanding VHA benefits decreased the odds of VHA enrollment, but having accessed VHA care in the past increased the likelihood of enrollment. For those in the deployed group for the secondary dataset analysis, the enabling

and need variables influenced enrollment in VHA care, so the model was significant. None of the predictor variables reached significance due to the small cell size. Therefore, there was evidence of significance, but the small number of respondents precluded meaningful results. This is not to say the study was unsuccessful. There were findings meriting attention by researchers within and outside the VHA to guide and inform future policy regarding WV.

Limitations of the Study

It is understood utilizing existing data imparts limitations. While significant efforts were undertaken to include all populations of WV in the 2010 National Survey of Veterans, all WV cannot be captured in a data set. As with any large-scale study, respondents are voluntary, and the 35-minute average length of the survey can reduce the interest of the respondents in completing the survey. The survey was administered independently of VA researchers, so all items were self-reported. Although the multiple-choice questions offered the option to add items if the listed responses were not reflective of the Veteran's intended answer, the ability to view those manually entered answers is limited. Equally challenging were the relatively few questions targeting WV specific health needs. A startling limitation was the number of WV included in the 2010 NSV. For all service eras, a total of 500 women were included in the 8,710 Veteran responses. This equates to 5.7% of the surveys which is significantly less than the 7.8% of the total Veteran population in 2010 as reported by the Defense Media Network (Lyons, 2010) and even more so in 2021 with the WV population reaching 10%.

Implications for Practice and Education

A majority of WV health services use research focused on those who were enrolled for VHA care, but 50% (n = 141) of this study sample population was not enrolled for VHA health services. Clearly, more effort needs to be focused on outreach to WV to inform them of VHA health services benefits as well as help to apply for service-connected disability compensation

which increases the odds of use and decreases the cost-share for health services.

Improvements in the process for applying for SC disability compensation have occurred over the past ten years, but assistance for those who are struggling with the application remains in the hands of Volunteer Service Organizations (VSO) such as the DAV, VFW, and WWP. These organizations are extremely valuable for all Veterans and their focus should be supportive when the VA is unable to meet the needs of Veterans, but should the VA be absolved of responsibility for outreach and assistance? Certainly, it's not the answer, but currently access to any VA entitlement requires the Veteran to find out "how to access" the services on their own. This is not a good business model and leaders within the VA and VHA must pivot the focus of the VA/VHA to reaching out and welcoming the Veterans with tangible avenues to extend access to health services, not merely having them be "available." As noted earlier, just because an organization builds a structure and process to provide health services does not mean there is equitable access. Research is required to determine the barriers to full use of VHA health services by WV with a follow on change process to remove the obstacles which currently create non-use/underutilization of VHA healthcare.

WV need and want health services. This study demonstrated WV are invested in their health to the point of paying for health services out of pocket. Of the combined Pre and Post 9/11 study population (n = 282), 85.46% (n =214) used primary care in the prior six months and 64.18% (n = 181) used WHC in the preceding year. While it is admirable WV are seeking healthcare services, the lack of knowledge of why and what reasons prompt WV to seek care outside the VHA is concerning due to the increased incidence of significant health conditions. Specifically, Post Traumatic Stress, lower back pain, migraine, major depressive disorder, hysterectomy, removal of reproductive glands, and impairment of knee are top service-connected diagnoses for WV. The VHA needs to increase efforts to provide gender-specific

health services in locations more comfortable to WV. There is benefit to consideration of delivering gender-specific services in venues separate from traditional VHA settings, similar to the establishment of Vet Centers for Post Vietnam era Veterans.

In 2021, the VA launched the Women's Health Transition Training program, a four-hour, online program which provides information for women transitioning to Veteran status on women's health care services available through the VHA. This program is self-paced and includes a handbook. This transition program is intended to be taken in addition to the military Transition Assistance Program (TAP). This additional training is now expected to be completed by transitioning active-duty women and the certificate is submitted as a part of the TAP program completion. Women who are already out of the military can complete the course, but dissemination of this information is limited to accessing the WV webpage on the VA.gov website. More effort is needed to reach WV who do not routinely access the VA website, including presence on social media sites and paid advertising similar to military recruitment efforts. Investment in programs within the VHA is certainly important, but if WV are not seeking out the information, the health services will continue to fall short of reaching those most in need.

For the combined Pre and Post 9/11 WV in this study sample (n = 282), 83.0% (n = 234) reported no current health insurance and 51.06% (n = 144) indicated they had little to no understanding of VHA healthcare benefits. The settings and methods for sharing knowledge of VHA healthcare benefits to WV needs to be re-evaluated and tailored to learning styles of women as increased knowledge of VHA healthcare benefits decreases the odds of non-enrollment. Similarly, the unanticipated finding of how many WV who were not enrolled in VHA healthcare but did seek primary or women's health care outside the VHA, 35.66% (n = 41) of Pre 9/11 WV and 41.3% (n =38) paid for healthcare services out-of-pocket. Since women are known to have lower socioeconomic status, the burden of paying for healthcare out-of-pocket

for WV who are eligible for VHA health services is unnecessary. This places additional risk for poor health and health outcomes in an at-risk population.

Directions for Future Research

As noted in the Women's Health Evaluation Initiative (WHEI) 2014 study, the number of WV using VHA healthcare services increased by 80% in the preceding ten years. As this growth continues, increasing demands on VHA healthcare delivery systems for women are expected (Frayne, et al., 2014, p. 22). This compounds the barriers for the rapidly growing population of WV. Before adequacy of VHA health services needed by WV can be met, an accurate identification of WV needs who are not engaged in VHA healthcare services must occur.

Recently, on the Women Veterans Health Care page, the 2023 Barriers to Care Survey was announced (<https://www.womenshealth.va.gov/WOMENSHEALTH/index.asp>). This survey is a VHA funded survey being conducted in cooperation with Trilog Federal, Altarum, and American Directions. This survey will include enrolled and non-enrolled WV consisting of a small, random sample of WV solicited by mail and email. Surveys for selected WV can be completed online or by telephone interview. This is definitely a step in the right direction.

The NSV 2010 did survey WV who were users and non-users of VHA health services, but the analysis of demographics indicate the sample was not consistent with the general population of WV in 2010. The respondents were mostly Caucasian and races other than African American were near zero. Therefore, the results are limited in generalizability to the WV population. Still, the results indicated several gaps in research. Clearly half of WV did not understand their VHA benefits, and this flowed directly into the low percentage of WV applying for service-connected disability compensation. Without a disability rating, WV can access VHA health services, but the cost of services becomes a factor. Equally important is the tiered system of access to VHA appointments. Those without a disability rating are placed at the

“bottom of the list” for appointments. With the challenges of 100% disabled Veterans accessing timely appointments, being in one of the lower tiers can make healthcare almost unobtainable.

Because the factors noted in this study negatively impact WV enrollment and use of VHA health services, the VHA leadership must focus additional research efforts and educational outreach to WV. It is imperative to take innovative steps to mitigate these gaps in healthcare, specifically targeting research funding to conduct small focus groups led by trained facilitators to determine the reasons WV do not understand VHA health benefits, do not apply for service-connected disability compensation, and why those who do seek care outside the VHA pay for health services out-of-pocket. The VHA is initiating more programs focused on provision of gender-specific health services which is refreshing to see progress, but attention is required to ensure equitable access is provided to all WV by focusing research on those who do not use VHA health services.

APPENDIX A



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Office of Research Compliance
Human Studies Program

DATE: June 27, 2022
TO: Tse, Alice, Nursing, University of Hawaii at Manoa
Jarman, Raymond, Nursing, University of Hawaii at Manoa, Parsons, Teresa, MA, MN, Nursing, University of Hawaii at Manoa
FROM: Rivera, Victoria, Dir, Ofc of Rsch Compliance, Social&Behav Exempt Healthcare Needs and Factors Related to Non-Use/Underutilization of VHA Healthcare Benefits by Post 9/11 Women Veterans
PROTOCOL TITLE:
FUNDING SOURCE: None
PROTOCOL NUMBER: 2022-00549
APPROVAL DATE: July 15, 2022

NOT HUMAN SUBJECTS RESEARCH DETERMINATION

The above referenced study, and your participation as a principal investigator, was reviewed and determined to be Not Human Subjects Research (NHSR). As such, your activity falls outside the parameters of IRB review. You may conduct your study, without additional obligation to the IRB, as described in your application.

The NHSR Determination is based upon the following Federally provided definitions:

"Research" is defined by these regulations as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge."

The regulations define a **"Human Subject"** as "a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention or interaction with the individual, or identifiable private information."

All Human Subjects Research must be submitted to the IRB. If your study changes in such a way that it becomes Human Subjects Research please contact the Research Compliance office immediately for the appropriate course of action.

Please contact this office if you have any questions or require assistance.

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Honolulu, HI 96822
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APPENDIX B

**National Survey of Veterans
Questionnaire Instruments**



Department of Veterans Affairs

National Survey of Veterans (NSV)

Veteran Survey

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 2900-0732. The time required to complete this information collection is estimated to average 35 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. Send comments regarding this burden estimate or any other aspect of this data collection, including suggestions for reducing burden to VA Clearance Officer (005R1B) 810 Vermont Ave, NW, Washington DC 20420. DO NOT RETURN THIS FORM OR SUBMIT REQUESTS FOR BENEFITS TO THIS ADDRESS.

If you have any questions or concerns, please call the NSV Survey Helpline at 1-888-NSV-2009 or send an email to NSV@westat.com

Instructions to Complete the Survey

- ◆ To answer a question, mark with in the box that best represents your answer.
 - ◆ You will sometimes be asked to skip questions based on your answers. In addition, certain sections of the questionnaire may not apply to you.
 - ◆ Please choose only one answer per question, unless the question indicates *Mark all that apply*.
-
-

**Section A
Background Questions**

- A1. Have you ever served on active duty in the U.S. Armed Forces?
Active duty includes serving in the U.S. Armed Forces as well as activation from the Reserves or National Guard.
- Yes, on active duty in the past, but not now → **Go to Question A1b**
 - Yes, now on active duty
 - No, never on active duty except for initial/basic training
 - No, never served in the U.S. Armed Forces
- A1a. Thank you. This survey is intended for Veterans of active duty service. Please return the survey in the enclosed pre-paid return envelope.
- A1b. Was any of this active duty service part of a mobilization or activation while serving as a member of the National Guard or Reserve Component?
- Never served on active duty as a member of the National Guard/Reserve Component
 - Yes, served on active duty while in the National Guard/Reserves (and I am **still** serving in the National Guard/Reserves)
 - Yes, served on active duty while in the National Guard/Reserves (and have **separated/retired** from the National Guard/Reserves)
- A2. In which branch or branches did you serve on active duty?
Mark all that apply.
- Army
 - Navy
 - Air Force
 - Marine Corps
 - Coast Guard
 - Other (e.g., the Public Health Service, the Environmental Services Administration, the National Oceanic and Atmospheric Administration, U.S. Merchant Marine)

- A3. When did you serve on active duty in the U.S. Armed Forces?
Mark all that apply.
- September 2001 or later
 - August 1990 to August 2001 (includes Persian Gulf War)
 - May 1975 to July 1990
 - Vietnam era (August 1964 to April 1975)
 - February 1955 to July 1964
 - Korean War (July 1950 to January 1955)
 - January 1947 to June 1950
 - World War II (December 1941 to December 1946)
 - November 1941 or earlier
- A4. Did you deploy in support of Operation Enduring Freedom (OEF) or Operation Iraqi Freedom (OIF)?
- Yes
 - No
- A5. In what year did you first enter active duty?
[][][][] Year (YYYY)
- A6. In what year were you last released from active duty?
[][][][] Year (YYYY)
- A7. Did you ever serve in a combat or war zone?
[NOTE: Persons serving in a combat or war zone usually receive combat zone tax exclusion, imminent danger pay, or hostile fire pay.]
- Yes
 - No
- A8. During your military service, were you ever exposed to dead, dying, or wounded people?
- Yes
 - No

A9. Were you ever a prisoner of war?

- Yes
- No

A10. During your military service, were you ever exposed to environmental hazards such as Agent Orange, chemical warfare agents, ionizing radiation, or other potentially toxic substances?

- Definitely Yes
- Probably Yes
- Probably No
- Definitely No
- Don't know

**Section B
Familiarity With Veteran Benefits**

B1. Please indicate how much you understand about the following statements regarding the Veterans benefits provided by the Department of Veterans Affairs (VA).

	A lot	Some	A little	Not at all
a. The Veterans benefits that are available to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. The Veterans health care benefits I'm entitled to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. The Veterans burial benefits available to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. The Veterans education and training benefits I'm entitled to from VA.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. The Veterans life insurance benefits I'm entitled to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. The Veterans Home Loan Guaranty benefits I'm entitled to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B2. In the past 12 months, have you looked for information on the following benefits and services?

	Yes	No
a. Eligibility for VA health care	<input type="checkbox"/>	<input type="checkbox"/>
b. VA health care facility locations	<input type="checkbox"/>	<input type="checkbox"/>
c. VA life insurance	<input type="checkbox"/>	<input type="checkbox"/>
d. VA home loans	<input type="checkbox"/>	<input type="checkbox"/>
e. VA education and training	<input type="checkbox"/>	<input type="checkbox"/>
f. VA vocational rehabilitation	<input type="checkbox"/>	<input type="checkbox"/>
g. VA burial and memorial benefits	<input type="checkbox"/>	<input type="checkbox"/>
h. VA disability compensation and pension	<input type="checkbox"/>	<input type="checkbox"/>
i. VA benefits for dependents and survivors	<input type="checkbox"/>	<input type="checkbox"/>
j. VA transition assistance	<input type="checkbox"/>	<input type="checkbox"/>
k. VA prescription benefits	<input type="checkbox"/>	<input type="checkbox"/>

B3. While you were on active duty, did you attend any of the transition assistance workshops known as the Transition Assistance Program (TAP) or the Disabled Transition Assistance Program (DTAP)?

The transition assistance programs provide job-search assistance to separating and retiring military members and their spouses. It began in 1990.

- Yes
- No → Go to Section C
- Don't know → Go to Section C

B3a. How useful did you find the transition program in providing information about VA benefits and services?

- Very useful
- Useful
- Somewhat useful
- Not useful

B3b. Please indicate how much you agree or disagree with the following statement.

The VA briefing gave me a thorough understanding of VA benefits.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Section C appears on the next page.

B3c. How beneficial was the VA benefits portion of the briefing?

- Very beneficial
- Somewhat beneficial
- Not at all beneficial

B3d. How knowledgeable was the VA benefits presenter?

- Very knowledgeable
- Somewhat knowledgeable
- Not at all knowledgeable

Section C Disability and Vocational Rehabilitation

C1. Have you ever applied for VA disability compensation benefits?

- Yes → Go to Question C2
- No

C1a. What are the reasons you haven't applied for any VA disability benefits?

Mark all that apply.

- Don't have a service connected disability
- Not aware of VA service-connected disability program
- Don't think I'm entitled or eligible
- Getting military disability pay
- Getting disability income from another source
- Don't think disability is severe enough
- Don't know how to apply
- Don't want any assistance
- Don't need assistance
- Applying is too much trouble or red tape
- Never thought about it
- Other: **Please specify below** ↓

- Don't know

Question C1a skips to section D, page 5.
Question C2 appears in the next column.

C2. Do you have a VA service-connected disability rating?

- Yes
- No → Go to Question C3

C2a. What is your current VA service-connected disability rating?

- 0 percent
- 10 or 20 percent
- 30 to 40 percent
- 50 to 60 percent
- 70 percent or higher
- Don't know

C2b. Has your VA service-connected disability ever prevented you from getting or holding a job?

- Yes
- No → Go to Question C3

C2c. Does your VA service-connected disability currently keep you from getting or holding a job?

- Yes
- No

C3. What is the status of your most recent claim application?

- Approved
- Waiting for decision from VA regional office
- Waiting for decision from the board of appeals
- Denied
- Don't know

C4. Are you currently receiving monthly disability payments from VA?

- Yes
- No → Go to Question C7

C5. Please indicate what sort of VA disability income you are receiving.

Mark all that apply.

- Service-connected disability compensation
- Non-service-connected disability pension

Question C7 appears on the next page.

C6. During the past year, how important was the disability payment benefit you received from VA in helping you meet your financial needs?

- Extremely important
- Very important
- Moderately important
- Slightly important
- Not at all important
- Don't know

C7. Have you ever used vocational rehabilitation services from VA?

- Yes → **Go to Question C9**
- No

C8. What are the reasons you have not used any VA vocational rehabilitation services?

Mark all that apply.

- Don't have a service-connected disability
- Didn't think disability was severe enough
- Didn't know how to apply for or get needed benefits
- Didn't want financial assistance from VA
- Didn't need financial assistance from VA
- Applying was too much trouble or red tape
- Never considered applying
- Got assistance from somewhere else
- Got better/didn't need assistance any more
- Just had claim approved
- Other: **Please specify below** ↓

▶ **Question C8 skips to section D on page 5.**

C9. How important were these VA vocational rehabilitation services in helping you meet employment goals or in helping you get a job?

- Extremely important
- Very important
- Moderately important
- Slightly important
- Not at all important

C10. If you are employed, what VA services were helpful to you in obtaining a job?

Mark all that apply.

- Educational services
- Financial assistance
- Job
- Job placement services
- Not employed
- Other: **Please specify below** ↓

C11. If you used VA vocational rehabilitation benefits but were also eligible for GI Bill benefits, why did you choose VA vocational rehabilitation services?

Mark all that apply.

- Financial benefit
- Payment of tuition and books
- Length of training program
- Support of VA vocational rehabilitation counselor
- Assistance in finding employment
- Referral for medical or dental benefits
- Other: **Please specify below** ↓

C12. Why did you stop participating in the VA vocational rehabilitation program?

- I am still in the program → **Go to Section D**
- Completed my program → **Go to Question C14**
- Financial barriers
- Changed jobs
- Medical reasons
- Other: **Please specify below** ↓

▼ **Question C14 appears on the next page.**
Section D appears on the next page.

C13. What services could have helped you complete your program?

Mark all that apply.

- Financial support
- Flexible training program
- Job placement services
- Independent living services
- Other: *Please specify below* ↴

C14. What services helped you complete your program?

Mark all that apply.

- Testing and evaluation
- Guidance and counseling
- Training and education
- Medical and dental referral
- Financial support
- Job placement
- Employment follow-up
- Other: *Please specify below* ↴

**Section D
Health Status**

D1. In general, would you say your health is...

- Excellent
- Very good
- Good
- Fair
- Poor

D2. How would you rate the health of your teeth and gums? Would you say it is...

- Excellent
- Very good
- Good
- Fair
- Poor

D3. In the past week, how much assistance do you require in the following activities due to a health condition?

	I can do without any assistance	I can do with some assistance	I am completely dependent on assistance	I do not do this activity
a. Bathing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Eating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Transferring from bed or a chair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Using the toilet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Walking around your home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Dressing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Preparing meals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Managing your money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Doing household chores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Using the telephone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Taking medications properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D4. Are you currently in need of the aid and attendance of another person?

- Yes
- No

D5. Are you permanently housebound?

- Yes
- No

D6. Have you smoked at least 100 cigarettes in your entire life?

- Yes
- No

D7. Do you now smoke cigarettes every day, some days, or not at all?

- Every day
- Some days
- Not at all

**Section E
Health Care**

E1. Have you ever been enrolled in VA health care?

- Yes
- No
- Don't know

E2. Have you ever used any VA health care benefits?

- Yes → **Go to Question E3**
- No
- Don't know

E2a. What are the reasons you never used any VA health care benefits?

Mark all that apply.

- Did not need any care
- Not aware of VA health care benefits
- Not entitled to or eligible for health care benefits
- Do not know how to apply for health care benefits
- Did not need or want assistance from VA
- Too much trouble or red tape
- Never considered getting any health care from VA
- Don't think VA health care would be as good as that available elsewhere
- I use other sources for health care
- VA care is difficult to access (parking, distance, appointment availability)
- Applied, but was told that I am not eligible
- Other: **Please specify below** ↴

- Don't know

Question E2a skips to question E4, page 7.
Question E3 appears in the next column.

E3. In the last 6 months, did you use any VA health care services, or did you have any of your health care paid for by VA?

- Yes – I received services at VA, or they were paid for by VA → **Go to Question E4**
- No – I received services, but not from VA and were not paid for by VA
- No – I did not receive any health care services
- Don't know/Don't remember

E3a. What were the reasons you didn't use the VA health care services in the past six months?

Mark all that apply.

- Do not need any care
- Not aware of the VA health care benefits
- Do not believe self entitled to or eligible for health care benefits
- Bad prior experience
- Do not know how to apply for health care benefits
- Do not need or want assistance from VA
- Applying for health care benefits too much trouble or red tape
- Never considered getting any health care from VA
- Don't think VA health care would be as good as that available elsewhere
- Uses other sources for health care
- VA care is difficult to access (parking and/or appointment availability)
- VA care is difficult to access due to distance
- I do not feel welcome at VA
- VA does not provide the services that I need
- Other: **Please specify below** ↴

- Don't know

Question E4 appears on the next page.

The following questions ask about health services you may have used for yourself in the last six months.

E4. In the last six months, have you stayed in a hospital for medical or surgical care?

- Yes
- No → Go to Question E5

E4a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E5. In the last six months, have you had outpatient care for doctor visits, urgent care, routine exams, medical tests, or shots?

- Yes
- No → Go to Question E6

E5a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

Question E6 appears in the next column.

E6. In the last six months, have you stayed in a hospital for mental health or substance abuse treatment?

- Yes
- No → Go to Question E7

E6a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E7. In the last six months, have you had outpatient visits for psychological counseling, therapy or mental health, or substance abuse treatment

- Yes
- No → Go to Question E8

E7a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

Question E8 appears on the next page.

E8. In the last six months, have you used prescription medications?

- Yes
- No → Go to Question E9

E8a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E9. In the last six months, have you used over the counter medications?

- Yes
- No → Go to Question E10

E9a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E10. In the last six months, have you had in-home health care for yourself?

- Yes
- No → Go to Question E11

Question E11 appears in the next column.

E10a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E11. In the last six months, have you had care for any prosthetics or medical equipment, including home oxygen?

- Yes
- No → Go to Question E12

E11a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E12. In the last six months, have you had care for hearing aids or eye glasses?

- Yes
- No → Go to Question E13

Question E13 appears on the next page.

E12a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E13. In the last six months, have you stayed overnight in a rehabilitation hospital or nursing care facility?

- Yes
- No → Go to Question E14

E13a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E14. In the last six months, have you had any dental care or visited a dentist?

- Yes
- No → Go to Question E15

Question E15 appears in the next column.

E14a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E15. In the last six months, have you visited or had care in an emergency room?

- Yes
- No → Go to Question E16

E15a. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E16. In the last six months, have you had any other types of medical treatment?

- Yes
- No → Go to Question E17

E16a. Please specify the other medical treatment you had.

Question E17 appears on the next page.

E16b. What source or sources provided the financial support for that care.

Mark all that apply.

- VA (Department of Veterans Affairs)
- CHAMPUS, CHAMPVA, or TRICARE (military)
- Medicare, including Medigap supplement
- Medicaid/Medical Assistance
- Some other federal/state/local government program
- Private insurance purchased directly or by a family member, through a union, or from a current or former employer
- Out of pocket by you or your family (copayment)
- Some other source

E17. How much do you agree or disagree with the following statements?

	Completely agree	Agree	Neither agree nor disagree	Disagree	Completely disagree	Don't know
a. If the cost of health care to me increases, I will use VA more.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I would only use VA if I did not have access to any other source of health care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I have a doctor outside VA who I really trust.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Veterans who can afford to use other sources of health care should leave VA to those who really need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Veterans like me who use VA are satisfied with the health care they receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. VA health care providers explain treatment/diagnoses in a way that patients can understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. There is a VA provider in my area that offers all of the health care services that Veterans like me need.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E18. I have one particular health care provider who is in charge of my care.

- Yes
- No

E19. What is your gender?

- Male → Go to Question E22
- Female

WOMEN ONLY:

E20. During the past 12 months, have you used women's health care services, for example, for pap smears or prenatal care from VA or other providers?

- Yes
- No → Go to Question E22

E21. During the past 12 months, have you received women's health care services at any of the following?

Mark one box for each item listed below.

	Yes	No
a. A primary care clinic at a VA facility	<input type="checkbox"/>	<input type="checkbox"/>
b. A women's health clinic or gynecology clinic at a VA facility	<input type="checkbox"/>	<input type="checkbox"/>
c. Any provider or facility outside VA, but paid for by VA	<input type="checkbox"/>	<input type="checkbox"/>
d. Any provider or facility outside VA, not paid for by VA	<input type="checkbox"/>	<input type="checkbox"/>
e. Any women's healthcare provider or gynecology clinic outside VA, not paid for by VA	<input type="checkbox"/>	<input type="checkbox"/>

MEN AND WOMEN:

E22. If you needed long-term nursing home care, would you:

- Definitely go to VA
- Maybe go to VA
- Definitely go somewhere else

E23. What is the primary way you plan to use VA health care in the future?

- As your primary source of health care
- In addition to non-VA care for some services
- A "safety net" to use only if I lose other sources of health care
- For prescriptions
- For specialized care
- Some other way
- No plans to use VA for health care

**Section F
Health Insurance**

F1. Are you CURRENTLY covered by any of the following types of health insurance or health coverage plans?

Mark all that apply.

- No health insurance
- Insurance through a current or former employer or union (of yours or another family member)
- Insurance purchased directly from an insurance company (by you or another family member)
- Medicare, for people 65 and older, or people with certain disabilities
- Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability
- VA (including those who have ever used or enrolled for VA health care)
- TRICARE, TRICARE for Life or other military health care
- Indian Health Service
- Any other type of health insurance or health coverage plan **Please specify below** ↓

F1a. Who provides this coverage?

Mark all that apply.

- Current employer, including COBRA coverage
- Former employer
- Individually purchased coverage
- Federal, State, County, or local community health services program
- Family member, such as a spouse, parent, etc.
- Or from somewhere else? **Please specify below** ↓

▶ **Instruction: If you are on Medicare, continue with question F2. Otherwise go to question F4.**

MEDICARE RECIPIENTS:

F2. Did you receive your Medicare coverage through a Medicare Advantage Plan?

- Yes
- No

F2a. Does your Medicare coverage pay for...

- | | Yes
▼ | No
▼ |
|--|--------------------------|--------------------------|
| a. Care if you are hospitalized? | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Doctor's office visits? | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Prescription drug coverage, "Part D"? | <input type="checkbox"/> | <input type="checkbox"/> |

F3. Do you purchase any private health care coverage to pay for services Medicare does not pay for?

- Yes
- No

EVERYONE:

F4. Do you currently have insurance coverage for prescription drugs?

- Yes
- No → **Go to Question F6**

F5. Do you currently have prescription drug coverage from VA?

- Yes
- No
- Don't know

Question F6 appears on the next page.

F6. How much do you agree or disagree with the following statements?

		Completely agree	Agree	Neither agree nor disagree	Disagree	Completely disagree
a.	I feel I know what is available to me through my VA health coverage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	My family has a health insurance plan that adequately covers me and my family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Section G
Education and Training**

These next few questions ask about your experience with education and training benefits provided by the Department of Veterans Affairs. **This does not include tuition assistance (TA) you may have received while on active duty.**

G1. Have you used any VA education or training benefits, excluding VA vocational rehabilitation?

Yes

No → **Go to Question G3**

G2. Please indicate when you used the VA education and training benefits.

Mark all that apply.

During active duty service

After active duty service

Both during and after active duty service

Have never used education and training benefits → **Go to Question G3**

Question G3 appears on the next page.

G2a. How did you use the VA education benefit?

Mark all that apply.

- Took college or university coursework leading to a bachelor or graduate degree
- Attended business, technical or vocational school training leading to a certificate or diploma
- Participated in an apprenticeship or on-the-job training program
- Took correspondence courses
- Took flight training
- Received tutorial assistance, refresher courses, or deficiency training
- Attended a teacher certification program
- Did something else: **Please specify below** ↓

G2b. Did you complete your training, or receive the primary degree or certificate for which you were enrolled and receiving VA education benefits?

- Yes
- No

G2c. How important were your VA education benefits in helping you meet your educational goals or preparing you to get a better job?

- Extremely important
- Very important
- Moderately important
- Slightly important
- Not at all important

Question G2c skips to question G4, page 13.

G3. What are the reasons you haven't used any of the VA educational assistance?

Mark all that apply.

- I used state education benefits from the National Guard instead
- Not aware of VA education or training benefits
- Don't believe entitled to or eligible for education or training benefits
- My period of eligibility expired/ran out
- Don't know how to apply for education or training benefits
- Don't need any additional education or training
- Don't need or want assistance from VA
- Too much trouble or red tape
- Never considered getting any education or training from VA
- Didn't pay into training funds during active duty
- Other: Please *specify type below* ↴

G4. Other than the VA assistance you may have noted previously, have you received any other education or training assistance since discharge or separation?

- Yes
- No → Go to Question G6

G5. What type of other education or training assistance have you had since discharge or separation? *Please specify below* ↴

G6. While on active duty, did you use the military's tuition assistance (TA)?

- Yes
- No

Section H Employment

H1. During the last week, were you...

- Working, or on paid vacation or sick leave from work → Go to Question H2
- Not working, but looking for work → Go to Question H2
- Not working and not looking for work

H1a. What is the main reason you were not looking for work?

- You are retired
- You are disabled
- You stopped looking for work because you could not find work
- You were temporarily laid off from work
- You were taking care of your home and family
- You were going to school
- Other: *Please specify below* ↴

H2. Does your most recent civilian job generally match the occupations you were trained for while you were in the military?

- Yes
- No
- Have not had any civilian jobs → Go to Question H4

H3. How much did the training, skills or experiences you gained in the military apply to your most recent civilian job?

- A lot
- Some
- A little
- Not at all

Question H4 appears on the next page.

- H4. When you left the Service, how well prepared were you to enter the civilian job market?
- Very well prepared
 - Well prepared
 - Neither well nor poorly prepared
 - Poorly prepared
 - Very poorly prepared
 - Not applicable; I was not interested in entering the civilian job market

H5. To what extent do you agree with the following statements?

- | | | | | | | |
|---|--------------------------|--------------------------|-------------------------------|--------------------------|--------------------------|--------------------------|
| | Strongly agree | Agree | Neither agree
nor disagree | Disagree | Strongly disagree | Don't know |
| | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ |
| a. The military allowed me enough time to prepare for my transition and job search. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. My chain of command was supportive when I began transition processing. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Section I
Life Insurance**

- I1. Are you currently covered by VA life insurance (e.g., Veterans' Group Life Insurance/VGLI, Service-Disabled Veterans' Insurance/SDVI)?
- Yes, covered by VGLI
 - Yes, covered by SDVI → **Go to Question I2**
 - No, not covered by VA life insurance → **Go to Question I1b**

I1a. (If covered by VGLI) What is the best way for VA to communicate VGLI program changes?

- Email
- Direct mailings
- Veterans Affairs (VA) insurance web site (www.insurance.VA.gov)
- Other

Question I2 appears in the next column.

I1b. What are the reasons you don't have VA life insurance coverage?

Mark all that apply.

- Not aware of VA insurance benefits
- Not entitled or eligible
- Don't know how to apply for benefits
- Don't need any insurance
- Don't need or want assistance from VA
- Too much trouble or red tape
- Never considered getting any insurance from VA
- Elected to forgo coverage while on active duty
- Never converted active duty life insurance policy to Veteran's policy
- Allowed policy to lapse
- Other: **Please specify below** ↓

I2. Excluding a VA life insurance policy, do you currently have life insurance from any other sources?

- Yes
- No → **Go to Question I3**

I2a. If yes, how much?

- Less than \$10,000
- \$10,000 to \$49,999
- \$50,000 to \$99,999
- \$100,000 to \$199,999
- \$200,000 to \$399,999
- \$400,000 to \$599,999
- \$600,000 to \$999,999
- \$1,000,000 or more

I3. Are you aware that you could have converted your Servicemembers' Life Insurance (SGLI) to Veterans' Group Life Insurance (VGLI) after you were discharged from service?

- Yes
- No
- SGLI was not available to me
- SGLI was available, but I did not have it while on active duty

**Section J
Home Loans**

- J1. What would you say your current living arrangement is?
- Rent my home
 - Own my home—with an outstanding mortgage
 - Own my home—no mortgage balance
 - Occupy dwelling with no payment of cash rent
 - Other

- J2. Are you aware that VA has a home loan guaranty program for eligible Veterans?
- Yes
 - No

- J3. Have you ever obtained a home loan (VA or other) to purchase a home, refinance a home loan or make home improvements?
- Yes
 - No → **Go to Section K**

- J3a. When obtaining financing for this loan, did your lender discuss VA's home loan guaranty program with you as a possible option?
- Yes
 - No
 - Don't remember

- J4. Have you ever used the VA home loan guaranty program?
- Yes, currently have VA home loan
 - Yes, not currently, but have had VA home loan in the past
 - No, never have had VA home loan → **Go to Question J6**

↓ Questions J6 appears on the next page.
Section K appears on the next page.

- J4a. How long ago did you obtain your most recent home loan (VA or other)?

- Within last 5 years
- 6-10 years ago
- 11-20 years ago
- More than 20 years ago

- J4b. When did you use the VA home loan guaranty program?

- During active duty service
- After active duty service
- Both during and after active duty service

- J5. What is the **most important reason** you chose to get a VA home loan?

- VA loan program is offered only to U.S. Veterans
- No down payment required
- Convenience
- No mortgage insurance required
- Favorable interest rate
- Loan more likely to be approved
- VA's assistance to avoid foreclosure
- Previous experience with the VA loan program

↓ Questions J5 skips to section K, on the next page.

J6. If you have not used the VA home loan program, what was the main reason you did not?

- A conventional FHA mortgage was easier or less expensive for me to obtain
- I applied for a VA home loan, but did not qualify
- I did not apply because I did not think that I would qualify
- I thought that the process for obtaining a VA loan would take too long
- My lender and/or realtor discouraged the use of the VA program
- The VA funding fee was too high
- I didn't know about the program
- Other: **Please specify below** ↴

**Section K
Burial Benefits**

K1. How satisfied are you with your ability to get accurate information about burial benefits?

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied
- I have not tried to get information

K2. How important to you are the following factors to maintaining VA National cemeteries as shrines that honor Veterans?

	Very important	Important	Not very important	Not at all important	Don't know
a. Maintenance of the cemetery grounds	<input type="checkbox"/>				
b. Upkeep of headstones, markers, and wall covers for cremated remains	<input type="checkbox"/>				
c. Maintenance of other landscape features	<input type="checkbox"/>				
d. Appearance of committal shelters	<input type="checkbox"/>				
e. Appearance of individual gravesites	<input type="checkbox"/>				
f. Maintenance of cemetery buildings and roads	<input type="checkbox"/>				
g. Cemetery's front gate and entrance area	<input type="checkbox"/>				
h. Availability of parking and/or restrooms	<input type="checkbox"/>				
i. Public ceremonies and events that honor Veterans	<input type="checkbox"/>				
j. Presentation of military funeral honors	<input type="checkbox"/>				
k. Other: Please specify below ↴	<input type="checkbox"/>				

K3. Please indicate if you have heard about the following burial benefits before today.

	Yes	No	Don't know
a. Burial at a VA National or State Veterans cemetery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Headstone and burial markers provided by VA at private cemeteries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Presidential Memorial Certificates for next of kin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Cash plot allowance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Cash burial allowance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Military Funeral Honors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Receiving a U.S. Flag	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Section L
Burial Plans**

L1. What type of burial do you think you'll have?

- In-ground, casket burial
- Cremation, in-ground burial
- Cremation, columbarium (a vault for cremated remains)
- Mausoleum (i.e., tomb within a monument or building)
- Something else
- Don't know

L2. Do you think you will be buried in a VA National or State Veterans cemetery?

- Yes
- No → **Go to Question L3**
- Don't know

L2a. What are your reasons for planning to be buried in a VA National or State Veterans cemetery?

Mark all that apply.

- No cost
- Friends or family buried there
- Quality of services
- The honor of burial in a VA National shrine
- My connection to the military/past service to country
- Other: **Please specify below** ↴

- Don't Know

Question L2a skips to question L5, page 16.
Question L3 appears in the next column.

L3. What are your main reasons for not planning to be buried in a VA National or State Veterans cemetery?

Mark all that apply.

- Don't know eligibility criteria
- Quality of services
- Don't know how to make arrangements with VA
- Made other arrangements
- VA services don't accommodate religious preferences
- Veterans cemetery too far away (distance)
- Travel time to Veterans cemetery too long
- Appearance of cemetery doesn't meet my expectations
- Want location close to other family members
- Want services that are not available at Veterans cemetery
- Too difficult to make arrangements with VA
- Unable to make advance arrangements with VA
- Other: **Please specify below** ↴

- Don't Know

L4. If you choose to be buried in a private cemetery, do you think you'll have your burial place marked by a headstone or marker provided by VA (at no cost to you)?

- Yes → **Go to Question L5**
- No
- Don't know → **Go to Question L5**

Question L5 appears on the next page.

L4a. What are the main reasons you don't plan to use a headstone or marker provided by VA?
Mark all that apply.

- Don't know about headstones and markers for Veterans
- Made other arrangements
- Wants headstone similar to other family members
- Don't like VA headstones and markers
- Other: **Please specify below** ↓

- Don't know

L5. For each of the burial options listed below, please tell us which one option you find the most preferable.

- Casket burial, in-ground
- Casket burial, in a mausoleum
- Cremation, ashes buried in-ground
- Cremation, ashes placed in a columbarium
- Cremation, ashes scattered
- Cremation, ashes kept by my family
- Something not listed

L5a. For each of the burial options listed below, please tell us which options you find acceptable (not your first choice, but would be OK).

- Mark all that apply.**
- Casket burial, in-ground
 - Casket burial, in a mausoleum
 - Cremation, ashes buried in-ground
 - Cremation, ashes placed in a columbarium
 - Cremation, ashes scattered
 - Cremation, ashes kept by my family
 - Something not listed

Section M Internet Use

M1. Do you use the Internet, at least occasionally?

- Yes
- No → Go to Question M4

M2. How often do you access the Internet or World Wide Web?

- At least once a day
- At least once a week but not every day
- At least once a month but less than once a week
- At least once a year but less than once a month
- Less than once a year

M3. Where do you go on-line to use the Internet?
Mark all that apply.

- Home
- Work
- School
- Public library
- Community center
- Someone else's house
- Some other place

M4. Do you send or receive emails, at least occasionally?

- Yes
- No → Go to Question M5

¹⁸Question M5 appears on the next page.

M4a. Where do you go on-line to send or receive emails?

Mark all that apply.

- Home
- Work
- School
- Public Library
- Community Center
- Someone else's house
- Some other place

M5. How willing are you to use the Internet for the following activities?

	Very willing	Somewhat willing	Neither willing nor unwilling	Somewhat unwilling	Very unwilling
a. Obtaining news and information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Carrying out research on services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Purchasing goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Responding to polls or surveys	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Obtain information about VA benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Apply for VA benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

M6. Have you ever used the "MyHealthVet" web site to obtain information related to your personal VA health care?

- Yes
- No

M7. Would you like to receive VA information through the Internet or the World Wide Web?

- Yes
- No

Section N Income

N1. Please indicate whether your family received income (past 12 months) in any of the categories listed below.

Please think about income from all members of this family who live at this address and who are 15 years of age or older.

	Yes ▼	No ▼	Don't know ▼
a. Wages, salary, commissions, bonuses, or tips from all jobs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Self-employment income from own nonfarm businesses or farm businesses, including proprietorships and partnerships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Interest, dividends, net rental income, royalty income, or income from estates and trusts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Social Security or Railroad Retirement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Supplemental Security Income (SSI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Any public assistance or welfare payments from the state or local welfare office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Retirement, survivor, or disability pensions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Veterans' (VA) service-connected disability compensation payments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. All other VA payments (e.g., VA education payments)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Any other sources of income received regularly such as unemployment compensation, child support or alimony	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

N2. Which income range category represents the total combined income of all members of this family during the past 12 months ?

This includes income from all sources mentioned in Question N1 (i.e., only those living at this address).

- Less than \$5,000
- \$5,000 to \$7,499
- \$7,500 to \$9,999
- \$10,000 to \$12,499
- \$12,500 to \$14,999
- \$15,000 to \$19,999
- \$20,000 to \$24,999
- \$25,000 to \$29,999
- \$30,000 to \$34,999
- \$35,000 to \$39,999
- \$40,000 to \$49,999
- \$50,000 to \$59,999
- \$60,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 or more

**Section O
Demographics**

O1. What is your gender?

- Male
- Female

O2. What is your year of birth?

				Year (YYYY)
--	--	--	--	-------------

O3. Please indicate the number of dependent children you have.

	<i>Number of minor children (age 17 and younger)</i>
--	--

	<i>Number of adult children attending High School and/or College (age 18-22)</i>
--	--

O4. What is the highest degree or level of school you have completed?

- Less than high school
- High school diploma / GED
- Some college credit, but less than 1 year of college credit
- 1 or more years of college credit, no degree
- Associate's degree (for example, AA, AS)
- Bachelor's degree (for example, BA, BS)
- Master's degree (for example, MA, MS, MEng, MEd, MSW, MBA)
- Professional degree beyond a bachelor's degree (for example, MD, DDS, DVM, LLB, JD)
- Doctorate degree (for example, PhD, EdD)

O5. Are you of Hispanic, Latino, or Spanish origin?

- No, not of Hispanic, Latino, or Spanish origin
- Yes, Cuban
- Yes, Mexican, Mexican American, Chicano
- Yes, Puerto Rican
- Yes, another Hispanic, Latino, or Spanish origin
For example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on. Please specify below ↓

--

- O6. What is your race?
Mark all that apply.
- White
 - Black or African American
 - American Indian or Alaska Native
 - Asian Indian
 - Chinese
 - Filipino
 - Other Asian (for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on)
 - Native Hawaiian
 - Guamanian or Chamorro
 - Samoan
 - Other Pacific Islander (for example, Fijian, Tongan, and so on)

- O7. What is your current marital status?
- Now Married
 - Widowed
 - Divorced
 - Separated
 - Never Married
 - Civil Commitment or Union

- O8. At which of the following types of addresses does your household receive mail?

Mark all that apply.

- A street address with a house or building number
- An address with a rural route number
- A U.S. Post Office Box
- A commercial mailbox establishment

- O9. At how many different addresses do you receive your personal mail?

Number

***Thank you for your participation
in this very important survey.***

If found please return to:

Westat
1600 Research Blvd, RA 1136
Rockville, MD 20850

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